

Journal of the North China Branch of the Royal Asiatic Society
Royal Asiatic Society of Great Britain and Ireland.
Shanghai, Kelly & Walsh, 1858-1948.

[Find this Book Online: https://hdl.handle.net/2027/uc1.31210004481691](https://hdl.handle.net/2027/uc1.31210004481691)

Digitized by Google

Original from
UNIVERSITY OF CALIFORNIA



[Public Domain in the United States, Google-digitized](https://hdl.handle.net/2027/uc1.31210004481691)

We have determined this work to be in the public domain in the United States of America. It may not be in the public domain in other countries. Copies are provided as a preservation service. Particularly outside of the United States, persons receiving copies should make appropriate efforts to determine the copyright status of the work in their country and use the work accordingly. It is possible that current copyright holders, heirs or the estate of the authors of individual portions of the work, such as illustrations or photographs, assert copyrights over these portions. Depending on the nature of subsequent use that is made, additional rights may need to be obtained independently of anything we can address. The digital images and OCR of this work were produced by Google, Inc. (indicated by a watermark on each page in the PageTurner). Google requests that the images and OCR not be re-hosted, redistributed or used commercially. The images are provided for educational, scholarly, non-commercial purposes.

Generated at Duke University through HathiTrust on 2026-06-15 08:18 GMT



THE LIBRARY
OF
THE UNIVERSITY
OF CALIFORNIA
RIVERSIDE

LIBRARY
UNIVERSITY OF CALIFORNIA
RIVERSIDE



JOURNAL OF THE NORTH - CHINA BRANCH OF THE ROYAL ASIATIC SOCIETY VOLUME LXI—1930—1931

CONTENTS

	Page
OBITUARY NOTICE	i
PROCEEDINGS OF ANNUAL GENERAL MEETING	iii
THE LIGHT THROWN ON ANCIENT CHINESE HISTORY BY RECENT ARCHAEOLOGICAL DISCOVERIES. By Dudley Buxton, M.A.	1
SOME POINTS ON THE HISTORY OF SCIENCE IN CHINA. By Prof. Giovanni Vacca	10
A JOURNEY TO THE TUNG LING AND A VISIT TO THE DESECRATED EASTERN MAUSOLEA OF THE TA TSING DYNASTY, IN 1929. By Emil S. Fischer	20
STORIES IN CHINESE PAINTINGS, II. By John C. Ferguson..	40
LANGUAGE AND NEW THOUGHT, OR, NEW WORDS FOR NEW IDEAS. By Dr. Evan Morgan	61
CAN CHINESE WRITING BE SIMPLIFIED? By Herbert Chatley, D. Sc. (Lond.)	76
THE BOOK OF CHANGES AND GENESIS. By Rev. H. R. Wells	81
KINGSHIP IN CHINA. By Prof. W. E. Soothill, M.A.	92
THE I-WEI—A PROBLEM IN CRITICISM. By Percy Bruce, M.A., D. Litt.	100
THE PHILOSOPHER YANG HSIUNG. By A. Forke	108
THE SYMBOLISM OF THE FORBIDDEN CITY, PEKING. By Florence Ayscough, D. Litt.	111
CONTRIBUTIONS FROM THE HERBARIUM OF THE SHANTUNG CHRISTIAN UNIVERSITY. By Arthur Paul Jacot	127
WHY THE SINOLOGUE SHOULD STUDY MANCHU. By Dr. Erich Hauer	156
CHINESE POEMS. Translated by Charles Budd	165
REVIEWS OF RECENT BOOKS	169
PRESENTATIONS TO THE LIBRARY	200
LIST OF MEMBERS	203

BYE-LAWS RELATING TO COMMUNICATIONS TO THE SOCIETY

1. Every paper which it is proposed to communicate to the Society shall be forwarded to the Hon. Secretary for the approval of the Council.

2. When the Council shall have accepted a paper, they shall decide whether it shall be read before the Society and published in the Journal, or read only and not published, or published only and not read. The Council's decision shall in each case be communicated to the author after the meeting.

3. The Council may permit a paper written by a non-member to be read and, if approved, published.

4. In the absence of the author, a paper may be read by any member of the Society appointed by the Chairman or nominated by the author.

5. No paper read before the Society shall be published elsewhere than in the Journal without the permission of the Council, or unless the Council decide against publishing it in the Journal.

6. All communications intended for publication by the Society shall be clearly written, on one side of the paper only, with proper references, and in all respects in fit condition for being at once placed in the printers' hands.

7. The authors of papers and contributors to the Journal are solely responsible for the facts stated and opinions expressed in the communications.

8. In order to insure a correct report, the Council request that each paper be accompanied by a short abstract or newspaper publication.

9. The author of any paper which the Council has decided to publish will be presented with twenty-five copies: and he shall be permitted to have extra copies printed on making application to the Hon. Secretary at the time of forwarding the paper, and on paying the cost of such copies.

S

ate
ary

er,
the
not
il's
ior

on-

ad
an

ed
of
ng

by
he
in
ls.

he
id

il
b-

is
re
s
it
st

Agents for the Sale of the Society's Publications:—

SHANGHAI, HONG KONG & SINGAPORE:

KELLY & WALSH, LIMITED.

LONDON: KEGAN PAUL, TRENCH, TRÜBNER & Co., LTD.:

38 GREAT RUSSELL ST., LONDON, W.C. 1.

PARIS: ERNEST LEROUX, RUE BONAPARTE, 28.

PEKING: LA LIBRAIRIE FRANÇAISE.

Application for Membership, stating the Name (in full), Nationality, Profession and Address of Applicants, should be forwarded to "The Secretary, North-China Branch of the Royal Asiatic Society, Shanghai." The name should be proposed and seconded by members of the Society, but where circumstances prevent the observance of this Rule, the Council is prepared to consider applications with such references as may be given. Remittances of Subscription for Membership (\$5 per annum, which entitles the Member to a complete annual set of the Journal for the year in which payment is made) should be addressed to "The Treasurer, North-China Branch of the Royal Asiatic Society, Shanghai." A Member may acquire "Life Membership" by payment of a composition fee of \$50.

Editors and authors wishing to have their works reviewed in the *Journal of the North-China Branch of the Royal Asiatic Society* are requested to send *two* copies to the Editor of the Journal, one copy being presented to the reviewer, the other remaining in the Society's Library. Papers intended for the Journal should be sent to the Editor.

It has been decided by the Council that the Society's publications shall not for the future be issued to any Member whose Subscription is one year in arrear.

It is requested that Subscriptions be sent to the Treasurer at the beginning of each year. Forms for payments may be obtained from the Secretary, by which members having a Bank account in Shanghai, can authorize a Bank to make the necessary payment at the appointed time every year. This is a great convenience to members, and to the Honorary Officers of the Society.

JOURNAL
OF THE
NORTH CHINA BRANCH
OF THE
ROYAL ASIATIC SOCIETY
FOR THE YEAR 1930.

VOL. LXI.

SHANGHAI:
KELLY & WALSH, LIMITED.
1930.

AS444

A78

v. 61-62

1770-1771

OFFICERS FOR 1930-1931.

President

Rev. F. L. HAWKS POTT, D.D.

Vice-Presidents

ISAAC MASON, Esq.

Rev. EVAN MORGAN, D.D.

Curator of Museum

A. de C. SOWERBY, Esq., F.Z.S.

Librarian

Mrs. E. C. ENDERS

Assistant Librarian

Miss M. V. MCNEELY

Honorary Treasurer

A. S. HENCHMAN, Esq.

Editor of Journal

Rev. G. W. SHEPPARD

Councillors

J. F. BRENNAN, Esq., C.M.G.

H. CHATLEY, Esq., D.Sc.

Ch. GROSBOS, Esq., M.A.

C. L. HSIA, Esq., M.A., B.Sc.,
Ph.D.

HU SHIH, Esq., B.A., Ph.D.

J. R. JONES, Esq., M.A.

C. KLIENE, Esq.

G. L. WILSON, Esq.

Honorary Secretary

R. D. ABRAHAM, Esq.

EDITORIAL NOTE.

Several of the articles in this year's issue of the Journal were contributed as papers to the Orientalist Congress held in Oxford in August 1928. These are indicated by asterisks in the List of Contents.

EDITOR.

VOL. LXI, 1930.

EDITED BY REV. G. W. SHEPPARD.

CONTENTS

	PAGE
OBITUARY NOTICE	i
PROCEEDINGS OF ANNUAL GENERAL MEETING	iii
*THE LIGHT THROWN ON ANCIENT CHINESE HISTORY BY RECENT ARCHÆOLOGICAL DISCOVERIES. By Dudley Buxton, M.A.	1
*SOME POINTS ON THE HISTORY OF SCIENCE IN CHINA. By Prof. Giovanni Vacca	10
A JOURNEY TO THE TUNG LING AND A VISIT TO THE DESECRATED EASTERN MAUSOLEA OF THE TA TSING DYNASTY, IN 1929. By Emil S. Fischer	20
STORIES IN CHINESE PAINTINGS, II. By John C. Ferguson ..	40
LANGUAGE AND NEW THOUGHT, OR, NEW WORDS FOR NEW IDEAS. By Dr. Evan Morgan	61
CAN CHINESE WRITING BE SIMPLIFIED? By Herbert Chatley, D.Sc. (Lond.)	76
THE BOOK OF CHANGES AND GENESIS. By Rev. H. R. Wells ..	81
*KINGSHIP IN CHINA. By Prof. W. E. Soothill, M.A.	92
*THE I-WEI—A PROBLEM IN CRITICISM. By Percy Bruce, M.A., D.LITT.	100
*THE PHILOSOPHER YANG HSIUNG. By A. Forke	108
*THE SYMBOLISM OF THE FORBIDDEN CITY, PEKING. By Florence Ayscough, D.LITT.	111
CONTRIBUTIONS FROM THE HERBARIUM OF THE SHANTUNG CHRISTIAN UNIVERSITY. By Arthur Paul Jacot	127
*WHY THE SINOLOGUE SHOULD STUDY MANCHU. By Dr. Erich Hauer	156
CHINESE POEMS. Translated by Charles Budd	165
REVIEWS OF RECENT BOOKS	169
PRESENTATIONS TO THE LIBRARY	200
LIST OF MEMBERS	203

PLATES.

Illustrating—

FACING PAGE

THE LIGHT THROWN ON ANCIENT CHINESE HISTORY BY RECENT ARCHAEOLOGICAL DISCOVERIES ..	4, 8
A JOURNEY TO THE TUNG LING AND A VISIT TO THE DESECRATED EASTERN MAUSOLEA OF THE TA TSING DYNASTY, IN 1929	24, 25, 32, 33, 36
CONTRIBUTIONS FROM THE HERBARIUM OF THE SHAN- TUNG CHRISTIAN UNIVERSITY	134, 146

OBITUARY

Mr. Ernst Ohlmer.

Ernst Ohlmer (1847-1927), before the war Commissioner of the Maritime Customs, died, at the age of eighty on January 1st, 1927. He was associated with the Customs service for a period of 46 years, and one hardly will find any treaty port in China where he has not left some traces of his work. In 1868, he joined the Customs at Amoy, and not much time passed before Sir Robert Hart discovered and acknowledged the abilities of the young assistant and placed his full confidence in his enterprises, especially during the 12 years Ohlmer spent at Peiping. In course of time, he laid the foundation of the statistical methods of the Maritime Customs which are still in use to-day. In 1886, he became Commissioner and, in 1898, he was transferred to Tsingtao, where he was not only working for the development of the Customs, the Customs Treaty between the Chinese and the German Governments accruing to his merit. His home was also a main centre of the social life of the community. He took a great interest in the improvement of the public buildings of the new town as well as of the private houses which were rather primitive after the opening of the port. In his younger days, he was a keen horseman and, as a member of the race committee at Peiping, was essential in establishing the renowned race course outside the west gates of the city. At Tsingtao, he was also the originator of the beautifully situated race course. There he also took an active part in founding the German society for science and arts which had a branch for research work on China. Mr. Ohlmer owned a remarkable collection of Chinese porcelain. In 1914, he left China and retired to his birth-place Hildesheim (Province of Hanover).

PROCEEDINGS

ANNUAL GENERAL MEETING

The Annual General Meeting of the North China Branch of the Royal Asiatic Society was held in the Society's Hall, Museum Road, Shanghai, on Thursday, June 12th, 1930, Dr. F. L. Hawks Pott, President of the Society, being in the Chair. After the Secretary had read the notice convening the meeting, the President briefly reviewed the Society's activities. He pointed out that the Society had had an interesting year, with many lectures well attended. With its record of service in the past, it seemed somewhat surprising that it is found so difficult to raise the funds for a new building, which is immediately necessary. The present building cost Tls. 3,000 when it was erected many years ago, and difficulty was experienced then in raising that sum. Nowadays it would cost much more to put up a building, and the difficulties seemed correspondingly greater. He hoped that as a result of this Annual General Meeting the overcoming of those difficulties might be facilitated.

The following reports were presented to the meeting:

Honorary Librarian's Report.

The Honorary Librarian, Mrs. E. C. Enders, reported that although the library had purchased no new books during the past year owing to scarcity of funds, there had been forty-three volumes presented. (A list of these additions to the library appears in the later pages of the Journal).

The library continues to be much used by visitors and by the residents in Shanghai, four thousand, six hundred and sixty-two persons having availed themselves of it during the past year.

Honorary Curator's Report.

The Honorary Curator of the Museum, Mr. Arthur de C. Sowerby, presented the following report:

As far as additions to the Museum's collections this year are concerned, there is very little to report. The following additions have been made:

A Tibetan warrior's equipment consisting of

- (1) A leather shield
- (2) A copper and leather helmet
- (3) A cross-bow

A lacquered hat, presumably for a priest, from Tibet.

A Cassowary	}	all from the Jessfield Park Zoo.
An Indian Peacock		
A Golden Eagle		
A Bear's skin		

A mounted Mandarin Duck from Mrs. E. T. Byrne.

That public interest in the Museum continues unabated is indicated by the following statistics regarding visitors each month of the year.

1929.		1930.	
July	358	January	387
August	502	February	750
September	560	March	702
October	370	April	719
November	495	May	654
December	408		

Once more I would like to call the attention of the members to the deplorable state of the building, adding that unless something is done soon we shall probably have to remove the museum collections to some place of safety, if we wish to save them.

Honorary Secretary's Report.

Mr. R. D. Abraham, the Honorary Secretary, presented the following report:

This year there has been an increase in the number of Lectures given. Public interest has been well maintained and attendances have been greater even than in previous years. The following Lectures were given:—

“The Desecrated Tung Ling.” Emil S. Fischer, Esq.

“The Development of Zen Buddhism in China.” Dr. Hu Shih, B.A., Ph.D.

- "A Sketch on Chinese Medical History." Dr. K. M. Wong, M.D.
- "Some Scientific Problems Concerning Asia." Prof. E. Tschepourkovsky.
- "The Drought in the North and the Water Shortage in Hongkong." Dr. A. Englaender, M.D.
- "A Talk on the History of Chinese Law." Dr. John C. H. Wu, LL.B., J.D.
- "Can Chinese Writing be Simplified?" Dr. H. Chatley, D.Sc. (Lond.).
- "Some Archeological Impressions of the Far East." Prof. C. G. Seligman, M.D., F.R.S.
- "The Distribution of Life as Illustrated by China's Fauna and Flora." A. de C. Sowerby, Esq., F.R.G.S., F.Z.S.
- "Language and New Thought." Rev. Evan Morgan, D.D.
- "The Foundation of the Ottoman Empire." Dr. Herbert Adams Gibbons, F.R.HIST.S., Ph.D., LITT.D.
- "Tibetans and Their Environment." R. A. Peterson, Esq., M.A.
- "Some Considerations on the Historical Geography of Asia." Prof. G. M. Dutcher.
- "A New Cataloging System for Old Chinese Characters." T. F. Chu, Esq.
- "The Role of Han Yu in Chinese Literature." Dr. Georges Margouliés.

Membership.—Forty-five new members were elected and thirteen members resigned. The death is recorded, with regret, of three Members:—Dr. J. A. O'Driscoll, Mr. E. Ohlmer, Mr. J. C. Shengle.

The net increase in membership is thirty-two. Owing to the departure from China of many Members the Membership List is now in process of being revised.

New Building.—His Majesty's Government have now very kindly agreed to give the present site free of all restrictions in order, if necessary, to raise money by means of a mortgage. It is fully realized that this is a great and most generous concession on the part of the British Government and the Society are duly grateful. This concession has been granted following representations first made by Sir Sidney Barton and later brought to a successful termination by Mr. Stark Toller; to both of these gentlemen the Society's hearty thanks are accorded.

ROYAL ASIATIC SOCIETY, NORTH-CHINA BRANCH. 28TH FEBRUARY, 1930.

RECEIPTS.		EXPENDITURE.	
<i>Subscriptions:</i>		Debit Balance on 1st June, 1929	\$ 611.63
Annual		Interest on Overdraft	11.14
Life		Wages, etc.	1,081.24
		Taxidermist	95.20
		North-China Daily News	180.35
<i>Grants:</i>		China Press, Inc.	99.12
Shanghai Municipal Council		Kelly & Walsh, Ltd.	696.55
French Municipal Council		Stationery, etc.	28.50
		Stamps	89.06
		Platt & Co.	69.44
<i>Interest on Debentures:</i>		Lantern Slides	50.00
Shanghai Municipal Council		Repairs	7.00
Shanghai Waterworks Co.		Rates	22.31
Mackenzie & Co.		Water	24.50
		Electricity	94.91
		Coal	107.75
Sale of Journals		Land Tax	272.23
Hire of Hall		Overcharge on Journals	22.47
		Gratuity to Assistant Librarian	20.00
		Subscription to China Journal	10.00
		Subscription to China Digest	10.00
		Credit Balance on 28th February, 1930	206.37
			<u>\$3,809.77</u>

Audited and found correct:
R. MACINTYRE.

A. S. HENCHMAN,
Hon. Treasurer,
Royal Asiatic Society, North-China Branch.

SHANGHAI, 28th February, 1930.

LIST OF SECURITIES HELD BY THE H. & S. B. C. FOR THE ROYAL ASIATIC SOCIETY.

Title Deed B.C. Lot 12416 with Declaration of Trust.
1 Debenture Tls. 700, Mackenzie & Co., Ltd., 6% 1915 (1st Mortgage).
4 Debentures Shanghai Municipal Council, 5 1/4% 1912, Tls. 100 each
4 " " " 5 1/4% 1914, Tls. 100 each
4 " " " 7% 1920, Tls. 100 each
" Shanghai Waterworks Co., Ltd., 8% 1921, Tls. 100 each

It is a matter of great and common regret that in spite of various representations the Shanghai Municipal Council have not yet been able to agree to assist the Society in raising funds for this building. Hope is still entertained, however, that the Society's proud record of over seventy years' service for and in the interests of Shanghai may warrant in official eyes the expenditure of public money on a public benefit of such magnitude as as the Society's united undertakings are.

In last year's report the Building was spoken of as being propped up and patched from time to time. Meanwhile conditions are steadily becoming worse. Recently a letter has been received from one living in the neighbourhood that whenever the wind blows a chimney totters.

During the season a Building Sub-Committee was formed composed of Mr. G. L. Wilson and Mr. Ellis Hayim. Their work is the subject of a special Report by Mr. Wilson.

Building Sub-Committee's Report.

Mr. G. L. Wilson presented the following report of the Sub-Committee's activities:

ROYAL ASIATIC SOCIETY PROPOSED NEW BUILDING.

In presenting the report of the Building Sub-Committee appointed to collect funds for re-building, I regret to say that to date we have not met with the success we anticipated.

We started out with great hopes of collecting the not very large sum required without difficulty, but we find it is not so easy in these times when business is so bad.

We realised from the first that we could not expect to collect the full amount unless we obtained a number of really substantial donations. Therefore we first approached the Shanghai Municipal Council. They expressed regret that they are unable to accede to our request for a contribution since it would be contrary to their established policy to assist in the financing of capital requirements of organisations qualifying for Municipal grants.

The building fund to date amounts to Tls. 4,425.00 and \$582.91 in cash with promises amounting to about Tls. 8,000.00, a total of about Tls. 12,845, all conditional on a sum sufficient to re-build being obtained.

We have particularly to thank the British American Tobacco Co., for a generous donation of Tls. 2,500.00 and Messrs. E. D. Sassoon & Co., for an even more generous promise of Tls. 5,000.00; and we still hope to receive similar sums from other leading firms and corporations. It appears that many of the large firms and corporations in Shanghai have a charity fund upon which they can draw for deserving charities, but as this Society cannot be classed as charity, it is necessary in most cases for our appeal to be referred to Headquarters, which takes time.

We are awaiting replies from abroad and still hope to receive several substantial donations before collecting the smaller ones which we believe are certain, but which alone would be insufficient to enable us to re-build.

When we know what to expect from the large firms and corporations, it is our intention to start an intensive campaign amongst the members of the Society and the general public so that although our efforts so far have been disappointing we are still confident of ultimate success in obtaining the amount required.

I appeal to you all to do what you can to help the Society to secure the amount required for a new building; the object is a really deserving one, the work of the Society is known in most parts of the world and as evidence that it is appreciated I would mention that a high tribute was paid us recently by one of His Majesty's Foreign Office Officials when he described the Royal Asiatic Society, North China Branch, as "The one bright spot in Shanghai."

G. L. WILSON.

Building Sub-Committee:

G. L. Wilson, Esq., *Chairman*,
Ellis Hayim, Esq.,
R. D. Abraham, Esq.

THE NEW OFFICERS.

The following officers were elected to serve during 1930-1931.

President, Rev. F. L. Hawks Pott, D.D.; Vice-Presidents Isaac Mason, Esq., Rev. Evan Morgan, D.D.; Curator of Museum, A. de C. Sowerby, F.Z.S.; Librarian, Mrs. E. C. Enders; Assistant Librarian, Miss M. V. McNeely; Honorary Treasurer, A. S. Henchman, Esq.; Editor of Journal, Rev. G. W. Sheppard; Councillors,

J. F. Brennan, Esq., C.M.G., H. Chatley, Esq., D.S.C., Ch. Grosbois, Esq., M.A., C. L. Hsia, Esq., M.A., B.Sc., Ph.D., Hu Shih, Esq., B.A., Ph.D., J. R. Jones, Esq., M.A., C. Kliene, Esq., G. L. Wilson, Esq.; Honorary Secretary, R. D. Arbaham, Esq.

The meeting terminated with a vote of thanks to the President and the officers of the Society.

THE LIGHT THROWN ON ANCIENT CHINESE HISTORY BY RECENT ARCHÆOLOGICAL DISCOVERIES

By DUDLEY BUXTON, M.A.
School of Anthropology, Oxford University

The archæological discoveries discussed in this paper are due very largely to the energy and enthusiasm of Dr. Andersson, who, during his tenure of the position of Geological Adviser to the Chinese Government, discovered, while investigating the recent geological history of China, remains of the early civilizations discussed below. He was able to communicate his enthusiasm to the Directors of the Chinese Geological Survey, who sanctioned the production of a magnificent series of Memoirs (*Palæontologica Sinica*, Series D) which contain accounts of the various excavations. My excuse for bringing them to the notice of those whose interests lie mainly in sinological studies is that the human remains associated with the archæological deposits have been shewn by Dr. Black to be of the same type as modern Chinese.

It is unnecessary in this context to discuss except very briefly the earliest archæological finds which have been made in China. It will be sufficient to say that the work of a small band of students, notably Pères Teilhard and Licent, have shewn that man was living in China in Palæolithic times, almost certainly before the great plain was covered with the loess which gives it its present remarkable form and equally remarkable fertility. The Neolithic age is beginning to be better known, but at present there are big gaps, and the Chalcolithic civilization, which is the subject of this paper, appears suddenly from beginnings which at least in China itself are at present quite unknown. It is a culture which, with certain exceptions, did not appear to know of the use of metals, but which at the same time attained a very high degree of civilization. The sites which have so

far been explored cover a wide area and it seems not improbable that further exploration will lead to the discovery of yet further sites (see Map). Extensive remains, differing somewhat from the rest, have been found all along the northern border of Kansu, at Fuku in Shensi, at Paote in Shansi and as far east as Sha Kuo T'un in Fengtien province, a series of discoveries which suggest that the culture certainly extended along the whole of the northern border of China. Further to the south only one province has at present yielded any results, namely Honan, in which four sites have been explored—Chih Kou Chai and Ching Wang Chai in Ho Yin district and Yang Shao T'un and Pu Chao Chai in Mien Chih district. There is sufficient difference in the sites to suggest that, even at present, when the subject can hardly be yet said to have been more than scratched, fairly representative discoveries have been made.

The finds in Kansu include both the remains of habitations and cemeteries. Most of the work done so far has been in the west of the province, particularly round the city of Lanchow. The pottery from this region is abundant and well made, especially those pieces which have been excavated from cemeteries. On the other hand implements are comparatively rare and of poor workmanship. It is on the pottery therefore that Andersson has based his preliminary classification of a number of sub-periods, of which the upper, and therefore later ones, belong to the Copper or early Bronze Age, while the three lowest appear to correspond *culturally*, not necessarily in time, with the sites from other parts of China. As elsewhere the domestic pig, so typical of China to-day, occurs very commonly. The burial customs of these people are not uninteresting. A large number of the bones had been covered with red ochre, a custom which is widely spread, and which occurs in Europe even as early as the Palæolithic period. Most of the bodies were laid in an extended position, with the feet to the south, but in two graves the skeletons lay on the left side in a contracted position. Whether this was due to accident, owing to the grave being too small or whether it was done on purpose does not appear in the reports.

The excavations in Fengtien were made in a small cave, which lay close to the railway, about half-way between Tientsin and Mukden. The cave, which was twenty feet long and half that breadth, appeared to have been occupied for a considerable time, as the deposits were

over six feet in depth and consisted of layers of charcoal alternating with bands of clay. The bands of charcoal were very productive of human remains. About half-way down there was a layer of human bones, most of them broken and burnt, amongst which Black counted the remains of at least forty-five individuals.

In contrast to this small site the inhabited area at Yang Shao T'un in Honan was very extensive, being about 600 yards long and 500 yards broad. Under a thin surface stratum of ploughland there were fertile deposits ten feet thick. The original surface beneath the deposits had been excavated into large pits. A few graves were found but most of the site consisted of the debris of a large settlement. In general culture there is no reason to believe that the Honan sites differed from the Feng-tien site.

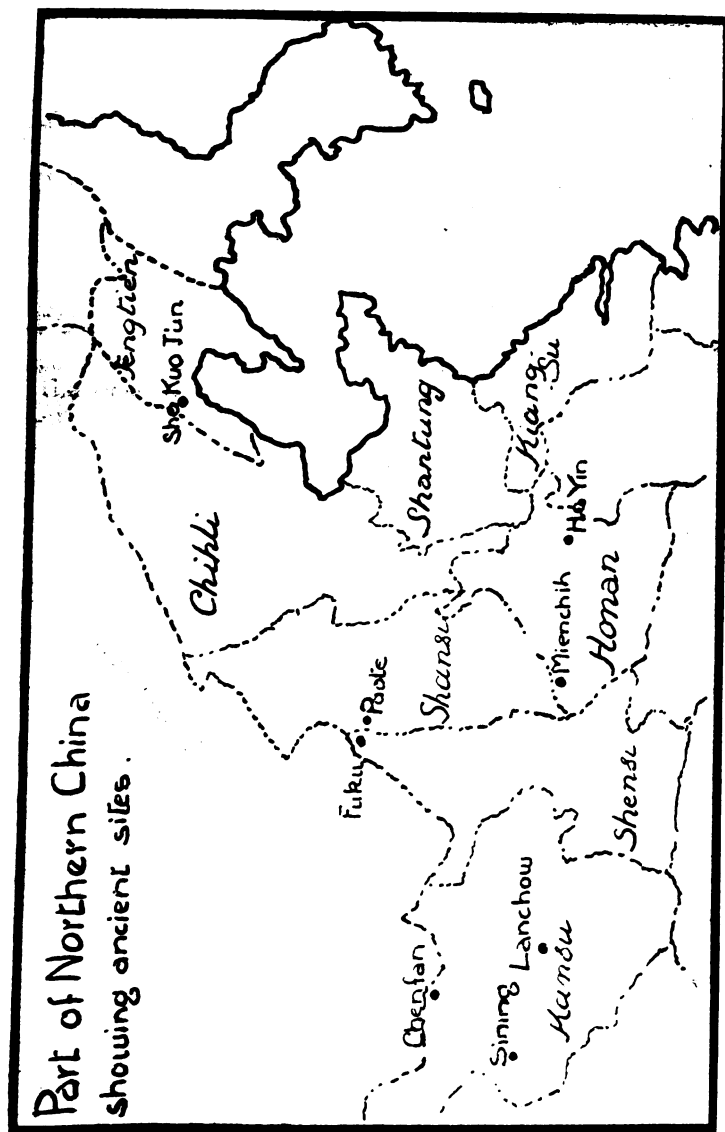
The pottery discovered on these sites naturally forms the most important guide to the date and culture of these ancient peoples. Although some of the wares are crude, most of the material is of considerable beauty and the skill shewn in the manufacture provides ample evidence that we are dealing with a relatively advanced civilization. The crude ware is not unlike that which has been found by Torii in Manchuria and may possibly represent a survival of a local ware for purely domestic purposes, side by side with the more beautiful other ware introduced from elsewhere. This other ware is very fine and is usually decorated with painted designs. Sometimes the paint has been applied directly on to the finished surface of the pot. In other cases this surface has first been treated with a clay wash, technically called a "slip." The pots are made of loess clay, a raw material available over all northern China. As this material cannot be obtained south of the Yangtze it would appear likely that if a similar culture is ever found in the south the wares would differ in technical details. Little stress, however, must be laid on this point, as the potters have used the most obvious material which came to hand. The clay has been thoroughly cleaned and freed from all impurities and then probably worked into a sort of paste. Such a paste before firing is usually too weak to support the weight of a pot, which would fall to pieces during the making. The clay has therefore been strengthened with a small addition of quartzite or some flinty material. Probably some iron-oxide was added to improve the colouring, but some of the differences in colour-

ing are almost certainly due to differences in firing, which it seems as the potters were sufficiently masters of their craft to be able to control. In any case the differences in colour do not seem to be of importance for classification. Red and black paints were used to add the ornament, either both together, or red alone. Most of the pottery is wheel-made.

Although in most cases only fragments have been discovered, the general form of the pottery has been classified fairly accurately. The unpainted vases include a series of tripod jars, and pots with narrow necks of a type probably not unlike the water pots used over much of the East to-day. Others seem to have had pointed bottoms. The painted pottery has usually been made in the shape of bowls of various types, but also includes a series of pear-shaped vases.

The ornamentation on the painted pots is of great interest and importance. In the Kansu ware there are more or less realistic drawings of animals. The ware from the other sites is ornamented with conventional designs only, although the Kansu ware also includes such conventional patterns as the continuous and the interrupted meander pattern. The ornaments include spiral bands or lines, triangles, sometimes of fantastically exaggerated form, discs—that is, circles which have been filled in with solid colour—plain circles, concentric circles and so on. The most characteristic ornament is the spiral, but hardly less characteristic is a kind of lattice pattern which is used either to fill in a triangle or as a band round a pot.

The geographical distribution of these forms and of the types of ornament is extremely instructive (see Map). The tripod-like vessel occurs as early as the first city of Troy in the West and is not uncommon in south-eastern Europe. It has been suggested that the fragment discovered by Torii and others in Manchuria and elsewhere in the Far East may really consist of tripod legs. If this is really the case it is of importance, as the tripod pot would have a much wider distribution than the other painted forms. Little can be judged from the geographical distribution of the pots with painted bottoms, as they occur in many places—India, Troy, Egypt and elsewhere. A type with a perforated bottom occurs in Troy, Persia, Egypt, and elsewhere. The small bowls are like pots which have been found in the earlier strata at Anau and Susa. Further, although there are differences in the



Part of Northern China showing ancient sites where painted pottery has been found. In most cases the Hsien, or nearest large town, has been marked in preference to the actual site. The remarkable isolation of the Fengtien site is very apparent, but it seems reasonable to suggest that this isolation is due rather to the accident of discovery than to actual isolation.

form of the rim, the pear-shaped vessels appear to shew affinities with ware which has been found in the Danube-Dnieper region. So far as form is considered, therefore, there is a certain amount of presumptive evidence that the pottery has relationships with that which was made in the Near East. The decoration throws further light on this problem.

Painted pottery was made over a wide area in south-eastern Europe and western Asia at a date which was probably between the fourth and third millenium B.C., though there are wide divergencies on the point of date. There can be little reason to doubt that the Chinese painted pottery is of the same class, or that this type of pottery had a wide distribution in Eurasia during the period of transition between the Stone and the Bronze Ages. Although it is an immense journey from the topless Towers of Ilium to the Yellow River, there have been trade routes right across Asia from very early times, probably even in the Neolithic period, and it is possible that the deserts which now constitute such a formidable barrier may then have been more easily traversed. On the other hand the differences in the design of the wares have led some archæologists to doubt whether the Chinese finds should definitely be associated with the western painted pottery, which itself falls into more than one group.

In the extreme West painted pottery has been reported from Tripolje in south-east Russia, from Petreny in Bessarabia, from Schepenitz in Bukovina, and from various other sites in Moldavia, Galicia and Transylvania. It extends as far south as Thessally. This area, the region of what is usually known as the Danube-Dnieper culture, is characterized by a pottery to which the Chinese wares bear a striking resemblance both in the forms and in the types of decoration.

In western Asia also close parallels can be found. Here there are two separate areas, a northern and a southern. In the north, at Anau near Askabad in Turkestan, Pumpelly found a series of different cultures of which the fourth was of Iron Age date. The earliest, however, is closest to the Chinese, for copper was here relatively rare and the pots, which were abundant, were of the polished and painted and decorated with geometrical designs. Lattice designs are found here as in China, and in the straight line patterns there seems to be a close agreement; at Anau, however, curves are very

rare and circles do not occur, both of which features are extremely characteristic of the Chinese wares. It should be noted that the earliest Anau culture seems to have had a fairly wide distribution, as similar finds have been made in Transcaucasia (near Nachitzewan) but in this case the culture appears to represent a highly developed Copper Age, in which point it differs both from the similar stratum at Anau and also from the Chinese sites.

The southern area in western Asia includes Persia, Baluchistan, and Mesopotamia. The closest resemblance to the Chinese wares, with the possible exception of some pots from Mesopotamia, is found in the pottery from Baluchistan, which Noetling has published. I am also informed by Sir Aurel Stein that he has seen sherds in Seistan which are extremely like the Chinese. Of the Persian sites the finds from Tepe Mussain about a hundred miles west of Susa shew the closest analogy with the Chinese wares and here all the motives which appear on the Chinese wares occur, except the meander, which it will be remembered only occurs on the Kansu pottery. This site is a little later than the earliest Susa finds (Susa, I) which also shew a certain kinship to the Chinese wares, but in all these cases we are dealing with a fully developed Copper Age, not a transitional Chalcolithic stage as in China.

Painted pottery is widely spread in Mesopotamia. It has been found at Eridu by Campbell Thompson, near Ur by Woolley, and at Kish and a neighbouring site by Langdon and other members of the Oxford (Weld) Field Museum expedition. These finds serve to link up the other discoveries from western Asia, and while conclusively proving that there existed a closely linked culture extending from the Caucasus to the Persian Gulf, and into India, certainly do not establish an absolutely complete link with China. Striking as the resemblances are, there are certain differences which have made many scholars reticent to accept the unity between the eastern and the western finds. It has been suggested that some of the Chinese finds (except the later strata from Kansu) should be considered as belonging to a Stone Age culture and that China is the original home of copper working, which spread thence. This seems a very improbable hypothesis. Secondly, Frankfurt is inclined to believe that there is an analogy between the Persian ware and some of the finds from Kansu, but that the spiral design is a local Chinese development, "due possibly to a technique acquired from

outside." Arne holds a similar opinion, but somewhat more elaborate. He believes in two waves of immigration, the first being either so early that it preceded a knowledge of copper, or else rapidly lost touch with its original home, so that copper did not come through by trade. The second, he suggests, may have been more closely associated with copper, and ascribes the copper finds in the graves at Sining and Chenfan in Kansu to this later date.

Any definite opinion on the problem must wait until further evidence is forthcoming. It seems clear, however, that we must ascribe the culture of Chalcolithic culture in China to the great culture so widely spread and characterized by the presence of painted pottery. The differences which are found in China may easily be explained as a local development, due to isolation. It is not improbable that the expansion of this culture eastwards may have started relatively early (but see chronology later) and in that case the difference between the Chinese wares and those from the West could be explained on the grounds of parallel evolution. It is clear that the expansion of culture was, on the whole, not a definite racial movement.

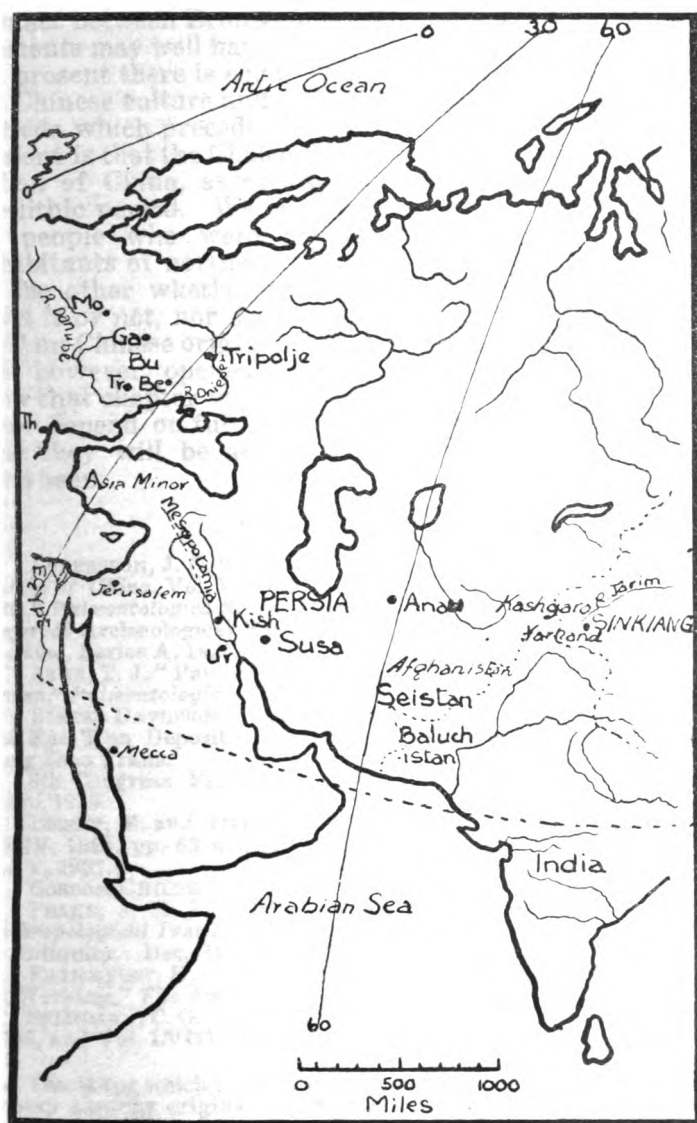
The skeletons associated with the discoveries in China belong to a racial type which closely coincides with the modern Chinese inhabitants of the same area. It is more than possible that the painted pottery culture was carried by a certain number of alien invaders, but they were not sufficient in numbers to impress their racial type on the people of the land. While therefore there is every reason to believe that there was a great migration of culture right across Asia, there is no reason to suggest that it was associated with a great racial migration. That some racial elements may have been absorbed into the Far East at this time is quite possible, but these elements did not dominate the physical type in the way that the culture entirely dominated the previous culture of the area. It seems further likely that considerable isolation took place so that the Chalcolithic civilization of China was able to a greater or lesser degree to evolve along lines which are peculiar to itself.

The date of the Chalcolithic period in China is important in this connexion. Teilhard has recently drawn attention to the discovery in Honan itself of inscriptions written on ivory or shell which belong to the Yin or Shang dynasty and may probably be dated at about 1760 B.C. If this date be correct, obviously the painted pottery must be considerably earlier, at least before the end of the third

millenium B.C., since that culture knows nothing of writing, nor of richly decorated bronzes. In any case the date suggested for the end of the Chalcolithic period must be received with a good deal of caution. It seems reasonable to suggest that while such a date may apply to the Kansu finds, the other discoveries must be considerably earlier.

The earliest possible date is even more difficult to determine. It will depend to a large extent on the dates ascribed to the painted pottery in the West, a subject on which unfortunately there is by no means any general agreement. Gordan Childe holds that in Thessaly and the Ukraine the date is probably not much before 3000 B.C., while in Elam and Egypt he would go back another two thousand years. In Mesopotamia most scholars suggest the middle of the fourth millenium B.C., but some prefer a much earlier date. Child pessimistically says that the earliest Chinese finds are undateable. Arne, believing that the Chinese finds are more or less synchronous with Susa, 8, I—an assumption not really justified by the evidence—suggests a date about 3000 B.C. In spite however, of the uncertainty of his analogy it would seem that Arne's date was the most likely which has so far been suggested. It must, however, never be forgotten that there is a definite break both between the Chinese Palæolithic and Neolithic and between the Neolithic and the Chalcolithic. Nor have we any means of judging how long it took for the culture to migrate across Asia. We must allow a considerable period for this and also sufficient time for it to develop in China itself. If we accept Childe's earliest date for the existence of the culture in Elam as 5000 B.C., two thousand years allows ample time for the spread and development of the culture in China itself, perhaps too long, but no further exactness seems possible at present. The Kansu finds must in any case be later, and it would seem probable that we have yet to find another culture, possibly the precursor of the Chalcolithic culture, possibly a transitional age between the Neolithic and that culture.

Finally the relations of this Chalcolithic culture to Chinese civilization deserves more than a cursory consideration. Andersson has suggested that Chinese civilization owes many of its special features to this period and that it is more or less directly descended from it. It seems extremely probable that China, and indeed the world, received wheat from the Near East, as Peake has made abundantly clear, but Andersson's examples of the



Part of Europe and Western Asia to show the distribution of the Painted Pottery Culture. Countries or other topographical features within the area in Roman lettering. Places marked to show relationship with China in *Italic*. Abbreviations; Mo=Moldavia; Ga=Gallia; Bu=Bukovina; Tr=Transylvania; Be=Bessarabia; Th=Thessaly.

Li character from the tripod pot, the pen adze used in Peking to-day, the kao-liang knife and so on, must be received with considerable caution. Seligmann has brilliantly shewn how there is undoubted evidence of culture contact between Bronze Age Europe and China, and these elements may well have been re-introduced at a later date. At present there is equal inconformity between the earliest Chinese culture and the painted ware culture and the periods which precede the latter. All that we can say at present is that the Chalcolithic culture is the earliest civilization of China, as opposed to the crude culture of the Neolithic period. We can also say that it was practised by people who were physically akin to the modern inhabitants of northern China. We cannot say one way or the other whether modern Chinese culture developed from it or not, nor does it at present throw any definite light on Chinese origins. The brilliant work of Andersson has, however, opened a new chapter of Chinese history. How that chapter will link on to the subsequent chapters must depend on future excavations, and it is to be hoped that they will be as fortunate as these pioneering digs have been.

BIBLIOGRAPHY.

ANDERSSON, J. G. "An Early Chinese Culture," *Bull. Geological Survey of China*, Vol. V, 1923. Id. "The Cave Deposit at Sha Kuo T'un," *Palæontologica Sinica*, Series D, I, 1, 1923. Id. "Preliminary Report of Archæological Researches in Kansu," *Mem. Geol. Survey of China*, Series A, 1925.

ARNE, T. J. "Painted Stone Age Pottery from the Province of Honan," *Palæontologica Sinica*, Series D, I, 2, 1925.

BLACK, DAVIDSON. "The Human Skeleton Remains from the Sha Kuo T'un Deposit," *Palæontologica Sinica*, Series D, I, 3. Id. Yang Shao Trans.

6th Congress Far Eastern Association. *Tropical Medicine*, Tokyo, 1925.

LICENT, E. and TIELHARD DE CHARDIN. *L'Anthropologie*, Vol. XXXV, 1925, pp. 63 and 201. Id. with Black, *Bull. Geol. Survey*, Vol. V, 1927.

GORDON CHILDE, V. *The Aryans*, London, 1925 (bibliography).

PEAKE, J. H. E. "Origin of the Cultivation of Wheat," *Roy. Anthropological Institute of Great Britain*, Vol. LVII, 1927, p. 31, id. *Antiquity*, Dec., 1928, "Origin of Copper."

FRANKFURT, H. "Sumerians, Semites and the Origin of Copper Working," *The Antiquaries Journal*, Vol. VIII, 1928.

SELIGMAN, C. G. *Journal Roy. Anthropol. Institute*, Vol. L, 1920, p. 153, and Vol. LVIII, 1928, p. 247.

The Maps which illustrate this paper have been redrawn from my very sketchy originals by Miss Brenda De Butts, to whom my best thanks are due.

SOME POINTS ON THE HISTORY OF SCIENCE IN CHINA

By Prof. GIOVANNI VACCA

University of Rome

I. Matteo Ricci, the first European who was able to read and write Chinese books, was the first to acquire some knowledge of the scientific ideas of the ancient Chinese ⁽¹⁾ and to see clearly the extent of their astronomical and geometrical conceptions.

Among the first successors of P. Matteo Ricci, was P. Joannes Terrentius, one of the first members of the *Accademia dei Lincei*. He wrote in 1623 a letter from China, which reached Kepler in 1627, and was published by him, together with his important answer, in 1630 ⁽²⁾.

Kepler suspects with reason the astronomical observations of the ancient Chinese to be not real observations, but the result of later and much more modern calculations. He supposes that the whole astronomical science of the Chinese came from the Arabs.

As their studies developed, the Jesuit missionaries in China were impressed by its imposing literature, and especially by the wealth of historical tradition, and came to have a too favourable impression of the value and age of Chinese science. The best known studies are those of P. Gaubil, which he condensed in a short *Histoire de l'astronomie chinoise* ⁽³⁾. The writings of P. Gaubil form the foundation of the studies on Chinese astronomy by J. B. Biot ⁽⁴⁾, and lately of a long series of studies by L. de Saussure ⁽⁵⁾.

A careful examination of the Chinese texts used by Gaubil and after him by all the supporters of an ancient Chinese astronomical science, brings to the conclusion that their opinion was groundless.

This has appeared clearly in the case of Schlegel's *Uranographie Chinoise* ⁽⁶⁾. The supposition that astronomers existed in China 170 centuries before Christ was too fantastic to be believed.

The first serious studies upon ancient China, which give a just idea of its science, are those of H. Maspero ⁽⁷⁾.

The most elementary astronomical knowledge supposes the use of some astronomical instruments. J. B. Biot claims that in the *Chou-pi* there is a description of the most exact form of a perforated gnomon. He translates the Chinese text as follows: "*Prenez un bambou, percez-y un trou dont le diamètre soit 1/10 de pied, à la longueur de 8 pieds. Cherchez l'ombre et observez-la. Le trou, en droite ligne, couvrira le soleil, et le soleil, correspondra à l'ouverture du trou.*" ⁽⁸⁾

The Chinese text says much less; it does not say that a hole should be pierced at the length of 8 feet, nor does it say that the sun's image on the ground is the object to be observed. The Chinese commentators have pointed out the obscurity of the description ⁽⁹⁾. In my opinion the Chinese writer seems not to have any idea that the end of the point of the gnomon gives a shadow corresponding not to the centre of the sun, but to the superior limb of the sun ⁽¹⁰⁾, but he seems to have paid attention to the necessity that the body of the gnomon should be sufficiently thick, so that also its end should cast a true shadow, not a penumbra. The conditions of the Chinese observation require that the gnomon should have the thickness of a Chinese inch. This only reasonable explanation seems sure, because it is quite impossible to make a hole in a bamboo cane in such a way that the image of the sun should be equally clear at the summer solstice and the winter solstice. J. B. Biot has seen this difficulty, but his opinion that the gnomon described is a rudimental instrument, seems to me unacceptable, because I think such a cane with a hole would have been useless as a gnomon.

Further, astronomical calculation supposes the measure of angles, the use of graduated circles, and some notion of plane geometry. Now, the existence of a celestial globe, used for astronomical purposes is based on unfounded interpretation of two Chinese characters ⁽¹¹⁾. Only late commentators have given these two characters the meaning of celestial globe, or some other similar astronomical instrument. But the first Chinese who have given this interpretation, had learned from the West, even if we do not know how, the first notions of spherical astronomy, and had tried to find in their own ancient literature something corresponding. But such a research was absolutely useless.

The most ancient Chinese work from which could be ascertained the science of the Chinese about 1000 B.C. is the *Chou Pi* already mentioned. The first translator, P. Gaubil, recognized that the second part of this work is recent. But even the first part and its dialogical form seem to point to an echo of western, and ultimately of Greek, science.

The calculation of the magnitude of the sun and its distance from the earth, founded upon the shortening of the gnomon's shadow as one goes towards the south, and on the hypothesis of the plane earth and the measure of the sun's apparent diameter, conduces to state that the sun is as large as Peloponnesus, and its distance from the earth equal to the earth's radius. This same calculation had been made by first Greek mathematicians and astronomers.

But while we can give the names, places and dates of these calculations in Greece, and their gradual development, in China there is no evidence that the scholars of the Chou dynasty knew the properties of similar triangles and the theory of proportions.

The wonder expressed in the *Chou-pi* that it should be possible to measure the sun's distance without climbing to it with a ladder, but with simple calculations, a wonder which is not even indirectly reflected in the flourishing Chinese literature, proves its derivation from some western tale, which never made any lasting impression on the Chinese mind.

It is on the other hand sufficient to think about the abundant harvest of information on the astronomy and mathematics of the Greeks, which can be found not only in the works of a single philosopher, but even only in the ironical allusions of one of Aristophanes' comedies.

Henri Maspero has clearly shown the real origin of the mythological legends of the *Sun King* about the ancient Chinese astronomers Hsi and Ho ⁽¹²⁾. From these reflections it seems that we must reject the conclusion not only of Schlegel's old *Uranographie Chinoise* (a book which has some interest only for sinologists on account of the information it contains), but also the recent writings of L. de Saussure, which, though made under better conditions by a sincere and enthusiastic scholar, are not in any way historically true. De Saussure himself, in one of his last papers ⁽¹³⁾, not satisfied by his reconstruction of an ancient Chinese science, has tried to find elsewhere, in the Iran, conceptions like those of the Chinese authors of the

third and fourth centuries B.C. (theory of five elements, denary cycle, etc.). But his conclusions on the propagation from Iran to China in the fourth millennium B.C., contain perhaps some truth if applied to the fourth century B.C.

To prove this conclusion we can observe that there is only one way to confirm, if possible, an historical account in which are recorded eclipses or other astronomical phenomena. We can make astronomical calculations to determine the date of an ancient eclipse only when it is known within a few years; but if the historical period in question is too long, we can always find an eclipse concurring with the requirements of the historical event. The mathematical calculation is naturally correct, especially if calculated by Laplace, as has happened, but the historical deduction is inconsistent. In fact the catalogue of the eclipses recorded by Chinese historians begins with some regularity only after 776 B.C., and the doubt remains that the most ancient eclipses of the series have not been really observed, but interpolated later by Chinese astronomers ⁽¹⁴⁾. The scarcity of astronomical and astrological notions of the Chinese, as they appear from the historians, beginning from Ssu-ma Ch'ien, is in contrast with the abundance and exactness of the statements on the points to which the Chinese mind has turned its attention in an original way.

Take, for instance, the records of periods of drought and following famine given by the Chinese historians. In an interesting article Alexander Hosie ⁽¹⁵⁾ has collected many hundred cases for a period of more than a thousand years, described exactly and with abundance of geographical data the important phenomenon. European historians have certainly been unable to collect a series of such complete data for as long a period. These observations are an extremely important document for the history of meteorology, and we can expect from them a better knowledge of the history of the climate of Asia.

II. The first Chinese astronomer is undoubtedly the Buddhist saint I Hang, of the T'ang dynasty. He studied the Indian mathematicians, from whom he learnt important mathematical and astronomical notions. A critical edition of his works and of such fragments as have been preserved would be desirable. Certain contributions to arithmetic contained in his mathematical commentary on the system used by soothsayers of divining with rods according to the *I Ching*, are perhaps his original work ⁽¹⁶⁾.

I have purposely omitted mentioning the calculations made by Chinese mathematicians of the ratio of the diameter to its circumference, which they are said to have calculated in the form of a fraction $355/113$. This result, which is quite correct, seems to be an importation from the West. It is natural to think that about the third or fourth century A.D., in a way that we cannot yet define, some results found in the works of Heron found their way to China through Central Asia, when we consider that under the Tsin dynasty, together with the above fraction, several other results contained in Heron's works made their appearance in China, such as, for instance, the complicated taximeter described by Prof. H. A. Giles.

We come to the same results when we inquire into the origin of the arithmetic of great numbers represented with the decimal system grouping the figures eight by eight, as Archimedes did in his *Arenarium*. This same result is found in a biography of Buddha, contained in the *Lalita Vistara*.

Of two Chinese translations, one of the fourth, the other of the seventh century (*Bunju Nanjo*, 159, 160), only the second, attributed to *Arjuna*, Buddha's master, contains calculations much like those of Archimedes. The possibility of an Indian origin of Archimedes' ideas, which is unlikely for many other reasons, is thus absolutely removed, as E. Blochet has well understood ⁽¹⁷⁾.

It seems probable that this interpretation of the *Lalita Vistara* should have been made in Central Asia, in the fourth or fifth century A.D., by someone who had a more or less direct knowledge of Archimedes' method. F. Woepke's hypothesis appears therefore quite baseless. At the end of the thirteenth century an algebraical work by the Chinese mathematician Chu Shih-chieh was published in China; it has been analyzed by A. Wylie (*Jottings on the Science of the Chinese Arithmetic*). It contains the table of the binomial coefficients, which appears in Europe over two centuries later, in the works of Petrus Apianus (1527), Stifel (1544), etc.

Neither the Chinese nor the European mathematicians claim to have discovered this important table. But the great mathematician Omar Khayyam says clearly in his works that he was the first to find the general method of extracting roots from numbers of any order; it seems therefore highly probable that his discovery should have been transmitted, in what way we do not yet know, from Persia to the East and to the West.

The method of giving an approximate solution to equations of a high grade, found in Chu Shih-chieh's works, calls forth the same operations. The extreme simplicity of the examples he uses in explaining the method, avoiding irrational numbers, shows that he had never made any application of it to real problems. This hypothesis may explain why this Chinese mathematician had no disciples, and why his works did not attract the least attention in China.

When in 1582 Matteo Ricci came to China, he aroused great admiration by teaching and translating the first elements of Euclid, the application of arithmetic to geometry and Sacrobosco's sphere. Notwithstanding his efforts and those of his disciples Giulio Aleni and Sabatino de Ursis, and of his successors in the eighteenth century, Schall and Verbiest, no real mathematical school was formed in China.

There were, it is true, in various periods, learned and active Chinese scholars, but none who was able to have an original conception of Western science, or to reconstruct it.

The efforts of Protestant missionaries in the nineteenth century were not more successful. The most prominent of them was certainly A. Wylie. His attempt to translate with symbols, half European and half Chinese, the elements of differential and integral calculus found no followers.

The works of Li Shan-lan show an exceptional mind, but did not contribute to the diffusion of Western science in China.

I do not think the small development of astronomy and mathematics in China is to be ascribed to deficiency of the aptitude for study in the race, or better *racés*, which make up the Chinese people. The analysis of a prelogical mentality in primitive peoples, made by Levy-Bruhl and his school, seem inapplicable to the Chinese.

Our exact sciences are based upon an evolution of Greek science for many centuries. It is impossible without long efforts, and not worth trying, to change, even slightly, the form of notation and the symbols. The mathematical formulas are difficult to read where there is no distinction between italic characters (sloping type) and ordinary (straight type). The absence of this distinction makes it difficult to read Leibniz's printed works. The formulas become nearly illegible if the alphabet only is changed: Germans and Russians have had to set aside, in formulas and calculations, their national

alphabet, and to accept the symbols of other European mathematicians. In the seventeenth century Galileo found it simpler to write in Latin his geometrical discoveries, though he became one of the creators of scientific language in Italian.

In the eighteenth century Germans and Russians wrote in Latin and in French, because they lacked a suitable scientific prose style, which they produced only in the nineteenth century.

Those who know China well have never doubted that the Chinese are capable of assimilating Western science; they have done so when, like the Japanese, they have taken the right course of careful study before attempting to write original expositions. The most subtle theories can be expressed by the Chinese symbols as well as in any European language. But it is possible that only in the second half of the twentieth century Chinese literature will achieve a scientific prose formed on the works of Chinese scholars who have studied science in a European language.

Chinese civilization is not that of an old, tired and conservative people, but rather that of a young people, eager to learn, reflective and quick. The ability of the Chinese as mechanics, sailors, pilots, skilled workmen in all sorts of industries is well known.

Chinese civilisation, while it is to be considered younger than ours, has contributed, in a way that seems almost necessary, to our progress. Some fundamental industries (silk, paper, porcelain, varnishes) come from China. That the Chinese in the eighth century knew the chemistry of gases, as Klaproth claimed, is now considered incredible ⁽¹⁸⁾, and the discovery by the Chinese of oxygen and of the composition of air and water must be removed from the history of chemistry. The chemical manipulations of the Chinese deserve however to be examined more attentively than has yet been done. The question of the origin of alchemy is still unsolved, and future studies may prove that it comes from the West ⁽¹⁹⁾, but Chinese contributions to metallurgy and pharmacopea have undoubtedly been very useful.

More important are the Chinese contributions to the study of the vegetable and animal world. I shall only refer to the interesting researches by the U. S. Government on the Chinese *Materia Medica*. The first study of the only known remedy against leprosy, the use of chaulmoogra, comes from the Chinese pharmacopea, and

the study of an *ephedra*, a *gnetacea*, may give a real cure of influenza.

Another proof of the Chinese aptitude for scientific research is their geographical work. The accounts of Chinese travellers from the first centuries A.D. to our times are remarkable for the accuracy of their observations. While we cannot speak of great Chinese mathematicians, the list of great Chinese travellers is long, and can reasonably be compared to that of western travellers. China, however, has no great navigators, because navigation is an art, or rather a science, born and bred first in Greece, then in Italy, and next in the rest of the world.

The Chinese had an original school of cartography, or rather topography; its maps of China and neighbouring countries are really important. The earliest documents of Chinese cartography, published by E. Chavannes, compare favourably with contemporary European maps, or rather surpass them. I wish to add to these maps a printed map, perhaps the first one printed in China, the work of a great Chinese poet and author, Su T'ung-po. He drew an interesting historical map of China under the Chou Dynasty, of which I can give only two recent reproductions ⁽²⁰⁾. Copies of the original impression may still be extant in some Chinese, Japanese, American, or even European library.

This new merit of a great poet is a new proof that the Chinese people, who have already given China and all the world great historians, poets and painters, will be capable in the future of giving original contributions to science.

REFERENCES

(1) In his letter of May 12th, 1605, from Peking he writes that the Chinese astronomers, in compiling their ephemerides, use both Chinese rules "*piu stimato eppure manco certe*" and Moorish methods, "*with which they predict eclipses more exactly, while appreciating them less.*"

P. Matteo Ricci suggested that a European astrologer could with advantage translate in Chinese characters the European tables, and so correct the Chinese calendar. This is the beginning of the astronomical work of the Jesuits in China, which Ricci's successors continued with their best efforts. (*Opere Storichedel*, P. MATTEO RICCI, s. J. Ed. by P. Tacchi Venturi. Vol. 2, Macerata, 1913, p. 284.

(2) J. KEPLER *Opera Omnia*, Francofurti, MDCCCLXVIII, vol. VII, pp. 667-683; R. P. JOANNIS, TERRENTII S.T. *Epistolium ex Regno Sinarum ad Mathematicos Europaeos Missum*, etc. Sagani, 1630.

(3) P. GAUBIL, *Histoire de l'astronomie chinoise*, published in the *Lettres Edifiantes*, T. IV, pp. 453-509 of the edition of Peris, 1877.

(4) J. B. BIOT, *Etudes sur l'astronomie indienne et chinoise*, Paris, 1862; *Précis de l'histoire de l'astronomie, chinoise*, pp. 249-398.

(5) *Le système astronomique des Chinois*, Arch. des Sc. phys. et nat., Geneve, 1919-1920; L. de Saussure, *Le système cosmologique sino-iranien*, jour. As., Paris, 1923, and other preceding articles in the *Toung Pao*.

(6) Leyden, 1875. It is interesting to see the review of J. Bertrand, *Journ. des Savants*, 1875, pp. 557-566, and also *Les Mathématiques en Chine*, an article by Bertrand, *ibid.*, 1879, pp. 317-329; 464-477.

(7) H. MASPERO, *Légendes Mythologiques dans le Chou King*, *Journ. Asiatique*, janvier-mars 1924, especially I. *La légende de Hi et de Ho*.

H. MASPERO, *La Chine antique*, Paris, 1927, (*Histoire du Monde*, publ. par M. E. Cavaignac), livre V, Ch. IX, *Le mouvement scientifique et les influences étrangères*.

(8) J. B. BIOT, p. 308. The same translation is accepted by de Saussure.

(9) *Chou-pi suan chiao k'iao k'an chi* 周髀算經校勘記 fol. lv of the edition of 1887.

(10) AL BATTANI, *Opus Astronomicum*, Milan, 1903, ed. Nallino, t. I, p. 182.

(11) *Hsan chi*, 璿璣 c/r. GILES *Dictionary*, 4813.

(12) See note (7).

(13) L. DE SAUSSURE, *Le Système cosmologique Sino-Iranien*.

(14) L. Am. Sedillot and Captain L. Vallois, in their communication to the 1st Congress of Orientalists, Paris, 1873, t. I, p. 289, were right in the main in their criticism of Biot. See the article of A. WYLIE, *Eclipses recorded in Chinese Works*, *Journ. of the North China Branch of the R.A.S.*, N.S., Shanghai, t. IV, 1868, p. 87-158.

(15) ALEX. HOSIE, *Drought in China*, A. D. 620 to 1643, *Journ. of the N.C.B. of the R.A.S.*, NS, 12, Shanghai, 1878, p. 51-89.

See also: *Sun spots and sun shadows observed in China*, B.C. 28-A.D. 1617, *ibid.*; p. 91-95.

(16) *Chou I Chê chung* 周易折中, K'ang Hsi edition, 1715, lib. 20, fol. 6, verso.

The supposition of Leibniz that the eight diagrams of the *I Ching* were considered as numbers in base 2 seems incorrect, if it is supposed that this conception was made in the third millennium B.C. It is only right when we attribute it to the second or even first century B.C. We are sure of the discovery of the arithmetical interpretation of these symbols only when we have the generalisation in base 3 made by Yang Hsiung in his *Tai Hsuan ching* 太玄經. See A. WALEY, "Leibniz and Fu-hsi," *Bull. of the School of Or. St.*, 1921-23, vol. 2, p. 165.

(17) E. BLOCHET, *Les sources grecques et Chretiennes de l'astronomie hindoue*, *Revue de l'Orient Chretien*, 1925-26, t. 5 pp. 400-441.

(18) M. MUCCIOLI, *Intorno ad una memoria di G. Klaproth sulle conoscenze chimiche dei Cinesi nell' VIII secolo*, *Archivio di Storia delle Scienze*, Roma, 1926, vol. 7, pp. 382-386; *L'Arsenico presso i Cinesi*, *ibid.*, 1927, vol. VIII, pp. 65-76.

(19) The opposite belief has been sustained recently; see OBED SIMON JOHNSON, PH. D., *A Study of Chinese Alchemy*, Shanghai, Commercial Press, London, Luzac, 1928, XI, 156.

(20) *Ch'un Ch'iu lieh t'u shuo*, 春秋列國圖說, reproduced in the *Ch'un Ch'iu Tso chuan* 春秋左傳 edition of Shanghai, 1897, and the French translation of S. COUVREUR, *Tch'ouen Ts'iou et Tso Tchouan*, Ho Kien fou, 1914.

A JOURNEY TO THE TUNG LING

and a Visit to the Desecrated Eastern
Mausolea of the Ta Tsing Dynasty, in 1929

By EMIL S. FISCHER

Years ago I made a year-long journey of inland observation through the more remote sections of Szechwan, Kansu and Shensi without mishap, although the trip involved ten thousand miles of overland hardship; to-day a trip of several hundred miles along the coast section of China presents more difficulties. It is not my aim here to discuss these difficulties due to hold-ups by *Tu-fei*—so-called bandits who are really disbanded soldiers and deserters.

For a long time I had planned such a journey to the Imperial summer hunting resort at Jehol, where centuries ago Emperor Ch'ien Lung erected Imperial residences and built famous buddhist temples on the crests of hills surrounding this famous spot. Among these palaces is a replica of the Patala of Lhasa, the residence of the Pontiff and Spiritual ruler of Tibet, the Dalai Lama. But the Councillor of the Waichiaopu refused the necessary Chinese passport, stating that I was much safer in Tientsin than in making a journey via the Ku Pei Kao Pass, outside of the Great Wall, into Mongolia.

Again in 1929 I wished to combine a trip to Jehol with a visit to Ma Lan Yü, at which market place, inside the Great Wall, the *Tung Ling*, or the Eastern Manchu Mausolea, are situated. I had before visited at various times the *Hsi Ling*, or the Western Manchu Mausolea, and had witnessed there the laying to rest, in his newly-erected mausoleum, of the Emperor Kwang Hsü and his Empress, as well as his favourite, Yü Kwei-Fei, the latter of whom had died at Sian Fu in 1900 during the flight of the Imperial House, when the Allied Powers pressed on Peking to relieve the Legations in consequence of the Boxer troubles. This triplica of an Imperial funeral took place at Liang Ko Chwang, south-west of Peking, in December, 1913. Here, along the foot of the Western

Hills, is the widespread and fan-like mountain area where the geomancers had selected the western section of Imperial Manchu burial grounds almost three centuries ago, when Manchu rule began (in 1644) in China. These supreme state, or temple, buildings of palatial Chinese architecture were situated in the centre of fine forest grounds almost a hundred English miles south-west of Peking. The spirit of the time had brought forth the laying of a twenty-miles railway side line from the Peking-Hankow Railway at Pe Tien to the *Hsi Ling*. This made it comparatively easy to reach the Western Mausolea. But this was not true in the case of the Eastern Mausolea, or *Tung Ling*, which had its more beautiful outlay about a hundred miles north-east of Peking in an inner section of the Great Wall, whence a path leads over the high mountain division into Mongolia, to Jehol.

Upon studying the Postal Map of Chili Province (now Hopei) I found among routes which led to Ma Lan Yü, one from Peking in a north-westerly direction for about a hundred miles and also another over which the Chinese postal couriers carry mail. This second route runs from Tongshan, the industrial centre along the Peking-Mukden Railway, in a northern and north-western direction, and its mileage, according to the Postal Route, aggregated 200 Chinese *li*, or less than 70 English miles. I decided to take this shorter route and engaged in Tongshan at the station a Peking cart, drawn by two mules tandem fashion. This conveyance could take me to Ma Lan Yü in possibly two days. As it was at the end of the rainy season, while we covered half of the distance in the plain during the first day, the other half we had difficulty in covering in three days, because we had to cross a great number of torrents which came southward from the Great Wall divide of mountains. At this point mountains reach altitudes of over 6,000 feet and their serrated tops, gullies and groves brought down from these hilly sections of the country torrent after torrent whose rushing waters were five and more feet high. This brought delay after delay before we could ford them with the help of peasants who knew the locality and the conditions of the streams.

However we succeeded in safely reaching Ma Lan Yü, which market town is spread out due north in the rear of the ridges between which the *Tung Ling* grounds are enclosed. It is inside this waste area that each of the

following named rulers possesses his own individual mausoleum wherein the Emperor and his Empress are buried. Each of these individual tombs also possesses a nearby separated burial ground of lesser magnitude in which the *Kwei-fei*¹ of various ranks, that is the concubines and consorts of the respective rulers, are laid to rest. Each of such individual burial grounds is easily distinguished, as the mausoleum of an Emperor, or an Empress, when laid to rest separately instead of together in one mausoleum, possesses temple buildings and walls surrounding them, and also huge entrance portals, all of which buildings are covered with yellow tiles; while the buildings of the separate mausolea for the *Kwei-fei* are covered with green glazed tiles. Each of the various mausolea has its individual name, as follows:—

The <i>Hsiao Ling</i>	in which is buried	Emperor Shun Chi,	1644-1662 A.D.
The <i>Ching Ling</i>	" " " "	"	K'ang Hsi, 1662-1723 "
The <i>Yü Ling</i>	" " " "	"	Ch'ien Lung, 1736-1796 "
The <i>Ting Ling</i>	" " " "	"	Hsien Feng, 1851-1862 "
The <i>Hwei Ling</i>	" " " "	"	Tung Chi, 1862-1875 "

These rulers have their tombs in the *Tung Ling*, while the other Manchu rulers have their last resting places in the *Hsi Ling*, or the Western Mausolea; they are:

Emperor Yung Cheng	who ruled from	1723 to 1736 A.D.
Emperor Chia Ching	" " "	1796 to 1821 "
Emperor Tao Kwang	" " "	1821 to 1861 "
Emperor Kwang Hsü	" " "	1875 to 1908 "

In 1928 suddenly came the widespread news that the *Tung Ling* had been looted and destroyed and that even the bodies of the rulers had been shamefully desecrated and stripped of their burial gowns and that priceless treasures which had been entombed with them had been carried away by soldiers led by their officers.

A first hand knowledge of this region led me to make some investigation of this terrible state of things. I had previously visited and examined not only the *Hsi Ling*, but also the mausolea of the Ta Tsing rulers, who have their tombs north and east of Mukden, and had also often visited the tombs of the Ming, not only in the neighbourhood of the Nankow Pass, north of Peking, the *Shi San Ling*, where the thirteen rulers of the Ming Dynasty (1368-1648 A.D.) are entombed, but also the tomb of the founder of the Ming Dynasty, Emperor Hung Wu, whose mausoleum is at the foothill of the Chung Shan of

¹ Better *Hwang Kwei-fei* or Imperial Consort.

Nanking, on the upper reach of which the mausoleum of Sun Yat-sen was erected recently.

When on our journey we approached the eastern entrance passage into the *Tung Ling*, I sent my Peking cart along to Ma Lang Yü, preferring to see at once the nearby mausoleum, called the *Hwei Ling*, from the outer terrace of which enclosure a fine prospect over the whole *Tung Ling* area could be viewed.

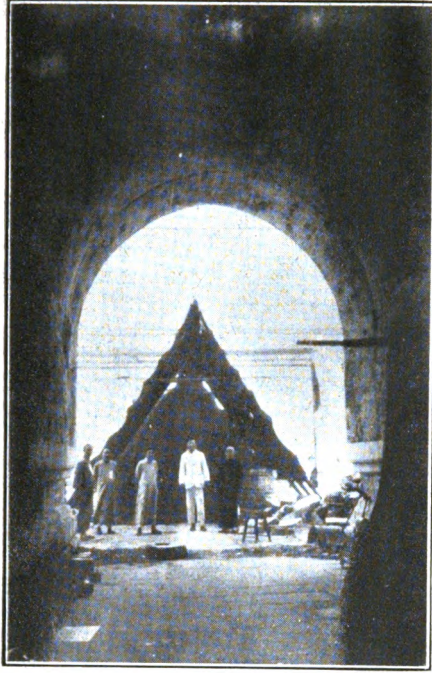
The perspective all over the crescent of hills inside of which the mausolea are spread out along the slope from north to south gave to the eyes a marvelous panorama. In the miles of distance towards the central southern portion, there was the *Lung Men*, or Dragon Gate, mountain opening, with a huge marble *P'ai-lou* divided into five large portal sections or arches. From thence in a straight northern direction the mausolea main road led to the central part of the general outlay of the tombs. Nearby to this huge *P'ai-lou* the large mural enclosure, the Red Wall, with its central entrance portal—a huge temple entrance of palatial extent with its pagoda-like roof—could be plainly distinguished.

Near the main portal in the distance a large enclosure with fine temple buildings and courtyards and a huge mound in the rear attracted the attention. This was the tomb known as the *Chao Hsi Ling*, and contains the remains of the mother of Emperor Shun Chi, the first ruler over China during the Ta Tsing Dynasty. She ought to have been buried at the mausoleum of her husband at Mukden at the *Pai Ling*, where the original rulers of Manchuria have their burial grounds and where also was the tomb of Tai Tsong Wen Hwang who, ruling from 1627 to 1643 A.D., closed up the Han Kin (Han Tsin) Dynasty, being succeeded by the Ta Tsing or Manchu Dynasty of China. However the mother of Shun Chi had expressed the desire to be buried near her son, who erected to her memory the so-called mausoleum *Chang An Feng Chien*, which later Emperor Yung Cheng in 1724 renamed the *Chao Hsi Ling*.

From this eastern point of vantage I followed the straight avenue leading from the entrance portal situated centrally south to a tower-like square building with marble steps on each side leading up to an open arch-like passage to its central hall, where is a huge marble slab inscribed with Manchu and Chinese letters, describing the deeds of the Manchus. This huge slab of marble rests upon an enormous marble tortoise, which

represents ten thousand times ten thousand years of ages. At each of the four outer corners of this building is erected a thirty to forty-foot high marble column in support of Heaven, which columns are decorated with fine stone carvings of symbolic figures of so-called cloud and dragon designs. Near the top on opposite sides are two triangular flag-like projections and on the top a seated lion. A little farther northward in this central avenue there now appears a wide path covered with marble slabs along the sides of which appear the so-called Stone Guards of mythological and other animals, all of over life size and closed up in its north section by huge stone figures of men. In successive order these stone guards, which are popularly called "The Avenue of Animals and Men of Stone," consist of one pair each of standing and one pair each of sleeping *Chi Lin*, camels, elephants, and horses and followed by two double pairs of standing warriors and civilian officials all larger than life size. Subsequently the central avenue crosses water outlets, the bank of which and the riverlike base are all laid out in marble, and equally fine bridge construction which crosses these river beds; the bridges are generally built in central and side sections with marble railings between, demonstrating the finest of stone work. A marble *P'ai-lou* gate in various divisions follows on the top of which a roof-like covering with yellow glazed tiles protects this monument against the ravages of time and weather. In such order and in miles of length the main or central approach or avenue goes straight up to the *Yu Ling* where the most famous of all the Manchu Emperors, Chien Lung, has his burial enclosure. But side roads lead eastwards towards my prospect and westward over to that extreme last Imperial Mausoleum, possessing in its off-turn in a curve an additional but smaller "Avenue of Animals and Men of Stone" leading to the *Ting Ling* enclosure where Hsien Feng is laid to rest, the Emperor who during the Allied invasion to Peking (1860 A.D.) fled to the Imperial Summer residence at Jehol and who had died there during an illness of smallpox.

Near this monument a little eastward stands an enormous double enclosure. All the buildings inside of this are covered with yellow glazed tiles like those of the actual rulers. This double enclosure contains to the west the temple buildings and the tumulus of the actual Empress of Emperor Hsien Feng who died over 30 years ago; and in its separate but close by easternward division



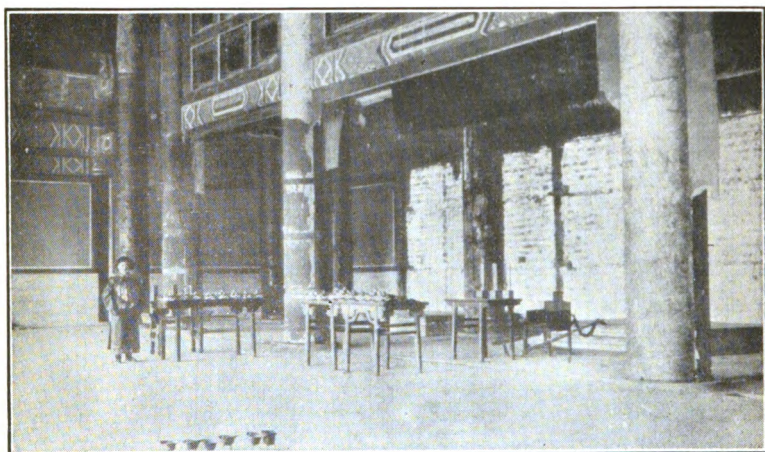
Close to the tomb of Emperor Chien Lung (straw tent to prevent rain entering tomb).



A huge bronze urn in the *Hsiao Tung Ling*, destroyed by vandals.



Entrance passage into Chien Lung's "Palace Under the Soil" (*Ti-kung*).



Main sacrificial temple hall (*Lung Wen Tien*) of the Chien Lung mausoleum, shewing destroyed altar.

this enclosure contains the last resting place of that famous woman, the last Empress-Dowager Tzu Hsi, that powerful autocratic ruler who during the life of three Emperors kept the reins of the state rule in her hand. These three rulers were her consort Hsien Feng, her son Tung Chi who succeeded him, and the successor of the latter, Emperor Kwang Hsü. Tung Chi and Kwang Hsü became rulers at a very early age, when Tzu Hsi was empowered with the Co-regency, and later she usurped the power of Kwang Hsü when he had become of age and he became her prisoner with the name of a ruler. Tzu Hsi was made an Empress by her son Tung Chi who raised her rank to such, although she had been only a *Kwei-fei* to his father, Emperor Hsien Fung. (Tzu Hsi and Kwang Hsü died in 1908).

To the east of this double Mausoleum is a large enclosure the buildings of which, however, are covered with green glazed tiles. This is the *Yü Fei Ling* of the mausoleum to the *Kwei-fei* and Imperial Consorts of Emperor Chien Lung. There are visible in the northern section of this enclosure 32 large and smaller bee-hive-like mounds, each possessing a square marble stair-railing around. These mounds demonstrate the number of concubines which Emperor Chien Lung possessed during his sixty years of reign. Nearby east on a slope is the centrally situated *Yü Ling* wherein is laid to rest the most famous of all the Manchu Rulers, Emperor Chien Lung, who is reputed to have raised Chinese art to its highest level and who interchanged Chinese art with the Emperors of France during the renaissance. The catacomb-like vault of Chien Lung also contains the coffins of two of his Empresses, Hsiao Hsien Chwan Hwang Ho and Hsiao Yi Chwan Hwang Ho. On a slope further east to the rear is the *Hsiao Ling* or the main mausoleum of the founder of the Ta Tsing Dynasty in 1644, Emperor Shun Chi, who ruled for only twenty years, when he seems to have retired into the Monasteries of the sacred Wu Tai Shan, where his son, Emperor K'ang Hsi, visited him. Near to the *Hsiao Ling* is the *Hsiao Tung Ling* wherein all six corpses are buried, among which is that of the Empress Hsiao Kwei Chang who held the title Hwang Ho of Shun Chi.

Farther in front and a little distance east is the mausoleum of Emperor K'ang Hsi, known as the *Ching Ling*, to which leads, over a side road from the central main avenue of the *Tung Ling*, another small "Avenue of

Animals and Men of Stone" standing there to protect the tomb from evil spirits. This main tomb is adjoined on the east by the *Ching Fei Ling* and the *Ta Fei Ling* wherein K'ang Hsi's concubines are laid to rest.

And now just before the eminence from which I had looked at the panorama of the *Tung Ling*, there was the *Hwei Fei Ling* with buildings covered with green-glazed tiles where the consorts of Emperor Tung Chi are buried and which secondary mausoleum belongs to the one on the outer terrace of which I stood on an elevation. This was the *Hwei Ling*, or main mausoleum of this Emperor.

In the foregoing only the names of the various mausolea were given except for the one on the western extremity and close by to the *Ting Ling*, the *Ting Fei Ling*, wherein the consorts of Hsien Feng were buried. Next to them is the double tomb of his two Empresses of which mention has already been made, the name of this double mausoleum being the *Tung Ling*.

Leaving aside for the moment destructions seen, the individual main mausolea are somewhat similar in their architecture and arrangements, only minor details are of a diversity into which this description cannot enter. Therefore in describing now the inner architectural outlay of the *Hwei Ling*, the same *in extenso* applies to each of the main mausolea. As to the various *Fei Ling* some are similar, as for instance the *Yü Fei Ling* of more superior construction and beauty. Others are of lesser grandeur.

Some little distance before the main portal, there is due south of it a large square tower-like building with its pagoda-like roof. This building the guardians called the *Hsiao P'ai Lou* wherein, in its centre, approached by an opening on each of the four sides of the tower, is a huge marble slab standing on a marble tortoise, with inscription in Manchu and Chinese relating to the Emperor to whom the tomb on the upper slope is erected. Before reaching the outer terrace to the entrance portal there is a side compound, with a number of smaller buildings and short smoke stacks seen in the rear. This compound contains the preparatory hall and side parts used as kitchen, also divisions for slaughtering purposes of whole oxen and other animals which are used at the time of sacrificial annual festivals. A marble bridge in three parallel divisions now crosses over a rivulet. Reaching soon after the outer platform, or terrace, before the main entrance portal, there are at its sides small guard

houses which are followed by the high mural enclosure of the mausoleum. Here in its generally southern and centrally situated main entrance building is a large platform with a few steps leading to the ground floor on which at regular distances stand numerous strong column supports of huge height. These timbers, several feet in diameter and made from the trunks of trees brought from far away, hold the majestic pagoda-like roof of the entrance portal. This roof is covered with yellow glazed tiles; it has an outer facade southward and an inner one northward sloping down from the upper central rest of the roof. Generally three double openings lead into the mausoleum to the inner platform before the first inner courtyard. The openings, i.e., a central double huge wooden door, and an equal one to the east as well as one to the west, all have red lacquer showing on the door, or double portal leaves. Grass button decorations led out in nine lines each with nine buttons or 81 in all on each door leaf.

From the inner terrace of the entrance portal we stepped down into a sunken courtyard over six steps across a platform and then six steps more of marble with equal kind of railings, with a central carved marble slab. In front, divided by a wide court-yard, on a high platform is the main sacrificial temple of more grand aspect and finer decorative designs and execution than any of the other buildings inside of the mausoleum. A large square platform precedes the sacrificial temple with a fine marble balustrade and approaches which are somewhat similar in construction to that descent which brought us down from the inner entrance portal into this first inner courtyard. When we had descended the stairs of the inner entrance portal, we saw at a little distance to our right and left various artistic stoves, constructed in fayence, which are used to burn up sacrificial papers and programs as in use for the ceremonials and high functions such as the annual court functions prescribed. Also to the right and left end of this courtyard there was each a side temple building used for preparatory purposes and as reception or waiting halls. All looked superb except for the presence of the desecration of the spoilers of which mention is made later. We directed ourselves to the central steps leading up to the open platform where the main sanctuary was. We went up the twelve steps and were on that large square of a marble terrace on which before antique bronze decorations, herons, incense burners and other implements had stood but which were taken away for ever. The majestic temple

building before us has a double sort of pagoda-like roof. A fine decorative panel which had hung between the two sections of the pagoda-like roof, on which was a Chinese and Manchu inscription giving forth the name of the temple, apparently had gone for ever; mention of it is made here solely as this was part of the impressive construction before which we stood. Its lower case sections are almost entirely in granite or marble while all upper sections are of marvelous wooden composition, except the roof covering which is of yellow glazed tiles. The roof section in this colossal inner hall is supported by immense round trunks of trees, which in olden times had been brought here from Szechwan and the South Seas; they are two or three feet in diameter and reach a visible inner height in the building of over thirty feet. I measured approximately the inner square area of this majestic hall covering a marble floor space of 94 by 66 feet. At regular distances were four lines each of six of these huge roof supports all being round and equally large beams. The high ceiling was made up of over one foot square decorative panels with paintings of sorts of mythological animals in the centre. The aspect of this hall was very quiet and sacred and at the same time gave a most attractive impression, in spite of the fact that the barbarous desecration spoilt the ensemble. The huge front gates were no longer there. So also the inner sacrificial tables and ornaments and other paraphernalia which had disappeared so also the altar in the rear section of the building. The Confucian sacred tablet also was gone. In fact while more is said about the spoil later, the rear wall of the building and the ceiling showed the *Tu-fei* missed nothing and forcibly took out of the masonry what was firmly built in, and took away the fine ceiling panels and spoilt the outer roof. In the course of time, if repair is not made soon the destruction of these "monuments of culture" will continue. But this and other more formidable spoil which these *Tu-fei* carried out, mean nothing else but vandalism of the worst type.

The outer marble railing in its fine designs right around this main building also bear the mark of the vandal. There is on each of the four square corners of this railing the head of some sort of a mythological animal projecting forward. These are sort of dragonheads, less than a foot in diameter and standing outward perhaps two feet, used as a kind of rain gutter. Some of them were broken off or had disappeared.

We turned from the main courtyard to the rear of the principal edifice whence a passage with a marble covered rivulet and marble bridge in three sections leads over marble steps upwards to the so-called *San Tzo Men*, through which gates the second sacrificial courtyard is now entered. Twenty marble steps in two sections lead up to these three entrance gates. The three entrance gates once possessed each a double red lacquer wooden door (gone for ever) which doors also were decorated with the numerous buttons in brass, like the main entrance portal which however is of much larger dimension. Outside on the red partially destroyed wall of this new courtyard were decorative panels in fayence partially destroyed; there was a glazed tile top cover over these three gates to protect the terracotta medallions and the entrance gates.

The impression which this second inner courtyard gave was still more serene; in its large inner square was very little to take away from the effect of the courtyard's emptiness. After we had passed the *San Tzo Men*, or the three entrance portals, there was, nearly in front, a marble *P'ai-lou* of fine yet simple design, while on the opposite northern front of the square there stood a high tower also with a pagoda-like roof on the upper top, while up about half its height there appeared citadel-like crenelated railings of marble, enclosing a promenade around this middle section of this tower which is called *Ming Lo*, the Tower of Renown, or literally "the name-tower." The only other object which appeared in this great inner square courtyard near to the Tower of Renown, was a dark granite stone sacrificial table, probably fifteen feet long and two feet wide. On this stone table for offerings there was standing in the centre a large tripod incense burner, and on each of its two sides at a short distance was one flower vase of peculiar antique design. In addition at a little further distance towards the end of this sacrificial table stood on each side a peculiarly-formed candle-stick; all these five implements were of the same sort of stone carved material as the sacrificial table itself. In addition to this the whole large courtyard square before the Tower of Renown was covered with large granite stone blocks. Advancing slowly towards the lower central opening of the tower and entering its passage, we found it led at one place to the corridor forty feet above along the upper central floor and at another spot to the closed-up passage outside the lower section of the huge Tumulus. To the right and left side of this catacomb-like inner tomb,

outside of course, steps led upwards to the height of the citadel passage of the tower which extended in the final northernmost point of the slope into which this tomb is deeply sunken. When we reached the upper passage of the tower, around the four outside walls we found four openings to the inner central upper section of the building which on the top is covered with a double pagoda-like roof covered with yellow glazed tiles. This inner dome-like section contained a huge marble monument standing on a big marble tortoise which has inscriptions in Manchu and Chinese expressing the deeds of the Emperor and stating the posthumous name of him who is laid to rest in the rear of the Tower of Renown. This monument itself is the one, however, put up by his successor and the monument shows also the Imperial seals of the successor who erected this monument. The tower itself is part of the whole citadel-like lower tomb construction with a secret entrance passage into the "Palace Under the Soil."

This secret passage leads to an ante-chamber with a marble *k'ang* which is reserved for the Empress of the Emperor to whom the mausoleum is erected. This ante-chamber is followed by a second chamber where the *k'ang* of the Emperor and his coffin, with all sorts of antique tokens, are placed. From what I had seen at the unfinished outer tumulus of the mausoleum of Emperor Kwang Hsü at the *Hsi Ling* where the whole outlay and construction of these tombs are similar to those in the *Tung Ling*, this rear tumulus section is several stories deep down into the levelled ground of the slope and is built with reinforced cement walls around. The top of this huge tumulus is possibly a couple of hundred feet in diameter. Some of such top circular tomb roofs are covered with grass, others with trees and growths which had sprung up with the passing ages.

In such way is laid out the palatial construction of each of the mausolea for the Emperors who were laid to rest in the *Tung Ling* and in the *Hsi Ling* since the Ta Tsing Dynasty ruled over China from 1644 to 1912. There are minor changes of details in construction to be seen, as for instance, there are Towers of Renown which are approached by a sloping upgrade of twenty to thirty feet; others again, which have no such sloping approach to the tower. But all of the tombs are laid out from its extreme upper or northern rear, where the tumulus actually is, towards the southern main entrance of the mausoleum-slope as on a downward grade.

The *Tung Ling* possessed up to about ten years ago a most beautiful pine forest which was hundreds of years old. Some of the trees had a circumference which could be barely spanned by two men. All this has long since disappeared. It is pitiful that in addition to the forest destruction, as in 1928, so in 1930 an actual desecration of these beautiful mausolea took place. Some of the destruction which happened to the *Hwei Ling* has already been referred to. In addition to the looting these monuments show a wanton destruction which one cannot understand. Why did these soldiers tear down parts of whole roofs of buildings? In some buildings more than half of the roofs have already gone; no doubt the wind and the ravages of weather in time will complete the utter ruin of this monument, unless the government responsible for these terrible deeds will undertake their repair and safeguard. This is much to be wished for. The China Branch of the Royal Asiatic Society which years ago interested itself in the preservation of monuments in China, should try to see that this is done substantially, even if the *Tung Ling* are far away from the beaten track. For instance, in the *Shwan Fei Ling* or the double green-glazed tiled tombs of K'ang Hsi's concubines, the front roof of the temple entrance was all gone. When I approached the so-called *Shen Chou Kao*, by which the slaughtering compound is meant, which stands outside of the *Ching Ling*, or the K'ang Hsi Mausoleum, I looked into it and found that it was now the stable of hundreds of Mongol ponies belonging to the military guard which was stationed at Ma Lan Yü when I visited the *Tung Ling* in August, 1929.

Of course this compound with its yellow glazed tiles looked a sight. Every window was gone as far as the main building in this section was concerned and correspondingly all was in a terrible condition in the various other parts of this mausoleum which was erected in honour of that Manchu Ruler who did the most for the literature of his country and who brought forth for all time the great K'ang Hsi Encyclopædia.

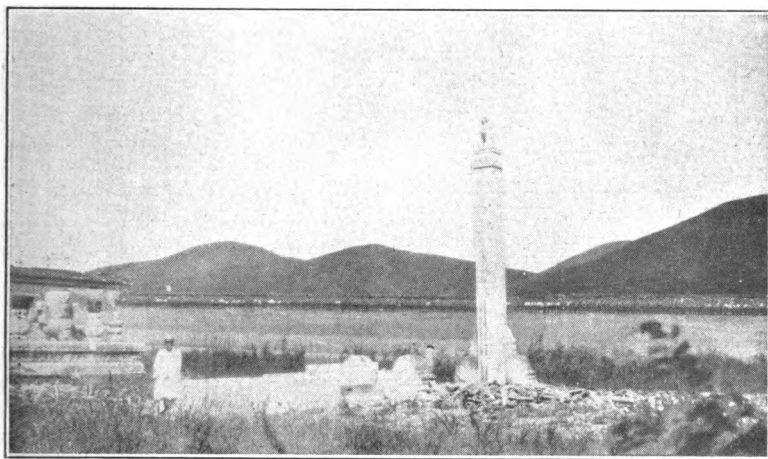
On the approach to the main portal of this monument the stone *P'ai-lou* was badly damaged. In the main sacrificial temple all implements inside and outside had disappeared, the inner ceiling roof of this majestic temple-hall was gone. The huge door leaves on the main portal were burnt up, I was told by the guard. The sacrificial table in the main temple was forcibly taken off the rear

wall of this building. The gold which decorated the big timber supports of the main hall has been all taken away. The doors of the *San Tzo Men* which led into the second courtyard were destroyed. The inner *P'ai-lou* in this mausoleum section was spoiled, but the stone altar table was untouched. The stone floors of the upper passage of K'ang Hsi's Tower of Renown, all large and strong granite pieces, were all turned up, but apparently the soldiers could neither find the secret passage here, nor along that section of the tumulus where is the door-like entrance into the inner chambers. This "outer faked" appearance is of fine fayence design; but all this work was destroyed without getting into the inner part.

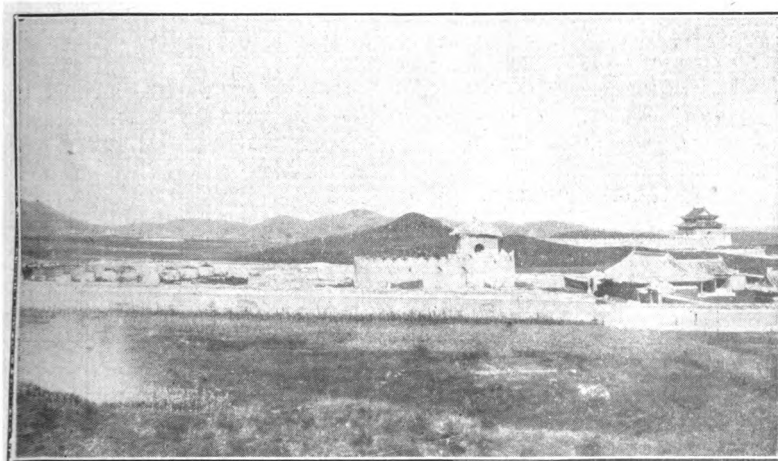
There was the green glazed tiled *Kwei-fei* mausoleum of K'ang Hsi's 35 concubines, the main temple of which monument no longer possessed its fine roof but the top masonry of the 35 beehive-like larger and smaller tombs was intact.

The stone bridge leading to the tomb of the Emperor of the Ta Tsing Dynasty, the *Hsiao Ling*, was well preserved but subsequently the three marble bridges were badly damaged and only two pieces of this approach were left. The shields of the buildings were gone. In the main courtyard the doors and windows of the east and west reception hall had disappeared, the roofs of the buildings were spoiled, all big entrance gates were taken away. In the inner hall all decorations and temple paraphernalia were no longer there. The altar tables which were built in three sections into the wall had been forcibly taken out. The beautiful gilt decoration of the huge timber columns was all destroyed. The rear part of the temple roof support was taken away; none of the paraphernalia were left. The big stone altar in the sacrificial compound had the implements of tripod, flower vases and candle sticks all broken to pieces. On the *Ming Lo* or Tower of Renown, the passage way was in a terrible state, but they could not penetrate into the vault. The place of sepulchre called the *Pao Ting*, or Tumulus, was left intact.

In the *Yu Ling*, Ch'ien Lung's mausoleum, the outer *Shen Shao* (slaughtering place) the sixty-foot wide marble bridge in its three divisions and the outer guard-houses showed little evidence of the spoiler's hand. But the big door shield above the main entrance gate had disappeared. From the three heavy, double, wooden, red lacquer entrance portals all antique brass buttons had



Only remaining column of the marble *p'ai-lou* of the
Ching Ling (K'ang Hsi mausoleum).



The *Yu Fei Ling* where Chien Lung's 32 consorts and
concubines are laid to rest.



Rear front of entrance portal of the *Yu Fei Ling*
(Chien Lung's consorts' mausoleum).



The damage done in unearthing and finding the secret passage
in the *Ming Lo* (Tower of Renown) of Chien Lung's tomb.

been taken off. Inside the compound the two fayence paper-burning stoves were badly damaged; of the east and west reception halls, doors and windows were missing. On the platform before the main temple all decorative ornaments had been removed. The outer marble railing, however, was not spoiled, nor was the marble slab between the rising twelve steps, which slab possesses most artistic carved designs of dragons and phoenix rising over mountains into the clouds. Inside the main temple all decorative ornaments had disappeared; the altar built in three sections was forcibly taken out of the wall, but its marble base was left intact. The numerous huge timber columns in this temple hall were stripped of their gilt decorations; in the rear section the timber support of the upper roof was taken away; nearly all the square ceiling panels had been stolen. The wooden lacquered doors of the *San Tzo Men* had been taken away, but the other arrangements of the sacrificial courtyard did not show much destruction. On the other hand, however, the soldiers acted under instructions in trying to get into the secret inner passage from the top of the sliding wall before the *Ming Lo* or Tower of Renown. At the point of a revolver one of the Manchu elders among the old *Tung Ling* guards was brought here and forced to show where this passage existed. This the soldiers dynamited and afterwards entered into the "Palace Under the Soil." They found there not only precious implements and antique ornaments but they also took off the burial garments of the Emperor and Empresses buried in this vault. These robes were covered with costly pearls. Lieutenant Colonel Dabreuil, now Commandant of the 16th Regiment of French Colonial Infantry, who for many years has been stationed in China, and who had made a journey to the *Tung Ling* in 1916, states in his work, *Voyages d'Etudes*, that in the main mausoleum of Chien Lung are also entombed two Empresses and three concubines named Hui Hsin, Che Min and Chu Chia. The ghouls therefore must have found this tomb a very rich booty. The soldiers who worked on the destruction of the *Tung Ling* kept the few thousand of the old Manchu guards for two weeks in terror; successively one after another of the individual mausolea were desecrated but they only succeeded in penetrating into the vault of Emperor Ch'ien Lung and of the late great Empress-Dowager Tzu Hsi, whose bodies were stripped of their imperial garments and jewels and from the vaults of which everything of

value was carried away. None of the mausolea was spared in the way of general destruction as already described.

Speaking of the avaricious looting, it seems to me best to use at this point the more accurate details which, on January 18th, 1930, were published in the *Illustrated London News*, by Moore Bennett. In giving this statement subsequently, I may point out that I had visited the *Tung Ling* in August, 1929, and had publicly spoken about the *Tung Ling* on September 26th, 1929, before the China Branch, Royal Asiatic Society, a fellow of which I have been since the second day after I first arrived in China, in the spring of 1894. Upon that occasion I told the packed audience of preceding visits to the tombs of the ancestors of the Ta Tsing Dynasty which I had visited in Mukden, the so-called *Pei Ling* and the older *Tung Ling* of Mukden, I gave my impressions of the *Hsi Ling* of the Western Manchu Mausolea south-west of Peking, where I was present at the funeral of Emperor Kwang Hsü. This funeral cortege started at two o'clock of an early December morning in 1913 proceeding from the mortuary in successive procession.

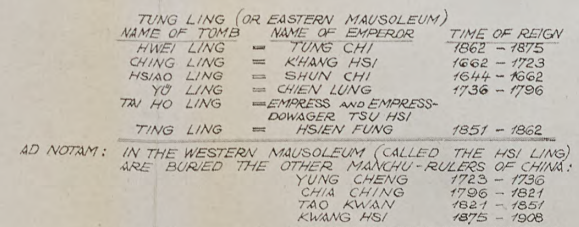
First came the priests, the emblems and imperial insignias and the 6,000 mourners, followed by the corpse of the Emperor on a huge baldachin, followed thereafter by the corpse of the Empress under a second huge baldachin, both of which were covered with heavy yellow damask, and right after came the corpse of the famous Yü Kwei Fei, whose baldachin, however, was covered in dark brownish, heavy gilt embroidered damask. And while there was hardly a distance of two miles from the sacred mortuary temple to the Kwang Hsü Mausoleum, the route, however, which the whole procession took and in which more than 6,000 officials of highest and other ranks participated, together with all Imperial Princes of the Blood representing the Old Manchu Government and the new Republican Officers of State and rule, this whole lengthy procession took a ten or more mile route. First a sacrificial kowtow, or rather a prostration of all the many thousands, started at the moment when at this nocturnal hour the sign was heard that the army of funeral corpse bearers had lifted the Emperor's body from the catafalque in the sanctuary mortuary. It was not only a sight of the thousands falling on their knees with foreheads down to the ground in homage of the Emperor who now was to be carried five years after his

death to his last resting place, but the sound of the wailing, lasting almost half an hour, of the many thousands of these officials, servants and bodyguard kneeling on the ground, that made this an experience never to be forgotten by the only three foreign spectators who had participated in this unique ceremony. These privileged spectators were the Chief Engineer of the Hankow Railway, Broulard, and his first assistant, de Retrou, on duty, and myself. From this point this long procession went afterwards through the long, stretched-out, narrow village of Liang Ko Chwang towards its southern suburb where the pine forest and avenue leading to the entrance of the *Hsi Ling* commenced. Here a turn westward led to the huge marble entrance *P'ai-lou* and through the *Hung Men* (Red Gate) into the actual *Hsi Ling* grounds, where the mourners went along the triumphal route of "Animals and Men of Stone," which in its northern windings later brought the procession to the newly erected *Chung Ling* mausoleum in which Emperor Kwang Hsü and his Empress were entombed, while the corpse or coffin with the remains of his famous concubine, the Yü Kwei Fei, who is said to have been drowned by the Empress-Dowager at Hsian Fu in 1900, was laid to rest in the nearby *Chung Fei Ling*. It was high noon when the procession had reached the *Hsiao P'ai-lou* of the *Chung Ling* where on the terrace (which was in plain view from the vantage point where I stood) the huge baldachin of the sarcophagus of both the Emperor and the Empress was taken off and now the two coffins, both covered in heavy yellow damask, were carried into the mausoleum and finally disappeared into the secret passage-way which led into the sepulchre. And having given this description and turning to Moore Bennett's pictures in the *London Illustrated News* of January 18th, 1930, I can state that all of his pictures were shown by me to the audience at my preceding lecture at the China Branch Royal Asiatic Society; they had been acquired straight from an august personality who wished me not to mention his name. But in the details which I gave about these pictures the actual names were mentioned, as for instance, the view of the *Yü Fei Ling* or the mausoleum covered with its green glazed tiles with the Tower of Renown in front and the view of the 32 bee-hive-like sepulchres of the *Kwei-fei* and consorts of lesser grade of Emperor Ch'ien Lung. This, of course, was only possible because

I had actually seen this sight and had inquired into and studied all that could be seen on the actual spot. But I did not get what Moore Bennett got: the details about the looting, facts which must be of equal interest for later knowledge. He says: "The treasures buried with the Empress-Dowager were tabulated at the time by the notorious eunuch Li Liën Ying, as follows: a mattress seven inches thick, embroidered with pearls, lay on the bottom of the coffin, and on top of it was a silk embroidered coverlet strewn with a layer of pearls. The body rested on a lace sheet, with a figure of Buddha woven in pearls. At the head was placed a jade ornament formed as a lotus, and at the foot a jade ornament carved into leaves. She was dressed in ceremonial clothes done in gold thread, and over that an embroidered jacket with a rope of pearls, while another rope of pearls encircled her body nine times, and eighteen pearl images of Buddha were laid on her arms. All the above were private gifts sent by friends. Her body was covered with the sacred *Tolo* pall, a chaplet of pearls was placed upon her head, and by her side were laid 108 gold, jade, and carved gem Buddhas. On each of the feet was placed one water-melon and two sweet melons of jade, and 200 gems made in the shape of peaches, pears, apricots, and dates. By her left side was placed a jade cut like a lotus root with leaves and flowers sprouting from the top; on the right was a coral tree. The interstices were filled with scattered pearls and gems, until the whole spread level, and over all was spread a network covering of pearls. As the lid was being lifted to place in position, a princess of the Imperial House added a fine jade ornament of eighteen Buddhas, and another of eight galloping horses." Moore Bennett adds to this that the value of all these treasures at the time, given precisely in numbers of emeralds, diamonds, sapphires, pearls, rubies and jade exceeded £8,000,000 and the value of the jade and rubies stolen from Ch'ien Lung's tomb totals more than £3,000,000. All of this and other vast treasures have disappeared. Moore Bennett stated that the whole area of the *Tung Ling* comprised 105 square miles, which, however, are not English miles, but Chinese *li* (three *li* to one English mile).

As to the cost of the individual mausolea, it is known that the Empress-Dowager Tzu Hsi, who died in autumn 1908 and who was buried amid pomp and grandeur in

COPIED FROM: « VOYAGE D'ETUDES AUX TONG LINGS »
PAR MR. LE LIEUTENANT-COLONEL DUBREUIL,
COMMANDANT DU 16^{ME} REGIMENT D'INFANTERIE COLONIALE A TIENTSIN.



AD NOTAM: IN THE WESTERN MAUSOLEUM (CALLED THE HSI LING)
ARE BURIED THE OTHER MANCHU-RULERS OF CHINA:

YUNG CHENG	1723 - 1736
CHIA CHING	1736 - 1821
TAO KWAN	1821 - 1851
KWANG HSI	1875 - 1908

DRAWN BY
J. A. HAMMERSCHMIDT
ACCORDING TO INTERPRETATION OF
EMIL S. FISCHER.

LIBRARY
UNIVERSITY OF CALIFORNIA
RIVERSIDE

November, 1909, lavished on her mausoleum during the thirty years of her rule millions upon millions, which so far as the historical value of the mausolea is concerned should be preserved for later ages.

Having in the preceding part of this essay about the Manchu mausolea given the name of the Rulers such as they are generally known to us and the names of the various mausolea, it is also necessary that details be given of the posthumous names of the Emperors such as are found on the monument inside the Tower of Renown. They are, in consecutive periods of reign:

Name of Ruler	Term	Posthumous Name	Name of Mausolea and where buried
Shun Chi	1644-1662	Che Tsu Chang	<i>Hsiao Ling at Tung Ling</i>
K'ang Hsi	1662-1723	Cheng Tsu Jen	<i>Ching Ling</i> „ „ „
Yung Cheng	1723-1736	Che Tsung Hsien	<i>Tai Ling</i> „ <i>Hsi Ling</i>
Chien Lung	1736-1796	Kao Tsung Chuen	<i>Yu Ling</i> „ <i>Tung Ling</i>
Chia Ching	1796-1821	Jen Tsung Sui	<i>Chang Ling</i> „ <i>Hsi Ling</i>
Tao Kwang	1821-1851	Siuen Tsung Cheng	<i>Mu Ling</i> „ „ „
Hsien Feng	1851-1862	Wen Tsung Hsien	<i>Ting Ling</i> „ <i>Tung Ling</i>
Tung Chi	1862-1875	Mao Tsung Yi	<i>Hwei Ling</i> „ „ „
Kwang Hsü	1875-1908	Te Tsung Ching	<i>Chung Ling</i> „ <i>Hsi Ling</i>

About the end of the year 1929 the Asiatic News Agency gave forth a proclamation stating that the valuable properties of the mausolea of the Ta Tsing Dynasty should be preserved from deterioration as a result of negligence and that the Provincial Government of Hopei had formed a Board of Trustees for each of the *Tung Ling* and *Hsi Ling* grounds and its duty was to protect these famous grounds, and to prevent the lands from being encroached upon. The Provincial Council indeed drew up a set of regulations governing the organisation of these two Boards. These regulations provide for the conservation of these lands around the mausolea into the First and Second Afforestation Areas. However, in March, 1930, came widespread news that another attempt to rob the *Tung Ling* had been discovered and that a tunnel

had been dug into a tomb and many articles of value stolen. This proved that a gang of tomb-breakers existed, and they should be brought to deserved punishment.

As to the proposed continuation of the journey to Jehol, this failed on account of the inclemency of the season, as the footpath which goes straight north from Ma Lan Yü via Ma Lan Kwan and Ma Lan Kao, was inundated on the Mongolian side of the mountain divide over which in its inner chain the Great Wall of China runs, over the crests of hills and across valleys. This route being impossible, I went with my cart on a several days' journey towards the main entrance by water and land routes to the Chi Feng Kao and Tien Men Kwan mountain opening where also the Luan River enters from the Mongolian side into China. By this river along the gorges of North China, one can reach in a twelve hours' small boat trip, the railway station at Lwan (Luan) Hsien, formerly called Lwan Chow. At the points named it was also impossible to proceed. Not wishing to stand the discomforts of the journey needlessly by trying the other main route via Ping Chiang Hsien (Pa Kow) from where the distance to Jehol is about 200 miles, I returned to Tientsin.

When, after my lecture before the China Branch, Royal Asiatic Society on September 26th, 1929, I had occasion to have a charming chat with Mrs. Juliet Bredon-Lauru, the author of the fascinating work *Peking*, which she dedicated to her father, Sir Robert Bredon, former Inspector General of the Chinese Government Customs, this wonderfully informed lady asked me if I also had seen, when visiting the *Tung Ling*, the tomb of Emperor K'ang Hsi. I replied that my observations had been directed to the desecration and therefore this detail I had not paid any attention to. Subsequently however I looked up Lieutenant-Colonel Dubreuil's work, *Voyage d'Etudes sur Tong Ling*, where he describes his approach to the *Tung Ling* and relates to a large forest such as often seen around a princely tumulus or those of high dignitaries. He says that he saw the inscription on the front side of the temple, reading: "*Fou Tze Ta Tch'enn Tchen Ling—Tombeau du Grand Ministre Precepteur*" who had been K'ang Hsi's great literati and who edited the great works of this famous Emperor. As to *Peking*, by Juliet Bredon (on page 368 and 369) the following remarks are stated relating to this tomb. "Just outside the space reserved for the Imperial family, we notice two tombs. One is the grave of K'ang Hsi's old teacher whom the Emperor so greatly loved and revered that he permitted him to be buried as near his person as convention allowed. There is something very touching in the story of the influence of this old man over the absolute monarch whose youthful outburst of anger he could calm with a word, whose generous impulses he could quicken with a smile. For he represents all that was brave, true, noble, in the

older life, and he is an example of that peculiar oriental relationship between teacher and pupil which often endures throughout the life time of both—even when the pupil rises in position far higher than his master.....”

STORIES IN CHINESE PAINTINGS, II

By JOHN C. FERGUSON

In my book *Chinese Painting* I suggested in the introductory chapter that in judging pictures a knowledge of the spirit of people as expressed in their historical development, literary production and poetic conceptions is helpful in correcting the vagaries of personal taste and peculiarity. Such knowledge is not needed to enable one to appreciate the flow of line, the spread of colour or the composition of a Chinese painting. These characteristics speak for themselves in all countries and at all time. Chinese paintings in these respects have no standards different from those of other countries but in the realm of the subjects chosen by Chinese artists we find everything unfamiliar until these are explained. In the *Journal of this Society*, Vol. LVI, 1925, p. 110, I gave brief explanations of thirty-nine subjects of well-known paintings and arranged them according to their historical sequence. In this paper I have followed the method of grouping paintings together according to their common subject or, in the case of Li Kung-lin, the paintings of one artist.

THE CITIZENS OF YAO'S EMPIRE SINGING

堯民擊壤圖

*By Han Kuang (韓滉), T'ang dynasty,
and Li Sung (李嵩), Sung dynasty.*

Yao is regarded as the ideal ruler of ancient times. It is said that when after years of administration he wanted to find out what his people thought of his government he went out in private clothes and wandered about the country. He met with some farmers who were enjoying themselves after their hard day's work. They sang and danced. They had no musical instruments but they regulated their singing and dancing by beating against the ground. Their song was:

We get up and work when the sun rises,
 Stop when the sun sets;
 We dig wells from which we drink water,
 And plough the farms to get our food;
 What has the Emperor to do with our life?

This was all a scene of peace and happiness and the Emperor Yao was greatly pleased with the contentment of the people who did not realize that his attempt to establish good government was in any way connected with their happy lot.

HUANG CH'U-P'ING TENDING SHEEP

黃 初 平 牧 羊 圖

By Ku K'ai-chih (顧 愷 之), Eastern Chin.

Huang Ch'u-p'ing was a native of Tan-hsi (丹 谿). At the age of fifteen he was given charge of a flock of sheep by his elder brother Ch'u-ch'i (初 起). One day, while on duty he met with a Taoist priest who took him to a grotto in the Chin-hua mountains (金 華 山). There he lived for over forty years. In the meantime, his elder brother had been trying to find him but in vain. At last there came another Taoist priest who told Ch'u-ch'i that there was a shepherd in the Chin-hua mountains who might be his brother. Upon hearing this, Ch'u-ch'i went immediately to the mountains and found him. Ch'u-ch'i asked about the sheep and Ch'u-p'ing said that they were on the east side of the mountain. They went to the spot together and there Ch'u-ch'i found only what he thought to be white boulders, but curiously enough these boulders turned out to be sheep when Ch'u-p'ing called them to get up. This picture presents Ch'u-p'ing in this magical act of turning stones into sheep.

PO I AND SHU CH'I PICKING WILD PLANTS

伯 夷 叔 齊 採 薇 圖

By Li T'ang (李 唐), Sung dynasty.

Po I was the elder brother of Shu Ch'i. They were the sons of the Prince of Ku Chu (孤 竹), a feudal state of the Shang dynasty. Their father made the younger son the heir to his property but when he died Shu Ch'i ran away from his native state as he was unwilling to deprive his elder brother of the rights of primogeniture. The elder brother on his part did not wish to upset his father's will and he also fled the country leaving the estate to their younger brother. This was during the last years of the Shang dynasty. When the two brothers heard that Wu

Wang was starting an expedition against their feudal principality Shang they went and advised him that it was not right for a vassal state to start a rebellion. Their advice was rejected. After Wu Wang's uprising proved successful and the Chow dynasty was founded the two brothers bitterly opposed it and declared that they would not feed on its grains. They retired to the mountains where they fed themselves on ferns and finally perished of cold and hunger.

LIEH-TZU RIDING UPON THE WIND

列子御風圖

By Ma Yüan (馬遠), Sung dynasty.

Lieh Yü-k'ou (列禦冠), commonly known as Lieh-tzū (列子), is said to have been a native of the State of Chêng (鄭) and to have lived at approximately the same period as Chuang-tzū (莊子). According to Chuang-tzū, Lieh-tzū could ride upon the wind and travel whithersoever he wished, staying away as long as fifteen days.

THE EIGHT STEEDS

八駿圖

By Shih Tao-shih (史道碩), Chin dynasty.

Reproduced by Chao Mêng-fu (趙孟頫), Yüan dynasty.

Mu Wang (穆王) of the Chow dynasty had eight steeds, which are said to have been able to travel 30,000 *li* a day. With chariots drawn by these steeds he made extensive travels over the empire and visits to the Hsi Wang Mu (西王母), as explained in "The Festival of Wang Mu at Yao Ch'ih," Vol. LVI, p.112. According to the *T'u Hua Chien Wên Chih* (圖畫見聞志), during the reign of Wu Ti of the Chin dynasty, A.D. 265-290, a painting of these eight steeds made at the time of Mu Wang was found. As the painting was very indistinct on account of its age, Shih Tao-shih was ordered to reproduce it. This reproduction was handed during the Division as a national treasure from one dynasty to another down to the T'ang and during the reign of Chên Kuan, A.D. 627-650, it was loaned to the Prince of Wei (魏王泰) for reproduction. According to the *Ch'ing Ho Shu Hua Fang* (清河書畫舫), Chao Mêng-fu made a copy of this painting and it was in the collection of Wang Yüan-mei (王元美) of the Ming dynasty.

SUN WU DRILLING AN ARMY OF PALACE LADIES

教習女兵圖

By Ch'iu Ying (仇英), Ming dynasty.

Sun Wu (孫武) lived during the time of the Warring States and became a great expert in military tactics. He served as commander of the army of the State of Wu under Prince Ho-lu (閔廔) and through his military success the State of Wu became powerful. When he was first introduced to the prince he talked freely on military tactics and Ho-lu was greatly pleased. Ho-lu then asked if what he said was practicable for ordinary soldiers. Sun Wu replied that it was not only practicable for soldiers but for any one, including women. The prince was amazed at this statement and called out his palace ladies to try an experiment. Sun Wu took charge of them, dividing them into two companies and appointed two of the most beautiful, who were most loved by the prince, as captains. He proclaimed martial law which meant that anyone who dared to disobey the orders of the commander would be beheaded. He then instructed them how to march forward and backward, right and left. This was simple and every one understood, but when he gave his first order the ladies began to laugh. He called out a second time and then a third time but they continued to laugh. He then became very angry and had the two captains beheaded. The prince, who was sitting on a tower, tried to save them, but in vain. Sun Wu then had new captains appointed and nobody dared again to disobey him. In a short time the ladies were marching like well-trained soldiers.

VISITING TAI K'UEI

訪戴圖

*By Chu Jui (朱說), Southern Sung, and
Chao Po-chü (趙伯駒), Southern Sung.*

Wang Hui-chih (王徽之), a son of Wang Hsi-chih the great calligraphist, A.D. 321-379, lived in retirement in Shan-yin (山陰), modern Shao-hsing (紹興). He was also a noted scholar and calligrapher. He had a friend named Tai K'uai (戴逵), who lived at Yen-hsi (剡溪). some distance from his house. One day there was a heavy snowfall but the sky cleared at nightfall. The effect of the bright moon shining upon the snow was so pleasing to

Wang that he wanted to enjoy it with his friend Tai. Immediately he ordered a small boat and started for Yen-hsi to see Tai. The journey took him some hours and on the way he lost his enthusiasm for the moonlight so that when the boat finally reached the gate of Tai's house he decided not to disturb him and returned to his own home in Shan-yin. This picture presents Wang on his way to visit Tai.

MING HUANG

No Emperor has been the subject of so many paintings as Ming Huang, the sixth Emperor of the T'ang dynasty, and no Empress as his consort, the beautiful Yang Kuei-fei. In this Journal, Vol. LVI, 1925, p. 127, mention is made of this Emperor in "The Game of Polo," painted by Li Kung-lin. Other paintings of him are as follows:

MING HUANG IN A MUSICAL PERFORMANCE

明皇演樂圖

By Han Kwang (混韓), T'ang dynasty.

This picture presents the Emperor in a musical performance. He had a band of 300 musicians and he would spend days and nights in training them. He was an expert in musical instruments and has been honoured as the God of the Stage. (See *Chinese Painting*, p. 76.)

MING HUANG TEACHING HIS SON

明皇訓子圖

Reproduction of a T'ang dynasty painting by the Emperor Hui Tsung of the Sung.

Ming Huang is here given as a teacher instructing his son. The boy has a book in front of him and is listening attentively to his father. On one side is standing a general in uniform with hands folded on his breast.

MING HUANG RAMBLING IN THE NIGHT

明皇夜游圖

By Wên Chêng-ming (文徵明) Ming Dynasty.

This picture presents Ming Huang in the Imperial chariot going for a drive in the night with the palace ladies.

MING HUANG AND FOUR OTHER BROTHERS

五王同幄圖

By Huang Yen-hao (黃浩延), Five Dynasties.

Ming Huang had four other brothers whom he loved dearly. He always enjoyed their company. After he became Emperor he feared that his brothers would no longer remain on intimate terms with him. Therefore he had a bed cover large enough to cover all the five of them made under which they used to sleep together just as they did when they were young.

MING HUANG PLAYING A JADE FLUTE

明皇吹玉笛圖

By Huang Yen-hao, Five Dynasties.

There are also three pictures in which the Empress is associated with the Emperor:

THE FLIGHT OF MING HUANG TO SSŪ-CH'UAN

明皇幸蜀圖

By Li Chao-tao (李昭道), Tang dynasty.

This picture shows Ming Huang and Yang Kuei-fei and attendants just as they were leaving Ch'ang-an on their ill-fated journey to Ssü-ch'uan after the rebellion of An Lu-shan.

MING HUANG PLAYING CHESS WITH YANG KUEI-FEI

明皇太真對奕圖

By an unknown artist of the Sung dynasty.

MING HUANG IN THE HUA CH'ING PALACE IN THE
MOONLIGHT

唐玄宗月夜游華清宮圖

By Ku K'uei (顧達) Yüan dynasty

Hua Ch'ing Palace was the summer resort of the Emperor Ming Huang. He used to go there with his consort Yang Kuei-fei in the summer and stay on till winter. This picture presents him enjoying the scenery of the place in the moonlight.

The gay reckless life of the Empress Yang Kuei-fei is narrated in Vol. LVI, p. 128, in the comments on "T'ai Chên Mounting Her Horse." The other most noted paintings of her are the following:

YANG KUEI-FEI RETURNING DRUNKEN FROM YAO T'AI

楊太真瑤臺醉歸圖

By Li Kung-lin (李公麟) Sung dynasty.

This picture presents Yang Kuei-fei about to mount a horse. She had become drunk during a feast with the Emperor Ming Huang at Yao T'ai and the attendants are shown helping her to return to her Palace on horseback. (See *Chinese Painting*, p. 115.)

YANG KUEI-FEI SUCKING DEW FROM FLOWERS

太真醉挹花露圖

By Lady Liu (劉妃夫人), Southern Sung dynasty.

In order to rid herself of the uncomfortable feelings due to excessive drinking she would get up early in the morning after festive dinners and suck the dew from flowers. She found this, coupled with the fresh air, an excellent restorative.

YANG KUEI-FEI COMING OUT OF HER BATH

太真出浴圖

*By Chou Fang (周昉)' T'ang dynasty
and Yüan dynasty artist.*

There was a hot spring bath in the Hua Ch'ing Palace (華清宮), the Emperor Ming Huang's summer resort, and Yang Kuei-fei used to bathe in it. This pictures her as she is leaving the pool.

YANG KUEI-FEI IN A NAP

楊妃春睡圖

By Wu Wei (吳偉), Ming dynasty.

This picture depicts the Empress in a graceful posture during a nap in the spring time.

. . .

The great artist Li Kung-lin (李公麟), who lived at the close of the eleventh and the beginning of the twelfth centuries, preferred to paint historical and religious subjects rather than landscape. A description of this remarkable artist may be found in *Chinese Painting*, pp. 109-116. In my earlier paper on "Stories in Chinese Paintings,"

Vol. LVI, 1925, I mentioned five paintings by this artist, viz., "The Nine Songs," p. 113, "Home Again," p. 123, "Li Mi Submitting to Ch'in Wang," p. 126, "The Game of Polo," p. 127, and "A Gathering in the Western Garden," p. 132. Other interesting subjects depicted by this artist are given herewith:

ILLUSTRATIONS OF FILIAL PIETY WITH ANNOTATIONS

孝經圖并題

The *Classic of Filial Piety* is divided into 18 chapters and is a discussion on this subject between Confucius and his disciple Tsêng Tzū (曾子), a most filial son. In these chapters is emphasized the importance of filial piety from the emperor down to the common people, from the administration of an empire down to everyday life. Li Kung-lin gathered from each chapter the main idea and painted these pictures. (See *Chinese Painting*, p. 115.)

EXAMPLES OF LOVING PARENTS AND FILIAL SONS

慈孝故實圖

The first part presents Confucius instructing his son Li (鯉) to learn the *Book of Odes* and the *Book of Rites*.

The second part presents the youthful Mencius with his mother.

The third part presents the mother of Wên Po (文伯) of the State of Lu (魯) who, in spite of her high dignity, continued her work of weaving. Her son begged her not to do it but this grieved the mother who thought that her son did not understand the duties of persons according to ancient customs. She told her son that every person must have some work to do and that idle hands soon became wicked ones. She told him that for this reason the ancient system provided that from the emperor and the empress down to the common people, men and women, all should be employed. Weaving was the particular duty of women.

Su Kuang (疏廣) lived during the Western Han dynasty and in the reign of Hsüan Ti, 73-49 B.C., was appointed Grand Tutor of the Heir-Apparent. On his retirement from office he was presented with a handsome sum of money by the Emperor, the Heir Apparent and other officials. On reaching his native district he distributed this money among his poor relatives and friends and daily entertained his neighbours. Some of his friends advised him to invest money in land and buildings but he

refused to do so saying that he did not want to burden his children with money which they did not need and they already had the original property of the family. He said that if his children were good the additional money might take away their ambition, and if they were bad the money would make them worse. The part of the picture presents Su Kuang with his neighbors.

The next part of the scroll presents Tsêng Ts'an (曾參) and his father Tsêng Hsi (曾皙). This man was the subject of the preceding painting "Illustrations of Filial Piety." Many tales are told of his devotion to his father. Every day Tsêng Ts'an would supply his father with wine and meat. After his father had finished his meal, Tsêng Ts'an would ask what his father wanted done with the remaining food and would give it to anybody that his father mentioned. Whenever his father asked if there was any food left that could be given away, Tsêng Ts'an would always reply in the affirmative. In this way Tsêng Ts'an "served both the body and the wishes of his father" as the Chinese phrase aptly expresses the idea. This is contrasted with Tsêng Ts'an and his son Tsêng Yüan (曾元). After the death of Tsêng Ts'an's father, his son Tsêng Yüan also served him with wine and meat, but Tsêng Yüan never asked if Tsêng Ts'an wanted to give anything away. Whenever Tsêng Ts'an asked if there was any more, the answer was always in the negative. The idea of Tsêng Yüan was that he did not want to give anything away but to reserve all for his father. "Although he thus served his father in the body he neglected his wishes."

The next part presents Lao Lai Tzū (老萊子) with his aged parents. He was himself seventy years of age but in order to please his parents he dressed himself in fantastic clothes and played as if he were a young boy.

The next part presents a scholar named Tung Chao-nan (董召南), who lived during the reign of Chên Yuan, A.D. 785-805, of the T'ang dynasty. He was poor but he and his wife served his parents well. He would go out farming, or fishing, or picking firewood in the day and read at night. This filial conduct had most unusual influence. A hen belonging to this man took care of a brood of puppies while the mother was out searching for food. This part of the picture presents these scenes.

The last part presents T'ang Fu-jên or as she is generally called Ts'ui Shih (崔氏) with her filial daughter-in-law. The mother was very old and had lost

all her teeth. Every day the daughter-in-law nourished the old woman with milk from her own breast and in this way the old lady lived in good health to a ripe old age.

THE THREE WORTHIES OF THE KINGDOM OF WU

吳 中 三 賢

The three worthies of Wu portrayed here are Fan Li (范 蠡), Chang Han (張 翰), and Lu Kuei-mêng (陸 龜 蒙). Fan Li lived during the time of the Warring States and was the minister of Kou Chien (勾 踐) of the State of Yüeh. It was due to his clever scheming that Kou Chien was able to revenge himself on the State of Wu. After this success Fan Li withdrew from official life and wandered about from place to place in a boat. Chang Han lived during the Chin dynasty and was famous as a poet. He resigned from his official post saying that he longed for the soup and fish of Sungkiang. Lu Kuei-mêng was a poet of the T'ang dynasty and was accustomed to practise abstinence from food. He amused himself by roaming among the waterways in a small boat and by fishing. He took with him a few books and writing material. (See *Chinese Painting*, p. 115).

A HAIRY LADY

毛 女 圖

This lady was named Yü-chiang (玉 姜) and lived in the mountains of the Hua-yin (華 陰) district. Her whole body was covered with hair. She claimed that she was one of the Palace ladies of the First Emperor, Ch'in Shih Huang, and had sought refuge in the mountains at the downfall of the dynasty. There she fed on the leaves of the pine tree, becoming an immortal.

OPENING THE ALMS-BOWL

揭 鉢 圖

A mother demon had five hundred sons, who were scattered all over the world feeding upon the blood of human beings. The Buddha felt sorry for the people and, in order to stop the wrong doings of the sons of the mother demon, he had her youngest son, whom the mother loved most, arrested and imprisoned in his glass alms-bowl. Soon the mother demon appeared before the Buddha and begged for the release of her son, but the Buddha refused. The mother demon became angry and a war was waged against the Buddha. She was assisted by her other 499

sons and numberless other demons, They tried all possible ways to lift the alms-bowl and then tried to break it open, but failed. Then they attacked the Buddha with stones, arrows, swords and spears, thunderbolt and lightning, but on all sides the Buddha was protected by lotus flowers so that they could not hurt him at all. Seeing that the Buddha could not be overthrown by force the mother demon changed her mind and begged again for the release of her son, this time swearing never to do harm again to the people. Thereupon the son was released. This picture presents Buddha seated on a lotus pedestal surrounded by his attendants, and opposite him stands the mother demon with two female attendants following. At a distance from them on a rock is the baby covered with a glass alms-bowl. Behind the mother demon are many other demons accompanied by tigers, elephants and dragons.

THE LOTUS CLUB

蓮社圖

The Buddhist priest Hui-yüan (惠遠) lived during the Eastern Chin dynasty, A.D. 317-419. He was the founder of the Lotus School which teaches the doctrine of a Paradise in the West to which the worshippers of Amida Buddha are transported. A temple called Tung-lin (東林寺) was erected for him in the Lü mountain where he lived with Hui-ch'ih (惠持) and Hui-yung (惠永), two of his followers. Later, Liu Ch'êng-chih (劉程之), Lei Tz'ü-tsung (雷次宗), Chou Hsü-chih (周續之), Tsung Ping (宗炳), Chang Ch'üan (張詮) and Chang Yeh (張野), all noted scholars, came and joined Hui-yüan after giving up their official positions. Then came seven other priests, Tao-ping (通昺), T'an-ch'ang (曇常), Hui-jui (惠啟), Tan-shêng (曇詵), Tao-ching (道敬), Tao-shêng (道生) and T'an-shun (曇順), and at last two Indian priests, Pa-t'o-lo (跋陀羅) and Peh-shê (耶舍). They formed a club and were known as the eighteen worthies of the Lü Mountain. Hsieh Ling-yün (謝靈運), a distinguished poet, greatly admired the teachings of the priest Hui-yüan. He dug a pond for him and planted white lotus in it. From this came the name "White Lotus Club." Hsieh wanted to join the club, but Hui-yüan refused, saying that Hsieh's mind was too confused. T'ao Yüan-ming (陶淵明) was also a frequent visitor to the Club. While Hui-yüan greatly admired him and would have gladly taken him into the Club, T'ao did not care to

join it, as he did not like the doctrine preached by Hui-yüan. Another frequent visitor to the Club was a Taoist priest named Lu Hsiu-ching (陸修靜). Although they preached different doctrines they were great friends. There was a creek outside of the temple called Hu-hsi (虎溪), and it was Sui-yüan's rule after entering the temple never to go further than the edge of the creek, thus keeping himself in complete seclusion from the outside world. However, one day the Taoist priest Lu Hsiu-ching and T'ao Yüan-ming came and chatted with Hui-yüan and on their departure Hui-yüan walked and chatted with them and unconsciously passed the bridge over the creek, thus breaking his rule. Upon noticing it Hui-yüan and his friends had a long laugh together before separating. T'ao Yüan-ming was a lover of wine and had no admiration for Buddhism. In order to get T'ao to visit him, Hui-yüan would often provide wine and then invite T'ao to come and drink.

This picture presents the priests of the Club, some preaching, some standing, some seated in meditation and some preparing tea. Hui-yüan is laughing with the Taoist priest Lu by the side of the bridge; T'ao Yüan-ming is leaving the mountain in a basket carried by his son and one of his disciples; and Hsieh Ling-yün is just arriving on horseback. (See *Chinese Painting*, p. 114).

THE THREE WORTHIES LAUGHING BY THE CREEK

虎溪三笑圖

By Li T'ang (李唐) *Sang dynasty*.

The subject of this painting has already been described in the preceding paragraph on the Lotus Club. The three worthies laughing together over the mistake made by Hui-yüan in unconsciously crossing the bridge which he had fixed as the boundary of his retreat is here commemorated. According to *The Topography of Lü Shan* there was erected on the spot a *San Hsiao T'ang* (三笑亭) in commemoration of this occasion. From this it is evident that Li T'ang is correct in this painting.

There are many instances in Chinese literature of groups of famous men who were accustomed to foregather in some beautiful resort where they feasted and drank during intervals of composing poetry. This custom is still prevalent both in China and Japan. In my previous paper on "Stories in Paintings," Vol. LVI, 1925, p. 110, I mentioned several groups, "The Four Oil Men", p. 115,

"The Seven Worthies of Chu-lin", p. 120, "The Gathering at Lan T'ing", p. 121, "The Eighteen Scholars", p. 127, and "The Eight Immortals of the Wine Cup", p. 130. The following are other groups which have been the subjects of paintings:

THE NINE OLD MEN

九 老 圖

*By an unknown artist of the T'ang dynasty,
and Liu Sung-nien (劉松年), Sung dynasty.*

Po Chü-i (白居易), one of China's greatest poets, lived during the T'ang dynasty. After filling high official positions for many years he resigned and built a retreat at Hsiang-shan (香山), near Loyang, where he gave himself up to poetry and wine. He often had with him eight other old men and one day in the fifth year of the reign of Hui Ch'ang, A.D. 845, they had a feast together to congratulate themselves of their old age. They have been known either as "The Nine Old Men of Hsiang-shan" (香山九老) from the name of the place where they gathered, or "The Nine Old Men of the Reign of Hui Ch'ang" (會昌九老) which indicates the time they met. They were Po Chü-i, the host, 74 years of age, Li Yüan-sang (李元爽), the oldest of them all, 136, Priest Ju-man (僧如滿), 95, Hu Kao (胡杲), 89, Chi Min (吉旼), 88, Liu Chen (劉真), 87, Cheng Chu (鄭據), 85, Lu Chen (盧真), 83, and Chang Hun (張渾), 77. This picture presents these nine old gentlemen in a garden, three in a pavilion, two in a boat and four in the hall.

A MEETING OF AGED WORTHIES AT LOYANG

洛 陽 耆 英 會 圖

By an unknown artist of the Sung dynasty.

The meeting of nine old gentlemen held at Hsiang-shan as described in the preceding paragraph was highly admired by the scholars of the succeeding Sung dynasty and frequently similar meetings were held, but it was left to Wên Yeng-po (文彥博) to hold the Ch'i Ying Gathering (耆英會) in the fifth year of Yüan Fêng, A.D. 1082. The meeting was held at the house of Fu Pi (富弼) and the participants were thirteen. They were, according to age, Fu Pi, 79, Wên Yen-po, 77, Hsi Ju-yen (席汝言), 77, Wang Shang-kung (王尚恭), 76, Chao Pin (趙丙), 75, Liu Chi

(劉几), 75, Fêng Hsing-chi (馮行已), 75, Chu Chien-chung (楚建中), 73, Wang Shên-yen (王慎言), 72, Wang Kung-ch'ên (王拱辰), 71, Chang Wên (張問), 70, Chang Tao (張濂), 70, and Ssü-ma Kuang (司馬光), 64. Ssü-ma Kuang was the youngest of them all and he attended only by special permission. Wang Kung-ch'ên was not present as he was then at his official post in Ta-ming (大名). He wrote to Wên Yen-po claiming that as a native of Lo-yang and with his old age he should be included though he could not be present owing to official duties. There were in reality only twelve present, but it is customary for paintings of this occasion to give thirteen. It is winter time and the thirteen worthies are scattered in various parts of the hall and the courtyard where the prunus and narcissus are seen in full bloom.

THE FIVE OLD MEN OF SUI-YANG

睢陽五老圖

By an unknown artist of the Sung dynasty.

Tu Yen (杜衍) lived during the Northern Sung dynasty. He was once made prime minister during the first years of the reign of the Emperor Jên Tsung (A. D. 1023-1056), but shortly afterwards he was given an outside post. As he was already very old he soon resigned, and retired to his native district Sui-yang (睢陽). There were in the district four other old men, all of whom were his former colleagues in the government. Wang Huan (王渙), formerly of the Board of Rites, was 90 years of age, Pi Shih-ch'ang (畢世長) of the Board of Revenue, 94, Chu Kuan (朱貫) of the Board of War, 88, Fêng P'ing (馮平) of the Board of Communications, 85. Tu Yen himself was then 80. He invited them to come together and form a club called "The Five Old Men Club" (五老會). They used to have feasts together and compose poems. This picture gives the portraits of these five old men.

LI PO FEASTING HIS BROTHERS IN THE SPRING TIME IN A PEACH AND PEAR GARDEN

春夜宴桃李園圖

By Léng Mei (冷枚), Ch'ing dynasty.

Li Po, the great poet, was also a pleasure seeker. He has left an essay written in commemoration of a feast,

given by him to his brothers in a peach and pear garden when the flowers were in full bloom. It was at night, and lanterns were lighted. According to the poet the world was simply a hotel for all living creatures, and days and nights were travellers passing through the long space of time. The time assigned to an individual was very short and therefore he must seek to enjoy himself as much as possible. This was the season that he and his brothers continued to enjoy themselves by having feasts at night, even after having spent the whole day together.

. . .

SU WU (蘇武)

Su Wu was an official under the Emperor Wu Ti of the Han dynasty. He lived at a time when the Hsiung-nu were a source of great trouble to the empire. He was sent to the Hsiung-nu to carry on friendly negotiations but was detained by the Khan who wanted him to throw off his allegiance and enter his service. When he refused, he was thrown into a dungeon and was left there without food for several days. He kept himself alive by sucking snow and gnawing a felt rug; and at length the Hsiung-nu, thinking that he was a supernatural being, sent him away north and set him to tend sheep. In the meantime one of his friends named Li Ling (李陵), a military official, surrendered to the Hsiung-nu after a bad defeat and was given a high post. They were good friends and were all the more intimate when they met again in a foreign land. At length, peace negotiations between the Hsiung-nu and the Han were concluded and Su Wu was permitted to return to China. It was with great distress that they departed. Two paintings of which Su Wu was the subject are:

TENDING SHEEP

牧 羝 圖

By Li Ti (李 迪), Sung dynasty

This picture presents Su Wu tending sheep in the Mongolian wilds. There are a flock of sheep and five horses and two camels pasturing on a plain with Su Wu seated on the ground. In the background is the Ying Shan (陰 山) covered with snow.

FAREWELL

蘇李泣別圖

*By Ch'ên Chü-chung (陳居中) Sung dynasty,
and Chiu Ying (仇英), Ming dynasty.*

This picture present Su Wu on a desert plain with his flock of sheep. Li Ling in full uniform is presenting a cup of wine to him while informing him of the good news that he is permitted to return. As Li Ling said farewell to him Su Wu wept bitterly.

. . .

CHUNG K'UEI (鍾馗)

According to the *T'ien Chung Chi* (天中記) Chung K'uei was a spirit capable of devouring demons. During the T'ang dynasty when the Emperor Ming Huang was once suffering attacks of intermittent fever he saw in a dream a large spirit with a blue coat and a broken hat catching small demons and devouring them. The spirit said that his name was Chung K'uei and that he was a native of Chung-nan (終南). He had attained the rank of *Chin-shih*, but, failing in an examination, he had killed himself by knocking his head against a flight of stone steps. When the emperor awoke from his dream he found that his fever had all gone. Upon this the artist Wu Tao-tsū was ordered to make a portrait of the spirit and this is the origin of the legendary figure Chung K'uei. His portrait was hung up in doorways on New Year's Day to keep off wicked spirits during the T'ang, Sung, Yüan and Ming dynasties, but now it is used on the Dragon Boat Festival in some parts of the country. Just when this custom arose it is not known. Chung K'uei has been a constant subject for paintings and in every case he is depicted as being followed with demons. The following are examples of such paintings:

CHUNG K'UEI PLAYING A LUTE IN THE MOONLIGHT

鍾馗月下彈琴圖

By Ma Yüan (馬遠), Sung dynasty.

This picture presents Chung K'uei playing a lute under an old tree. In the background is a demon listening to the music.

CHUNG K'UEI GOING FOR A RAMBLE

中山出游圖

By Kung K'uai (龔開), Southern Sung.

Chung K'uei and his sister were out on a trip. They were carried by demons in sedan chair.

CHUNG K'UEI OUT ON A CIRCUIT IN THE NIGHT OF THE
FIFTEENTH OF THE FIRST MOON

鍾進士元夜出游圖

*By Wu Tao-tzū, (吳道子), T'ang dynasty,
and Yen Hui (顏輝) Yüan dynasty.*

On this occasion Chung K'uei is carried by three demons and he has a long drawn out line of guards and attendants. The 15th day of the first moon is regarded as an important feast day.

CHUNG K'UEI UNDER A PRUNUS TREE

梅花鍾馗圖

By Ch'ien Ku (錢穀), Ming dynasty.

CHUNG K'UEI IN A WINTER SCENE

寒林鍾馗圖

By Wên Chêng-ming (文徵明), Ming dynasty.

CHUNG K'UEI AND SNOW-COVERED TREES

雪林鍾馗

By Wên Chia (文嘉), Ming dynasty.

CHUNG K'UEI ESCORTING HIS SISTER TO MARRY
A HUSBAND

鍾馗嫁妹圖

*By Su Han-ch'én (蘇漢臣), Sung dynasty,
Yen Hui (顏輝), Yüan dynasty, and
Wang Chên-p'êng (王振鵬) Yüan dynasty.*

Chung K'uei left a sister at home when he became a spirit and she had no one to take care of her. He had a friend whom he greatly admired and decided to have his sister marry him. He first appeared before his friend and got his consent and then with a band of demons escorted his sister to her future husband's abode.

CHUNG K'UEI HUNTING

鍾馗出獵圖

By Ku Hung-chung (顧閔中), Five Dynasties.

CHUNG K'UEI ATTACKING A DEMON

鍾馗擊鬼圖

By Liu Li-chung (劉履中), Sung dynasty.

CHUNG K'UEI DANCING

舞鍾馗圖

By Liu Li-chung, Sung dynasty.

. . .

KAO TSUNG BEFORE HE WAS MADE EMPEROR

中興禎應圖

By Hsiao Chao (蕭照), Southern Sung, and

Ch'iu Ying (仇英), Ming dynasty.

This is a scroll in twelve parts presenting stories relating to the Emperor Kao Tsung, first emperor of the Southern Sung, before he was made emperor. These stories were compiled in order to show that he was the one commissioned by Heaven to revive the fallen Sung. The scroll was first painted by Hsiao Chao, an academician of the Southern Sung, and during the Ming dynasty Ch'iu Ying made a reproduction of it.

Part 1. The birth of Kao Tsung.

Part 2. In a dream his mother was told by two gods that she should not feed him with food left over by her.

Part 3. Kao Tsung practising archery.

Part 4. Kao Tsung on a mission to the Chins negotiating for peace.

Part 5. Kao Tsung on another mission to the Chins. On this occasion it was followed by four armoured gods who were invisible to all but herself.

Part 6. Kao Tsung on a mission to the Chins reached a temple in the Tz'u-chow (磁州) district. Here he was begged by the residents to go back lest he be taken prisoner by the Chins.

Part 7. Kao Tsung's mother as prisoner in the camps of the Chins divining with men of Elephant Chess. The divination shows that it was he that was to become the future emperor.

Part 8. While Kao Tsung was still lingering at Tz'u-chow a band of cavalry of the Chins came to arrest him. On their way they asked an old country lady about the whereabouts of Kao Tsung and she told them that he had left for Shantung two days earlier. Upon hearing this the men retreated and thus Kao Tsung was saved.

Part 9. Kao Tsung shooting with bow and arrow from a pavilion.

Part 10. Kao Tsung hunting.

Part 11. Kao Tsung crossing a river. It was winter time and he crossed over it on ice, but just as he reached the bank the ice broke and his followers fell into the water.

Part 12. After the emperors Hui Tsung and Ch'ing Tsung were taken prisoners, Kao Tsung was made commander of the forces. One night in a dream he met the Emperor Ch'ing Tsung who took off his dragon coat and put it on him. This was another omen that he would succeed to the Throne.

READING A TABLET

讀碑圖

By Li Ch'eng (我李), Sung dynasty.

Ts'ao O (曹娥) lived during the Eastern Han dynasty, on the bank of a river at Shang-yü (上虞). One day her father fell into the water and was drowned. She wept and wandered along the bank of the river in the hope of finding his body for seventeen days with no result and finally she committed suicide by throwing herself into the river. Several days later her dead body rose to the surface, clasping in its arms that of her father. This act of devotion to her father was greatly admired by the people and a tablet was erected by them in her memory. The inscription on the tablet was composed by Tu Shang (度尚). Ts'ai Yung (蔡邕), the great calligraphist, heard of this tablet and went to see it. He reached it by night and, as it was dark, he read the inscription by tracing it with his fingers. After having read it, he wrote the phrase 黃絹幼婦外孫齋白 on the tablet and left. This is a puzzle phrase meaning that the composition was unusually good (絕妙好辭). Some years later Ts'ao Ts'ao (曹操) passed the tablet with some of his literary friends. He had heard of the tablet previously and the picture presents him reading the tablet and trying to solve the puzzle left by Ts'ai Yung. (See *Chinese Painting*, p. 89).

SALUTING A BOULDER

拜石圖

By Mi Fei (米芾) Sung dynasty.

Mi Fei, an artist and scholar, was an eccentric character. When he was magistrate of Yü Hsi (濡須), a district in modern Anhui province, he heard that there was a curiously-shaped boulder lying on the bank of a river. He gave orders to have it carried to his official residence to him. He was greatly pleased with it and immediately saluted it calling it his elder brother in the same way as if he were addressing a great friend who had just arrived. This was depicted by Mi himself in this picture.

REFUSING TO SHELTER A WOMAN IN A RAINSTORM

魯男子閉戶圖

By Wang Meng (王蒙), Yüan dynasty.

According to the Family Records of Confucius (孔子家語) there was once a man of the State of Lu, who lived in a house near to one occupied by a widow. One night there was a great rainstorm in the midst of which the house of the widow collapsed. The woman went to the man's house and begged for shelter. He refused and would not open the door saying that according to the rites it was not proper for a man and a woman under 60 years of age to stay in a room together. The woman contended that it was quite proper and cited the example of Liu Hsia-hui (柳下惠) who once held a lady in his lap without suffering the slightest imputation on his moral character. The man replied that this might have been possible with Liu Hsia-hui but not with him. The woman was kept outside in the storm.

T'EN CHI-TZŪ'S MOTHER REFUSING A BRIBE

田每拒金圖

By an unknown artist of the Yüan dynasty.

T'ien Chi-tzū (田稷子) was prime minister of the State of Ch'i (齊). One day he was presented with a bribe of one hundred pieces of gold by a lower official. He accepted it and took it to his mother. The mother became very angry. She told him that she would not

recognize him any longer as her son since he had been so dishonest as to receive a bribe. T'ien Chi-tzū became ashamed of his action and, returning the bribe to the man, appeared before the King and told him the whole story, asking to be punished. In view of the prompt disavowal of the evil deed the King forgave the son and made a handsome present to the mother.

LANGUAGE AND NEW THOUGHT

or, New Words for New Ideas

By Dr. EVAN MORGAN

We are living in an epoch of exceptional weight in the creation of new words. It is an age full of perplexity and difficulty, of disaster and change. It is an age of transition and cataclysmic events; nevertheless, it is an age rich in new thought and words, which are finding their way into the new dictionaries. "Boycott," "Bolsheviks" (*Ti chih* and *Chin lieh tang*), new ideas and new words, both in English and Chinese, which will be the interesting study of some future historian as he tries to expound the catastrophic age of the 20th century—for the rumblings and reverberations of the present will pass through many future centuries, and be recorded, partly, in the words the present is creating. We may even imagine the scholar in some distant age trying to reconstruct the idea of *mo t'o k'a* in some ancient script, wondering what it could have been; just as we are trying to-day to know of the self-propelling machine invented by the Duke of Chou about 3,000 years ago.

This generation in the midst of the hurly-burly of new experiences is in the condition governed, as the Chinese say, by the subjective point of view and is like the cicada and the young dove, which see things from their own point of view. (*Chuang Tzu*: Giles, p. 306). We are meeting with new experiences, feeling after new expressions, finding new things and making fresh discoveries, and human-like, endeavouring to put these into signs and symbols that can be understood. Like everything else, language is in the process of development. Whilst it would not be correct to say the language is new, nevertheless, there are many new things in it. And the new things are finding much favour. But the law of order must be remembered. Dean Inge has said: "It is most significant that the Gospel at once introduced a new ethical terminology. The Greek words which we translate love (or charity), joy, peace, hope, humility, were no part of the stock-in-trade of Greek moralists before Christ.

Men do not coin new words for old ideas." The rule, then, is new ideas first and then new words to describe the new things.

New things and new ideas and so new words are appearing in great abundance in every country. Speaking of English, Professor Kerr says: "No dictionary can keep up with the language: for new words spring up the day after the sheets have been passed for the press. A great number of words were brought into use during the war. The *Oxford English Dictionary* has included all words that are likely to last. Thus in the last section there are 'strafe' and 'stunt.' 'Strafe' is from the German; 'stunt' is of doubtful etymology, but is traced to the slang of American college athletics. We have the 'U-boat.' 'Rand' is not included, never having had more than a local significance. 'Camouflage' is likely to live; so is 'khaki,' a word of Urdu origin."

Some Chinese writers and speakers greatly affect new terms. They think it elegant: they imagine it creates more impression to use them. They exist in every age. Bruyère, you remember, wrote one of his essays on such people, and critics here have also pointed the finger of scorn at these lovers of new words and doctrines.

THE SOURCES OF THE NEW WORDS

The editors of the New Edition of Hillier's dictionary say in their Preface: "The eight years which have elapsed since the first edition of this dictionary was published have witnessed the advent of a Republican regime in China, followed by a development of parliamentary and legal institutions, and of the press, all of which events have had a marked effect on the language. New terms have been found necessary in order to enable public and private speakers and writers on the events of the day to convey to their audiences the new ideas connoted by revolution and progress. It was inevitable under the circumstances that, in order to meet this need, recourse should be had in the first instance to the kindred language of the neighbour Japan, where large stocks of expressions coined in recent years to give currency in the East to the ideas of the West were ready at hand. So marked has been the Japonisation of the modern Chinese vocabulary as a result of this borrowing that it is hardly too much to say that a Japanese dictionary has become almost an essential in the study of the language in its present form."

There is truth and exaggeration in this. It is true that Japan has been a factor in the creation of new words, or rather, in the resurrection of old words: but it is an exaggeration to say that there has been a Japonisation of the modern Chinese vocabulary. In English the influx of French words during the Norman conquest was considerable but the language was still Anglo-Saxon and maintained its identity. It was in no sense Gallicized. The example is a suitable parallel to the present tincture of words from Japan. Chinese remains Chinese, and the language is in no sense Japonised. Even most of the words that bear the Japanese complexion are old Chinese terms. The words of purely new Japanese creation are very few. Another apt illustration of the case may be found in the expressive slang of America. These can be traced largely to old English, as is pointed out by Mr. Lowell in that interesting disquisition that forms an introduction to the Bigelow papers. Further it is questionable how far this influx has affected the colloquial. It mostly affects literary compositions. It is true not a few new terms have been coined by the Japanese, like the words "police station" and "police beat" (交番), many legal terms, political, chemical terms and terms in physics have been adopted and will stay in the new family. But it cannot be maintained that all of the Japanese terms that have been introduced and found currency in the Chinese language will remain, for the simple reason that the storehouse of Chinese words is full, and well stored with a great variety of words that can be used to meet new conditions.

HOW NEW PHRASES ARE MADE

Let us consider more definitely how new terms are created. They are created in many ways:

1. New combinations.
2. New contents and thought given to old terms.
3. New dress.
4. New formations.
5. New phrases introduced by transliteration.

Generally speaking the Genius of Language hunts amongst the piles of old materials for suitable words to new ideas, and in this respect it may be pointed out that there is a difference between the method used in English and that used in Chinese. English has borrowed largely from outside. Its structure helps it to do so. Chinese on the other hand borrows largely from within in the creation

of new terms. It has abundance of reserved and mellow stores from which to draw. They have taken ideas only from within as a general rule.

Thus, then, for the most part the language develops by a new shuffling, new combinations, new arrangement of old words. Very often a new content is given to an old phrase. The word for "prayer" is *tao kao*, but the custom and the experience of the Christian church has given a new content to the ancient word so that the phrase is considered to be a new one.

But the great way is one of new alliances: new partners. These are being constantly formed. Just as a family grows by new alliances begetting new children, so with language. Take for example, "railway," *t'ieh lu* or *t'ieh tao*. *T'ieh*, "iron" and *tao*, "road" are old words. But, until recently, they were never in alliance. There have been many roads beside the railroad. But the experience of the Chinese was limited until the thing itself came upon them—they had not heretofore passed over this, but when it did come, they were ready with a name, "iron-road." I believe that was also the first name given to the invention in English: they called it the "iron-road" and the "iron-horse." The Chinese have done much the same. It will be known that the Chinese also have the railroad, *kuei tao*. In both languages we thus have the road, the characteristic of which is rails, or iron bars in line. In connection with this railway enterprise, it will be noticed that the Chinese have hovered between two words, i.e., *tao* and *lu*. The words themselves you know in an old combination *tao lo*, "road"—and both are used in the new terms. *T'ieh tao kung sso*, "railway," but we also have *t'ieh lu tse lieh*, "railway by-laws." Possibly, the hovering between *t'ieh lu* and *t'ieh tao* is a matter of provinces. In Shantung *t'ieh tao* is more common: in Shansi, *t'ieh lu*. *T'ieh lu* possibly is the more *Wenli*-ish—and *t'ieh tao* is more Mandarin.

With regard to the "iron road" and its corresponding *kuei tao*, the Chinese is perhaps more exact than the English. In Chinese *kuei tao* refers purely to the rails rather than to the road—where in English the road itself is "railway." Take again another method of getting at a new term—purely using an old term and one in constant use, such as *Ming ling* (命令), an Imperial command pure and simple, but which now may be used by provincial authorities. Thus the change in regime has given a totally different complexion to an old term. Fancy, if

people twenty years ago thought the Governor of Kiangsu could use a *Ming ling*. The power of a *Ming ling* was vested in Heaven and his Vice-Regent on Earth. It would be sacrilegious for any one else to use it. Mencius, possibly, that fine old democrat, might see some reasons for it, but what would the venerable Confucius think of such things? Thus future investigators must know something of history when they come to speak of the transitions in idea of this great word. How it was that the Monarchy was overthrown in 1911, and the ideas and institutions of China underwent a cataclysmic rupture. *The old terms remained, but they connoted new ideas and so may be classed as New Terms.* There are even more startlingly new ideas than that seen in *Ming Ling* arising from a new regime. One of the most noted is *t'ung pao* (同胞). This again is a very old term, used always of brothers born of the same mother. But under the stimulation of new and powerful influences, the idea expanded and the country became the one mother, and "all we are brothers." The expansive power of new ideas bathing old words with new significance, and baptising them into a new consecration. So we have the *ssu wan wan t'ung pao*, the 400 million brothers, having a common heritage and bearing a common duty and destiny—a great uplift in human progress. So we have the new spirit indicated in another new term, *Chung Kuo Hun* (中國魂), a term of great significance and import. The Chinese were provincial in their ideas once: every man for himself. There was a moderate provincial, local spirit, but it was extremely parochial, as a Chinese scholar expressed it to me during the Sino-Japan war—"so long as they don't come to Shansi I don't mind what happens to the Peking crowd and the maritime provinces. The war is their business." How different from this spirit is the idea of the *ssu wan wan t'ung pao*—resulting in *Chung Kuo Hun*. National brotherhood, national unity have appeared on the threshold uplifting men's spirits, and women's too, commanding them to care for the precious heritage handed down from the *San Wang*, Three Kings, and *San Tai*, Three Dynasties, through the long vista of many centuries, with their varying experiences and fluctuating fortunes. The angel-wings of ancestry have been flapping over these millions, calling on them to take possession of what by right belonged to the people, and which had for so long been unlawfully arrogated as the possession of a reigning house and

looked upon as a bit of personal property—an idea greatly encouraged by Chinese philosophers, generally arising from their view of the constitution of the Universe and the divine rights of individuals, who in turn were appointed by some star according to Chinese cosmological ideas.

What is this *Hun*—this soul that goes up when it leaves the body? It has hovered over the spiritual chaos of China for millenniums and discharged many functions, in their theories. In the new age, and combined in a new term, it is limited and defined. But being limited and defined it seems to find a new sphere of usefulness. It has found its own at last—the *spirit of a people*.

Closely allied to this is the word “nationality” expressed by the two terms, *kuo t’i*, “nationality,” and *kuo chi*, “international.” What strange thing has appeared on the scenes with these new terms. The ancients knew a *kuo*, country, and a *t’i*, body, and *chi*, limit. But their combination is a strange introduction into the family. It is a new word even in English arising like the Chinese through new conditions. The word “nationality” in English is not found in Dr. Johnson’s two folios which appeared in 1775. He has nothing further than “national,” a word he defines as “begotten to one’s own country”—the essence of the older Chinese idea, by the way. What then is this combination, a country and a body added in Chinese, and indicated in English by the suffix “-ty.” Philologists tell us that “-ty” is a suffix in abstract nouns. “Nationality” is then an abstract noun—but with immense potential promise. Substantial enough to sway people, both small and great, and bend them under its influence like the breeze swaying the undulating grass. “What nationality are you?” is a sufficiently significant question to-day. The ancients of China had no need to coin such a word. There was only one nation to them, and all the others were but insignificant barbarians. But the world has grown and knowledge has expanded, and “nationality” stands in the midst to give a name to this potent thing.

Following on this we have another new term which is important, *Wu Tsu Kung Ho*, “the Republic of the Five Races”: the Five Races are one family—the Unity of China. Lord Acton says: “If we take the establishment of liberty for the realisation of moral duties to be the end and object of civil society [and Acton did so take it], we must conclude that those States

are substantially the most perfect which, like the British and the Austrian Empires, include various distinct nationalities without oppressing them. Those States in which no mixture of races has occurred are imperfect. A State which is incompetent to satisfy different races condemns itself. A State which labours to neutralise, to absorb, or excel them, destroys its own vitality. A State which does not include them is destitute of the chief basis of self-government. The theory of nationality, pure and simple, is a retrograde step in history." Now Lord Acton's definition of nationality is just the very thing China has. She has not only a name but the very substance of the thing itself. We should add that it is ominous that Dr. Sun abolished that flag for "one sun in the clear heaven."

It might be advisable at this point to introduce a little caution as to the use of new words. We might very well recall to mind the imperfection of words. This applies equally to new words and old, and to every language. John Locke laid down certain general ideas on these lines. First of all, "by recalling to mind what the primary use of words is, we shall be ready for certain imperfections and inconsistencies. What philologists and users of language should be on their guard is not to perpetuate a wrong use of a new term, but rather help to recover its proper and lawful use.

"Words are used for recording and communicating ideas for our own use, and to communicate with others. In a sense they are only symbols. Now if a man uses the same sign always for the same idea there will be no difficulty or confusion. But where identity of use is lost uncertainty of meaning creeps in. Words in common use, in conversation and commerce are easily stereotyped and come to have a fixed meaning to all. In such subjects as philosophy and theology, where the ideas are more recondite and the meanings not quite so clear, since they are not so frequently used, it is easy to see how imperfections arise. The speaker and the hearer again may understand different things by the terms used. Hence there is a degree of doubtfulness very often."

New names in English such as "shun," "wheedle," "banter," were created by the inventor to indicate certain ideas he had in his mind. At first possibly these did not convey quite the same idea to those who heard. So it required time and use for them to gather round them the same definite meaning. So it is with new terms in every

language. *K'ao lü, k'ao lü*, "Consider, consider," is a new term in the mouths of the people; but do they have any definite idea of what they mean? Or do they mean the same to every one? Complex ideas again are naturally more difficult than simple ideas. For instance, children learn names by connecting them with things, such as stone, dog, door. But once we come to the more abstract, the imperfection of words is easily more apparent. And so in authors and writings. I think it was Dr. Abbot who pointed out the difficulty of finding out the exact meaning of writers, even of such a clear writer as Macaulay. There are many similar difficulties with new phrases.

For instance in the use of the word *chin*, "metal," a foreigner very often is led astray by an imperfect experience of it. He saw in the primer one meaning attached to it, and he is inclined to apply that meaning to the word always, forgetting that there may be many other meanings as well. This, of course, created difficulties and discouragements. I was at a meeting a few weeks ago where the subject was Internationalism. There was a paper, and much discussion over this new term and new idea, just as there would be of its counterpart of *Kuo Chi* in Chinese. It struck me later that the meeting had forgotten one of the most essential factors—and that was the exact meaning of the word. Hazy and confused ideas floated about, and therefore no exact conclusions could be reached.

John Locke gives an instance of a similar difficulty that occurred in a meeting where savants argued the possibility of a liquid passing through conduits of the nerves. No agreement could be reached until it was suggested whether they all agreed on the word they were using, "liquor." It was found they did not. When the word "liquor" was defined they all did agree that some subtle matter did so pass.

And again the word "nationality." It is a new word in almost every language. What really do the Chinese mean by "sovereignty," "nationality"?

After this digression let us return to the appearance of the *hun*, "spirit," and *t'i*, "the body." In new combinations they will surely bring with them something more than abstract ideas, and we shall find that they have brought their blessings. In the 18th Essay of Huai Nan Tzū, we read *Chiao*, the great word for the Sacrifice of Heaven, in the open. When people sacrifice at the *Chiao*, or *Wang*, or *Ti*, or *Chiang*, they do not thereby pray for

the oncoming of any blessings. But those will come indirectly; "it is an indirect result of their piety." So we may say that the new apprehension of the national spirit and nationality will also indirectly bring blessings—the only blessings worth having, such as the idea of the "people's power," *min ch'uan*. It will bring "civil law," *min lü*, *min fa*: create "a parliament," *i hui*, *kuo hui*: and give them "elected representatives," *min hsuan i yuan*. They will be saddled with "republicanism," *kung ho chu i*: and the "national flag," *kuo ch'i*, will float proudly on their frontiers. It will bring them the "right of sovereignty," *chu ch'uan*, "nationalism," *kuo chia chu i*, "personal rights," *ko jen yu tzu ch'uan*: "national possessions," *kuo yu*. Note the simplicity of this last phrase.

And correspondingly there will come also a few complications indicated by the term *kuo chi*, "international"—and a host of related and cognate terms. You will notice that the older new term *wan kuo* has been abandoned for the newer term *kuo chi*. How, is not quite clear to the historian. But I expect that the second word in the term, *chi*, was the deciding factor in favour of the newer term—*chi* implies contact, a pass, a crisis, so that "international" implies a certain difficulty, and diplomacy is required to smooth out matters.

Thus we are being gradually prepared for another phase of new terms but one still closely related to these which have gone before. Where the blessings hover, there—not far off—are sure to be mischievous sprites. The "open door," *men hu tung k'ai*. Just think of this little demon facing the courteous old strict guardian of the law. He did his best to kill the *kuei*, by erecting walls and that kind of thing.

The Chinese theory of unity is really a profound one. Its doctrine is very deep-rooted and its fruit widespread. It has entered into every department of their life, political, social and theological. For this reason the ancients disliked the ideas of faction, party, and so on. Thus all such words as *hui*, "association," *tang*, "party," *p'ai*, "faction," were tabooed. To them the presence of such elements implied anarchy of the ordered harmony of the Universe, as well as danger to the government. From their point of view, and you must remember they, too, were the cicada and the young dove looking at things subjectively, the people had only one right and that was the duty of paying taxes: the only liberty they should have was

that of doing their duty and so on. And the "individual," *ko t'i*, had very little room. So the emancipation of the human spirit by the arrival of the *hun* and *t'i* unfettered the people from their shackles, and such an innovation must have been very galling to the strict Confucianist. But things were bound to come. In a certain way, however, the old Confucianist was quite right, for with the blessings that came with the emancipation of the human mind there came also disturbing factors into the camp. These persons are represented by the *tang*, by the *chiao hui*, by the *p'ai*. There are altogether too many of them. These new terms then imply, partly, unhappy ideas. They are birds of ill omen, but somewhat necessary even as carrion birds are useful.

There are certain other disturbing elements too, seen in such terms as "foreign debt," *kuo chai*, and the "audit of National Funds." The ancients knew none of these things. The country was self-sufficient. The bounty of Heaven had provided for every need. In the bitter lot of the world to-day, shall we say that the new is better than the old? Evil days dog the footsteps of the good.

But perhaps enough has been said on this side of it. Let us pass on to another phase of new terms. In social life, in the homes, in business concerns, for instance, and especially in politics, we have generally three forms of combination. We have the equal partners; we have the manager and his assistants; we have the master and his ministers, and we have the husband and wife in the home—almost equal but, of course, not quite so.

So it is in language: we have the main part standing alone sometimes, or the chief factor supported on the one side or the other by aids, by helpers, or we have partners of equal standing co-operating, or perhaps the one a little under the other.

Let us take first of all the partners in the work. There is *yao ch'iu*, "claim." This noun is apparently made up of two verbs, both meaning to ask, to demand. They have become equal partners. In another phrase *yao ch'iu ch'üan*, "right of claim": the *yao* and *ch'iu* are subordinate to *ch'üan*, the "rights" asserting themselves. This has become the predominant member: the old is the defining assistant. A very good illustration I think in English is the word "thunder-clap." The two separate limbs have become an identical one body: for a thunder-clap is that one thing done, alone and nothing else. The component parts are apparently of equal value. *Ssü fa*

is another. It is the word for "judiciary," "judicature," a phrase made up of two old words: *ssu*, meaning "to control," and *fa*, meaning "a law."

Now take *hsi*, a "mat," a very old word—when they had no chairs, they sat on mats—almost the earliest in any language, implying kneeling ceremonies and so on. It appears too in the new terms. To be present at a meeting is *ch'u hsi*—come forth on the mat. Absence from a meeting is *ch'üeh hsi*, the mat is absent. It is very interesting to note these traces of ancient courtesies with the new age. It does not mean to break with the past: it is a development. You will notice that certain words are partners and assistants: *fa* is such a one. *Fa tu*, "law," "pattern" in the old, an equal partner; but in the new it may be an assistant as well, *pien cheng fa*, "rules of debate." But as a rule it maintains its old standing, "law," receiving its modifications from the nature and colour of its qualifying assistants such as *Kung fa*, "Public law," *Po ch'an fa*, "bankruptcy law."

Some terms are both masters and assistants: *chu i* is a good case in point. It is a master-word, "theory," "policy": as an assistant it is an influential suffix "-ism." It is one of the most useful words in either capacity to the writer and speaker. "Despotism," *chuan chih chu i*: "pacificism," *ho ping chu i*, "Monroeism," *pao shou chu i*: Take *li*, "strength." In combination with water, it is the dominant idea. *Shui li*, "hydrostatics," *ya li*, "pressure." But changed about in order as in *li hsueh*, "dynamics," it becomes the defining word. In *hsueh li*, "education gained with effort," it is again master: but in *chu tung li*, "motive power," "directive force," it may be half and half like husband and wife. It corresponds to numerous suffixes in "-ity," "-ation," "-ancy," as in "buoyancy," *fu li*, *shang fu li*.

The Chinese language has great facility in making new words. Years ago, Dr. Wells Williams made the statement that Chinese was the most competent language to become a universal one, if only facility in making new words was the only requirement. In this respect the Chinese has certain words, and these not a few, which it can take as terminals or suffixes and thus create new compounds with ease. Take for example the word *chung*, "kind," "sort," "class." By adding the qualifying word we have white, black, brown races. Take *chieh*, "world," and we can form the "legal world," *fa chieh*; the "student world," *hsueh chieh*; the "press," *pao chieh*; "gentlemen," *shen chieh*, and so on.

Chiao, fa, chih, tao, li, i, wu, hsueh, shuo, so luei, k'o, p'ai, hui, tang, chia, chan, li. These are some of the many words the language has at command for the creation of new terms to express new ideas. Most of them may be used as prefixes and suffixes. They are most useful instruments for creating a rich vocabulary.

To return again to the more general aspect of the question we notice first that there are many terms which are ephemeral: they know not a spring and autumn life, as the Chinese say. They are like the cicada. They only have a summer's life—and soon pass away. They know neither a spring nor autumn of life. They are not strong enough to last the more severe weather of popular use. Partly the reason also is that the thing for which the word stood exists no longer. This is most true of words dealing with governmental affairs. These words are as unsteady as the government they represent. Think of the phrase *Tsung t'ung*, "President." Only a few years ago what struggles there were to get into this position of honour: what millions were squandered, what trampling of liberty to step into this coveted position—the throne of power as people supposed. We think of the good-natured Ts'ao Kun and the loyal Wu Pei-fu. But the honour was fleeting. Ts'ao is a private person to-day—enjoying himself in some quiet spot. The very name has gone out of the vocabulary. None speaks of a *Tsung t'ung* to-day. *Nuei ko*, "privy council," *tuchun*, "provincial governor," and *sheng chang*, have all passed out of existence. New names have appeared. In place of *Tsung t'ung* we have *chu hsi*. *Chu hsi* is "chairman." Have the Chinese lost their skill or do they think the word "chairman" is big enough to cover the duties of the head of the country?

Some words again have undergone a change. For example, the word for "professor" used to be *chiao yuan*, coined by the Japanese. But now the phrase *chiao hsi* is the one in use. The change has been made from a nice appreciation of language. *Wan kuo* has given place to *kuo chi* in all words referring to international matters.

TRANSLITERATION

Of transliterated words there is abundance. It should be noticed here that China is quite as accommodating as the English which is self-preserving because it is not too proud to borrow from others. It borrows wholesale from Greek and Latin, not only initials and terminals

but whole words. The Chinese does so too, but more by transliteration. "Tun," "ultimatum," "motor car," and a thousand others have been transliterated. Geographical and biographical names are bewildering, ugly and impossible in many cases. Popular articles of Commerce, like Carbollic (Acid) are transliterated for popular use. *Ta la* (dollar) is of course much in use.

Let us now return to a few general considerations and to a review of certain special forms of the question. Let us take first of all certain aspects in the *abuse* of language. You will remember that John Locke has a chapter on this. And he specifies certain headings on this source of difficulty.

1. Words without any clear ideas. For instance what are the ideas conveyed to your mind by *Hsin fa ming* (新發明) and *fa ming* (發明)? They are both used.
2. Abuse arising by learning names before the ideas they belong to.
3. Inconsistency and unsteadiness in the use of new words and phrases.
4. Affected obscurity by wrong application.
5. Logic and disputations.

Now inexact and confused use of words is a danger to society and tends to destroy the instruments of knowledge and communications. And very often the learned by their quibbling in words and developing them into a state of fineness that led to trouble, as the Taoists say, "If you grind the axe too fine you will spoil its edge": and very often it has been found that the unscholastic statesman and unlearned mechanic have been defenders of liberty and the promoters of the arts more than the glib talker, so it behoves us to know exactly what we mean by the terms we are using. I must confess though that often words and phrases are obscure and entangled and doubtful. It is hard to get proper meanings out of them since they are beset by "briers and thorns and obscure thickets" that make it difficult of getting close to them and seeing them clearly.

There is one other vital element regarding new terms that should be watched with care especially by the Chinese and it is to take the words for the things. All are liable to err in this respect. There are many fine words high sounding and pompous phrases current in and around us. "Liberty," "Free thought," "Privilege," "the rights of the

people," "Free institutions," "Republic," "Democracy." The end of words is not in themselves but in the things they represent. So it is absolutely necessary to be clear on what is meant by new terms and when they are clear they should be beacons to lead us to certain attainments and ends.

For instance the word "liberty" is in everybody's mouth. It has blown like a healthy spring breeze over the dead bones of this people, quickening them, and pulling them together into living unity. But there is a great fear of abuse. For "liberty" implies "co-operation." The one without the other is incomplete. It is most liable to abuse if the spirit of co-operation is lost sight of. And here we have a most instructive lesson. The old must co-operate with the new. The new alone is dangerous. So the new term *tzu yu* is in alliance with the old habit *hsieh ho*, "co-operation."

THE CREATORS OF NEW TERMS.

Who are the creators of the new terms? It is very difficult to say really. For the most part they are unknown—mostly journalists and writers of books. Stealthily have these new members crept into the family of language. They have only sought a place for their offspring, they have coveted no name or glory for themselves. It is so with most of the operators and forces of creation. And even where the author is known it was only so by chance and not design, just similar to Apelles, the great painter. You know he is the author of a famous phrase, "Cobbler stick to your own last." It arose in this wise: Apelles was in the habit of exhibiting any new painting in front of his house and to hide behind a door to catch people's criticisms. One day a cobbler came by and criticised a new picture: the next day he came again and made somewhat uncomplimentary remarks which made Apelles quite angry so that he cried out, "Cobbler, stick to your own last." This has become current coin; in such chance ways many new phrases have arisen to enrich the vocabularies of men.

At the beginning of the paper it was said this was an age for the creation of a great number of new terms. There is an overflowing addition to every language. Particularly is this the case with China. At the close of the paper we might well ask what do these new terms indicate in the evolution of human welfare. Do the terms that we have passed in review imply optimistic view or

pessimism, *lo kuan* or *yen shih chu i*? Are they buoyant with hope or depressed with despair? I think it may be said that they belong to the class that elevate, uplift. Even the *Ti chieh Jih pen huo* and such do not belong to a people that is altogether playing a losing game. A great many of the national terms or those that pertain to the people and the interest of the country, throb with a new hope, and indicate the thawing of frozen affections, the creation of personal interest in the native land, an interest that had been hidden in a corner for all too long. A review of the terminals shows that schools of thought and politics are multiplying and that the new learning and new text books are being added to the things that go to make up the equipment of life. In a word the new terms in Chinese indicate a broadening horizon, a deepening view of life and its claims, not only in the realm of knowledge, but also in the realm of morals and spiritual things. New terms in these spheres are the coming currency; even old things are putting on the sprouts of a new vivification. All these promise well.

Words are nothing in themselves. Their only value is to serve as symbols of communication: to stir the soul of others by that which quickens one's own: that is to say they are valuable only as indicators to the state of thought that lie behind them. And we may say that of the new terms in China they are an indication of a growing national life, they indicate a swelling tide of new currents that are sweeping through this ancient people. If we look at their hands their fingers are none the less long and tapering than they have been in past centuries: if we look at their physique there is no sign of decay, if we look into the eyes of the boys and girls even those who do not seem to be too well clad and fed, yet we see fire there, showing that the vital fluid of life exists generously still. If we look into their new terms we find that there are corresponding generous ideas of the mind circulating through their spiritual life which gives promise of a larger and stronger life.

CAN CHINESE WRITING BE SIMPLIFIED ?

By HERBERT CHATLEY, D.SC. (Lond.)

There is an urgent need for some simplification of the method of writing Chinese. With all its elegance, suggestiveness and historic character, the established method is a burden which weighs extremely heavily on the Chinese brain. It is even tenable that many of the idiosyncrasies of the people are due to the cumbrous system of recording ideas. Modern psychology shows quite clearly that thought, speech and writing are so closely associated that they react on each other to a remarkable extent. Precision and simplicity in language and writing are paralleled by clarity of thought.

PRESENT SYSTEM

The standard system of Chinese characters (also called, not quite correctly, "ideographs") has one character for each word and there are therefore as many characters as words, not sounds. In ordinary practice some 5,000 or so are employed (the Classics have about this number but many of their characters are obsolete), good literary custom uses about 10,000 and a complete dictionary has about 50,000. Of the latter number many are variants and rare or obsolete forms.

The writing of the characters has been conventionalized into a number of strokes which vary from 1 to 36 in number in any one character. The average number of strokes in a character is about 12.

There is naturally great difficulty in learning even a few thousand characters and the Chinese student must spend many years in thoroughly mastering them. In this way a great deal of mental energy is consumed and an unnecessarily tremendous burden is impressed on the growing brain. Much wasted space is occupied in recording ideas and the loss of time in acquiring the medium of writing is colossal. The mental training involved has some use in developing memory and notions of form, but

the results are out of all proportion to the effort. One of the practical results is that the art of reading and still more that of writing is confined to quite a small minority. Apologists will naturally emphasize the historic interest of the characters, the beauty of Chinese calligraphy and the aesthetic features of such a script, but all this is again much overdone unless one is convinced that reading and writing should be confined to the leisured classes of exceptional intelligence. The elegancies of style, the nuances of meanings in the characters, the necessity of continuing to interpret old records, are all points in favour of retention but cannot weigh seriously against the use of a medium which will be much easier to acquire and use.

The characters during their 4,000 years of evolution have lost to a great extent their ideographic character and many are really phonetics. Various schemes of classification have been employed. Undoubtedly the earliest characters (say 1800 B.C.) were purely picture writing, but stereotyped forms developed and about 1,000 reputedly primitive elements can be perceived.

Since Kang Hsi's time the characters have been arranged under 214 radicals, each of which form part or the whole of every character. The remaining parts, some 900 or so in number, are more or less phonetic but are not consistently so, except in the light of an abstruse theory of phonetic evolution.

To add to the difficulties there is a distinct difference between the vernacular and the written language even in its most modern journalistic forms.

Literary composition abounds in metaphor and elliptic formulae which obscure the meaning, but this does not affect the question of writing except in so far as it leads to the introduction of rare characters. Poetry is almost unintelligible to the poorly educated for this reason.

ALTERNATIVES

The need for simplification has long been felt. A reduction in the number of current characters has actually occurred. Chinese, like all other forms of writing, has a tendency to become formal and more simple but this tendency has not proceeded far enough. There is a new school of thought which aims to produce a standard vocabulary of 1,000 characters for work-people but it has already surrendered to the extent of using 1,300 and, as it has no principle of reduction except that of frequency

of use, there is no real limit. In Japan the number of Chinese characters is practically limited to about 2,000 and the Government has wisely laid down limits for schools, but even 1,000 is far too many for practical purposes and yet is far too few unless a phonetic system is employed.

English in its development from Sanskrit, Gothic and Anglo-Saxon has dropped genders, case inflections and many verbal forms with the result that except for its archaic spelling and irregular verbs it is the simplest of the Teutonic languages. All the European, Semitic, and Indian languages use an alphabet derived from the old Phoenician one and ideographic forms, such as the ancient Egyptian and Babylonian, have entirely disappeared. Practically all the European languages, except English, have standard phonetic spellings which make writing easy and misspelling almost impossible.

The Chinese have made certain experiments towards a phonetic system. The phonetic element in compound characters has been referred to already. In the 3rd century the Buddhists introduced the *Fan Ch'ieh* (反切) system consisting of pairs of standard characters making initials and finals. The Japanese more than 1,000 years ago developed the *Kana* system of syllabaries which is fully adequate for purely Japanese words but breaks down when applied to the enormous number of Chinese words which Japan has borrowed. Various missionaries (such as those of Wenchow) have attempted to romanize Chinese and a few years ago an alphabet of 40 signs was invented in Peking, but all these attempts have so far proved almost valueless.

Nevertheless this is the only direction in which progress can be made and it is therefore necessary to consider what the difficulties really are.

PROBLEMS OF PHONETICIZATION

The fundamental difficulty is that the language is monosyllabic, so that there is a paucity of actual word sounds (800 or 2,000 in number according as tones are disregarded or not) and a consequent complete uncertainty as to the meaning of individual sounds. Thus a sound such as Chi may have over a hundred meanings and correspond to a hundred different characters so that phoneticization per se deprives the characters of meaning.

A second difficulty is dialectic variation. In different parts of the country the changes in the sound attached

to a certain character are so great that the uncertainty just referred to is perhaps trebled.

A further difficulty is that the Phoenician alphabet and its derivatives are deficient in some sounds and redundant in others, while "scientific" alphabets invented by philologists are unfamiliar and pedantic in character. Thus the English (really Latin) variant of the Phoenician alphabet has the following useless letters:—C, Q, W, X and Y, and lacks several vowels, aspirates, nasals and diphthongs. Nevertheless the Latin alphabet is used by about half the world's population and is obviously the only basis for a system of "Romanization." What is then the solution?

To the writer's mind, no sudden solution is probable or even possible, but there is a line of development which may finally lead to a solution. *This is the systematic introduction of polysyllables.* If we take a di-syllable such as *Ti Fang*, there is little ambiguity in the meaning as compared with complete uncertainty in the meanings of the *separate* sounds *Ti* and *Fang*. With a tri-syllable such as *Huo-che-chan* ambiguity almost entirely disappears, except in respect to proper names. Incidentally it should be observed that in all languages proper names tend to lose meaning.

In Japan the *Kana* systems of romanization fully represent true Japanese polysyllables and the same would be true in China for polysyllables. As to which alphabet should be used, as remarked above the Latin one seems preferable in spite of its defects, simply because it is easy to learn and is already extremely widely used. New diphthongs are preferable to dieresis. Aspirates are perhaps best expressed by the Wenchow system of Hard and Soft Consonants (P, B, T, D, Ch, J) which are much easier to remember and less liable to error than the apostrophes of the Wade system.

Doubtless ardent patriots would prefer a less foreign method, but it should be observed that the Latin alphabet was foreign to almost all the nations that now use it and is the nearest approach to a really international set of sound signs in existence.

There will be enormous passive resistance by the million or so literates of China to any drastic change of writing and it will take many years to put into general use a new system. In the meantime if a simple romanization is used in conjunction with polysyllabization a step will have been taken towards the end. Vernacular forms

which include an element of polysyllabization in the context of monosyllables lend themselves much more readily to romanization than the literary styles. To the utilitarian even the peculiarities of *Pai Hua* are affectations in so far as they differ from spoken language and it is possible that another hundred years may see China using a romanized *Kuo-Yu* as the regular means of communication. In this connection it should be remarked that unless some such change is made China's international correspondence will always have to be carried on in English or French since the Chinese ideographs require far too much time for foreigners to learn, whereas an easily readable script would make Chinese as easy to learn as any other Asiatic language.

THE BOOK OF CHANGES AND GENESIS

By Rev. H. R. WELLS

The Chinese Classic called the Book of Changes is a very ancient document.

By some it is supposed that its earliest text was made and arranged by Wen Wang, father of the first Emperor of the great Chou Dynasty, which began about 1122 B.C. But many Chinese believe that it was, at least as far as its figures, which are its basis, are concerned, prepared by Fuh Hsi who lived about 2900 B.C., perhaps even reigning for nearly one hundred years. It may be that he also arranged the order of the figures.

If the Book was really the product of Fuh Hsi, it must be about 4,800 years old.

In his time China had not begun to use characters, and used various methods to record events. But, apparently, at that period this new type of record was invented, and if the figures of the Book of Changes, which are sixty-four in number, were then made and arranged in a definite order, they must be one of the earliest records in the world, perhaps as early as those of ancient Egypt, or those of the west of Asia, which have been studied and examined for a very long time.

The method of development of these figures is an extremely interesting study, but if it can be proved that the book is really an essay of sixty-four words, or pictures, or symbols, and that it is really a record of historical value, it would add very considerably to its interest and perhaps even its importance. It may even be that the author wished to leave instruction for after ages, and the composition may prove to be his contribution to world knowledge.

It would seem that if this were his intention, that intention has been hidden for milleniums, and that the comments of later times on the figures and their lines have really been, like the sands of Egypt and Western Asia, the means by which the real contents were buried.

Presuming that Fuh Hsi formed the figures and arranged their order, the next part of the book, which is one of the great Classics of China and perhaps the earliest, was written by Wen Wang about eighteen hundred years later.

Wen Wang wrote a sentence about each of the figures. Sometimes his comment consisted of several sentences, but even when it appears to be only one sentence, each word may have a great deal of meaning, and some of these words are discussed at great length even to this very day.

As far as can be seen Wen Wang did not fix the order, but that is a subject which might be argued. If he did, the point of what is set forth in this statement would be somewhat lost, as it would appear that Wen Wang did not have the knowledge which it is felt that Fuh Hsi might have had.

If this is so, it is probable that Wen Wang's notes have misled later commentators, and even Confucius himself.

Wen Wang's son, Chow Kung, went a step further, and prepared comments on each of the six lines of each figure, relating his comments to those made by his father.

Confucius and perhaps others wrote certain parts of what is now used as the Book of Changes. His remarks are instructive, but he seems never to have found the true meaning of the author. It is stated that he said, "If some years were added to his life, and he gave fifty of them to the study of the *Yih* (Book of Changes), he would have no great errors."

It is doubtful whether fifty years of study would have brought him to the real knowledge of the author's thought, as probably he did not have the facts on which he might have based such a study.

During many years of study of this book, efforts have been made to get back to the original text, and three years ago it became evident that Chow Kung's part of the text might be set aside as of no real value in such a study.

The question then arose whether Wen Wang had fixed the order, and, if so, what principles he adopted in doing it. This proved a difficult study, and Chinese scholars seemed wholly unable to shed light on the subject.

Suddenly a year or two ago, as if by an inspiration, it became evident that a number of the earlier figures were capable of interpretation on the lines of Genesis, and further study revealed that at least the first fourteen figures seemed to be on the same lines as parts of the earlier Genesis records.

It has been said that some of the later figures are records of historical events, and, if that is so, this method of study may assist in unveiling the mystery of the real meaning of the author.

One can easily conceive of other explanations for other figures, but these are purposely ignored in this article, as what has been observed seems so plain that it might only confuse the issue if one were to introduce other material.

Fuh Hsi is credited with being the author of the famous eight figures which are so prominent in many Chinese works of art, and in ordinary life.

These eight figures had certain positions, North, South, East, West, North-East, North-West, South-East and South-West, but for some reason the positions were altered later. Whether this may have helped still further to mislead those seeking to study the work of the sixty-four figures or not, is not yet clear, but it is quite conceivable that it might do so.

Before considering the sixty-four six-lined figures, which are sometimes called hexagrams, it will be well to get the meanings of the eight three-lined figures in mind, and as these have been evolved from the single lines we may first observe them.

They are — and -- , a whole line and a broken one. The whole line represents the *Yang* or male principle, or perhaps the positive, and the divided line represents the *Yin* or female principle, or the negative.

It seems that they represent the principles of life and growth by division of substance. They evolved from the great limited one (? the great monad). These two are regarded as a pair, and may be called the *Yang* and *Yin*, perhaps also they represent movement and repose.

These two by a similar process formed four figures of two lines each —, ==, ==, ==, these may be called the four symbols (emblematic), each was given a number, and many Chinese think that numbers grew from these four symbols.

A third line was then added by the process used, and so the eight trigrams or three-lined figures were formed. These may be set forth thus:—(1) ≡, (2) ≡, (3) ≡, (4) ≡, (5) ≡, (6) ≡, (7) ≡ and (8) ≡. This is not the usual order, but it is convenient for our purpose to use this order. In this order they represent (1) father, (2) mother, (3) eldest son, (4) second son, (5) third son, (6) eldest daughter, (7) second daughter and (8) youngest daughter.

These eight figures had names and meanings, and these might be used in combinations so as to construct other meanings.

The meanings of the eight figures were as follows :—

- (1) ☰ was Heaven, father, strength, etc., in fact in this case there are more than 12 meanings, and so with each of the others.
- (2) ☷ was Earth, mother, submission, etc.
- (3) ☳ was movement, eldest son, thunder, etc.
- (4) ☵ was water, second son, danger, etc.
- (5) ☶ was mountain, youngest son, stoppage, etc.
- (6) ☴ was wind, eldest daughter, agreement, etc.
- (7) ☲ was fire, second daughter, brightness, etc.
- (8) ☵ was marsh or collected water, youngest daughter, pleasure, etc.

A fourth was added to the figures making sixteen in all, and a fifth line was added and thirty-two figures were formed.

Finally, as far as these figures were concerned, a sixth line was added, making the number sixty-four, and it was seen that each of the trigrams had the eight trigrams added to it, and from these, meanings were evolved and probably different meanings were applied to them from the beginning.

Such combinations as heaven over heaven, earth over heaven, water over fire, mountain over water appeared and according to the various methods of interpretation might have many meanings.

The basis of a hexagram (as the figures are sometimes called) was now formed, and if each was only to be used once, the next question would be, how to arrange them in a proper order: this would depend greatly on what the author wished to set forth.

If, as has been stated, some of the later figures have an explanation that is historical, why should not the first figures also be historical?

Endeavouring to put one's self in the place of Fuh Hsi, what would be the first figure to place after the first two, which denoted heaven and earth, had been determined? And what should the third figure represent? We may think of the author considering this question, and finally

deciding as to which figure should come in this position and the meaning to be attached to it.

The first figure was Heaven, the next was Earth, the decision was to make the third figure represent life, or the beginning of life. The Chinese talk of Heaven, earth and man as the three powers or qualities, but it may be that the representation was intended for life on the earth, and not only human life. In those days this might seem to be the only thing to talk about, and it was decided to use the figure ☰, as the third in the series; and perhaps it was to delineate life. This figure is made up of ☰ movement, and above it is water, ☵. The question at once arises, what was in the mind of the writer?

It is stated that, at one time there was water all over the surface of the earth, and that there was life, and therefore in all probability movement within the water. This might well be represented by such a figure.

But there is another idea on the subject which should be considered. In Genesis, I, 1, it is said God created the heaven and the earth. This is in the same order as that in these figures, and they may be regarded as very fitting and appropriate, the heaven coming before the earth.

In Genesis, I, 2, we read that the Spirit of God moved (or hovered or brooded) on the face of the water and in this figure there is movement and water. It will be very instructive if we can find out exactly what the author had in his mind, but this is not easy, and may take a long time to explore.

It may be objected that here water is above the movement, but here again another point must be considered. The beginning of these figures is at the bottom, and the advance is from the bottom upwards, and it may be better in general not to make a hard and fast rule about order and position in the case of the parts of a particular figure.

The point to be observed is that the statement made in the figure is at least on the lines of that made in Genesis.

If the figure does not refer to the movement mentioned above, it at least seems like a statement of the beginning of life, which may be said to be quite in line with modern theories that life began in the water, though it may have been written 4,800 years ago. Where did Fuh Hsi get his views or his knowledge?

A further statement will be made about this figure later, but it will be better to proceed with the next figures following, and for some of these there appears to be a

parallel with statements made in the first chapter of Genesis.

Examining the figures it is evident that from number 3 to 8, six figures in all, the trigram for water is in each figure (hexagram).

As far as the fourth figure is concerned no connection with the first chapter of Genesis has yet been found.

The figure is ☵, water, ☷, below and ☶, mountain, above. There is another meaning that may be read out of this figure to which reference is made later.

If figure No. 3, movement and water, referred to tides, then No. 4 might represent high tide, the mountain still remaining above the water, and Nos. 3 and 4 together might then be considered as representing ebb and flow, or flow and ebb, of the tides.

Figures 3 and 4 might also represent a time when water covered everything (on the earth) and a time when mountains appeared above the water. These are however better delineated in figures Nos. 7 and 8.

Studying figures Nos. 5 and 6, ☴, and ☵, we find that they are made up as follows:—No. 5 has ☴, heaven, below, and ☷, water, above, and No. 6 has heaven above and water below. In Genesis, I, 6 and 7, it is said:—God divided the waters which were under the firmament from the waters which were above the firmament. This may not be exactly the order of these figures, but they convey the same idea.

Then taking figures Nos. 7 and 8 which are No. 7 ☵, and No. 8 ☶, we see that there are water ☵, under the earth and water above the earth and in Genesis I, 9 and 10, it is said: God said, let the waters under the heaven be gathered into one place, and let dry land appear, and God called the dry land, earth, and the gathering together of the waters called He seas. It may be objected that this is not the exact representation here, but it is at least well represented by the two figure pictures.

The series of figures seems to apply to such conditions as are mentioned in the first chapter of Genesis, and it leads one to wonder whether there was the same source of knowledge in the two cases. In any case it is extremely interesting to find so much similarity in the two records.

So far no further meanings have been definitely found in the book of Fuh Hsi similar to those in the first chapter of Genesis, but we may now proceed to look for other similarities in the two books.

Taking the first two figures to represent father and mother, we come to study No. 3 and find that there is a son, the eldest son, ☰ and then a second son, ☷. The father and mother have two sons, and up to this point there is no mention of daughters.

Naturally one feels that here there is a parallel case with the Genesis account of Adam and Eve and their two sons, Cain and Abel, as related in the fourth chapter of Genesis.

Not only are there two sons, but we find that the elder moves, ☷, towards the younger, and the younger is represented by danger, ☰. We read that Cain, was very wroth and rose up against Abel his brother, and slew him. So that Abel was in very great danger, and in fact lost his life.

The beginning of the study of these figures on the present lines arose from light which came on this figure while studying it, and trying to find out what it meant, and why it was the third figure. Suddenly, as mentioned above, it become evident that here was a reference to the story of Cain and Abel. What has been written above about the first chapter of Genesis was later light on the subject.

The next step was to study figure No. 4, and here it was found that two sons were mentioned, the second, ☷, and the third, ☰, the figure being, ☳. In Genesis, Chapter IV, after the death of Abel we read of the birth of a third son, Seth, and still there is no mention of daughters. This comes later in Chapter V.

Now the meaning of the top portion, ☷, is the third son, and it also has the ideas of a mountain, and stoppage. As far as the family is concerned there is a stoppage, no other members are mentioned.

It may be objected that Abel was dead, and that therefore he should not be included in a later figure, but in reply to this there are at least two possible explanations. First of all, Abel though dead, as stated in Hebrews (Chapter XI) yet speaketh. In Genesis, it is said that his blood (the blood being in other places spoken of as the life) cried to God from the ground. Might not this be intended to convey a suggestion of a life after death, Cain being unable to destroy Abel's real life?

This and the following suggestion are not intended to be taken as in any sense fixed or final.

Here is Abel at the foot of a mountain. Did Chinese in the time of the author already talk of a grave as a

mountain? Or seek burial places on mountains? If so there may have been an idea of a burial at the foot of a mountain. This is certainly open to criticism, but it is advanced because very often meanings are concealed, which, after further study, may be very fruitful in revealing the basis of truth.

We may now turn to figures Nos. 5, 6, 7, and 8, which are referred to above, and it is readily seen that they seem to represent a statement of the Flood or of a great flood; very much like that described in Genesis, Chapter VII. This event has been stated in words somewhat as follows: The waters above the heavens came down upon the earth, and the waters below the earth burst out and covered the earth. The Genesis account as seen in verses 11 and 12 of the above chapter reads:—All the fountains of the great deep were opened, and the windows of heaven were opened, and the rain was upon the earth forty days and forty nights.

Figures Nos. 5 , and 6 , which represent the waters above the heaven and below the heaven respectively may well represent the windows of heaven being opened, and figures Nos. 7 , and 8 , represent the waters below the earth and the waters above the earth respectively, and seem to correspond to the statement of the fountains of the great deep being opened.

These representations do not at all agree with the ordinary Chinese methods of explanation, but they may be right for all that, and further study may show that they are not so difficult as might be supposed from a superficial view.

Figures Nos. 9 and 10 bring another surprise. No. 9 is , which is made up of , heaven and , the eldest daughter, and No. 10 is , heaven and the youngest daughter, .

This is the first reference in these figures to daughters, and they are associated with heaven. In Genesis, VI, 4, it is said that the sons of God came in unto the daughters of men, and there were giants in those days.

This may be a very fruitful subject for study, but for the present taking only the superficial view, there are heaven and the daughters of men joined in these figures, and they seem to correspond with what may be called a most unexpected kind of statement, yet it seems as if this may be a correct representation of the figures. Here again it may be easy to criticise and point out differences, but the general idea conveyed leads one to think that there

may have been similar ideas in the mind of the authors of the two documents.

The 11th and 12th figures, (11) ☰, and (12) ☷, seem to indicate the story of the tower of Babel. Men decided to build a tower to reach unto heaven and figure No. 11 has a representation of earth, ☷, over heaven, ☰, which may well have been intended to convey this idea, and figure No. 12 has a representation of heaven, ☰, over earth, ☷, which may be said to represent God coming down to the earth or to men and the result was the dispersion. The picture represents something of this sort, as one looks at it, there is the great heaven coming down on the weaker earth, and the earth being composed of divided lines contain a picture of a dispersion. This may seem far-fetched, but it certainly conveys such an impression to some people.

The Chinese meanings attached to those figures are, in the case of No. 11, prosperity or greatness, which may be called the earth becoming exceedingly prosperous, and calamity or destruction in the case of No. 12, which might well be shown by heaven coming down to earth as shown in this figure.

The 13th and 14th figures, (13) ☲, and (14) ☱, these represent fire, ☲, under ☰, heaven, and fire above heaven, and may be explained as fire coming down from heaven and fire going up into (or even above) the heavens.

These two figures seem to depict something like the statement in Genesis, XIX, 4, where it is said that God rained upon Sodom and Gomorrah fire and brimstone out of heaven and in verse 28 of the same chapter it is said that the smoke went up as the smoke of a furnace. This depicts the idea of smoke ascending into the heavens. Up to the present these are all the figures that are seen to refer to subjects similar to those mentioned in Genesis, but it is hoped that others may be able to find much more.

It may be that the story of the destruction of Sodom was much later than the time of Fuh Hsi, but he may have known of some similar case which was historical in his days, or at least traditional.

In any case there is no idea of being dogmatic and pressing the subject of these similarities, but this is offered as a subject for study.

Any one could easily use these figures, 128 in all, the three-lined figures, and consider them as the eight tri-

grams, and himself consider what they mean in relation to these figures and seek to reconstruct the ideas of Fuh Hsi.

In connection with these studies there is a very interesting comment on the first figure which was made by Ching Tsz in the Sung Dynasty. Ching Tsz died about the year A.D. 1200. This comment though rather modern is essentially Chinese. It reads somewhat as follows:—In ancient times the sage first made the eight figures (*i.e.*, the trigrams) and the principles of the three powers were set forth (the three powers are Heaven, Earth and Man). Then he doubled them to make them include all the changes in the world. So the six strokes made these figures (hexagrams). Doubling the *Kien* figure, that is the trigram ☰, made *Kien* which represents Heaven, it becomes *Kien* (the hexagram) ☰, the doubled *Kien* is also *Kien*. Now *Kien* is heaven, and heaven is the substance or material embodiment of Heaven. *Kien* is the nature of Heaven. *Kien* is firmness or strength. Strength without any cessation is called *Kien*.

Now when we talk of Heaven alone we mean principle, that is Heaven also does not deviate. Dividing it and discussing it, the material embodiment is called Heaven, as far as the ruler is concerned it is called (*Tai*) God, and so forth, talking of spirits good and bad, and of its uses and powers . . . *Kien* is the first of all things, and therefore it is Heaven, the male principle, father and ruler.

Looking at this, it seems possible that the writer may have had in mind ideas about the two parts of the six-lined figure, and was dividing it up for discussion or study.

Let us consider it in the following way. The Chinese talk of so many grades of heaven, as Dante did of Hell and as the Chinese do of Hell also. St. Paul also spoke of the seventh heaven. Sometimes the Chinese use a number to represent the grades of heaven and we may apply this to one three-line portion, and say that it represents the material heaven, as in three grades or steps, and then take the other three-line portion and refer it to the ruler or God.

Can it be that in the mind of the author Ching Tsz there was any idea of a triune God? In Genesis, I, 26, it is said:—Let us make man in our image, which is interpreted by some as a statement of God's personality not being limited to one person.

It may seem like forcing meaning into words that were not intended by the author, but at least it is of

interest as a possible interpretation of some thoughts on God and heaven. (This does not mean to refer to the heaven we speak of as our future abode).

The passage very imperfectly translated above is not quoted in its entirety, but this was all that was needed for the present purpose.

What is important is that in this very ancient writing or picture book with 64 pictures, or essay in 64 words or acrostic, we have many things that seem to be on the same lines as the words of Genesis, and at the same time in some cases to have double interpretations.

This may open up a new method of Bible study in addition to assisting in the study of a very ancient document, perhaps a literary masterpiece. It is given to few to write such a brief and comprehensive guide to things in the heavens and on the earth, and which may be interpreted in connection with the family or the court, kings and rulers, officials and ministers, and people of all sorts and conditions, and social life in its closest bearings, and in parts of the document some Chinese claim that there are elements of worship.

This is written in the hope that it may reach some who will prosecute the subject further, and assist the writer in further study. It seems hardly possible that he can be wholly mistaken in his effort to find the earliest meaning of the figures.

KINGSHIP IN CHINA

By Prof. W. E. SOOTHILL, M.A.

The idea of sovereign power associated with ritual is clearly seen in the regulations for the monthly sacrifices to be performed by the emperor. Without him they lost their force. By the day of Confucius this force had almost disappeared, a fact deplored by him. Only by strict attention to ritual could it be restored. The importance of this State Ritual may be seen in the *Yueh Ling*, or Monthly Ordinances, where complete directions are found for the rites connected with the new moon. Take the following as a sample of one month. It is taken from the *Li Chi* which, though it took its present form early in the Christian era, very evidently was compiled from existing material, some of it very old.

"In the first month of Spring the Sun is in *Shih* (*alpha* Markab Pegasi) the Star culminating at dusk being *Ts'an* (in Orion), and that culminating at dawn *Wei* (in Scorpio). Its days are *Chia* and *I* (the two first of the Ten Celestial Stems). Its *Ti*, or Divine Ruler, is T'ai Hao (the deified first traditional emperor Fu Hsi, who was made divine ruler of the three months of Spring); and its *Shen*, or associate minister-spirit, is Kao Mang. Its creatures are those with scales (*i.e.*, reptiles and fish). Its note in music is Chio and its pitch-pipe the T'ai Ts'ao. Its number is eight; its taste is sour; its smell is rank. Its sacrifice is at the door, and the spleen of the victim has precedence over the other parts.

"The Son of Heaven occupies the room on the left of the Ch'ing Yang (a hall of the Ming T'ang); rides (there) in the carriage with the phoenix decoration, drawn by (horses representing) azure dragons, carrying the green flag. He wears green robes and green jade. He eats wheat and mutton. The vessels he uses are slightly carved with shoots (of plants).

"In this month occurs the inauguration of Spring. Three days before the ceremony, the Chief Recorder informs the Son of Heaven saying: 'On such and such a day is the inauguration of Spring.' That season's virtue (or power) is seen in (or represented by) wood. Thereupon the Son of Heaven devotes himself to self-purification, and on the day appointed he leads in person the three ducal ministers, his nine high ministers, the feudal princes, and his great officers, to meet the Spring in the eastern suburb. On their return he rewards them all in Court (i.e., gives largess with mimetic purpose). He charges his assistants to disseminate (similar) virtue to the myriad people in harmony with royal order and in expression of his pleasure and the bestowal of his favours. Such largess is thereupon bestowed on all in due order.

"He also commands the Chief Recorder to be careful of the statutes and maintain the laws and (especially) to observe the motions in the heavens of the sun and moon, and of the zodiacal stars in which the conjunctions of those bodies take place, so that there should be no error as to where they rest and what they pass over; that there should be no failure in the record of all these things, according to the regular practice of early times.

"In this month the Son of Heaven, on the first *hsin* day, prays to Shang Ti for a good year; and afterwards, when the day of the first conjunction of the sun and moon has been determined, he takes the plough-handle and share in the carriage, placed between the man-at-arms, who is its third occupant, and the driver, and conducts his three ducal ministers, his nine high ministers, the feudal princes and his great officers, all with their own hands to plough the field of Shang Ti. The Son of Heaven turns up three furrows, each of the ducal ministers and feudal princes nine. When they return, he takes in his hand a cup in the great chamber, all the others being in attendance on him and the great officers and says, 'Drink this cup of comfort after your toil.'

"The king gives orders to set forth the business of husbandry. (Here follow instructions of an ordinary character).

"In this month orders are given to the Chief Music-master to enter the College for practising the dances.

"The sacrificial Ordinances are examined and formulated, orders being given to sacrifice to the hills and forests, the streams and meres, care being taken not to use female victims.

"Prohibitions are issued against the cutting down of trees, (for cutting down would interfere with the spirit of growing up, or growth).

"Nests should not be thrown down; uninformed insects should not be killed, nor creatures in the womb, nor very young creatures, nor birds just taking to the wing, nor should eggs be destroyed. (There was, of course, nothing humane, or any idea of game laws in all this. It was merely a form of sympathetic magic.)

"No congregating of multitudes should be allowed (possibly assembling of armies is meant, though it may have another meaning); nor any rearing of fortifications. (Dr. Legge adds a note that "such operations would interfere with the labours of husbandry." That is true, but the real reason lay in sympathetic magic).

"Skeletons should be covered up, and bones with the flesh attached to them buried." (This was the season of life, not of death, and it must not be discouraged by suggestion).

"In this month no warlike operations should be undertaken; the undertaking of such is sure to be followed by calamities from Heaven. The not undertaking warlike operations means that they should not commence on our side. (The last sentence is probably editorial. The season was one for life and growth, which must mimetically be encouraged, not discouraged. The "calamities from Heaven" were not in vengeance, but part of natural law).

"The ways of Heaven may not be interfered with; nor the laws of Earth be nullified; nor any breach be made in human society.

"If in the first month of Spring the State proceedings proper to summer were carried out, the rain would fall unseasonably, plants and trees would decay prematurely, and the various states would be in constant anxiety. If the proceedings proper to autumn were carried out, there would be great pestilence among the people; boisterous winds would work violence, rains would descend in torrents; (autumn greens and herbs) would flourish. If the proceedings proper to winter were carried out, pools of water would produce their destructive effects, snow and frost would prove very injurious, and the first sown seeds would not enter the ground."

Each month of the year is dealt with in similar fashion.

The most important point from the standpoint of mimetic magic is that the emperor must always be in tone

with the season. In Spring he wore green robes and ornaments; in Summer, red; in the interposed section, associated with Earth, yellow; in Autumn, white, or probably straw colour; and in Winter, black. His carriages and horses, in like manner, as well as all their accoutrements, must accord with the season. His diet, probably only during the two days associated with the ceremonial, was regulated, but on what grounds is not clear. The order according to the seasons was wheat, beans, paniced millet, hemp-seed and millet; and the flesh foods were in the order of mutton, fowl, beef, dog, and sucking pig (one cereal and one flesh food to each season); they probably had some relation with the five elements. The vessels for his food must agree with the seasons; in Spring they were carved but little, with sprouts and shoots, and apparently were low and shallow; in Summer they were tall, representing large growth; in the interposed section they were round; in Autumn, rectangular and somewhat deep; in Winter, large and deep. Thus in shape, size and ornamentation they were a kind of suggestive prayer, all was *en rapport* with the seasons, and was meant to have the force of mimetic magic.

In the first month, as already shewn, the emperor went forth to meet the Spring. In the second, inter alia, he went to sacrifice to the Founder of Marriage, attended by his ladies, special honour being paid to those he had lately approached. In the third month of Spring, animals were torn in pieces at the nine gates of the capital to ward off epidemics and develop the influence of Spring. In the fifth month, or midsummer, the longest day arrived, when the influences in nature of darkness and decay struggled with those of light and growth; and death and life were in equipoise. Men of the upper classes must keep vigil and fast. They must remain secluded in their houses, avoid violent exertion, not indulge in music or the beautiful, avoid sexual indulgence, eat sparingly without condiments, control themselves and be free from all agitation. The magistrates also should avoid punishments. All this was done in order to aid the forces of darkness and decay to overcome those of light and growth. At first sight this may seem very singular, but the reason clearly is that Nature must no longer be stimulated to further growth, but must settle down to the ripening of the harvest.

In the second month of winter, in which occurs the autumn solstice, no digging should be done, and all doors

should be kept as closely shut as possible, otherwise the heat of the earth would escape, or be stirred to unseasonable activity, when insect life would perish and pestilence ensue. On the shortest day, a day of equipoise, men of the upper classes must act as on the longest day. It was one of the taboo days. The noble class must aid the forces of darkness and decay to overcome those of light and growth.

Judicial and military affairs were regulated. In the first month of Spring, warlike operations which involved cutting and chopping down should—such as cutting down trees—be avoided, as they would disturb the springing up and natural growth now so much desired. In the second month, litigation should be discouraged and prisoners freed from their fetters, that is, in order to aid in setting free Nature's expansion. The time for repression of crime is the autumn; for as Heaven and Earth then begin to be severe, so the judges must aid in strictly carrying out justice, but not in excess, or as is implied, the weather also would become too severe. It is also the proper time for martial exercises.

These are some out of many such regulations in the *Li Chi*. I do not mean to say that we have these regulations in their original form. Changes were no doubt made in the process of the centuries both in theory and practice, but I see no reason to doubt the validity of the theory recorded, whatsoever may be said of the practice, and that the records are a valuable contribution to Comparative Anthropology. It is evident that the practices arose out of a primitive belief in China, as elsewhere, in man's union with Nature, in unseen forces to which he only gradually gave personification, and in his own power, spiritual power, to bend these unseen forces to his service; perhaps it would be more in keeping with Chinese philosophy to say to blend himself, Man, in a harmony with Heaven and Earth, each of the ternion, Heaven, Earth, Man being essential to the operations of Nature. To me, one of the most impressive features of the discoveries of Anthropology is that Man so early saw the clod as more than clod, and by this fact raised himself from the clod to the concept of spiritual powers which he could not define, but like himself dwelling in a realm of Mind as well as a realm of Matter.

It would surely be difficult to find anywhere a clearer, or better defined, statement than that in the *Li Chi* of belief in the influence of man on nature by Mimetic or

Ritual association with it. Here we have ancient written testimony to the magical influences believed in and customs practised down to, indeed long after the Christian era, whose power was till recently closely associated with royal power. Magic is still, of course, in constant, fully elaborated practice in China, by rulers as well as people, for, except among the small body of westernized students, China but slowly changes in spirit and practice. Here, then, we are given in detail, in one of the Classical Books of China, its Bible so to speak, the ill effects that would arise from using the wrong ritual in any month. China remained for milleniums far behind the stimulating and liberating concepts of the psalmists and prophets of Israel.

Another interesting point arises from this ritual, namely, the evidence it provides why the Calendar was of such extreme importance to government. Such importance did not only rest, did not indeed chiefly rest, in the knowledge it gave of the proper time for ploughing, sowing and reaping. Important though this information might be, especially as the sovereign must take the lead, it was far more urgent to know when and how he, as representative Man, could correctly align himself and his people with the unseen forces of Nature so as to aid them. To be out of date with the seasons and perform the ritual of, say, the last month of winter in the first month of spring, would throw all the Powers above and below out of gear and bring woe on the nation. The Calendar from the earliest rise of civilization, was a matter of first rate ritual importance as also of profound difficulty and it was one of the main sources of the rise of the royal power. It is also possible to see that the acceptance of the Calendar by the feudal lords gave proof of their loyalty, for with different Calendars in different States everything in Nature would be turned to confusion. It strengthened the concept of one Heaven, one Earth, and the one representative Man, the emperor.

Moreover, the main ritual must be performed by the emperor himself. That was of the very essence of religion. The "virtue" attributed by Confucius to the throne was something far more than ethical, or at least in origin it was more than this. It is inferential that, if we had the necessary material for tracing this idea back to the earliest days of the tribes who united to form the Chinese nation, we should find the king, who provided the nucleus for this union, to be early "medicine man", the

wise man of the tribe, the man of virtue because he possessed power with nature and with man. He remained; he became emperor, the chief actor in the drama, the medium, the *pontifex maximus*, the priest, the king, stargazer and virtue came forth from him.

Though the rites were maintained and enlarged, the peculiar virtue itself ceased, for after a long period the king in China was no longer a man of outstanding personal power, who had won his way by his own force, or virtue, to the throne. This decadence apparently set in with the advent of the first dynasty and, along with it, the system of rulers hereditary in the paternal line. This hereditary system seems to have been the chief cause of the decay, for little beyond formality of ritual remained in later generations. The magnetic personal force and wisdom of the earlier Sheng Jen was dead. The system associated with the Priest of Nemi may not have been without its value!

It is impossible to discuss the subject of Kingship without a brief reference to the centre from which it may have arisen, and in which for ages lay its power. I refer to the Ming T'ang, the centre, and to some extent the source, of China's religious and cultural development. As I hope to publish a study of this subject ere long I will here but draw attention to it. The Ming T'ang had its origin in the remotest past of Chinese history and tradition. By the days of Confucius it had already sunk, along with the royal power, whose mainstay it had been, into powerlessness, and though a Ming T'ang as one of the imperial buildings was from time to time revived until the Ming dynasty, it had lost much of its early significance.

What was the Ming T'ang? That is a question which has long puzzled Chinese scholars. Briefly I may say that they trace it under different names back to Yao and Shun, to Huang Ti and even to Fu Hsi. It is evident that the building was not the emperor's palace, nor was it in the palace grounds. It was situated, some say three *li*, others up to thirty *li* from the Court, and in the open country to the south-east.

There are traditions which indicate that the original of the Ming T'ang was a very simple thatched hut, surrounded by water, away from the haunt of men. There are also traditions which imply that its early, and perhaps primary, use was for astronomical and meteorological observation, with a view to the regulation of the Calendar, and the determination of the proper days for the ritual.

Far down in its history the primitive character of the building was still maintained. Long after the invention of tiles, the Ming T'ang still was thatched, indeed in even later times thatch was retained under the tiles. Its primitive use then, seems to have been astronomical and meteorological, with the national ritual as its object.

In course of time other institutions gathered around it. It became the centre where the Shang Ti were served. These Five Ti and their Spirit-ministers ruled five seasons, and with them were associated all the subjects of Nature-worship, until, at a later period, these were separated to other altars. It has been mistakenly assumed that the Ming T'ang was a royal ancestral temple. That is only true in the sense that certain ancestors were invited to share the banquet spread for the Shang Ti and the Nature-Spirits. As time passed, a Hall of Audience was connected with it, for the transmission of royal commands, probably at first calendrical and ritual, to the barons. A School or College of princes also grew up with it, thus making it the origin of culture. The imperial Archery Court for selecting military officers formed part of the enclosure, and so on.

It would not serve our immediate purpose to go further into the detail of this ancient and royal institution, its foundation and influence of the magic square of nine, which played so important a part in the government of China. Suffice it now that I think there is sufficient traditional indication—evidence is hardly the word—that the Ming T'ang of later ages, with its temples and elaborate ritual, grew out of an earlier building for the observation of the heavens, not least of Ursa Major. Such observation I think, had a ritual objective, and was, at first, creative of royalty and later its mainstay. It existed to provide a general calendar for the chiefs and rulers of the people, but chiefly for the determination of the times for performing the necessary ritual, which was of a mimetic, or homoeopathic character, for aiding the Powers of Nature to do their duty. Further, I think that earlier still, all this elaboration arose out of a very simple thatched hut, which existed long before the days of an inherited throne, in a period when the Wise Man, the Sheng Jen, the reader of the stars, perhaps the so-called Medicine-man, was by his magnetic personality and his occult powers, the royal man of Virtue.

THE I WEI

A Problem in Criticism

By PERCY BRUCE, M.A., D. LITT.

The subject I have chosen may appear a somewhat strange one to select, and it may be well to say a word or two by way of explanation.

To begin with I have been anxious for some time to trace to their source those philosophic conceptions which are characteristic of the Sung period, but instead of starting at the Sung end and working backwards I decided for various reasons to start with the Han period and work downwards.

But why the Han period? One of the answers is this:—

There has always appeared to me to be something specially attractive about the Han period as a field for literary investigation for the reason, if for no other, that it immediately follows the Burning of the Books by the First Emperor.

That tragic event was like a spiritual Great Wall separating us from the Ante-Ch'in period of Literature by a barrier which it is very difficult to pass, so that the Han Period may almost be regarded as the beginning of things in a literary sense. Whatever there was before, and survived the ordeal of the Ch'in persecution, passed through the hands, or minds, of the Han scholars, either as editors, or as memorizers.

I said just now that I was anxious to trace to their source the conceptions of the Sung philosophers. The task, however, has already to a very large extent been most ably done by Professor Forke in his work *The World-Conceptions of the Chinese*. He has covered almost the whole field in every period, but on parallel lines, if I may use the expression. That is, the Professor has taken individual conceptions and followed their development separately and on parallel lines down through the successive generations of literature.

A task which still remains to be done by scholars is to give us a presentation of the philosophy of each period as a whole. Suzuki and Hu Shih have done something on this line, but we still wait for something exhaustive and comprehensive. From this point of view the Han period is a tempting field for study.

The question still remains—Why the I Wei? There are of course other works of the Han period, such as the writings of Tung Chung-shu, of much greater importance from the point of view I have just mentioned, and a further word of explanation may very fairly be asked for. I might give a two-fold answer to the question and say: The I Wei fascinates me while it irritates me. The questions which repeatedly assert themselves—What is the I Wei? What constitutes the I Wei? What does it all mean as to its content? When and how was it produced?—are irritating by reason of the perplexity they cause, and yet fascinating because one finds it almost impossible to leave them alone.

That probably, to be perfectly candid, is one reason. But it seems to me that involved in obscurity and mystery, as it is, the work is not without considerable importance if we are rightly to understand the period to which it purports to belong, if it belongs to that period; and if it does not belong to that period it is also important that we should know that it does not.

Now it is obvious that, comparatively small though the work is that goes under the name of the I Wei, it would be impossible to give a complete and comprehensive treatment of it in the time allotted to this paper. But as I have just indicated, the prior problem to be considered before the treatment of the subject matter can be of any value is that of its origin and date. How did it come to be and when? That is the question to which I am addressing myself in this paper, and shall only touch on the subject matter in so far as it bears on this question.

Let me say I do not for a moment claim to have solved the problem; I might almost say I can do no more than state it. But what I have tried to do is to gather up the salient points furnished us by Chinese editors and to offer some reflections of my own which a study of the work has suggested.

The first of those irritating questions which I just mentioned is "What is the I Wei?" The work which goes by that name appears to consist of a number of

writings more or less independent of each other, or more or less related to each other, but what really constitutes the I Wei itself it is difficult to say. There is, as I say, an irritating vagueness about the term, and yet though it is difficult to attach it to any one concrete work, it nevertheless stands for something.

The term itself, of course, suggests some relation to the term Ching, a relation corresponding to the relation between the warp and the woof which are the respective primary meanings of the two words. We are told that there were several Wei corresponding to all the Ching. There were the Shu Wei, the Shih Wei, the Ch'un Ch'iu Wei, the Li Wei as well as the I Wei, and all were largely composed of what purported to be sayings of Confucius. The work which we have now is in the Ssü K'u and is substantially the same as the work which was included in the Yung Ho Ta Tien. In the Index of the Ssü K'u the editors have treated fairly comprehensively the problem of criticism, and they tell us that the Wei were supposed to supplement in some way the Ching, that the I Wei, in particular, had its origin in the I Ching, but in its application of the I conceptions passes on to other subjects not treated of in the *I Ching*. These other subjects, even a cursory glance of the work will tell us, are associated with fortune telling, and the theory of numbers which was so exhaustively developed by Shao Yung in the Sung period. So then the I Wei is allied to, and yet to be differentiated from, the I Ching.

Similarly it is allied to, but is to be differentiated from, the Ch'an Shu. The expression Ch'an (Fortune Telling) Wei occurs in several writers leading us to suppose that they are of the same class, if not synonymous. But the Ch'ien Lung editors adjure us to avoid that mistake. The Wei are the Wei, and the Ch'an are the Ch'an. The distinction is that the latter deal wholly with fortune telling whereas the I Wei, though including some of the Ch'an ideas, also deals with Philosophical, or rather Cosmological conceptions, as such.

The fact appears to be that the I Wei occupied a middle position between the I Ching and the Ch'an Shu, or rather was a composite of the two.

It is interesting to note that the I Wei, if such a work existed before the beginning of the Ch'in dynasty, while it was spared the general massacre of the innocents, owing to the Taoist leanings of the First Emperor, was itself destined for the stake in a later period. Its turn

came in the Sui Dynasty, one of whose Emperors, Yang Ti (A.D. 605), because of the spurious use of the name of the great Sage ordered all copies to be burned, together with the Ch'an Shu, books on Magic, thus following up the work of Hsiao Wu Ti in the preceding Sung Dynasty (A.D. 457).

The I Wei is the only one of the Wei that survived, and that only in a fragmentary form. The work as we now have it consists of no more than a collection of separate writings which may or may not, so far as we can tell from their subject matter, have been so many chapters of one homogeneous work. In one of these, the titles of several others are cited, and in some instances quotations from them are given, all of which are called Wei by the Ch'ien Lung editors, but are now completely lost.

Of the writings which comprise the surviving remnant of the I Wei there are eight, each with its own title and in the following order:—

1. Ch'ien Tso Tu 乾鑿度, The Way Opened by Ch'ien.
2. Ch'ien K'un Tso Tu 乾坤鑿度, The Way Opened by Ch'ien and K'un.
3. I Wei Chi Lan T'u 易緯稽覽圖, The I Wei Illustrated by Diagrams.
4. I Wei Pien Chung Pei 易緯辨終備, A Key to the Essence of the I Wei.
5. Ch'ien Yüan Hsü Chih Chi 乾元序制記, The Order and Rules of the Four Principles of Ch'ien.
6. K'un Ling T'u 坤靈圖, The Spirit Diagrams of K'un.
7. Shih Lei Mu 是類謀, The Method of Divination by Milfoil.
8. T'ung Kua Lien 通卦驗, Manifestations of the Kua.

The number and order of the writings differ in different works which refer to or quote from them. There are as many as four different arrangements which I have discovered. Even the Ch'ien Lung Editors in the Index follow a different order in their Introductions to the several sections from that in which the writings are arranged in the work itself, as though the order of the sections was not important.

The most important of the sections are the first three: The Ch'ien Tso Tu, the Ch'ien K'un Tso Tu and

the Chi Lan T'u. The Ch'ien Tso Tu deals first with the meaning of the Great Source as *change*, and applies this to the universe and life, particularly instancing the political change that took place in the overthrow of the Yin and the founding of the Chou. It is that by which Heaven and Earth are ruled, Man controlled and the law of Kingship established. Therefore by the Eight Trigrams the Five Ethers exist, and the Five Relationships come into operation. From thence onwards the Eight Trigrams form the main theme, in the treatment of which the Magic Square of nine numbers which formed the Lo Shu of the great Yü comes in, and the course of the T'ai I through the nine positions is traced. Eight of these are occupied by the *kua* with the same positions as in Wên Wang's clock, that is, in two sets of four each—the Four Mên 門 and the Four Chêng 正, the former in the four corner positions, and the latter in the bottom, top and the two side positions, the centre one being the place of rest for the T'ai I in the midst of its procession.

The Ch'ien K'un Tso Tu starts with the Four Mên and Four Chêng, and goes on to treat of the Hsiang—Symbols—and phenomena in general 物. It then takes up individual *kua* and lines, quoting from earlier writings which are now lost.

The Chi Lan T'u also discusses the *kua*—with their numerical and meteorological significance.

We have now reached the point at which it will be pertinent to discuss the problem of date.

The Ch'ien Lung Editors in their critical research deal with each of these writings separately, and discuss its date and authorship, or rather editorship. Before giving their conclusions we may say that Wei Shu in general, i.e., including the Shu Wei, the Shih Wei and others, are mentioned in both the Sui Shu and T'ang Shu. Pan Ku of the 1st century A.D. refers to them, and says, "The Sages wrote the Ching and the Worthies wrote the Wei."

The I Wei as a whole is mentioned in the Fan Ying Chuan of the Hou Han Shu, and the several writings composing it in the Commentary by the T'ang Editors—in the Sui Shu, too, the I Wei, in eight sections, is referred to as edited by Cheng K'ang-ch'eng.

It is important to note in this connection that the external evidence furnished by Dynastic Histories is valuable, for they are of the nature of Archives. A

forged of a later period must have tampered with no less than three of these Dynastic Histories, a thing very difficult to do.

With regard to the evidence for the several sections independently, the following are the conclusions of the Ch'ien Lung Editors:—The Ch'ien Tso Tu, Chi Lan T'u, Pien Chung Pei, K'un Ling T'u, and the T'ung Kua Lien are all attributed to the Hou Han period. The Ch'ien K'un Tso Tu is not mentioned in either Sui or T'ang Records, but the internal evidence points to the Ch'iu period. The Shih Lei Mu is thought to belong either to the Sui or the T'ang period. The Hsü Chih Chi is not mentioned at all in the Hou Han Shu and is thought to be spurious.

So much for the External Evidence. More might be said perhaps, and more is said by the Ch'ien Lung Editors in the Index, but not much more that would be of value for our present purpose.

What is more valuable from our point of view is the Internal Evidence. Here we must to some extent part company with the Ch'ien Lung Editors and be more on our own. The question before us is: Does the subject matter stamp the work, or the several sections of it, as belonging to the period to which the external evidence points?

In answering this question I wish first to draw attention to certain conceptions characteristic of the work as indicating the period to which it belongs, and second to point out certain passages which, either verbally or in their subject matter, are common to this and other works of the period.

Of the conceptions characteristic of the work I will instance too marked types.

(1) First, there is the legendary element specially characteristic of the Taoist, e.g.

1. The reference to Legendary Emperors as:—T'ien Lao Shih, Hun Tun Shih, T'ien Yung Shih, etc.
2. Legendary Animals:—The Nine Tailed Fox, the Three Horned Bull, The Five Horned Bird.
3. Legendary Phenomena:—Changing the Colour of the River, a White Rainbow in the Sun.
4. Most notable of all, the Superscription on one section—the Ch'ien K'un Tso Tu, ascribing it to Fu Hsi, Huang Ti, and Ts'ang Chieh.

These are all suggestive of a period when Taoist ideas and the love of the legendary and fantastic were rife.

(2) On the other hand there was, secondly, another type more suggestive of normal Confucianism. There is elaborate treatment of the *Pa Kua* of the *Yi Ching*, a good deal of which is from the point of view of their numerical signifi-
cance.

Hardly less important is the treatment of the famous diagram known as the *Lo Shu* which was revealed to the Great Yü. This old and familiar square of nine numbers, totalling 15 in any direction appears in this work in association with the Eight Trigrams and the T'ai I 太易. The T'ai I, as already indicated, makes its journey through the nine positions of the square, four of which are called the Four Mên 門, or Four Wei 維, and four the Four Chêng 正; thus:—

<i>sun</i>	<i>li</i>	<i>k'un</i>
4	9	2
<i>chên</i>		<i>tui</i>
3	5	7
<i>kên</i>	<i>k'an</i>	<i>ch'ien</i>
8	1	6

The above is the square, with names of the Eight Trigrams which the numbers severally represent. Of these the odd numbers 1, 9, 3, 7 are the Four Chêng, and the even numbers 2, 4, 6, 8 are the Four Mên.

Of passages common to this and other works of the period I will now give a few instances.

1. In the *Lang I* 郎顗 Chuan of the Hou Han Shu there are several passages almost verbatim the same.
2. In the *I Chuan* of Ching Fang (1st century B.C.) there are theories of the numerical signifi-
cance of the *kua* identical with those in this work, and certain terms characteristic of those theories.
3. Two conceptions, the first, that of the order of existence of the 太易, the 太初 the 太始 and the 太索;

and the second, the theory that 易 becomes unity, unity changes to the number seven, and seven to nine, both occur in the *Lieh Tzŭ* and in the *Pei Hu T'ung* of Pan Ku (1st century A.D.) and, if Giles is correct in placing the writings known as *Lieh Tzŭ* in the 1st or 2nd century A.D., these coincidences, like those just mentioned, point to the Han or Ch'in period as that in which the work was produced.

What I suggest by way of conclusion is this.

To go back some distance in the Chou period, the philosophers who became known later as Taoist Philosophers with Chuang Tzū as the most famous, were the authors of, or gave currency to, certain mystic legendary and even fantastic conceptions.

Of course there were not at that time two distinct schools—Confucian and Taoist. It was much later that this distinction became clearly marked. They were simply philosophical teachers with different philosophies, such as we have had in the West, and they taught their several systems as individual teachers rather than as representatives of schools. But the process of what De Groot calls bifurcation was in progress, and one element in that process was the emergence of what I have just referred to, viz:—

Credence for the legendary, the fantastic, the mystical and magic.

By the end of the Ch'in dynasty these ideas had become so distinctive that the term Huang Lao, either then or later was applied to them.

The term Ch'an 讖, referring more specifically to fortune-telling also came into use at the end of Chou, or the beginning of Ch'in, together with the growth of a class of fortune-tellers called 方士.

This stream of thought and practice was notably in the ascendant under the Ch'ins. The burning of books was accompanied by the ostracism of orthodox Confucianism, whereas Taoist books and the Yi Ching related to them in substance, were spared.

With the coming of the Hans, however, a reverse process set in. Respect for Confucian books was revived, and then followed a commingling of the two streams. The Confucianists borrowed Taoist ideas, perhaps to make their teachings more popular, and the Taoists borrowed from Confucianists, possibly to give greater credence to their teachings, even to the extent of falsely attributing sayings to the Sage which he never uttered.

This commingling is just what we have in the I Wei. The collection of writings collated under that title are largely made up of what purport to be sayings of Confucius, and, on the other hand, their teaching is largely Taoist in colour and tendency; and the suggestion I wish to make is that it was a product of the period to which the Ch'ien Lung editors assert it belongs.

THE PHILOSOPHER YANG HSIUNG

By A. FORKE

Yang Hsiung, or Yang Tse-yün, was born in P'i-hsien, a district of Cheng-tu, the capital of Szechuan Province. The name is derived from Yang-hsien, a town in Shansi which an ancestor of the philosopher held as fief. At Yang Hsiung's time the family had become rather poor, but, engrossed by his studies, he did not feel this poverty very much. In his biography in the *Ch'ien Han-shu* it is stated that he died in A.D. 18 at the age of 71 years, consequently he must have been born in 53 B.C. First he wrote poetry after the fashion of his famous countryman, Sse-ma Hsiang-ju, then he imitated Ch'ü Yuan and composed an elegy, the *Fan Li-sao*, which he threw into the Min river as a homage to the drowned poet. About 13 B.C. Yang Hsiung arrived at Chang-an, where he was recommended to the emperor Cheng-ti, who appointed him member of the *Han-lin* and later secretary of the Censorate. When in A.D. 9 Wang Mang overthrew the Han dynasty, he was not promoted as many others were who flattered the usurper. Implicated in a trial of his disciple Liu Fen, he jumped from the Tien-lu Hall, when he was to be arrested, and almost lost his life. Then he wished to retire owing to his age, but Wang Mang appointed him *Ta-fu*. The height of the Tien-lu Hall is no sufficient reason to discredit the incident, as some scholars have done, for Yang Hsiung may have thrown himself down from a lower story.

Whereas up to the Sung time Yang Hsiung was placed on a level with Mêng-tse and Hsün-tse, some Sung philosophers blamed his moral character and found fault with his writings. They censured him for having served under Wang Mang instead of committing suicide, and accused him of having flattered the usurper whom he ought to have condemned. These charges brought forward, especially by Tschu Hsi, are unjust. The praise he gave to

Wang Mang dates from the time of his regency, before he dethroned the Han dynasty, and was well deserved. His honour has been vindicated by Tsêng Kung of the Sung dynasty and by Chiao Hung of the Ming dynasty. As a philosopher he was highly appreciated by the historian Pün Ku, by the philosopher Wang Ch'ung, the poet Han Yü, by Wang An-shi and most of all by Sse-ma Kuang, the great statesman, historian, and scholar, who edited his chief works, the *Fa-yen* and the *Tai-hsuan ching*, with a commentary.

In addition to these works Yang Hsiung wrote a book on music, *Yo*, in four chapters, and admonitions for officials in the provinces, *Chou-chen*, in two chapters. He is also the author of the *Hsün-tsuán*, a dictionary of 5,340 characters in fourteen old scripts. All these works have been lost, only of the *Hsün-tsuán* Ma Kuo-han has collected and published some fragments. On the well-founded testimony of the *Fêng-su t'ung-i* of the 2nd century A.D., the *Fang-yen*, a dictionary of colloquialisms in various dialects, has been attributed to Yang Hsiung. The objection raised by Hung-mai, a writer of the Sung time, that this work is not mentioned in the biography of the *Han-shu* nor in the section on Literature, is well answered by the editors of the *Sse-k'u Ch'üan-shu tsung-mu* holding that probably Yang Hsiung left this work incomplete, and that it was completed and published by his disciples.

In the *Fa-yen*, which is written in the style of the *Sun-yu*, we find some fine utterances, e.g., "Temperament is the horse on which we ride to good or evil, for in human nature good and evil are mixed up. He who cultivates the good becomes a good man, and he who cultivates the evil, a bad one." Yang Hsiung proclaims Confucius as the infallible teacher but also acknowledges Lao-tse, though with a limitation, saying, "What Lao-tse says about *Tao* and virtue I admit, but when he demolishes benevolence and justice and extinguishes propriety and study, I do not admit it."

The *Tai-hsuan ching* is a book on divination like the *Yi king*. Its scientific value is not to be sought in the principal sections, but in the appendices, which contain Yang Hsiung's metaphysics. His ontological principle underlying the whole universe, from which everything is evolved and which governs every change in nature and in human life, he calls *Hsuan*, the Mystery. It has the same functions as *Tao* and scarcely differs from it.

Yang Hsiung cannot boast of the brilliant style of Mencius, his own being often too concise and obscure, nor of the critical acumen of Hsun-tse, but he surpasses them both as a speculative philosopher, being undoubtedly the greatest metaphysician among the Confucianists before the Sung period.

THE SYMBOLISM OF THE FORBIDDEN CITY, PEKING

By FLORENCE AYSCOUGH, D. LITT.

Were an airman to approach Peking from the south, his eyes would first be arrested by the wonderful blue roofs and round white marble altar among the trees of the vast space devoted to the worship of Heaven; and the square white altar to the west where sacrifices were performed to the Earth principle; and as he flew yet farther north he would be dazzled by the gleaming golden tiles of the Imperial City. From the air he would see clearly the arrangement of the innumerable buildings composing it, which follows a very definite plan. There are two distinct portions of the city, the outer and inner, divided from each other by a wide moat encircling the four sides of an immense quadrangle. This quadrangle was, strictly speaking, the forbidden part.

The halls of ceremony are built, one directly behind the other, on a wide paved strip running through the centre of the square from south to north. A portion of this strip is greatly raised, forming a vast stage on which the three principal halls are placed. To right and left are grouped an infinite number of buildings designed for various purposes. Four gates facing the four cardinal points pierce the walls which rise from the edge of the moat; and each serves a special purpose. The southern half of the Forbidden City was designed for great ceremonials, when the Son of Heaven received his officials in state, and the northern half was used for the daily interviews at dawn when ministers in constant communication with His Majesty entered by the north gate.

The approach to the inner city lies through a series of openings in the outer city, leading in a direct line from the busy Ch'ien Men (Front Gate) in the wall of the

Capital itself. The central doorway of the Front Gate, which in Imperial days was kept closed, used to be opened wide upon the rare occasions when the Son of Heaven left his palace and proceeded to perform the sacrifices to Heaven and to Earth at the round altar and the square, in the southern extremity of the South suburb.

With these facts in mind, Mr. Cultivator-of-Bamboos and I proceeded, in imagination, through the various Halls and Palaces of the Purple Forbidden City. It may be called an apotheosis of, a consecration to, that Ho or Harmony, that co-ordination of thought and action which brings peace and happiness to the world.

The great Chinese dictionary published by the Emperor K'ang Hsi defines the word elaborately; the entry reads: "*ho* is to be in accord with, to harmonize together, it is not hard nor soft, not unyielding nor yielding." An analysis of the characters is even more expressive; *ho* was originally written with the character for the flute or pan pipes beside the figure for growing grain. It would be hard to find similes better to express perfect peace and harmony. Full ears, promise of a plenteous harvest; and sweet sounds, perfectly blended, floating through the air.

The gorgeous colouring of the buildings is symbolical. The walls are red—symbol of the south, the Yang principle, the sun, happiness; while the roofs which cover the residence of the Sovereigns on Earth are of the bright yellow which is the symbol of earth, the Yin principle.

The approach to the enclosure designated as "forbidden" is through the T'ien An Mên (Gate of Heaven's Peace); this is flanked by two beautifully decorated marble columns known as Hua P'iao (Glory of Virtue Signposts) supposed to guide the Emperor upon the way he should tread. They are a survival of the Fei Pang Mu—Boards of Criticism and Detraction, instituted by Yao and placed by him and his successors outside the palace gates, in order that all who wished to do so might write upon them their opinion as to the acts of the Ruler and their suggestions for improvement in the government. The *hua p'iao* is also a symbol of the glory which should shine from the Emperor's virtue.

It is a long way from the Gate of Heaven's Peace to the colossal Wu Mên (Gate of the Sun at its Zenith)

which forms the entrance to the inner quadrangle, and the Ruler, who is regarded as the personification of the Yang essence, is the only individual privileged to pass through its portal. Upon the solemn occasions when it is opened, a bell is sounded as the Son of Heaven passes under the central arch, thus announcing to the people of the Capital the fact that the Imperial sun is actually in the ascendant.

Symbols stand on either side of the entrance. To the East a white marble Sundial or Jih Kuei. The idea is suggests is that the sundial is useless when obscured by clouds, so the Imperial Sunshine is without effect if clouds, that is evil counsellors, are allowed to intervene between the King and his people. It also suggests to the Ruler that he should emulate the sun whose light shines on high and low alike, and is furthermore a constant reminder to him to follow the immutable way of the Universe. To the West stands a square grain measure of excellence, a Chia Liang. It is a symbol of the full measure of justice and mercy which should be meted out to every individual in the world, irrespective of his station. The measure should be level to the brim with benefits for the people. Being four-sided it represents All-Below-the-Sky, it is in fact in the form of the original character for 'country', which was a simple square. By one of those plays on words to which the Chinese are so attached, these two symbols have become the basis for a saying used by all classes of people. The round dial has come to mean *kuei* (the circle enclosing right conduct), and the measure is *chü* (the square of right action). The two words used together—*kuei chü*—mean absolutely correct behaviour under all circumstances. These symbols are repeated in front of each sub-division of the Forbidden City.

Beyond the Gate of Sun-at-the Zenith lies the first courtyard, and through its centre, between marble banks which sweep in a perfect curve, flows a watercourse, symbol of the Earthly or Yin essence. Here it is called the Golden Waters River, but in the Western Hills where its source lies, it is known as the Jade Stream. Five carved white marble bridges are thrown across its limpid waters which reflect the brilliant sky. They correspond not only to the five virtues I have already spoken of, but to many other fives in the numerical category, such as five happinesses, the five relationships, the five colours,

and so on. As only the Sovereign and his personal cortège may pass through the great South gateway, so only he may cross these bridges. Officials of his Court meet him, upon ceremonial occasions, in the space just beyond. Civil officers enter the Forbidden City by the Eastern Glory-of-Virtue Gate in its outer wall, and then come to the inner precincts through United-in-Harmony Door. Military officers use the opposite and less honourable entrance, passing through the Western Glory-of-Virtue Gate and the Glorious-Harmony Door. It must have been a remarkable spectacle when the Son of Heaven met his courtiers from the right and from the left, in that great white paved courtyard under the shadow of the vast tower of Sun-at-the-Zenith Gate. Facing them stood the T'ai Ho Mên—Supreme Harmony Gate and two side gates used by officers of the Court. Bronze guardians of the hearth, those genial dogs of Fo, mount guard on either side, and there are two other symbols which I found very puzzling. The ceiling of Supreme Harmony Gate is beautifully decorated in the design known as pondweed wells, and it is faithfully reproduced in colour in the Japanese plates. Gold dragons form circles on a lovely green background. The Emperor used the Central doorway; civil officials filed through the Door of Luminous Virtue to the east; and military officials used the Door of Correct Conduct to the west. In such order the procession swept up steps and down steps, and so into the immense Courtyard of Supreme Harmony which stretches in front of the Supreme Harmony Hall. A Chinese definition of the words T'ai Ho, which I have translated as Supreme Harmony, runs: "When Yin and Yang meet and unite, the breath of Harmony rises to Heaven." And again: "T'ai Ho means to nourish and increase Harmony." The courtyard in front of Supreme Harmony Hall must be very, very large indeed. Juliet Bredon in her book on Peking says: "At the official review and celebration of the Allied Victory the Court held more than fifteen thousand troops and guests, and could still have accommodated three times as many people." Although Miss Bredon gives a most excellent description of the Hall and Courtyard from a physical point of view, she says nothing of their symbolical character; so, magnifying glass in hand, Mr. Cultivator-of-Bamboos and I studied the Japanese plates with care.

The Courtyard stands at the southern extremity of

the colossal stage on which the three principal halls of ceremony are built. Large gilded bronze vessels are placed at intervals up the sides; these served to light the square space when ceremonies were held after dark and were filled with oil upon which huge wicks floated and flamed. Across the northern end rising one above the other, stretch three terraces; they correspond to the Three Powers, that is Heaven, Earth and Man. When these powers act in perfect union they are supposed to produce those greatest of blessings—peace and plenty. Four flights of steps, two wide and two narrow, lead from terrace to terrace and terminate at the portals of Supreme Harmony Hall. In the very centre, flanked by the narrow flights, lies inclined a magnificent carved marble path, often called the Spirit Stair. Upon occasions of ceremony the Imperial cortège mounted to the hall in a definitely prescribed manner. Civil officers used the outer eastern flight of stairs, and military officers ascended by the outer western. The chair-bearers of the Emperor mounted the narrow flights on either side of the pathway, carrying the palanquin of the ruler between them. In this way the Sun of Heaven rose to Supreme Harmony Hall over the symbolic ornamentation of the Spirit Stair.

A variety of dragon motives are used in the decoration of the terraces. The balustrade finials show Ying Lung and Ch'iao Shên writhing among clouds. Ying Lung translated is "correct conduct dragon." The Chinese say, "the dragon which has fins is called correct conduct," and again, "that which is coiled in the mud, then rises and flies to Heaven, is the spirit of the Ying Lung." The Ch'iao Shên is the spirit of the mountain of that name; it has the head of a dragon and body of bird—at least so the Classic of the Hills and Sea says, and *ch'iao* is also the name of the magpie or bird of happiness. The central pathway bears the five-clawed dragon himself, personal emblem of the Ruler. He is shown rising from high waves, which in the words of Li T'ai-po are "connected like a mountain range." Various figures stand on the terraces; dogs of Fo, protectors of temples, palaces and homes; a crane of longevity who need only flap its wings and rise, to carry the fortunate individual who has "perfected his immortality" to the joyous realms of the Western Paradise; Pei Hsi—robust and of extraordinary

strength—that son of the dragon who willingly bears weights;¹ and on the upper terrace the great hall of Supreme Harmony flanked by the sundial and the good measure completely fills the centre. The whole composition forms a homily in marble and bronze, illuminated by the symbolic colours of gold and rose.

The Hall of Ceremony is immense, and has a double roof supported by huge pillars painted in rich colours. The Imperial throne stands on a high dais. In its centre and above the throne hangs a horizontal board bearing the inscription: "By the establishment of high ideals the Ruler will adopt the best law for tranquillity in the State." Five stairways lead to the gilded Imperial seat, and incense burners on tall graceful stands are placed between the steps. There are incense burners upon the dais, too, and tall perforated gold columns through which fragrant fumes rise high above the Emperor's head. This custom of scenting the air upon ceremonial occasions is often referred to by Chinese poets as: "Their bodies soaked in Imperial Essences, the Officials return," and as in a poem by Wang Wei which appears in *Fir-Flower Tablets*.

The Supreme Harmony Hall was used regularly three times each year. Here the Son of Heaven received his Court on the first day of the lunar year when he returned from offering the sacrifices at the Altar of Heaven; at the winter solstice he also gave audience in great state from its high throne; and again on his own birthday the celebrations were held within its walls. In addition to these regular festivals, it was used for any occasion of great rejoicing such as took place when a Son of Heaven assumed office.

¹ The dragon seems to have been eclectic in his affections, and had nine sons who did not perfectly resemble him; according to a generally accepted list they are follows:—

Pei Hsi: Robust and of Extraordinary Strength, a creature resembling a turtle, which is able to, and likes to bear great weights. It carries stone slabs which bear inscriptions.

Ch'ih Wên: Hornless Dragon of the Edge, a sort of dragon which likes to gaze and look out, so is placed on the ridges of roofs.

P'u Lao: Strong Creature of the Reed Beds, a creature which loves to growl and make noises, therefore it is used as a handle to great bells.

P'i Han: Fierce Black Feline, a creature which likes to use his energy and active strength. It is placed over prison doors, being very fierce.

The two other Great Halls stand behind it, but "great" is certainly a misnomer for the Chung Ho Tien—Heart of Harmony Hall—as it is very small indeed; but it was used on the momentous occasions when rites in connection with agriculture were performed. It was there the Son of Heaven made offerings to ancestral and other spirits, at the Season of Clear Brilliance in the Spring; there he inspected implements connected with the tilling of the soil; there in fact he made all preparations for the growing season. And in the fall of the year newly harvested grain was brought to the Heart of Harmony Hall to be shown to the Ruler.

The Imperial seat can hardly be called a throne, and it is but slightly raised. Characters are of course hung above it and read:

"Sincerely hold fast the perfect mean."

The balanced phrases on either side proclaim:

"At all times the Ruler mounts the Chariot drawn by six dragons that he may rise to Heaven; he shuns luxurious ease.

"Spreading abroad and bestowing the five happinesses, making clear to the Four Quarters that he is governed by eternal principles."

The phrase "Chariot drawn by six dragons" is an allusion to the vehicle driven by a spirit called Hsi Ho (the Breath of Harmony), in which the sun is supposed to make his daily passage through space; and the five happinesses are: long life, wealth, vigorous strength, love of virtue only, and a natural or non-violent passing from this world.

Beyond Heart of Harmony Hall, and at the northern extremity of the platform, stands Pao Ho Tien (Protection of Harmony Hall). It has an especially beautiful ceiling of the pondweed-well type, which is considered

T'ao T'ieh: Covetous Creature which Eats till Exhausted, a creature which is very gluttonous. It loves food and therefore is put on various vessels, as cover, handle, etc., as a warning against gluttony.

Pa Sha: Hoarse Voice, a creature which loves water. It is put on the railing of bridges.

Ai Chai: Stare at and Punish too Severely, a creature which likes to kill. it is therefore used on sword handles and where blades join handles.

Suan Li: Young Lion with Red Eyes, a creature which is fond of smoke and fire, and is used on incense burners.

Chiao T'u: Peppery Creature which Surrounds Carefully, a creature which likes to close things, and is therefore used on door handles.

effective in warding off fire from the inside of a building, as owl-tail fish are supposed to be a guard from danger to the exterior. The throne, although not so richly carved nor so elaborate as the one in the principal hall of ceremony, is very imposing and is placed on a high dais. The screed above it states:

"In the creations of the Emperor are to be found most perfect excellence."

Protection of Harmony Hall had two chief uses. It was where tributary princes assembled in the Capital were offered a feast on the last day of the twelfth month; and where the candidates who had successfully passed the triennial examinations for the highest literary degrees were received by the Emperor. The Senior Classic and the little band of ten scholars who had proved themselves the most able in the country thus automatically stepped into the ranks of the governing body. Theoretically, and as a rule practically, no favouritism affected the status of these candidates, but as Heaven has not yet permitted perfection to be attained in mortal affairs, it did sometimes creep in. The following reproachful little poem by Kao The Toad shows that he felt that had he been allowed to do so, he could have blossomed in that spring wind which brings the fertilizing rain, and would not have been nipped as rose mallow buds so often are, by frost. Of course it is possible that The Toad overestimated his own talents.

A Poem from One Below, handed up to the Vice-President Kao.

By Kao the Toad

In Heaven above the peach trees with double blossoms are
planted in the dew,

Beside the Sun the pink apricots are rooted—supported by the
clouds.

The rose mallow springs beside the chill river of autumn.

It does not feel the East wind of spring. In resentment, it
does not bloom.

Through the northern gateway of Protection of Harmony Hall a descent of forty-five steps is made from the three terraces, corresponding to the Three Powers, and the Three Great Halls of Ceremony, are left behind. The remainder of the Purple Forbidden City, North of this line, is looked upon as the private residence of the Son of Heaven. Here he lived with the ladies of his entourage and the innumerable attendants who ministered to their wants.

A lesser ascent terminates before the Gateway of the Cloudless Heaven, and from the gate a long causeway leads to the Palace of the Cloudless Heaven. The causeway is raised high above the courtyard, and is beautifully ornamented by Pa Sha (Hoarse Voice), those sons of the dragon who love running water. Their heads are used as gargoyles to carry away any superfluous moisture from the road used by the Son of Heaven in his passage from the Halls of Ceremony to his private apartments.

A sundial and a good measure stand to the East and West of the palace façade, and a number of large incense burners are placed at intervals along the single terrace. Gilded bronze oil vessels stand in the court below the hall in order to provide light when it is needed.

The steps and Imperial path leading from the causeway up into the hall are exquisitely and delicately carved, with less boldness of relief than is the case in the enclosure devoted to the fostering of Harmony. The decoration is of course symbolical. One of the symbols for which we had been searching had, so far, not appeared, but as we studied the carving in front of this palace, which is devoted to the personal use of Heaven's delegate, Mr. Cultivator-of-Bamboos suddenly said in a quiet voice: "It has come."

"What has come?" I asked.

"The Ch'ieh Yü, the malevolent animal with the voice of a child. It has a dragon's head, a horse's tail, a tiger's claws. Its body is forty feet long, and it loves to eat men. If the princely Ruler has virtue, if he follows the right way of life, the malevolent animal remains hidden in the World of Shade; if he has not virtue—then it is seen."

The slanting panel which forms the Imperial path is most elaborate. From a background formed of the hundred flowers, fungi of longevity and other auspicious symbols, rises the five-clawed dragon—the Emperor's personal emblem. In the four corners are Fêng Huang, which Europeans usually call "phoenix"; but as these beautiful creatures of Chinese mythology resemble the phoenix in neither appearance nor attributes, as the Argus pheasant is undoubtedly their prototype, and as they are symbols of friendship and affection, it seems preferable to call them "love pheasants." They are the personal emblem of the Imperial Consort and do not appear in the decoration of the halls devoted to public ceremonial. There is a deep octagonal border to the

central dragon figure, and in it appear deer, symbols of longevity; dragons, of correct conduct; and dragon horses, curious creatures who spring from the mating of dragons and mares, and who resemble both parents and are called Lung Ma.

The nine steps on either side of the Imperial path are lovely. The artist who carved them was possessed of a chisel full of life's movement. Dragon horses cavort on undulating waves on the marble slab below the stairway. Dogs of Fo roll their variegated ball in the centre of the first tread, and the long ribbons which sweep in lovely curves from the ball to the edges of the step, encircle two of those malevolent creatures with the voices of children, who should remain unseen. Ch'i Lin, fabulous animals who portend peace and good fortune, appear on the second tread, and love-pheasants among clouds on the third. The whole of this fourfold design is repeated on the remaining steps which reach the narrow platform before the palace door.

The Son of Heaven received his officials in the palace of the Cloudless Heaven each day as the sun rose. The Throne is most elaborate and very deeply carved with a heavy design of five-clawed dragons and clouds; it is in fact the Dragon Throne so often spoken of. The board above it reads:

Upright, Noble, Honourable, Clear of Intellect.

Such are supposed to be the attributes of the Ruler. A magnificent fivefold screen stands behind the throne, and in the centre of each fold a panel is inserted, and on each panel a quotation from the Classics is carved. The central precept states:

Only Heaven is All-hearing, All-seeing, and perfect in Comprehension;

Only the Perfect Ruler is at all times a Pattern;

Only the absolutely sincere Official reverently follows the Ruler's example.

Only the Virtuous People are obedient and allow their actions to be regulated.

In a word, only by harmonious co-operation can good government be achieved; only when the Son of Heaven follows the Way of Heaven, can and will his officials take him as a pattern, and can and will his people accord with the regulations. The whole theory of Chinese government is contained in this passage, and it has stood the wear and tear of many centuries.

The sentences in the side panels read as follows:

Achievement that is worthy of admiration, springs from
perseverance;
Patrimony can be widened only by diligence;
The Emperor is above all creatures;
The Ten Thousand Countries all enjoy peace.
The Princely man is kind and courteous;
He is a model for the Four Quarters;
His knowledge of men shows his discernment;
He is able to conserve the people in peace—this shows his
kindness.

I have a photograph of the Baby Emperor taken the year he was chosen to mount the Dragon Throne, and I could not resist looking at it when Mr. Cultivator-of-Bamboos and I had finished our translation of the precepts with which he was, and is surrounded. It shows him a quaint small person, aged about four, dressed very simply in padded winter garments which keep his arms outstretched. His little Oriental face is quite impassive and he is standing correctly as an Emperor should do. His younger brother, a mere infant, who was photographed with him, is folded into a blackwood armchair and looks thoroughly uncomfortable—but resigned, as Eastern babies do.

The Dragon Throne occupied by the Son of Heaven is surrounded by carved railings, and incense burners of various forms stand in front and to the side. The furnishings of the hall are of course most gorgeous, and an enormous mirror is placed in such a manner that the throne is reflected on its brilliant surface.

As the Three Great Halls form the nucleus of the ceremonial portion of the Purple Forbidden City, so the Palace of the Cloudless Heaven and two other halls form the nucleus of the residential portion. The plan of arrangement is identical; that is, large halls are placed to the South and North of a small central building, which represents the very heart of the idea which is expressed by the whole. The Three Halls of Ceremony are, as I have said, an apotheosis of the harmony which should exist between the Ruler, his officials and his people; the three halls to the North are an apotheosis of a still more subtle harmony, that of the two essences, the Yang and Yin.

As the Emperor is supposed to be the personification of Yang, the Positive Essence, which it must be remembered comprises light, strength and all the so-called

masculine elements of Nature, so His Consort is looked upon as the personification of Yin, the Negative Essence, to which pertain all feminine qualities. The Record of Rites defines their functions very clearly in the chapter called *Hun I*. The passage reads:

"For this reason it is said: 'Hearken to the Son of Heaven in regard to the tenets for men; hearken to Her-who-is-equal-to-the-Sovereign in regard to the compliance required of women. The Son of Heaven directs the inherent principle of the Yang essence; She-who-is-His-equal regulates the Yin qualities. The Son of Heaven rules all without; She-who-is-His-equal directs all within.' Thus opinions and tenets, together with un-resisting compliance, are perfected among the uninstructed people; without and within, harmony and accord obtain, and in the state and the homes the elements of reason and order prevail. This condition is called 'superabundance of that virtue which springs directly from the heart.'

"For this reason, if the tenets of men are not cultivated, the functions of the Yang essence will not evolve; their opposition will be manifested in the sky, and the sun will suffer eclipse as though consumed by a living creature. If the compliance of women be not cultivated the Yin qualities will not develop: their opposition will be manifested in the sky, and the moon will suffer eclipse. Hence when the sun vanishes, the Son of Heaven puts on his plain robes of raw silk shining only with the natural lustre of crude threads; he rectifies the government of the six palace Halls, and purifies the Yang essence in All-Below-the-Sky. When the moon is consumed, She-who-is-equal-to-the-Sovereign dresses in her plain robe of raw silk, regulates the administration of the six palace Halls and purifies the Yin qualities in All-Below-the-Sky. Because the Son of Heaven is to His Consort as the sun is to the moon and as the Yang essence is to the Yin, so they are essential to each other and she perfects the whole.

"The Son of Heaven, in laying down the instructions for men, fulfils the functions of a father; She-who-is-equal-to-the-Sovereign, in teaching the compliance of women, treads the mother's way: therefore it is said that the Son of Heaven and His Consort are the father and mother of the people.

"Hence for him who is the Heaven-appointed king they wear the sackcloth with the jagged edges—as for

a father; and for the queen they wear the sackcloth with the even edges—as for a mother.”

The Palace of the Cloudless Heaven is devoted to the Emperor's personal use, and the K'un Ning Kung (Palace of Earthly Peace), furthestmost north of the three in the northern half of the Purple enclosure, is used by the Empress. Between the two stands the small building called Chiao T'ai Tien—Hall of Fusion and Permeation. The name is very difficult to render in English. The complete phrase should read *t'ien ti chiao t'ai*, translated by Williams as: Heaven and Earth Vigorous and Productive. Juliet Bredon calls the Chiao T'ai, Hall of Imperial Marriage Rites. This is far too concrete and carries the wrong connotation; it suggests that actual marriage rites take place in the Hall; this is not so. The name is entirely figurative, and refers to the moment when the descending Vital Force of Heaven meets and is fused with the ascending Vital Force of Earth—at which moment, on the fifteenth of the Fifth Month, all things are completely permeated with life.

Imperial Seals of past dynasties are kept in the Hall of Fusion and Permeation. They are placed in caskets and are arranged behind and at the sides of the small and very simple throne, which is not raised on a dais. The horizontal board hung above it bears only two words: Wu Wei (non-Action). I do not suppose that any two words in the Chinese language have caused such endless discussion. They mean “inaction”; yet the Chinese say, “do nothing and there is nothing that cannot be done”; and again, “perfect virtue does nothing, yet accomplishes everything”; and in the “Analects” of Confucius it is said that the Emperor Shun instituted the rule of Wu Wei, which is explained as: rule by virtuous example, and the Law of Nature which will ensure the evolution and development of the people as rule by force and punishment can never do. It is exactly the same principle as that adopted by parents in regard to their children. The Chinese do not believe in discipline as understood in the West; and although precepts are very generally used, example is the keystone in the Chinese arch of culture, and the Son of Heaven is supposed to display it to perfection.

In an alcove to the East of the Throne stands a magnificent gilt water-clock which has dripped out the hours for centuries, and, I suppose, still does so. Thus

even time springs from the heart of the Imperial residence.

All the decoration in the Hall of Fusion and Permeation shows a combination of the dragon and love-pheasant motives; and these two creatures appear, carved in high relief on the panels of the doors, and painted in soft colours on the wide roof beams.

Behind the little central building stands the last ceremonial hall: Palace of Earthly Peace. As it is constructed for the use of the Imperial Consort, the doors are carved with her special emblem, the round full moon. Just beyond it, to the North, the end of the enclosed paved central strip of the Forbidden City is reached, and the door in the northern wall is called Gate of Earthly Peace.

Directly to the North stretches the flower garden of the Ruler, and in its centre stands the Hall of Imperial Peace, where the Son of Heaven may rest from the cares of office, among trees and blossoming shrubs. The white marble balustrade is carved with a design of "moving dragons," and is surmounted by vases and peonies; by a play on words this decoration suggests the words: "Happiness, prosperity and peace." Very fine examples of the dragon son, Hoarse Voice, are used as water spouts in the corners of the terrace, and below are lightly traced circles of "longevity."

The Imperial study, where the Ruler keeps his books, is placed directly West of the Palace of the Cloudless Heaven, and is called Yang Hsin Tien (Hall where the Heart is Nourished). The heart of course is looked upon by the Chinese as the seat of intellect. A poem by the Emperor Ch'ien Lung is carved on a screen directly behind the throne, and bookcases are ranged on either side; and in an inner apartment a beautifully painted symbolic frieze runs round the wall. It shows a round red sun shining from between pine branches, which are symbols of longevity. The red sun stands for the Emperor whose light is supposed to illuminate the world as the sun illuminates the universe; whose fortune should rise higher and higher even as the sun rises. Cranes of long life and peaches of immortality are painted on the western wall. The panels are carved in a design of bamboo and epidendrum also symbolical. The bamboo can suggest many, many things, but here only two of these meanings are intended — inalterability and receptivity. As the bamboo is evergreen and unaffected

by the changing seasons, so the Ruler should never vacillate; he should be uninfluenced by trivialities, and as he is in the beginning, so should he be in the end. The bamboo has a hollow or empty centre, so should the Emperor keep an empty heart, or as we should say, an open mind, one that is always ready to receive good suggestions and treasure good advice.

The epidendrum has been used as the symbol of a perfect man ever since Confucius enumerated its exquisite characteristics; and the Emperor is supposed to possess them all.

The Imperial bedroom is in the Hall where the Heart is Nourished, and the dragon bed is hung with yellow curtains woven in a design known as the endless knot of long life, or the ten thousand characters of the revolving dragon; the character *shou* (longevity) appears too in several of its one hundred possible forms.

To the North of this private residence of the Ruler is the I K'un Kung (Assist the Earth Palace), residence of the Empress. It possesses two marvellous wooden screens; one is carved in the design known as *hsi shang mei shao*, and shows the magpie, bird of joy, among plum blossoms. The allusion lies in a play on words, the idea being that when the eyebrows are lifted high and are not drawn together, one is happy and care-free. The other screen is composed of the pines of longevity. The frieze and panels of the room are decorated with a design of bamboo. Thus the Three Friends, the pine, bamboo and plum, "who do not fear the winter's blast," are all represented. Panels and window-frets are ornamented with characters for longevity, and elaborate lanterns, screened in different shades of yellow, hang from the ceiling, while at the end of the room stands a magnificent circular mirror, which conveys the meaning "United in a complete circle for eternity!" A round mirror has several meanings: it is symbolic of conjugal happiness; the death of a wife, the absence of a husband are referred to as "a broken mirror"; it also suggests complete comprehension; and is used as an allusion to the magic mirror in which the nature of hearts is reflected. These magic mirrors were used by the Great First Emperor of China to test the hearts of Palace Ladies.

The last gate of the Purple Forbidden City is called Shên Wu Men (Spirit of Bravery Gate). In addition to all his other attributes the Son of Heaven is supposed to

be absolutely courageous; he is described as "the princely Ruler, majestic and awe-inspiring." Ironically enough, it was through the Spirit of Bravery Gate that the Emperor Kuang Hsü, his august aunt the Empress Dowager T'zū Hsi and their court fled, when in 1900 the allied troops took Peking.

To East and West stand innumerable palaces, halls, pavilions, courtyards and flower gardens; and they all have beautiful symbolical names, such as Palace of Peaceful Longevity, Hall of Mercy and Tenderness, Pavilion of Southern Glory. And as the Emperor is supposed to be an example to his people in all ways, he is naturally expected to perform the most important of social duties, in the eyes of the Chinese: that is, he must provide descendants in order that his family does not perish. So we find the Doorway of a Hundred Sons, and the Gateway of a Thousand Girl Babies.

I was asked by the Director of the Far-Eastern Section at the Congress of Orientalists, Oxford, to speak on the subject of the symbolism of the Forbidden City Peking, of which I made a study some years ago. My talk was illustrated by slides made from the photographs taken by the Japanese during the absence of the Court after the Boxer troubles in 1900. My teacher Nung Chu *hsien shêng*, whom I refer to as Mr. Cultivator-of-Bamboos, and I made a careful study of the plates published from these photographs, and unravelled the symbolism shown therein. Readers who are interested in the study of Chinese symbolism will find a detailed discussion of the philosophy upon which this symbolism is based, in Chapter Four of my book *A Chinese Mirror*, "Being Reflections of the Reality behind Appearance."

CONTRIBUTIONS FROM THE HERBARIUM OF THE SHANTUNG CHRISTIAN UNIVERSITY¹

By ARTHUR PAUL JACOT

III. SPRING FLOWERS OF THE TSINAN PLAIN

Although there are lists of the flowering plants of Chefoo, Tsingtao, Tientsin, Peking, and other such localities, the plants involved are seldom described, and when they are, it is rarely in English. The present paper is a contribution towards the remedying of this condition. Non-technical language is used, even though not so well understood by the systematic botanist. In order to make the identification of the species as simple as possible, and at the same time to present a series of pictures of the flora as it changes from season to season, the order of presentation is chronological. Thus, with this paper in hand, one may become acquainted with the wild flowers one by one as they appear throughout the spring. The plants may be ecologically divided into the following associations:

Field weeds (spring: among the wheat, summer
rainfall: among the fall crop plants)

Field margins (narrow herbaceous ridges left
between fields)

Graves and terraces (sloping ground, more or
less permanent)

Water runs, draws, arroyos (some being used
as "road" ways)

Stone dumps, villages and yards.

Arbor Vitae (*Thuja orientalis*) groves (burial
grounds)

The first plant to bloom is the small, cosmopolite best
known as the Shepherd's Purse (*Capsella bursa-pastoris*)

¹ This is a direct continuation of the series begun in Vol. LIX (1928).

(L.)). About March 18th the small rosette of leaves, which has been growing a little each warm afternoon through the winter, sends up its slender stalk with a cluster of tiny white blossoms. Later, this head spreads out several slender branches lined with the characteristic, slender-stalked (pediceled), triangular pods which, if broken off and held suspended by their pedicel, recall the purse which shepherds carry suspended from their belts. It occurs as a field weed and about waste places, the soil of which has been newly turned up.

A week later, or rather during the next warm pulse, usually occurring during later March, the characteristic spring flowers begin to add colour above their unfolding leaves.

Astragalus scaberrimus Bunge which forms a greyish-green mat over the ground, sets up its slenderly pea-like flowers which, although usually white are often flushed with yellow or pale rose. The greyishness of the small oval leaflets is due to a covering of closely crowded, closely appressed, stiff, white, bristle-like hairs. The flowers are often so crowded together as to form a mat of white blossoms, a very attractive addition to any "lawn". Later the greyish-green pods may be found close to the ground among the leaves. The plant is spreading in habit and common in burial grounds and on graves.

Gueldenstaedtia giraldii Harms is also a bean plant, its flower being much more pea-like than the former and borne in heads of 3 to 6 on a stout, erect stalk (scape). When in bud they are rosy, but turn lilac on opening, with a white flame in the centre of the upstanding petal (standard). On withering they turn dark blue. The compound leaves spring from a peg-like root, forming a tuft of blue-green, silky haired mouse ears. When seen from above, each flower cluster is seen to be twisted like a pin-wheel due to the twist of each flower. When fertilized the scape slowly bends earthward so that the hand-like cluster of pods lie close enough to the earth to be safe from browsing sheep.

G. stenophylla Bunge, first described by the early Russian botanist Bunge, from specimens he found near Peking, is similar but has very narrow leaflets, and pale pink, sometimes almost whitish, flowers on much longer and more slender scapes. It is therefore much less conspicuous and not so common, though far more dainty.

G. giraldii glabra Jacot is an absolutely hairless variety whose leaves are consequently a bright green, giving the plant a fresher, cleaner look. Although the species itself loses most of the hair of the leaves during the summer it never has the same vivid green and always has hairs about its buds and unfolding leaves. In the variety the flowers also are more rosy and vivid. All three of these forms are common on terraces, graves and burial grounds.

Viola prionantha Bunge, another of Bunge's Peking plants, is the common violet of this region. It has long been called *V. patrinii*, but Becker, the late authority on Eurasian violets, has shown that *V. patrinii*, a Siberian species, never comes south of the Great Wall. Our species has no beard inside the side petals, and has elongate oblong leaves when older, though some are elongate-triangular with an almost straight (truncate) base. The leaf stalk (petiole) is winged. Terraces and graves are the preferred habitat.

Euphorbia lunulata Bunge, the north China spurge, is conspicuous by its height and tuft of green flowers. Actually the green petal-like parts are better called the *involucre*. Above them are the lobed pods crowned, like the moslem, by a crescent (gland). The strap-shaped leaves, like the rest of the plant, exude milk on being bruised or broken. Large individuals may reach 15-18 inches in height. It is common on graves, terraces and field margins. One may often find specimens crowned by a cluster of thick leaves whose lower surface is covered with yellowish "powder" caused by a fungus disease which arrests the growth.

Accompanying these flowers but waving above them are the poplar (*Populus tomentosa* Carrière) whose catkins become long, drooping red fingers, the willow (*Salix matsudana* Koidzumii) whose catkins become erect and fuzzy, and the elm (*Ulmus pumila* L.) which puts out its clusters of tiny green flowers and then showers its green seed-wafers about their shade area.

Also, if one looks carefully along the roadsides and pathways for what is usually thought of as grass, one will find the flower of a cosmopolitan weed, the slender leaved sedge (*Carex stenophylla* Wahlenburg). This flower consists of a tuft of brown "chaff" on a slender, erect scape, rarely over three inches high in this dry, sunny north China plain. The upper half of this chaffy

head becomes yellowed by the extruded anthers, the lower half being feminine. As it spreads by underground runners, the flowers may be found in merry companies, "nodding and dancing in the breeze," chiefly along roadways.

The next warm spell, about the first week of April, brings out another group of which the first will probably be the dandelion but not, as has usually been reported, *T. officinale* of southern Europe but, as has been shown by Handel-Mazzetti, *Taraxacum mongolicum* found abundantly throughout north China. The blossom and leaves are like the old familiar species but the seeds are very different, being ornamented by encircling ruffs or tucks turned upwards, instead of longitudinal ridges (see figure 1). The shape and size of the leaves varies greatly with age and locality (moisture and shade). Of many specimens examined around Tsinan, Tsingtao, and Chefoo, I find they are all Chinese species (see contribution IV).

Sisymbrium sofia L. another wheat field annual and cosmopolitan weed has greyish-green, very much cut up or compound fern-like but coarsely thick leaves, which the poorer Chinese use, like the Shepherd's Purse, for vegetable greens. About this time it sends up its stalk the tip of which soon bursts, rocket-like, into many, tiny, yellow, star-like flowers. A count of its four petals shows it to belong, like the Shepherd's Purse, to the criss-cross family which gives us our mustard, radishes, turnips, and such. It may also be found wherever earth has been newly turned up.

Marrubium incisum Benthham begins growing in the fall, like winter wheat, and thus is ready for a big spread in spring. The rosette of roundish, palmately lobed leaves then sends up a stout four-angled stalk, which is frequently interrupted by a quartette of leaves which still higher up become couples embracing in their axils clusters of velvety white flowers, each one stuck in a bristly-toothed cup (the calyx). The plant may reach a foot in height, though usually less, and forms a conspicuous blue-green tuft on graves and terraces. By May it begins drying at the base so that by June nothing is left but a dry, brown stalk studded by crowns of chaffy calices.

Lepidium chitungense Jacot, usually called *L. apetalum* Willd., a species of central Siberia, and commonly called Pepper-grass, spreads its petal-less flowers about houses and yards. Its leaves are strap-shaped but

bordered with short, *blunt*, triangular teeth (figure 2). Three or four weeks later it is more familiar to the eye because of its rows of tiny, green, disc-like pods, slightly notched at the tip. A careful survey of the tips of the branches will show a cluster of the tiny flowers whose most conspicuous feature is the yellow anthered stamen on each side of the disc-like pod, and the white fringed, hairy backed sepals, four in number. Thus this also is a *Cruci-fer*. The branches always spread widely from the base (there being no erect, main stalk) making the plant broader than high.

Trigonotis peduncularis (Treviranus) the north China forget-me-not, is often so tiny in plant and flower as to be usually overlooked. In favourable places it may attain considerable size and in mass is quite conspicuous. As, however, there are four kinds of small blue-eyed Borages in this region one must look closely. In this species the leaves are almost to quite smooth (hairless), the blade is shorter than its stalk (petiole) though much broader, while the flowers are staggered along the elongating axis without subtending leaves. The tip of the axis unrolls, resembling, like young ferns, a fiddle head. Robust specimens may reach a length of 15 cm. (6 inches) with a spread of 2.5-3 dm. (10-12 inches). It is one of our daintiest spring flowers found chiefly on new land recently gone "wild" and with some plant covering. It does best in limestone rockeries developing to its maximum size in contact with such stones.

Bothriospermum secundum Maximowicz is another of these small flowered plants with blue petals. The blossom is at least twice the diameter of the former and the leaves are long-oval or ob-lanceolate and studded with coarse, spiny hairs (almost bristles, each with a dilated, disc-like base, figure 3). As the year advances the branches keep lengthening, the flowers continuing to develop, crowded along their tips, each subtended by a short leaf. The sprouts (figure 5) are erect with oblanceolate leaves scattered along the axis, but soon lose their attractiveness because of the large, hairy calyces and rough, hairy stems. Common about waste land.

Bothriospermum chinense Bunge resembles the preceding very closely but is less hairy, the hairs more silky, while the flowers are much less crowded and subtended by leaves which far exceed the flowers. Still more important, the four little nutlets snuggled in each

calyx are almost smooth while in *B. secundum* they are studded with slender or elongated warts. The young sprouts also are readily distinguished by the arrangement of the leaves relative to the development of the shoot, which in this species remains short, the oboval leaves forming quite a conspicuous rosette (figure 4) while in *B. secundum* they shoot quickly up, taking the half grown leaves along with it. It is most frequent on the graves and terraces.

Oxytropis bicolor Bunge is another "bean" plant found only in the north China area. About Tsinan it is found chiefly on overgrown, stony dumps, terraces, and on the limestone hills. It may be distinguished from all other Tsinan plants by its pointed, sessile leaflets often grouped four together along the petiole (the leaf being compound), and by the yellowish-green heart of the elongate scarlet flowers closely bunched in a roundish head which terminates a long prostrate scape. The generic character is a small point standing out from the tip of the flower keel, while that of the *Gueldenstaedtia* is the extremely short keel, shorter, in fact, than the calyx.

Lepidium incisum Roth, another Pepper-wort, which grows much taller than the above one, and branches only at the top, leaving a clean, though leaf garnished, "trunk", has lyrate-pinnate, basal leaves with very fine pubescence (short, soft hairs) on the upper surface only. The leaf divisions (pinnae) are strongly and deeply toothed and the edges slightly turned downward. The flowers are petal-less, like *L. chitungense*, or rarely with small, white petals.

The other spring sedge, *Carex heterostachya* Bunge, may also be looked for now. Though its leaves and colonial habit resembles the earlier one, its flower-fruit arrangement is quite different. To begin with, coming later, its scape has time to grow twice as tall as *C. stenophylla*. Then instead of one broad head, it has two or three slender ones, of which the upper are male flowers bearing pollen and the lower female bearing seed. Finally, the heads are a much darker, walnut brown.

On sandy places and on the dikes at places north of the city one may find the annual *Hypecoum erectum* L., the golden poppy of north China. Though a fairly large (13 mm.) and conspicuous yellow flower, borne well above its tuft of grey-green very finely divided (compoundly pinnate) leaves, and in clusters (cymose) several on a

scape (though but two or three of a scape may be in bloom at one time), it is but a small plant at this time, barely exceeding 8 cm. (3 inches) in height or spread. Its most surprising feature is its large blossoms of two 3-lobed petals, enclosing two narrower deeply bilobed petals in whose cleft is a sterile stamen, these in turn enclosing two stamens with broad filaments and two with narrow. The two small sepals are caducous. Each flower is subtended by a fimbriated bract. Later in the season the flowering branches have elongated, carrying the flowers and slender pods terminated by the two curved styles, far beyond the leaf tuft, and thus forming a filmy cloud about the vegetative organs. Thus the plant is at once one of the daintiest and most conspicuous of the low annuals.

After the ensuing blow from the northeast or cold blast from the north with its accompanying dust storm, one may go again in quest of a new galaxy.

Conspicuous, in the morning before the sun is high, is the fringed disc of *Lactuca versicolor* Schultz-Bipontius, the wild lettuce, which closes up to a wizened tube as the sun gets hot. In the evening, however, the plant is all aglow again. Both flower and leaf resemble the dandelion but the ray flowers occupy only the outer edge and the blossoms are usually more than one to a scape. The leaf is greyer-green and more remotely toothed (figure 8), to almost untoothed in shady places. Although the flower is pale yellow about Tsinan, further south, as at Tengersien, may be white, or white and yellow ones may be scattered about without the slightest relation to soil, shade or other environment factor.

Rehmannia glutinosa (Gaertner), often called digitalis by foreigners who know the western flowers, is conspicuous because of its large, oval, blue-green leaves and scape bearing at its tip, several long, tubular, maroon and cream flowers. It boasts the largest leaves of all our wild herbs and they are mahogany red beneath. If the tube of the flower is split at the juncture of its three-lobed lower lip, and the two-lobed is split at the juncture of its three-lobed lower lip, and the two-lobed upper lip, the four stamens will be found to lie against the roof in two pairs: an outer and an inner, the apices of the filaments curved towards each other so that the anthers which open downward form a yellow, feather-stitched cluster. Later, the large conical pods will be

crowded with small seeds whose surface is at first covered with many opalescent facets which later are replaced by shallow, honey-comb-like pits. The flowers vary considerably in the extent of yellow (or maroon). The entire plant is extremely hairy so that it accumulates a great deal of dust as the season advances. Commonest on graves and terraces.

Androsache umbellata Loureiro, better known as *A. saxifragaefolia* Bunge is the only spring "primrose". Its tiny white flowers with yellowish eye borne as an inverted candelabra on a three inch scape, recall forget-me-nots, but their grouping (in an umbel) is strikingly different. Its only leaves are a rosette of tiny, oboval, coarsely but prettily toothed blades. At Tsinan one finds them along the north foot of the hills, though they are locally common on the alkaline plain. It is found on the plains of India (Calcutta to Punjab) to 4,000 feet in the Himalaya, and throughout China to Japan and Manchuria. "The distribution of this species is highly remarkable".

Vicia tridentata, another of Bunge's Peking finds, is the common vetch of the plain, colouring the ground with its large violet blue, pea-like blossoms. The name *tridentata* is due to the shape of the tips of the leaflets which are so deeply emarginate as to leave the sides of the leaflet protruding like horns which, with the protruding mid-rib, form three prominent teeth (figure 6), as is the case with *Gueldenstaeditia multiflora* of the Peking mountains. These leaflets are opposite and four to six in number, the terminal one represented by a longer, branched tendril. There is no more brilliant blue flower on the plain than this, and the blossoms, though but two or three per peduncle, are unusually large for this genus (2.5 cm. long). This, with the colonial habit of growth, makes the species quite attractive.

Conspicuous by its appearance though not by its blossom, is the unique shrub *Speranskia tuberculata* (Bunge). Unique because there is none other like it in north China, although the Germans have described another species *S. pekinensis* differentiated by its warty ovary and short, erect styles. After a careful study of many specimens in the field, I find that this is not even a constant variety as each of the so named specific characters appear on any plant without the slightest correlation or constancy of association and with any

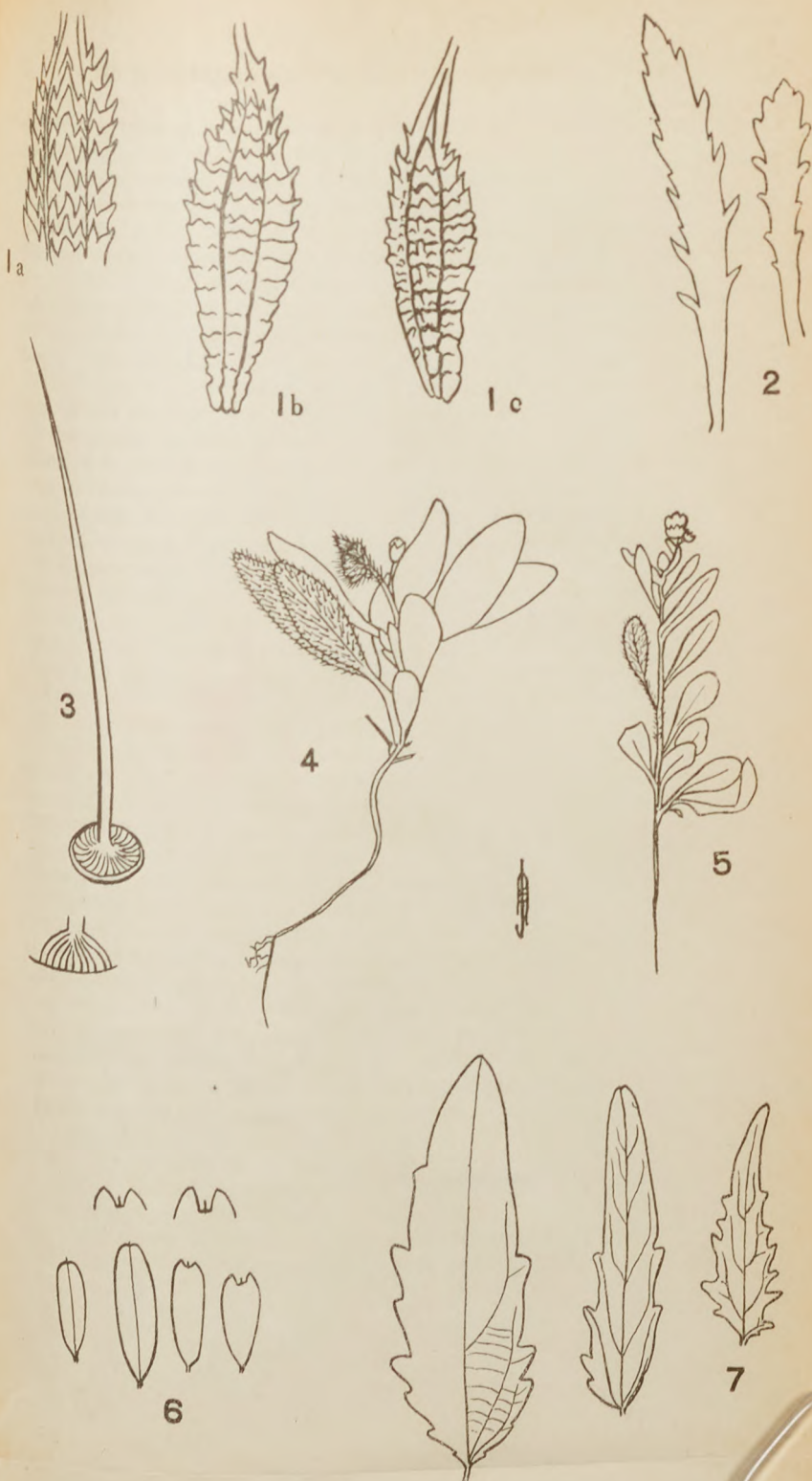


Figure 1a. *Taraxacum mongolicum caninum* var. nov. Seed.
 " 1b. *Taraxacum mongolicum laeve* var. nov. Seed.
 " 1c. *Taraxacum duplex* sp. nov. Seed.
 " 2. Leaf of *Lepidium chitungense* (on right) with young leaf of *L. ruderale* for comparison (on left).
 " 3. Hair and hair base of *Bothriospermum secundum*.
 " 4. Sprout of *Bothriospermum chinense* (May 2nd).
 " 5. Sprout of *B. secundum* (May 16th).
 " 6. Leaflets of *Vicia tridentata* (upper ones enlarged).
 " 7. Leaves of *Speranskia tuberculata*.
 Figures 1 and 3 much enlarged; figures 2, 4 to 7 natural size.

degree of intermediacy. The leaves are oval-lanceolate and coarsely toothed (figure 7). The flowers are scattered along the terminal part of the longest branches, the male flowers at the top, the female, which soon form three-lobed pods, below. It is these green, smooth to warty capsules, strung along the slender twig tips, which are the plant's most distinctive feature. Likewise it is these three-lobed capsules that recall its relatives: the spurges, the castor bean, and the poinsettia. Found chiefly about graves.

During the third warm spell (week) of April one may go out to meet the following debutantes.

Erodium stephanianum, one of Willdenow's many children, is the only wild geranium of this region, and even it cannot be called a true *Geranium*, because there are but five stamens and the tail (awn) of the seeds is bearded along its inner edge. Like many of the humbler geraniums and several of our wild flowers, the petals are lilaceous though more bluish than those of *Gueldenstaedtia giraldii*, three or four growing on an erect scape so that later on one is presented with a nest of cranes pensively looking down their long bills. An interesting characteristic is the gland tipped style terminating each sepal. This species grows from a thick tap-root and sends out a large rosette of branches lost in a mass of pinnately divided leaves (figure 9). Such plants may reach 38 cm. (15 inches) in diameter, forming pleasing, variegated mats on graves and terraces.

Erysimum cheiranthoides L., a cousin of *Sisymbrium sophia*, and growing up like it tall, slender and yellow, crowned with four petalled flowers which give rise, like its cousin, to slender, erect, tiny, bean-like pods, has leaves which are strikingly different in that they are lance-like but shallowly toothed. This waste-land weed is garnished with stiff trifid hairs.

Lactuca denticulata. Maximowicz differs from the earlier species in having a smaller more orange-yellow flower, on larger plants with more elongated branches, and in having very large, halberd-like bracts at the base of each fork. The basal leaves are lyrate (figure 10), runcinate or obovate and denticulate (especially when young). The bracts are entire at the top but become progressively more toothed, first at the broad, eared, clasping base, then along the slender blade, until near the base of large plants they have long, toothed spurs,

as though the plant had sent their milky, dandelion-like leaves up their stems, the smallest going highest. On the whole, it is a stiffer, more variegated but lacier plant, preferring shady places and therefore found more in Arbor Vitae groves and on north facing slopes, under bushes and similar retreats.

Potentilla flagellaris Willdenow is in my estimation the loveliest of the yellow flowered plants. It resembles very much in the shape and size of its flowers, its leaves and trailing runners, the strawberry plant, but its petals are yellow, a clear buttercup yellow, the blossom exceeding in its clearness, flash and size (to 3 cm.) any other local, yellow, wild flower. The runners become adorned by leaves whose axils bear a single flower and possibly another shoot. About Tsinan it is always and only found at the foot of graves and terraces facing north, if steep enough to afford plenty of shade.

After these last two plants, which usually bloom about the middle of April, have spread their stars on the green carpet there is a marked pause in the procession which some six or seven days later is resumed by the following two composites:

Aster hispidus Thunberg is the only but quite common wild Aster. Its leaves are not only undivided but untoothed and strap-like. Furthermore they are characterized by being covered with stiff grey hairs which, along the margin when seen in silhouette, are seen to be quite large, stiff, and strongly curved, pointing towards the tip of the leaf. In fact, most of the plant is rendered hispid by these curved "hooks". The blossoms are fairly large (to 2.5 cm. in diameter), the rays being pale blue to almost white. They may be found almost any place where they are not ploughed or hoed up, forming increasingly large colonies.

Cnicus segetum (Bunge) is the thistle of the region but mild in every way. Its blossom is lilaceous to rose, small for a thistle; its leaves are merely scalloped (denticulate to coarsely toothed), the prickles being quite weak. Typically its stalk is terminated by a single flower though smaller ones occasionally occur below it. The flower head is enclosed by several ranks of pointed bracts, each successive row upward, longer than the lower, until in the uppermost, the bracts are lanceolate. It is found in greatest frequency as a field weed.

It is also at this time that the fourth tree *Paulownia fortunei* (Seeman) puts forth its long (6 cm. or more), tubular, white flowers among the large, long-triangular leaves (blade to 25 cm. $\times$ 16 cm.). These blossoms demand closer study. The receptacle-like calyx is a heavy, green cup, with thin, silvery skin (epidermis) and rusty plush (toment). One is at first struck by the heavy, sweet scent. On looking down on the blossom one is surprised to see it is mauve (a lilac blue). Correspondingly the three lower lobes are white, the upper two mauve, but on the inner (upper) face the three lower lobes have deep blue points of two sizes, the larger of which are arranged in rows converging towards the interior of the flower. Within the tube one finds two elevated tracks which are a pale yellow, and run to the honey glands. The arrangement of the reproductive organs is similar to that of *Rehmannia* (above), but the stamen filaments are straight and immaculate. The style exceeds the stamens by twice the length of the anthers when fully grown, the tip being bent down as a pointed knob with a tiny hole at its tip. The filaments are curved near their base, first downward, then outward to the sides of the blossom tube, leaving exposed the four honey openings of which the upper is much the longest. The two little eggs (ovules) are like flattened wheat grains with a deep groove but with pebbled surfaces. It is thus not only the largest wild flower, but one of the most interesting. The trees about Tsinan are infested with a fungus which develops witches' brooms.

The last week of April is marked by the flowering of two trees, one native the other an alien:

Catalpa bungei C. A. Meyers, the columnar tree of north China becomes crowned in violet. There is no more glorious sight in the plains of south-central and north-central Shantung than a mass of these tall trees towering as a grove above the buff wall of a village, their upper region a mass of violaceous bloom, like islands of rosy spray against a sea of green wheat. The flowers are thimble-like and about 4 cm. ($1\frac{1}{2}$ inches) long. The colour is due to purple spots in the throat, the ground colour being white but so clear in the sun and the blossoms so grouped (in corymbs) as to give the general purple colour to the distant eye. The leaves are deltoid with two or three prominently projecting teeth about the widest part.

Robinia pseudoacacia L., the black locust of the United States, introduced by the Germans especially along the railroad, is now being used more and more by the Chinese, as a rapidly growing, freely sprouting, pest free producer of fuel. Its gracefully pendulous compound leaves and clusters of white blossoms contribute to its rank as an ornamental shade tree while its stout thorns tend to keep off the careless.

The wild alfalfa (*Medicago sativa* L.) now tips its long, spreading shoots with a cluster of small, whitish blue to deep blue blossoms. It may be easily recognized by its deep blue-green foliage spread in large, roundish mats, and the close clusters of small, pea-like flowers which have so much the blue of the leaves as to be easily overlooked. It is most common along roadsides and field margins.

Polygala tenuifolia Willdenow, another blue flower, may be found in special localities as it is more of a dry hillside species than one of the plains. It grows up like a tiny bush with very slender, strap-like leaves (rarely exceeding 3 mm. in width) and several small blue flowers scattered along the upper part of the longer branches. These flowers are quite unique in appearance for they are bilaterally symmetrical and are quite unlike a pea-flower. They may be easily recognized by the stiff tassel at one end formed by the fimbriated end of the middle (of three) petal. Two of the sepals function as petals thus making up a total of five coloured parts, as in so many flowers. About Tsinan this "blue-bird" may be found springing from loess "cliffs" and terraces especially those facing north and east.

Iris ensata Thunberg although the largest blue flower of the plain is disappointing as an Iris as it attains but 15-20 cm. height. What it lacks in size it makes up in daintiness as both leaves and flower parts are quite slender. The standards are quite stiff and erect, the falls quite beardless and the stigmas long, erect and terminate in two slender teeth. The flowers are always single on scapes with a few long but slender bracts. The plant springs from a brown fibrose rhizome which spreads profusely so that one may find about villages considerable beds of these dainty flowers. They are also specially planted at the head of vegetable garden rows in order that the extremely tough and supple leaves may be handy to tie up bundles of vegetables.

The first week of May ushers in another Composite: *Saussurea affinis* Sprengel. Its rosette of lyrate leaves (3-4 inches long), white-woolly beneath have been more and more shadowed by the elongating, ribbed stalk which now puts forth its cluster of rosy-red, thistle-like flower heads each on a long, slender, curved peduncle. It is at once the most variegated of the composite spring plants and the tallest of the spring annuals (with the exception of the grasses). The pappus encompassed flowers are enclosed in several rows of pointed bracts of which the innermost are long and slender while the short, lower ones are rendered bizarre by bearing a broad crest-like wing on their backs.

The plantain (*Plantago depressa* L.) also gives evidence of blossoming at this time by dusting its stiff spike with yellow anthers at first near the base and on upward. The leaves are characterized by being irregularly toothed along *most* of the margin and broadest at the middle or beyond. They are quite hairless and have five (seven) nerves.

The warmth of the second week of May brings forth three characteristic flowers of which the first is indigenous to north China.

Incarvillea sinensis Lamarck, a Bignoniaceous plant named for the Father Incarville, one of the early French Jesuit missionaries of Peking, is garbed in the leaves of the Cosmos but has a thimble-like, bright red flower about 2.5 cm. (one inch) long. It grows to a height of about 7.5 cm. (2½ feet) under good conditions, but is not particularly ornamental because the flowers begin withering first at the toothed, outer rim and progressively towards the base, collapsing about the broad, two lipped stigma, and because these gaudy blossoms give rise to long (3 inch), stiff, erect, scimiter-like pods which soon split from the tip downward and slowly release their elongately winged, Catalpa-like seeds. Though found scattered along way-sides and field margins, it is so uncommon as to be seldom seen.

At one or two places on the graves, though fairly common in the hills, I have found another vetch: *Vicia amoena* Fisher which contrasts strongly with the preceding in being a large, stiff plant. Each leaf is about 9 cm. (3½ inches) long and composed of six to seven pairs of strongly mucronate, almost sessile, slender leaflets always far from opposite. The 2-3 branched tendrils

just exceed the leaflets in length. The flowers are numerous but small (6 mm. long) scattered along a peduncle far exceeding the leaves in length. By the end of May, the 2-3 seeded pods are already 2.5 cm. long.

Convolvulus arvensis L., a common European field weed, is the common morning glory of the dry plains, and being a child of temperate regions, its flower is merely a pale pink, only 3.5 cm. in diameter, the leaves narrow and strap-like, with long ears (figure 11) and the stems but a few decimeters in length. It is a true Convolvulus because the two bracts of the long peduncle are small and distant from the flower. The one large petal suffused with rose along the rim, almost white about the middle and with rosy lines at the base, on the stiff rays, while the throat itself is yellowish. It is a common field weed also found on terraces. In the autumn, as the seeds ripen and the pod dries, its peduncle turns 180° from upright to drooping, so that when it cracks open the heavy, black, triangular seeds may fall out.

The third week of May is marked by a lull in flower production, for but one flower opens at this period: *Carum carvi* Linné, the wild Caraway. As it is the only plant about Tsinan resembling the wild carrot, Queen Anne's lace, and such (in short, the only Umbel-i-fer), as also the only white flower of the month, it needs no special description.

Later the tribulation of the earth (*Tribulus terrestris* L.) hangs out its regular, pale yellow bells from the axils of its compound leaves. Although the only succulent (juicy stemmed) plant of the spring, it is the joy of the shoemaker in that it produces seed capsules (carpels) with long, stiff, exceedingly sharp spines, which not only pierce the sole (and seat) of man but the tire of pneumatic wheeled vehicles as well. If it were not for this extremely prolific, spiny-burred plant the Chinese farmers would undoubtedly be a bare-footed race.

May 27th marks the average date of the coming of the Indian Cuckoo, the ripening and taking down of the wheat and the general advent of summer showers and rainfall flowers.

IV. THE SHANTUNG DANDELIONS (*TARAXACUM*)

The most up to date paper on this group is that published by Dahlstedt in the *Plantae Sinenses* series Acta Horti Gothoburgensis, vol. 2 (1925-26), pp. 143-184,

figs. 1-15, 3 col. pls.). Although the classification of the species of dandelions is still far from satisfactory, as witness the placing, in his paper, of six species (out of fourteen) under the head "incertae sedis", the common species of northeast China, *T. mongolicum* is so clearly characterized as to be placed in a section by itself: *Mongolica*. In this group the seed (achene) has its four (the fifth being suppressed or more or less fused with one of the four) longitudinal sections crossed by raised, transverse ridges which are thrown up into three distinct bumps. As these bumps are of regular size they form three *longitudinal* rows of bumps as well as transverse rows on each of the four sections. The characteristic feature of the group, however, is that these bumps, due to their being seated on a transverse ridge, are much more prominent as *transverse* structures. In practically all dandelion seeds the outstanding pattern is longitudinal; in *Mongolica* it is transverse. These bumps give the achene a pretty marbled or pebbled or beaded appearance. It should be noted, however, that the central nob (longitudinal row) is larger than the outer. This is well figured by Dahlstedt (pl. 2, fig. 17).

With this as a fundamental pattern, I find on examining material from Shantung, that there is variation in three distinct directions, and as these variations are constant within the flower head, and also geographically or ecologically distinct, I propose designating them by separate names as follows:

T. mongolicum caninum var. nov. Achene with the nobs developed as elongated spines, resembling the canine teeth of the Canidae (see fig. 1a); colour blackish, size slightly smaller than in the species; involucre bracts hyaline margined, slender, apex slightly dilate-spatulate, round-oval, denticulate, under x40 magnification seen to be covered by filaments of translucent oval to globular cells, while the scarious edge of the blade is finely denticulate. On back of spatula and near its base is a low, conical compressed wen-like swelling resembling a certain type of insect gall, much longer than high; scape arenose-pilose about distal end. Habitat: arid field margins about Tsinan.

Type: taken November 11th, 1928; field margins, Tsinan; No. 1921.

T. mongolicum laeve var. nov. Achene with nobs pointed on upper half, but running together almost

evanescent on lower half, the central one only remaining as a distinct protuberance on the ridge (figure 1b), convex side usually with an entire section smooth; usually more slender and straighter (especially than *T. mongolicum* as found at Tsingtao, in wooded tracts near the shore); involucre bracts hyaline margined, usually slender with a single prominent vein, and a single crest (even if double veined but one crest appears), tip barely dilated laterally, but extending well beyond crest, thick and deeply emarginate; outer bracts in three rows, apex similar to that of long (inner) bracts, margins rendered ragged by fine hairs and long stalked glands; scape apex weakly arenose-pilose. Habitat: arid field margins about Tsinan.

Type: taken September 13th, 1927; field margins, Tsinan; No. 1922.

T. duplex sp. nov. Achene with supplementary nobs immediately below the lateral ones thus forming lateral, longitudinal rows of many fine beads separated by the median longitudinal row of coarser (figure 1c), colour reddish tan, more slender, straighter, and more quadrangular in cross-section, than *T. mongolicum*; involucre bracts hyaline margined, with two prominent lateral veins, along the back of which runs a prominent wing and on the apex of which is developed a longitudinal, elongated, thickened crest, usually much more developed on one vein than on the other. In some bracts and all the outer (short) bracts which are in a single row, only one crest is developed. In such case the crest is much longer than width of bract at that point in outer bracts, making an elongate-triangular crest; hyaline margin broadening at apex of bract to form an irregularly dentate to denticulate hyaline flap, not noticeably wider than apex of bract; outer bracts and apex of scape arenose-pilose. Habitat: more moist and shaded soil of Tsinan area.

Type: taken April 12th, 1928; garden, Tsinan; No. 1923.

V. THE VIOLETS OF NORTH-EAST CHINA

The common violet of north China has almost without exception been called *V. patrinii*. The late Wilhelm Becker in his 1916 paper "Zur Klärung der *Viola Patrinii* DC. und "almlicher Arten" which was published in the *Botanischer Jahrbucher*, vol. 54, beiblatt 120, pp.

156-189, pls. 2, 3, gives us his reasons for considering this incorrect. The material here presented owes its inception to this paper.

As the violets were formerly believed to be simple, clearly recognizable species, which are now known to be represented by many closely related, often freely interbreeding species, it is no wonder that the early writers lumped several species under one name. Such is true of the descriptions of *V. patrinii* of Maximowicz, and of Hooker in *Flora of British India*.

V. patrinii DC. is throughout its range a plant of moist habitats, ranging from the upper reaches of the Jenissei about Lake Baikal, the Chilok and Schilka Rivers, east through the Amur River region to Vladivostok and Japan. It has not been found (according to Becker 1916) in Korea.

Its outstanding characters are: its slender, *delicate* build, small, individual plants of 2-3 leaves and 1-2 flowers, leaves with unusually long petioles, blade ovate-oblong (base and middle of equal width), at flowering time, not clearly subsagittate, base truncate to weakly cordate (small ones cuneate), after flowering time becoming slightly sagittate to more or less deeply cordate, apex blunt, mostly smooth, rarely with short hairs; flowers *white*, mostly small, including spur about 1 cm. long (in Japan to 1.5 cm. long), on a *strongly* nodding peduncle, so that the spur stands outward to upward; sepals short, *rounded* to blunt; lateral petals bearded; spur *very* short, about 2 mm. long (in Japan to 3 mm.).

1. *V. betonicifolia nepalensis* Ging. of South China is a closely related form. This is a more xerophytic plant, the variety found from eastern Shantung (Tsingtao, Strand Bay region, on slopes, more moist meadows, grassy hill slopes, 20 m. elev.) to Hupeh, Shensi and Yunnan; the species in India, Java, Celebes, Philippines, Formosa and Japan.

It differs from *V. patrinii* in its more robust nature, number of leaves (3-5), of flowers (2-6), forming clumps; petiole shorter, with narrower margins; blade narrower, narrowing more gradually to the apex; petals white or violet with paler base and spur, length of flower including spur 1.5-1.7 cm.; spur somewhat thick and to 5 mm. length.

Evidently another bearded species.

2. *V. mandshurica* Becker is the old *V. patrinii chinensis* Maximowicz (not *V. chinensis* G. Don of South China which is *V. philippica*) found in the lower Amur River region of Manchuria, through Korea and Japan and in China only at Tsingtao. It probably occurs throughout the promontory.

The description follows: Rhizome very short; roots *dark*; stipules: lower scale-like, *brown*; upper more or less pale *brown* or violaceous, adnate to petiole to beyond their middle; petiole longer than blade, winged above, very broad below, backwardly hispid; blade ovate-lanceolate, lingulate, obtuse, truncate or suddenly narrowed into petiole, flatly and remotely crenate by 8-10 teeth, *occasionally entire*, somewhat pubescent above, distinctly pubescent beneath, especially on nerves, also glabrous, mid-rib

prominent, yellowish-brown; flowers surpassing leaves, large, on brownish, *gracefully* recurved, hispid to glabrous, *short* (3-5 mm. long), bracteolate peduncles; sepals ovate-lanceolate, narrowly membranaceous, margin straight, acuminate, at base obscurely maculate; auricles abbreviate, broadly rounded; petals *deep* violaceous, obscurely lined, lateral distinctly bearded, lower distinctly emarginate; spur *thick*, 4-5 mm. long (but at another place recorded as 3 mm. long), at end somewhat thickened, somewhat curved upwards, surpassing auricles by 3-4 mm., pale; ovary glabrous; style at apex thick, margined.

V. patrinii macrantha Maximowicz 1859, p. 49, according to Becker, is a synonym. If this be so the proper name of *V. mandshurica* should be *V. macrantha* Max. 1859.

3. *V. philippica munda* Becker is a northern form of the southern *V. philippica* Cavanilles 1801, formerly placed under *V. patrinii* and close to the last. It is found from the Amur region of Manchuria (type locality: near Blagowestschensk), Korea, Japan, China to Yunnan on the mountains.

Rhizome not thick, rather slender, short; roots pale, slender, smoothish, originating nearly at one plane; stipules adnate beyond the middle of their length, the free teeth fimbriate, pale or at times somewhat violaceous; leaves lingulate, pale green, occasionally violaceous below, at base truncate or abruptly narrowed into the about *equally long petiole* which is winged along the upper part, ovate-oblong or rather ovate-lanceolate, 3-4 cm. by 8-10 mm., pubescent (especially on the nerves) to glabrescent, obtuse, *flatly* and remotely crenate [i.e. few toothed]; flowers fine, elegant, rather small, surpassing the leaves; peduncle slender, *sharply* curved, hispid, 6-8 cm. long; sepals ovate-lanceolate, subacuminate, margins distinctly membranaceous; auricles abbreviate rounded or truncate, ciliate or glabrous; petals narrow, obovate, *pale* violaceous, at base darker coloured, lateral indistinctly bearded under the lens to *not* bearded, lower petal short spurred; spur *slender*, 4-5 mm. long (longer than in *V. mandshurica*); ovary glabrous; style bent at base, clavate at apex, flattened on top, distinctly margined on both sides, anteriorly short beaked. Blooms May-June.

In China: Mongolia; Peking; Shantung (Collected by Maingay No. 168, and Fortune, 1846, No. 24, without more definite data; Tsingtao, on fields and hills, scentless, one of the earliest spring flowers, April 20, 1899, Nebel and Praeger), Shanghai; south Shensi; eastern Kansu; west Hupeh; Yunnan.

V. chinensis G. Don 1831 and *V. primulifolia* Loureiro 1793 are synonyms. *V. patrinii* in Benthams "Flora Hongkongensis" is this species. So also is *V. p. chinensis* DC. 1824.

Common about Tsinan, on plain. Sometimes one petal will be slightly bearded under dissecting microscope and not the other; sometimes both are glabrous; auricles obliquely truncate or shorter than long but lobed, and even with an extra lobe projecting at one side; stipules very long and membranaceous, the free portion much shorter though conspicuous, lanceolate and with prominently stalked glands along the edge. Not fimbriate. Is this another subspecies? Also blooms in the autumn.

4. *V. prionantha* Bunge 1835 (p. 8) is a hill species of the Amur region, Korea, north China to Shensi, Kansu and west Hupeh.

Rhizome quite thick; roots somewhat thick, elongate, rather smooth, pale, not always springing from same plane; stipules somewhat pale green, adnate to beyond middle, dilated, free teeth somewhat fimbriate, to 1.5 cm. long; leaves lanceolate or oblong-ovate, broadest at middle, glabrous or more or less pubescent, lower ones distinctly round-crenate, 14-16 crenulations, somewhat abruptly narrowed into petiole, or subcordate, the lowest cordate-ovate (during the summer developing to a truncate or subcordate base, oblong-ovate, 2-4 cm. long, subcutish, flatly crenate); petiole glabrous or pubescent, especially on upper (winged) portion; flowers scentless, surpassing the leaves; peduncle at or above middle slenderly bracteolate; bracteoles 4-7 mm. long, sometimes crispulate; sepals lanceolate, acute to somewhat acuminate, narrowed at base, margins distinctly membranaceous; auricles more or less elongate denticulate; petals violaceous, somewhat abbreviate, *equalling* spur, occasionally shorter, obovate, lateral not bearded; spur elongate, 5-7 mm. long, somewhat thick, often somewhat curved upward; ovary glabrous; style flattened on top, margined. Blooms March-June.

In China: Peking at Chieh t'ai Ssu (Schindler No. 33); Shantung: Tsingtao at Lao Shan region; at Iltis hill (Krug Nos. 129, 520); Honan, Shaolin Ssu near Teng-fong, 970 m. elev. (Schindler No. 181a); north Shensi; west Kansu, west Hupeh.

V. patrinii chinensis Franchet in Pl. David. is a synonym, as also many north China records.

This is the common violet about Tsinan, blooming in early spring.

V. limprichtiana Becker of Central China and Korea (at Seoul).

Rhizome thick, vertical or oblique; roots thickish; stipules conspicuous, pale green or brownish, 4-5 mm. wide (including petiole), adnate to about their middle, the linear-lanceolate teeth distant; leaves: outer ones shorter—inner ones longer petioled; petiole even at the blade *unwinged*, rarely with a very narrow margin; blade distinctly, flatly cordate, elongate triangular, obtuse, crenate; blade of outer leaves 2-3 cm. by 2 cm., of lower 4-5 cm. by 2-3 cm., entirely *glabrous*; flowers entirely glabrous barely to not surpassing leaves, to 10-15 cm. high, on a rather thick peduncle which has rather elongate bracteoles above the middle, 2 cm. long including spur; sepals ovate lanceolate, acuminate, indistinctly three nerved, narrowly membranaceous; auricles *very* short, 1.5 mm. long, quadrate, entire to denticulate; petals *white*, oblong obovate, lateral bearded, lower *broadly* emarginate, distinctly spurred; spur thickish, somewhat recurved, 4-5 mm. long; ovary glabrous; style elbowed at base, clavate above, apex flattened, margined, anteriorly short beaked.

In China: Kiangsue, near Soochow, on graves near Schiang Shan on the west shore of the Tai Hu (Limpricht No. 361); on roadsides on Hsiding Ding Island of Tai Hu (Limpricht No. 357); also Hupeh.

? *V. phalacrocarpa* Maximowicz 1876 (p. 726) from south Manchuria, Korea and Japan on dry hillsides, in thin woods.

Rhizome usually breaking off short; stipules *narrow*, pale, adnate beyond centre; leaves with distinctly winged, usually long petiole; blade *pubescent*, occasionally glabrescent, at base *flatly cordate*, ovate, lowest *somewhat rounded*, 1.5-2.5 cm. long, 1-2 cm. broad, obtuse, finely *incised-crenulate* (summer leaves 7 cm. by 4.5 cm. sparsely pubescent to glabrous, somewhat more obtuse, cordate at base, oblong-ovate); flowers medium large, *mostly* surpassing leaves, at blooming time 5-8 cm. high, later to 20 cm. high; sepals linear-lanceolate, acute or ovate, acuminate or acutish, not ciliate, but on dorsal face and on auricles which are distinctly *broad* (not elongate); petals deeply *reddish-violet*, lateral bearded, lower long spurred; spur 7-9 mm. long, *slender*, often somewhat curved upward, occasionally pubescent, violaceous to pale; ovary *pubescent*. Blooms April-June.

This may yet be found in east Shantung.

From the above, the following hybrids are recorded:

V. mandschurica $\times$ *patrinii*. Differs from *V. mand.* in the more glabrescent leaves, longer petioles (more like those of *V. patrinii*), shorter spur (3-4 mm. long); from *V. pat.* in darker leaf colour, violaceous petals and longer spur. Among its parents on Ussuri River, Manchuria.

V. mandschurica $\times$ *phalacrocarpa*. General appearance of *V. mand.* Roots dark; stipules somewhat brownish; leaves shorter than in *V. mand.*, oblong-ovate, obtuse, broader below, pubescent, distinctly incised-elongate crenate, partly violaceous; sepals narrowly lanceolate, lower part and auricles white hispid; spur 7 mm. long, thickened at end.

Differs from *V. mand.* in deeper crenulation of leaves, broader leaves, smaller sepals, longer spur, more distinct pubescence and hispid sepals; from *V. phalac.* in somewhat brownish stipules, elongate leaves, flattish crenations, thicker spur and finer pubescence. From Manchuria and Japan.

V. philippica-munda $\times$ *prionantha*. Differs from *V. prio.* in narrower leaves, in narrower petiole, more distinct pubescence, flatter crenations, shorter auricles, more slender spur; from *V. p. munda* in larger somewhat pubescent leaves, more distinct crenations, somewhat truncate leaf base, somewhat elongate auricles, somewhat thicker spur. Among parents near Peking.

Thus two new forms are recognized:

Forma submunda. Rhizome more slender; lower leaves ovate-lanceolate, more roundly crenate, upper ones lingulate, indistinctly crenate, all more distinctly narrowed at base; on the whole more similar to *V. p. munda*. *forma subprionantha*. Mostly resembling its subspecies *V. p. munda* in more thickened rhizome, leaves mostly ovate-lanceolate, more roundly crenate, at base somewhat rounded; on the whole more similar to *V. prionantha*.

These last may be expected anywhere on the plain.

* * *

This paper was followed by a series entitled: "Violae Asiaticae et Australenses," published in *Beihefte zum Botanischen Centralblatt*, Vol. 34 (1916), abt. 2, pp. 208-266, 373-433, pls. 5-7; vol. 36 (1918), pp. 15-59 vol. 40

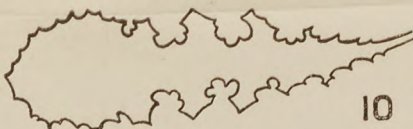
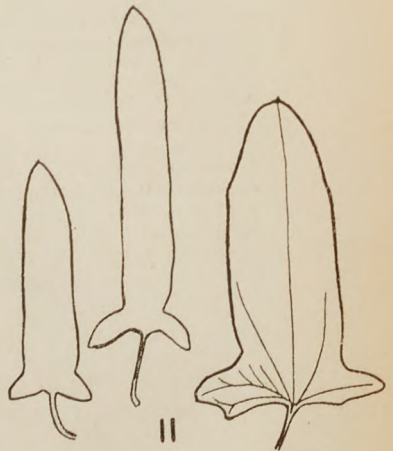


Figure 8. Sun leaves of *Lactuca versicolor*.
 .. 9. Leaf of *Erodium stephanianum*.
 . 10. Leaf of *Lactuca denticulata*.
 " 11. Leaves of *Calystegia hederacea*.
 All figures natural size.

(1923), pp. 20-118, pls. 1-5, pp. 119-171. Herein he published the following two additional species belonging to our area.

5. *V. tenuicornis* Becker 1916 (p. 248)). Rhizome short, rather slender; roots 1 mm. thick, elongate, smooth; stipules lanceolate to linear-lanceolate, fimbriate to entire, glabrous or pubescent, about 1 cm. long; leaves long petioled, pale green, flatly cordate, rounded-ovate or ovate, subacutish, crenate, petiole unwinged, margins and veins more or less white pubescent, glabrescent, 2-3 cm. by 1.5-2.5 cm. or even smaller; flowers barely or not surpassing leaves; peduncle slender, 5-10 cm. high, bracteolate near middle; bracteole 4-5 mm. long; sepals ovate-lanceolate, acuminate, indistinctly membranaceous edged, three nerved; auricles very short truncate; petals 7-10 mm. long, violaceous, oblong-obovate, lateral somewhat bearded, lower one slenderly long spurred; spur 5-8 mm. long; ovary glabrous. Blooms April-May.

China: Peking, Chieh-t'ai Ssu (Schindler); north Shensi, Kan-y San (Lao-y San, Giraldi). Also two varieties from Manchuria.

Common on north slope of Maen Shan, Tsinan; April 18th, at foot of rocks and ledges. Leaves usually mahogany red on lower face. The spur is usually slightly bent upward but also straight or slightly bent down. It always crosses the petiole.

6. *V. pekinensis* Regel 1861 (p. 230). Rhizome thick; roots smooth, subcaulescent; outer stipules dilated, adnate three-fourths their length, inner ones narrower, lanceolate, fimbriate, about half adnate; leaves small, long petioled, flat cordate, rounded-ovate, glabrous, incised-crenate, obtusish; flowers barely surpassing leaves, peduncles about 8 cm. long; sepals lanceolate, subacuminate, very narrowly membranaceous; auricles narrowly elongate to 2 mm. long; petals broadly obovate, lateral bearded, lower long spurred; spur somewhat stout, 8-10 mm. long; ovary glabrous.

China: Peking, collected by Tatárinoff.

* * *

From these papers and his contribution in *Die Natürlichen Pflanzen-familien* (1925) pp. 363-376, is drawn the following synopsis of the violets of northeast China.

I. Stipules rather well developed, free or adnate to petiole; flowers chiefly blue, seldom white, rarely yellow; lateral petals directed sideways; spur of various lengths; style erect from more or less curved base, or bent gradually forwards, more or less clavately thickened, and curved forward at apex to form a stigmatic beak of different directions and length, which head may be smooth or rimate or more or less flattened with an anteriorly directed stigmal beak.

Group: *Nomimum* (see A-F below)

II. Stipules more or less small, oval, free, pointed; flowers *yellow*, small, sometimes violet-flushed; side petals not bearded; the four upper petals erect; style bilobed at end, stigmal aperture on the *ventral* side between the two lips, *not* rostrate.

Group: *Dischidium* (see G below)

III. Stipules *free*, more or less broad oval to lanceolate, somewhat short; flowers mostly *yellow* or more rarely white, the upper petals sometimes brownish or violet; spur *very* short, the short calyx auricles scarcely or not surpassed, blunt; style at end capitate, rostrate and *hairy* on both sides; stigmal aperture in front on the sides of the head in a semicircular projection.

Group: *Chamaemelanium* (see H below)

A. Plant stemless, some with stolons; style beak hook-shaped, i.e. the apex of the somewhat compressed style hook-shaped; bent down or more or less erect and drawn out; length of hooked part, measured along concave side, about as long as greatest diameter of style; stigmal opening *narrow*. Subgroup *Uncinatae* (Rostelatae of 1909, in part and *Curvato-pedunculatae* of 1918, in part).

1. Stolons present, section: *Flagellatae* (see 1918, pp. 15-21) vacant.

1. Stolons absent or very short, section: *Eflagellatae* (see 1918, pp. 22-29) one species:

V. *collina* Besser 1816, p. 151 (Becker 1918, pp. 24-26) Rhizome thick; stipules more or less narrowly lanceolate, long acuminate, more or less long fimbriate, margins and teeth ciliate; leaves in early spring broadly ovate to somewhat circular, acuminate, at base more or less deeply cordate; summer leaves at base deeply and narrowly cordate, lower ones round-cordate, upper ones cordate-ovate, more or less acuminate, always distinctly incised-crenate (elongate-crenate), soft, like the petiole: white hirsute or pubescent, especially below; flowers medium sized, fragrant, not to barely surpassing the leaves; peduncle scatteringly hirsute, with long bracteoles usually above the middle; sepals broad at base, *broad-oblong*, ciliate; auricles *broadly truncate*; petals *pale* violaceous, white at base, narrowly obovate, upper ones rounded at apex, lateral bearded; spur short, curved

upward, whitish; style drawn out into a slender horizontal hook; capsule globose, *hirsute*. Blooms March to April.

Turkestan, Siberia, Mandchuria, Korea, south in Chili to Jehol, Shingching at Tchang-dien.

B. Plant branching; style beak short uncinat, seldom erect, curved part more or less obliquely erect (anteriorly directed), length of curved part shorter than diameter of style; stigmal aperture more or less *broad*. Subgroup: *Rostratae* (Axilliflorae of 1909, in part).

1. Rhizome crowned by a leafy rosette, section: *Rosulantes* (see 1923, pp. 23-68). 2
1. Rhizome without rosette of leaves at apex, section: *Arosulatae* (1917, pp. 374-395). 4
2. Style erect, apex not arched, section: *Orthostylae* (vacant).
2. Style at apex bent more or less hook-like, section: *Campylostylae* (pp. 39-66). 3
3. Stem mostly solitary; stipules mostly short, somewhat brownish, narrow; leaves almost always ovate; sepals narrow and rather short; auricles short; spur mostly slender, directed downwards, section: *Silvestres*.
3. Stems usually not solitary; stipules mostly greenish, longer and broader; leaves usually rounded; sepals wider and longer; auricles more or less conspicuous; spur somewhat thickened, usually directed upwards, section: *Rivinianae*.

It is probably among the *Silvestres* that there belongs the species *V. stewardiana* Becker 1925 (p. 365 or 366), from Kiangsu and characterized as having leaves narrowing considerably and wedge-like at the base. Its northern limit has not been determined.

4. Leaves elongate to broad-ovate, greatest breadth above basal third; spur clearly projecting, section: *Eucaninae* (One species).

7. *V. micrantha* Turczaninov 1832, p. 183 (Becker 1918, pp. 380-384) Branching but without basal leaves, 10-40 cm. high when in bloom; lower stipules subadnate, leaf-like, large, 1-3 cm. long, pinnatifidly lacerated, teeth linear-lanceolate, elongate or dentate; leaves cordate-ovate, crenate or crenate-serrate, long or short acuminate, more or less pubescent, especially below on the veins, 2-5 cm. by 1.5-4 cm., rather long petioled; flowers somewhat

surpassing leaves, small, whitish to dilute pale blue, on slender peduncles with bracteoles near the corolla; sepals linear-lanceolate, elongate-acuminate, pubescent or glabrous; auricles short, truncate, or rounded-truncate; petals: upper subreflexed, lateral subbarbate, lower veined with violaceous; spur short (1.5-3 or 5 mm. long); ovary conical, glabrous; style elbowed at base, at apex convex, short papillose, short beaked. Blooms March-May.

Baikal-Siberia, Amur Region, Sagalin, south Japan, Manchuria, Korea, China in Chungking, Chili (Hsiao Wutai Shan, 1,600 m. elev., von Möllendorff; Pohua Shan), Shensi, Hupeh, Kiangsi, Shantung (Tsingtao region on Lao Shan, moist humus, clayey soil, 300-700 m., Krug Nos. 32, 527; Chefoo).

Race *brevistipulata* Becker.¹ Leaves deeply cordate, ovate or oblongovate, more or less long acuminate, somewhat pubescent; stipules shorter, to 1.5 cm. long, elongate linear-fimbriate; spur 2-3 mm. long; plant usually low, generally small (dwarfish). In southern part of the geographical area of the species (warmer and drier region).

Race *grandistipulata* Becker. Leaves flat cordate, broadly ovate, short acuminate, glabrescent; stipules larger, to 3 cm. by 1 cm., more broadly fimbriate or longer dentate; spur 1.5 mm. long; plant tall and robust, larger throughout. In northern part of the geographical area (colder and moister region).

Under race *brevistipulata* is described the new sport *kiautschauensis* Becker. Stem glabrous, in upper part somewhat pilose, somewhat stout; stipules somewhat brownish, 7-10 mm. long; leaves thickish, central ones long petioled, lower ones ovate, drawn out narrowly cuneate, into the petiole; median ones flat at base or truncate-cordate, triangularly ovate, margin rather straight barely acuminate, somewhat pubescent, 2-3 cm. by 1.8-2.5 cm; inner-most deeply cordate, subacuminate, 3.5 cm. long; petiole (especially above) winged, glabrous or somewhat pubescent near the blade; flowers smaller than in the species, with spur 1.2 cm. long (in *V. micrantha* of same locality it is 1.5-1.6 cm.); sepals not or barely surpassing middle of petals.

Tsingtao (Kiao-chou region), Iltis hill, May 9th, 1906, collected by head forester Hass, No. 32; Tunglinhsin near Schymen, along water-course between stones, 500 m. with the typical form.

Specimens secured by me from Shuishih Wu (north slope, beyond Mecklenberg) on May 18th are intermediate in that they have the leaves of *brevistipulata* and the tall stems and long stipules (over 2 cm.) of *grandistipulata*. Another taken the same date is dwarf with obtuse leaves and stipules 1.5-2 cm. long!

C. Stemless; without runners; rhizome subterranean, branching and forming under the point of origin of the leaves several more or less smooth roots; stipules, except the outer, coalescing with petiole to above their middle; leaves narrow to broad, base cuneate to deeply

¹ Not *V. pubescens brevistipulata* Franchet et Savatini 1879, p. 288. I propose *breviorstipulata* nom. nov.

cordate, sometimes sagitate; style at apex flattened and mostly round edged, with short beak, subgroup; *Adnatae* (about 11 species).

1. Leaves deeply lobed or-and divided. 2
1. Leaf margin dentate at most. 3
2. Leaf trisect (i.e. divided to midrib); sepals narrow lanceolate; auricles long.
V. chaerophylloides (see No. 8 below)
2. Leaf pinnatifid (cleft or parted—not to midrib) to pinnatisect; sepals ovate; auricles short, truncate.
V. pinnata (No. 9 below)
3. Lateral petals bearded on inside, at throat. 6
3. Lateral petals imberbate. 4
4. Leaves heart-shaped. *V. japonica* (No. 7 below)
4. Leaves oblong-lanceolate. 5
5. Leaves broadest near base, obtuse, major crenulations less than 14; auricles abbreviate, rounded to truncate; spur slender, 4-5 mm. long.
V. philippica munda (No. 3 above)
5. Leaves broadest at middle, subacutish, with 14-16 crenulations; auricles elongate denticulate; spur somewhat thick, 5-7 mm. long. *V. prionantha* (No. 4 above)
6. Leaves lingulate, ovate-lanceolate, truncate to cuneate at base. 7
6. Leaves ovate to cordate. 8
7. Flowers white to violet; on a strongly nodding peduncle so that the spur is nearly erect. *V. betonicifolia nepalensis* (No. 1 above)
7. Flowers deep violaceous; on gracefully recurved peduncles; spur somewhat horizontal. *V. mandshurica* (No. 2 above)
8. Petals white, lower broadly emarginate; petiole unwinged; auricles very short.
V. limprichtiana (see above)
8. Petals suffused with colour. 9
9. Spur 8-10 mm. long; leaves incised crenulate. 10
9. Spur less than 8 mm. long; leaves flat crenate to crenate. 11
10. Flowers reddish violet; auricles broad; ovary pubescent. *V. phalacrocarpa* (see above)
10. Flowers violaceous; auricles narrowly elongate; ovary glabrous.

V. pekinensis (No. 6 above)

11. Leaves subacute; petals violaceous, weakly bearded; plant pubescent.

V. tenuicornis (No. 5 above)

11. Leaves obtuse; petals pale violaceous, strongly bearded; plant at first hirsute.

V. hirtipes (see below)

V. hirtipes Moore 1879, p. 379 (Becker 1923, pp. 142-143). Rhizome short, roots springing nearly from one plane; stipules linear-lanceolate, adnate to their middle or more, pale; leaves 1-2 (or 3), base somewhat flat or rather deeply cordate, elongate ovate, somewhat obtuse, flat to somewhat round-crenate, glabrous or pilose at base; petioles elongate, pilose to hirsute below or throughout; flowers conspicuous; peduncle slender, equalling blade, pilose to hirsute to more or less glabrous, with linear bracteoles at centre; sepals elongate, lanceolate, acutish, 3-nerved to indistinctly 5-nerved, glabrous; auricles short, deltoid to subquadrate; petals pale violaceous, oblong-ovate, lateral ones bearded; spur 6-8 mm. long, rather slender; ovary puberulent (?) or glabrous. Blooms April to May.

Manchuria, Korea, Japan and North China (on hills, near Kwandien, Shingching; Ross).

7. *V. japonica* Langsdorff (in DC.) 1824, p. 295 (Becker 1923, pp. 155-158). Rhizome short, branches springing from nearly one plane, whitish; stipules whitish adnate to beyond middle, linear-lanceolate, short-fimbriate, 1.5-2 cm. long; leaves several per plant, long petioled, pale green, somewhat openly and deeply cordate, ovate, upper (inner) ones ovate-deltoid, elongate, broad towards apex, glabrous (especially below) and white-pubescent, rather obtuse (upper ones to acute), crenate or somewhat incised crenate, 3-4 by 2-2.5 cm., petiole more or less winged; flowers conspicuous, barely surpassing leaves, 2-2.5 cm. long (including spur), bluish; peduncle 8-15 cm. high, usually bracteolate above middle; bracteole about 8 mm. long; sepals lanceolate; auricles somewhat conspicuous, quadrate, emarginate; petals oblong-obovate, lateral bearded to not; spur about 8 mm. long, rather thick and inflated, usually directed upwards; ovary glabrous; capsule globose. Blooms April to May.

Japan, Korea, northeast China (to west Hupeh).¹

8. *V. chaerophylloides* Regel 1861, p. 222 (Becker 1923, pp. 120-122). Rhizome more or less vertical, rather short; stipules adnate to beyond middle, broadly lanceolate; leaves trisect, segments distinctly short petiolulate, lateral ones bipartite, terminal one bi- to tri-partite, ovate or ovate-lanceolate or lanceolate or even narrowly linear, closely incised-serrate or secondarily trifid; some specimens (evidently summer plants) with lower leaves ovate-lanceolate, undivided, glabrous or slightly pubescent; flowers conspicuous, fragrant, violaceous to white; peduncles in fruit to 25 cm. high, with long bracteoles below middle; sepals ovate or ovate-oblong, broad, 3-nerved; auricles conspicuous, emarginate to dentate; petals broadly obovate, lateral ones somewhat bearded spur thick, 4-6 mm. long, somewhat erect; style flattened, short beaked. Blooms April to May.

¹ See *Acta-Horti Gothoburgensis*, Vol. 2, p. 285.

South Manchuria, Korea, Japan and North China (Tsingtao at: Lao Shan, on Laoting 800-1000 m. elev.) on high, sunny slopes, between rocks, 10-20 cm. tall, cream-coloured, calyx (kelch) delicate rose, agreeably fragrant, April 21, 1906, coll. by Zimmermann, No. 315; on Laoting and neighbourhood of Mecklenberghouse, between stones, 1000 m., May 1908, coll. by Kuntzel No. 65; along water course, in shade, 600 m., very rare, white, 15-20 cm. tall, May 1906, coll. by Krug No. 149.

The only north China record seems to be east Shantung. I have it from Shui Shih Wu trail between Mecklenberg and Laoting, May 18th, flower white. The leaf is almost pedate, much divided and 7 cm. across.

9. *V. pinnata* L., 1753, p. 934 (Becker 1923, pp. 122-124). Rhizome short, somewhat vertical; roots springing nearly from one plane, smooth, with few rootlets; stipules whitish, lanceolate, adnate to above middle; leaves glabrous or more or less pubescent, more or less long petioled; blade roundish to broadly ovate, deeply pinnatifid or pinnately divided, divisions oblong or linear often and mostly secondarily incised, base flat-cordate to cuneate; flowers somewhat conspicuous, fragrant; peduncles in fruit, erect; sepals oblong to *sublanceolate*, occasionally acute; auricles *short, obtuse*; petals pale violaceous, lateral ones bearded, lower one usually long spurred; ovary glabrous; style thickened at apex, flattened, triangular, short beaked; capsule conspicuous, seeds reddish-brown. Blooms June to July.

V. pinnata multifida Willdenow 1819, p. 352. Plant usually taller (than the species—European); leaves deeply pinnately divided, more or less narrowly laciniate. Asiatic, especially east Asia.

Becker then divides this subspecies in two varieties, one *latisecta* Becker with most leaves distinctly digitate, the divisions oblong and obtuse, from Russian Asia and:

V. p. m. angustisecta Becker. Most leaves more pinnately divided, with divisions narrow to linear, somewhat acute. Chiefly China (i.e., eastern arid extension of the range).

Secured from Pohua Shan, Chihli by Bretschneider; Jehol and Sarchty by David, northern Shensi by Giraldi, and west Kansu.

I have it from Kaiyuen Ssu pass, south side of ravine, April 14th; and top of Hsinglung Shan, April 21st, lee of boulders, north rim. This is a decided southern extension of its range in east China.

D. Plant stemless; rhizome more or less *horizontal*, thick, elongate, with leaves and blossoms growing at the end; stipules *free*, broad; leaves more or less broad, pointed, cordate, more or less glabrous; flowers considerably short and thick spurred; peduncle upright; style on the end flattened and rimate. Subgroup: *Vaginatae* (one species only):

V. rossii rossii Hemsley (in: Forbes and Hemsley) 1866, p. 54 (Becker, 1918, pp. 34-35). Rhizome vertical or oblique, rather thick, 3-4 mm. thick, 2-4 cm. long; roots elongate; stipules pale green, broad, free; leaves long petioled (6 cm. long), blade 2-3 cm.

long and broad, soft, glabrous, above: subpubescent on nerves, beneath: distinctly pubescent, openly cordate, broadly ovate or subreniform, closely serrate-denticulate, subacuminate; petiole narrowly winged; flowers pale lilac, as tall as petiole, 2-2.5 cm. broad; bracts subentire, long acuminate; sepals 2-2.5 mm. by 3-4 mm., glabrous, ovate-oblong; auricles short, rounded or truncate, subemarginate; petals obovate, lateral somewhat bearded, lower rounded or truncate, subemarginate, with short and broad spur; ovary glabrous, acute; style flat-headed, short beaked; capsules glabrous, conspicuous. Blooms April to May.

Manchuria, Korea, Japan and eastern China (Shingching at Kwandien and Changdien, Ross; Kiangsu at Chinkiang; Kiangsi at Lushan, Kiukiang).

E. Stemless, with more or less prone to erect, elongated, slender, subequal runners, regularly leaved towards end; stipules *free*, lanceolate, more or less richly long-fringed; leaves more or less cordate, round to elongate-oval, obtuse or somewhat pointed; flowers mostly small, with lanceolate sepals; spur short; ovary glabrous; style at apex more or less flattened, occasionally rimate, short beaked. Subgroup: *Serpentes*.

V. curvicalcarata Becker and DeBoiss 1908, p. 740 (Becker 1923, pp. 112-113). South China north to Shensi. This species will probably not be found in our area because of the dryness of the soil.

F. Stemless, sending out more or less upright runners; stipules more or less leaf-like, lanceolate to oval, sparsely toothed to smooth; leaves cordate, roundish to almost angled and elongate triangular, very often auriculate; flowers rather small, light coloured; style at base more or less bent, at apex both sides lobulate, short beaked. Subgroup: *Bilobatae* (possibly one species):

V. alata verecunda Grey 1858, p. 382 (Becker 1923, pp. 227 and 224). Java to Japan and Manchuria. Should be sought for in east Shantung.

G. Spur 5-6 mm. long, slender. Subgroup: *Longicalcarata*.

V. biflora L. 1753, p. 936 (Becker 1918, pp. 39-43). Holarctic in subalpine and boreal regions, to over 4,000 m. elev. In our area recorded from Pohua Shan, and Siao Wutai Shan 1,100-2,000 m., Chili and north side of Wutai Shan, Shansi.

H. Branching stems few, erect, well developed; radical leaves present. Subgroup: *Erectae*. Stems leafy only above middle; flowers yellow. Section: *Nudicaules* (one species, No. 10 below).

10. *V. orientalis* Maximowicz 1889, p. 81 (Becker 1916, p. 265 and 1918, pp. 45, 50). Rhizome more or less vertical; roots elongate, smooth, dark, scaly at end; basal leaves, developed after flowering time, long petioled, cordate, rounded, short acuminate, rather thick, deep green; stems 1-3, 10-15 cm. high, 1-2 flowered, glabrous, lower half leafless and without stipules (scales), upper half with 2-3 ovate, acuminate, leaves; petioles short; stipules minute, 2 mm. long, ovate; flowers small; peduncles short; sepals lanceolate. Blooms May to June.

Manchuria, Korea, Japan, east China (Tsingtao at Laoshan 900 m., on moist humus soil, very common).

I have found it colouring the herbage on the pass to Laoting near the three-finger region, May 18th.

In my specimens the flowers are large (to 2.5 mm. broad, dried) and have long (to 3.5 cm.) slender pedicels! so that the flower slightly surpasses its leaf.

11. *Viola cheelooi* sp. n. Rhizome stout, dark; roots long, stout, branching from various levels; stipules broad, adnate for about three-fourths their length, pale green, free portion lanceolate, with very few short, slender teeth or, better, with few, widely spaced, long-stalked glands, violaceous; leaves several per plant, glabrous, pale green, broadly to deeply cordate, ovate to deltoid, obtuse, conspicuously dentate, petiole distinctly margin-winged throughout its length; flowers several per plant, large (to 20-23 mm. long with spur), handsome; peduncles 6-7 cm., exceeding leaves, usually *not* strongly recurved; bracteoles near centre, 8 mm. long, slender, with 2 or 3 long stalked glands near their base, each side, sepals ovate lanceolate, lower one obtuse, upper more acute, with violaceous blotches (as also the auricles), hyaline edge scarious, auricles 3 (to 4) mm. long, deeply emarginate to three toothed at apex; petals violaceous, broadly obovate, lateral slightly bearded on one vein; spur shortish (6-7 mm. long), stout, not swollen at apex, straight, to very slightly curved but given that appearance by longer ventral than dorsal line (i.e., apical point is nearer dorsal than ventral line), usually held horizontally, rarely crossing peduncle; ovary glabrous; style and stigma of Adnatae.

Types: taken from Hsinglung Shan, 6 miles south of Tsinan, on top of north rim, thin limestone soil; April 21st, 1923; Nos. 653-654, 9 specimens.

Resembling *V. japonica* in leaves, glabrousness, bracteoles and weak beard; differs in the long auricles and shorter spur. Resembles *V. pekinensis* especially in length of auricles but has non-fimbriate stipules, deeply cordate leaves, less beard and shorter spur.

WHY THE SINOLOGUE SHOULD STUDY MANCHU

By Dr. ERICH HAUER

The aim of this paper is to call attention to an undeservedly neglected branch of Far Eastern sciences, namely the Manchology or science of the Manchu language and its prominent importance for the understanding of Chinese grammatical thought.

The pioneers of Sinology were the Jesuit fathers of Italian, Portuguese, and especially French nationality. Living at the Peking court of the Manchu emperors in the 17th and 18th century, they studied and expounded the strange Chinese language first. In their toilsome task to overcome the many difficulties presented, these ingenious and active missionaries started with the comparatively easy Manchu language as an intermediary and key. Manchu being the language of the court, the learned fathers were even compelled to learn it by imperial command. After the death of Father Verbiest, a brilliant Chinese and Manchu scholar, in 1689, the newly-arrived Fathers Gerbillon and Bouvet were appointed to be teachers of His Majesty in Western sciences, and Emperor K'ang Hi attached them to the *Hupu* or Board of Revenue, where only Manchu was spoken by the officials. Eight months after, we are told, the two fathers were already able to explain Euclid's geometry in Manchu to the inquisitive Son of Heaven. Later under the reign of K'ien Lung the French Father de Mailla moulded his famous *Histoire Général de la Chine* in 12 volumes after the Manchu version, the *T'ung-kien-kang-mu*, and Father Amyot wrote in the preface to his translation of Emperor K'ien Lung's Eulogium of Mukden the following panegyric in favour of the Manchu language: "The knowledge of Manchu would open a free entrance into the Chinese literature of all centuries:

there is no good Chinese book which has not been translated into Manchu. These translations have been made by learned academicians by order and under the auspices of the emperors from Shun Chih up to K'ien Lung who is now upon the throne. They have been revised and corrected by other academicians no less erudite knowing perfectly the Chinese language as well as the Manchu. I myself acknowledge that, if I had only known Chinese, I should not have been able to achieve any success in my undertakings. The Manchu language is after the style of European languages; it has its methods and its rules; briefly speaking, one sees one's way clearly. Moreover, five or six years would suffice for any active man to acquire a good knowledge enabling him to read with profit all books written in Manchu."

Father Amyot's assertion that every good Chinese book had been translated, does not hold good. Setting aside the translations of the Chinese classics the whole Manchu literature consists of only about 180 works, of which the translations of the *Ku-wên-yüan-kien* or "Mirror of Ancient Literature" and the translation of the *T'ung-kien-kang-mu* or "Universal Mirror of History" take the first place. On the other side Father Amyot is, however, quite right in pointing out that the best scholars of the time, both Chinese and Manchus, have been employed by the emperors to compose these standard translations, and there is no doubt that these China-born and China-educated men possessed a deeper knowledge of the two languages than any Western scholar can ever hope to acquire. If in a book a certain passage has been translated in this way and not in another there must have been, of course, valid reasons and the Sinologist is obliged to investigate these reasons. From an entirely objective point of view it may be said that a fundamental principle of sound philological criticism and method requires the consultation of all the existing means of elucidation regarding a given text, in spite of their origin and character. As Prof. Laufer of Chicago has put it, only self-complacent conceit and the arrogance of ignorance may arrive at the dogma that Manchu is a *quantité négligeable*.

Besides, the Manchu translations were not destined to replace or to push aside the original Chinese text, but their aim was purely to facilitate the understanding of the original to the Manchu student. That may be seen from the fact that the classics, for instance, have never

been printed in Manchu only, but always in interlinear versions with Chinese text beside. The Chinese text and the Manchu text ought to be read together.

The Manchu student studied, of course, the Chinese text of the classics and used the parallel running Manchu translation as a handy shift for a quicker and clearer comprehension. This is the reason too, why all these translations are literal paraphrases of the Chinese prototype and nothing else. As Prof. Laufer in his valuable *Sketch of Manchu Literature* has said, there is no need to excite oneself about so-called slavishly faithful rendering and literal interpretation, for the only purpose of the Manchu versions was to serve as text-books for Manchu students whose mother tongue had been the Chinese language. Would not these works be useful to the European Sinologue as well? This question leads us to a short review regarding the Manchu language, namely its history, its characteristics, and its usefulness in sino-logical work.

I. During the years from 1583 to 1626 a chieftain Nurhaci, after his death called by his temple name T'ai-tsu, united about sixty Jurjen tribes of Fengtien, Kirin and Heilungkiang to a nation named Manju Gurun, i.e., Manchu Nation, the word "Manchu" being an abbreviation of Manjusiri, the name of Nurhaci's remotest forefather. The language spoken by these remnants of the late Jurjen nation (usually incorrectly called Nü-chên or Nü-chih), the rulers of which had founded the Kin dynasty and governed North-China in the 12th century, was now called *Manju gisun* or Manchu language. In 1599 Nurhaci ordered the adaptation of the Mongolian characters to the requirements of the Manchu language, the Mongolian language having served from the Yüan dynasty up to that time as the official language of letters and documents. The written Manchu language was developed and perfected during the Manchu sway at Yenden, Liaoyang, and Mukden, into which city the court and the government were transferred in 1625. After the occupation of Peking by Prince Dorgon's army, the court and government removed there from Mukden in October, 1644. Peking became the place where both the Manchu language and literature flourished most. For the rest of the 17th century the language was still alive and spoken universally. Owing to the numerous inter-marriages between bannermen of Manchu, Mongolian, and Chinese extraction, however, the real Manchus or

descendants of the Jurjen were soon amalgamated with the two other nationalities and turned into Chinese speaking Chinamen in course of time. In 1722 the Manchu scholar Daigu confessed in the preface to his Manchu dictionary that he had compiled his work considering the fact that the Manchu were beginning to forget their own language. Towards the end of the 18th century Emperor K'ien Lung deplored openly the decay of the Manchu language, trying in vain to obtain redress. Under Tao Kuang the last conspicuous Manchu publications were printed in the first half of the 19th century. During the following reigns of Hien Fêng, T'ung Chih, and Kuang Sü, the great Taiping rebellion and the disastrous conflicts with foreign powers took place; the Manchu language fell into oblivion more and more and became an artificial idiom in court ceremonies and red-tape work. In the very last years of the Manchu dynasty the Peking government made some efforts to establish schools for the study of the Manchu language, but it was too late: the wash of the revolution swept away the foundations and Manchu became a dead language in Peking and China proper. Only in Manchuria, in the province of Heilungkiang, some vestiges appear to have been left. Some months ago I got from the town of Hailar, on the Trans-Siberian railway, a small newspaper in Manchu, called *Ice Donjin Afaha*, i.e., "New Tidings Sheet," bearing the number 322 and dated the 21st November, 1925, not letter-printed but reproduced in a polygraphed manuscript, in which Chang Tso-lin's government published such news concerning the civil war in China as seemed fit. The fact that Chang Tso-lin thought it worth while to spend work and money on such a paper proves that somewhere in Manchuria even to-day Manchu texts are still read by a population knowing Manchu. Indeed the Russian scholar Shirokogoroff in his book *Social Organization of the Manchus*, published at Shanghai in 1924, states that in the Aigun district about 20-25,000 people speak a Manchu dialect only slightly different from that formerly spoken in Peking. Because these last of the Manchus are rapidly decreasing in number owing to alcoholism and disease, our Russian colleagues should not miss the opportunity to take some gramophone plates before it will be too late. Here is the last chance offered to hand down to posterity a genuine Manchu pronunciation.

II. I now beg you to allow me to say a few words concerning the characteristics of the language. Manchu belongs to the Altaic branch of the Uralo-Altaic languages and is related to the Mongolian and Turkish languages. In strict contradistinction to the monosyllabic and isolating Chinese, Manchu is polysyllabic and modifies the words. Moreover there are some moods and several tenses of the verb, a declension comprising five cases, a plural for some categories of substantives, and a number of other grammatical distinctions totally wanting in Chinese.

Rather short Manchu grammars were written by the Peking Jesuit Fathers Gerbillon and Amyot and published in Paris in 1787. The later grammars are also but small booklets: (1) *Eléments de la Grammaire Mandchoue*, by the German scholar Hans Conon v.d. Gabelentz, Altenburg, 1832; (2) *Linguae Mandshuricae Institutiones* in Latin, by the German Franz Kaulen, Regensburg, 1856; (3) *Grammaire de la Langue Mandchou*, by Lucien Adam, Paris, 1873; and (4) *Manuel de la Langue Mandchoue*, by Charles de Harlez, Paris, 1884. P. G. von Mollendorff's *Manchu Grammar*, published at Shanghai in 1892 and up to this day the only Manchu Grammar in English, is but a poor piece of work and better not mentioned here; even the English translation of the ten exercises has been borrowed from Sir Thomas Wade's *Tzu-êrh-chi*.

The most complete but also most circuitous Manchu grammar was compiled by the Russian scholar Iwan Zacharoff, and published in St. Petersburg in 1879. Whilst his predecessors started from the accustomed rules of traditional Latin grammar, Zacharoff based his own system of analysis upon the theories of Russian grammar. In my opinion his method of explanation is conclusive in the sphere of the verb. The Russian grammar knows two so-called aspects, i.e., the difference between finished doing and unfinished doing. The Russian grammar knows further a peculiar participle and a peculiar gerund, having nothing in common with western participles and gerunds, but representing an adjective declinable form of the verbal action and an undeclinable adverbial participle respectively. By equalisation of three Manchu forms with the Russian participle and of seven others with the Russian gerund, Zacharoff and his disciple, Prof. Wilhelm Grube, late of Berlin University, have discriminated between three kinds of verbal forms in the Manchu language: (1) adnominal

forms, namely forms joining nouns; they are themselves nouns and act in a predicative position as finite verbs; (2) adverbial forms, namely forms joining other verbs, and (3) finite forms. There are three adnominal forms; the participle imperfecti, expressing an unfinished coincident doing; the participle perfecti, expressing a doing already finished in the past; and the participle praeteriti imperfecti or Durativum, expressing an unfinished doing in the past. The seven adverbial forms are: the gerund of unfinished coincidental doing, the gerund of continuous doing, the gerund of finished doing in the past, the conditional or temporal gerund (translated by "if" or "when"), the concessive gerund (translated by "although"), the gerund of duration or termination (translated by "during" or "till"), and the gerund of description and delineation. The four predicative forms, finally, are: an aorist or a tense unlimited with regard to the time, an optative and a threefold imperative, expressing a usual, a soft or an energetic command respectively.

It seems evident that such an abundance of tenses alone is of great value for interpreting Chinese parallel texts. It is, however, not my task here to give a sketch of Manchu grammar. Let us rather see, what advantages the study of Manchu offers to the Sinologue, especially the advanced beginner.

Before doing so I have, however, to refer to some desiderata. The grammars just mentioned are not only antiquated and out of print long ago, but scarcely obtainable at the bookseller's. There is an urgent need of a new grammar on the basis of Zacharoff's work, enlarged by the results arrived at by Herrn v. Zach and others, and augmented by some exercises in Manchu characters, transliteration, and translation. Besides this there is need of a good Manchu-English dictionary. The Manchu-French, Manchu-German and Manchu-Russian dictionaries by Amyot, v.d. Gabelentz and Zacharoff are neither complete nor reliable. In order to remedy this lack I myself have arranged the contents of emperor K'ien Lung's great "Mirror of the Manchu language" in alphabetical order on more than 9,000 slips of paper and am occupied now comparing the definitions given in the "Great Mirror" with the acceptations offered by the other Manchu dictionaries, especially the *Ts'ing-wên-hui-shu* and the *Ts'ing-wên-pu-hui*. In my opinion the grammar of the future as well as the dictionary of the future should

be written in the English language which is universally known by all scholars. Moreover, Manchu books are no longer printed and sold in Peking. So in Europe, the libraries watch over their Manchu works jealously and it is not easy for the average student to get Manchu books. Therefore we are in need of transliterated editions of the Chinese classics in their Manchu garb. v.d. Gabelentz published the transliteration of the Four Books, the *Shuking* and the *Shiking* in 1864. His work should be revised and continued by the Manchu text of the *I-king*, the *Li-ki*, the *Ch'un-ts'iu*, the *Tso-chuan*, the *Kung-yang-chuan*, the *Ku-liang-chuan*, and the *Hiao-king* for the benefit of all students and scholars. As the work which has yet to be done is immense, I take the opportunity to-day of inviting international co-operation and assistance.

III. In conclusion I will now enumerate the advantages gained by the knowledge of Manchu.

(1) Even a limited knowledge of the language will guarantee the correct rendering of Manchu names and Manchu words occurring in Chinese texts. The history of China during the last three centuries from 1644 to 1912 cannot be thoroughly understood and appreciated, even as far as mere Chinese sources are concerned, without a knowledge of Manchu. Just as a successful understanding of the history of the Mongolian Yüan dynasty requires an acquaintance with the Mongolian language, so in the case of the Manchu Daicing dynasty all documents, writings, and books contain Manchu names, Manchu expressions, and allusions regarding specifically Manchu things and institutions, a familiarity with which can only be obtained by the knowledge of the Manchu language. When treating the history of the Manchus, the scientific compiler is expected to restore the horribly mutilated Manchu words from the insufficient Chinese transliteration to the original Manchu reading.

(2) The Manchu versions of names often reveal the true meaning of the names given, e.g., to palaces, gates, temples, reigns of emperors, and so on. So the southern main gate of the Imperial Palace in Peking, the T'ien-an-mên, is not the "Gate of Heavenly Tranquillity," for the Manchu name *Abkai elhe obure duka* means "Gate of Heaven's Peacemaking." The Tê-shêng-mên in Peking is not the "Gate of Victory of Virtue," for the Manchu name *Erdemu i etehe duka* means "Gate of Having Conquered by Virtue." The first Manchu emperor's title

of reign, *Shun Chih*, does not mean "Favourable Sway," for the Manchu version *Ijishûn Dasan* means "Obedient Keeping in Order," the two Chinese characters *shun-chih* being an ellipsis for *shun-t'ien chih-kuo*, i.e., obedient to heaven keeping in order the realm. K'ang Hi is not "Lasting Prosperity," for *Elhe Taifin* means "Tranquil Peace." K'ien Lun is not "Enduring Glory," for *Abkai Wehiyehe* means "Heaven's Having Holpen." Kung Sü is not "Brilliant Succession," for *Badarangga Doro* means "Expansive Imperium." Süan T'ung is not "Wide Control," for *Gehungge Yoso* means "Manifest Fundamental Laws." From these few examples it may be seen that the correct translation of such titles and names is quite impossible without the help of the Manchu language.

(3) Every Manchu version of a Chinese text determines the grammatical function of the Chinese words. For instance, a well-known essay of the renowned T'ang scholar Han Yü bears the title "Yüan Tao." Mr. Homer H. Dubs in his valuable book, *Hsüntze, the Moulder of Ancient Confucianism*, has translated these two Chinese words by "The Original Way," a translation which is, of course, possible in itself. From the Manchu version, contained in chapter 35 of the *Ku-wên-yüan-kien* we learn, however, that the word *yüan* has here the function of a verb, for the Manchu translation *doro be fetehe bithe* means "Essay after having investigated the Right Way." Or, *shêng-kia*, the emperor's vehicle, is not to be rendered by "the Sacred Chariot," for in the Manchu equivalent *enduringgei sejen* the first word is a genitive, and therefore the meaning is "the chariot of the Sacred One."

(4) Every Sinologue knows very well the indispensableness of the bulky *P'ie-wên-yün-fu*, Emperor K'ang Hi's voluminous Thesaurus of rhymes, and he knows quite as well the difficulties of understanding the quoted texts. Now an epitome has been published in Manchu under the title *Ts'ing-Han-wên-hai*, which enables us to read a good part of the *P'ie-wên-yün-fu* in a convenient manner.

(5) Manchu is not difficult to learn. Somebody once called it a "tiffin language," that is, a language which could easily be mastered during the short time of a tiffin. This is, of course, but a facetious exaggeration. Compared with Chinese, however, Manchu is certainly very easy and may be learned in a much shorter time. The grammar is simple and clear, with almost no irregularities

at all, and the polysyllabic words impress themselves on one's memory without any trouble. Having acquired a sufficient knowledge of the Manchu language, one is able to read with pleasure Chinese works of fiction in their Manchu attire as the *Kin-p'ing-mei* and the *Liao-chai-chih-i*, the Chinese original text of which is only read with painstaking care and understood after assiduous study. Above all, the knowledge of Manchu enables the student of Sinology to use the Manchu versions of the classics, the *Ku-wên-yüan-kien*, the *T'ung-kien-kang-mu*, and other standard works, in order to verify the meaning of the Chinese text.

The five points just mentioned should, in my opinion, convince everybody that no Sinologue who can spare the time, should miss the opportunity of acquiring a sufficient knowledge of the Manchu language.

CHINESE POEMS

Translated by CHARLES BUDD

A SONG OF AUTUMN WINDS

BY THE EMPEROR WU OF THE WESTERN HAN DYNASTY,

Reigned from 140 B.C. to 88 B.C.

The Autumn winds are blowing,
And white clouds fleck the sky;
The leaves are sear and falling,
The wild geese homeward fly.

The lotus flowers are opening,
And asters scent the air;
And midst these scenes I'm thinking
Of you, my Love, so fair!

As o'er the stormy waters
Our high-pooped boat we sail,
And watch the foaming surges
Beat on us till they fail.

To drum and cheery fluting
We sing the boatmen's songs,
Forgetting, while rejoicing,
The world and all its wrongs.

But even in our gladness
We feel that youth is brief,
And age will soon o'ertake us,
With death to end our grief!

A SNOWSTORM

This poem was written by Shen-Chow, a famous artist and poet of the Ming Dynasty, on beholding an ancient picture of a snowstorm which he discovered in the attic of a monastery.

After ten days in the city,
Mad with glare and scorching gust
And the brain is whirling wildly,
Choked my eyes with burning dust.

Pleasant then to see before me
In the attic of the priest
League on league of snow-clad country
To my arid sight a feast.

Small the measure of the canvas,
Which displays the snow in flight
Yet so real the white flakes falling
That I shivered at the sight.

Long, lithe willow branches bending
Laden with the frozen sleet
While through thickset bamboo copses
Whistling blasts of winter beat.

Moored by the farther margin
Of the chill dividing stream
Waits the ferry-boat for travellers
But of man there's not a gleam.

Staggered are the rooks in flying
By the West wind's gusty course,
Far off wild geese cackle loudly
Blinded by the white storm's force.

Light limned are lines and shading,
By the hand of genius bold
Showing countless miles of landscape
As a gem of perfect mould.

Just as if some leagues of Kiangnan
At this moment came in view,
But my aged eyes need rubbing
To perceive the rocks anew.

Painting such as this is genius
Of the highest, rarest kind,
Showing art's profoundest mysteries
Captured by the master's mind.

Through the classic age of T'ang-Chao,
Specially by the men of Wu,
This rare work was closely guarded
With a care and reverence true.

And its value went on growing
Through the Northern, Southern Song
And the wealthy sought to purchase
Showing purses broad and long.

Costly relics oft are hidden
In the mansions of the great,
But a phoenix seldom dwelleth
With the poor of low estate.

Once before I saw a snow scene
On a canvas one-foot square
Marvellous but over-crowded
With a wealth of genius rare.

Now in age I gaze in wonder
On this greater picture scroll
In which the master's mind has let
All its lofty thoughts unroll.

Surely on this priceless relic
Heaven bestowed a special ward,
Teaching Tai-Kiu's sons and grandsons
How to judge it, how to hoard.

So they wrapped the prize in paper
Very tight and very small,
Hiding it within a furrow
Bored deep in the temple wall.

As a witness to this matter
 And the thoughts my mind does store
 Here I make and write this poem
 For a record ever more.

THE SOUTH BANK OF THE BROOK

BY YUEN I-SHAN,

Kin Dynasty, A.D. 1115 to 1234.

On the south bank of the brooklet
 Wine was made of generous brew;
 On the north side of the brooklet
 Groves of flowering plum trees grew.

There I spent a pleasant summer,
 Last year and the year before,
 Drinking often and admiring
 Plum flowers on the farther shore.

This year winter tarries longer,
 And the flowers are hid from ken;
 For they shrink from such wild weather,
 As a maid from riotous men.

Poets love the flowers and mountains,
 Shaded vales where spring first peeps,
 Where one sees the wind-swept hill-tops
 Just emerged from cloudy heaps.

In the deep and quiet gorges,
 Safe from boisterous storms above,
 Flowers and fragrance dwell together,
 As a pair in mutual love.

Now the north wind's howling round me
 In my mountain lodge at night,
 With a sorrow, I seem stricken,
 Of an overwhelming might.

REVIEWS OF RECENT BOOKS

The Most Noble and Famous Travels of Marco Polo together with the Travels of Nicolo dé Conti, edited from the Elizabethan translation of John Frampton, with Introduction, Notes, and Appendices by N. M. Penzer. 10in. by 7¼in., pp. xi-lx; 1-381. The Argonaut Press, London, 1929.

A very warm tribute must first be paid to the beautiful way in which this book has been printed and got up by Mr. Walter Lewis of the Cambridge University Press. The type, paper, printing, margins, binding, are all as nice as they can be, and the book is thoroughly pleasant to look at and comfortable to handle. There is also a series of eleven maps admirably and clearly drawn by Miss G. Heath. The book is one which will be an ornament to any library or drawing room table.

It is however a matter of regret that a volume materially so delightful should not be able to claim praise quite equally unstinted for its contents. Mr. Penzer opens with an Introduction of 50 pages, in which he deals with John Frampton and Santaella, with the manuscripts of Marco Polo as classified and described by Professor Benedetto in his monumental Italian edition published at Florence in 1928, and finally with the difficulties of the itineraries, helping us here with the wonderfully clear sectional maps. The Introduction is followed by an exact reprint of the English translation (the first ever published apparently) of John Frampton, 1579. Those who like a quaint Elizabethan book to read, and are not in the least interested in the identifications of places and other such details, might be glad of a simple reprint of this old version without notes or maps; and serious students of Marco Polo will of course be glad to have so careful a reprint of Frampton; but the great majority of readers, who without being collectors or specialists, wish to know what Marco Polo really said, where he went, and what are the places which he describes, will perhaps be sorry to have to read a very imperfect text which distorts the place-names to the utmost extent—Cinaugnary, Pingramphu, Candrafra, Tuognrou—and to have to supply the most glaring omissions by turning first to the notes for shorter additions (reprinted from Wright's edition of 1854) and then to the second Appendix for longer additions from the same source. It is hard to get good consecutive reading in this way, and a critical reader will feel that he has got nothing new, not one word corrected by direct reference to the best manuscript sources.

Turning again to the Introduction, it is curious to remark that, in spite of the undeniable popularity of Polo's book (Ramusio tells us that all Italy was filled with copies of it in a few months), all the extant manuscripts are greatly abridged and, more strange still, all seem to be derived ultimately from a single copy which was itself already corrupt, as Benedetto's researches have tended to show. With regard to the Itineraries, which seem to have been Mr. Penzer's chief care, it is not always well enough remembered by others that Marco Polo did not make a book of travels but a description of the world (*Devisement dou Monde*). His knowledge of other parts of Asia was derived from definite journeys when everything was wonderful and easily remembered, and places, descriptions, distances, and compass-bearings, though not without their difficulties, will bear scrutiny in a remarkable way. But in China, which he reached when his power of wonder must have been nearly exhausted, he was resident for at least fifteen years; and though he generally puts the places which he describes along routes which were probably more or less familiar to him, it is obvious that there is more chance of confusion, misplacement, and other error here than in the straight journey across Asia. For the places in the southern seas and India, where also great difficulties are encountered, it is fair to remember how extraordinarily hard it must have been for even a Venetian passenger on a junk to form a clear idea of his route and of the position of the places which he visited. The places in China are probably those which interest me and my readers most. The identification of many of them bristles with difficulty, and it is to be feared that Mr. Penzer has not really improved matters very much. He brings to his task apparently no local knowledge, no first-hand study of contemporary or any other native documents, little if any direct study of Marco Polo manuscripts, but only a genuine understanding of maps and a familiarity with the Yule-Cordier and other notes. He seems to have paid little attention to the work of M. Charignon. We may not always be convinced by M. Charignon, but he has come to these problems with an engineer's knowledge of the ground and with a considerable direct knowledge of native sources of information, and his opinion is not simply to be ignored. Let us take a specific case and see what help we get from Mr. Penzer. One of the well known problems—all the more provoking because the country is so familiar—is the identification of three places between Soochow and Hangchow. In the best MS. (which Mr. P. calls by its library mark, fr. 1116) the places are *vugiu* or *uugiu*, a day's journey from Soochow, *vughin*, and *ciangan* or *caiugan*, three days journey from Hangchow. Yule, fully recognizing the difficulty and uncertainty, suggested that these were respectively Hu-chou, Wuchiang (Wukong), and Chia-hsing (Kashing). Pauthier, whose

principal MS. omitted the second, makes *vugiu* into Hu-chou, and *ciangan* into Sung-chiang. Mr. Penzer makes *vugiu* into P'ing-wang, *vughin*, Hu-chou, and *ciangan*, Chia-hsing. In the course of the paragraph Mr. P. makes two remarks which ought not to pass without comment. The first is, "Any attempt at tracing the localities on etymological grounds seems hopeless." This would reduce the identifications to a pure game of chance. Here for instance *vughin* is difficult, but *vu-giu* and *cian-gan* are regular transcriptions of Hu-chou (Wu-chiu) and Ch'ang-an, and good arguments ought to be produced before we abandon the identification with these two well-known places. The second remark is, "Although fr. 1116 is alone in giving *three* distinct localities, we find that all the best MSS. agree in stating that Kinsay [Hangchow] was reached from some place or other *three days' journey away*." This is taken from Yule omitting his important proviso "at least of the principal texts." But even Yule is mistaken. Of nine MSS. which I have examined only the normal Pipino Latin and a Latin text very closely allied to Pipino omit all the places and make Soochow to Hangchow a five days run. Another Latin text (LT) reads *vngui*, *vghin*, "and afterwards there is another city." Of three French texts, the readings of fr. 1116 have been given above; FA¹ (Pauthier's A) reads *vonguy*, —, and *siangu*; FB¹ (Pauthier's C), *vnguy*, *vnghyn*, *siangan*. Of the Italian texts TA¹ has *ingui*, *vghin*, *quisai* (perhaps a slip, as it proceeds to say that after three days' journey one reaches *quisai* (Hangchow); and TA¹ *ingui*, *unghin*, *cianghin* or *cinghan*. Finally Z, the newly found Latin text which has a good claim to stand very high amongst the "best" or "principal" MSS., reads *vngui*, *vghin*, *zangan*; and it says that Hangchow is *one day's journey* from Zangan. M. Charignon will admit, for want of a better explanation, that *vugiu* is Wu(-chiang) chou; and makes *Vughin* into Hu-chou, not by guesswork but by recollecting that Hu-chou was for ages called Wu-hsing. *Ciangan*, he admits, is the proper transcription of Ch'ang-an, but as Ch'ang-an is less than *three days journey* from Hangchow he thinks that *ciangan* must have become confused in memory or in writing with *cian-ghin* and stand for Ch'ang-hsing. He would be interested to know that an important early MS. like TA¹ (*della Crusca*) actually reads *cianghin* once; though it is doubtful if that reading will stand against its own variant *cinghan*, *ciangan* (twice), *caiugan* (once), *syangan* (thrice), *siangu* (once), and *zangan* (twice). Fortified by Z's *one day's journey* and by the readings *ciangan* and *zangan* of the two best MSS., I expect that Ch'ang-an, then as now a canal-side market-town and stopping-place for boats, is the place meant; but enough has at any rate been said to show that the time for dogmatic statements is not yet, and that much critical work on the MSS

remains to be done. It may be added that *ghin*, which is invariable as the ending of the second place, is not a natural transcription of *hsing*, and there is, as was pointed out several years ago, a town called Wu-chên about half-way between Soochow and Hangchow on the more direct route west of the Grand Canal. But neither is *ghin* a good transcription of *chên*; Chên-chiang, for example, is *Cin-ghian* in the best MSS. of Marco Polo.

Mr. Penzer's spelling of Chinese words leaves something to be desired. There must be half-a-dozen persons in London who would have been willing and able to put them all into some known system, if they had been asked to do so. Mr. Penzer kindly thanks me for having looked at some of his proofs; but then it was too late. The maps had been engraved, and the text must agree with the maps. On the otherwise beautiful map illustrating the section which we have been discussing we find mixed up together (I put the *Giles* spelling in brackets): Tait-sang (T'ai-ts'ang), Hwai-ngan-chau (Huai-an-chou), Ping-wang (P'ing-wang), Shih-mên-che (Shih-mên hsien?), Ch'ang-an (Ch'ang-an), Teh-tsing (Tê-ch'ing), Lin-ping (Lin-p'ing), Wu-li-t'ou (Wu-lin-tu), etc. The antiquated spelling *chau* is specially to be deprecated.

But when all our criticisms are made it remains true that Mr. Penzer has given us a most beautiful volume which, if it has not added *immensely* to our knowledge or settled *all* our doubts, is full of interest from cover to cover and contains a series of extraordinarily clear and helpful maps. There is also an excellent index for which all readers will be very grateful.

A. C. M.

The East India Company Trading to China. By H. B. Morse, LL.D. Vol: 5. Size, 9"×6". pp. xi, 212. Oxford, The Clarendon Press, Mr. Humphrey Milford. Price 15s.

Four volumes of these records have already been published. This is the fifth and a "supplementary volume." The records for 1754-1774 were considered to be lost. They were found, however, or duplicates of them, after much search in the Legation in Peking. They were sent to London and now they are published.

This is a very interesting volume. Of course there are many figures in it, mostly statistical, concerning cargoes, ships and prices. In those days Tls. 3 would buy a £1 sterling. There are many lists of imports and exports and much information is given as to methods of landing and loading. The values of cargoes are given and the prices of the different articles. Business men will give attention to comparative values, and the facilities of trading then compared with what is possible to-day. The modern trader may have his trials but it is doubtful whether they can be compared

with the difficulties that beset the early traders in Canton. There were dangers on land and sea. How those small ships weathered the storms of the China Sea and managed to round the Cape is a marvel. It required nerve and strength to endure all the hardships of the voyage. Then the difficulties ashore with the "linguists," the merchants, the *Hoppo* and the great authorities. Much of this arose undoubtedly from ignorance and inexperience. The Chinese and lesser magistrates were uncertain of what their superiors would think. And the authorities were uncertain of the Peking view. One poor fellow was beheaded for teaching a young Englishman Chinese: a solatium of Tls. 300 was paid to the widow. On the whole the impression is left that if the actors were more certain of their ground, intercourse could have been carried on in a friendly spirit.

This volume is by no means a dry-as-dust record of business dealings, of prices and piculs of tea. It is the relation of traders from the west invading the marts of a land whose language and customs they knew nothing about, and in the endeavour to have means of communication, they had to rely on linguists. The petitions that were sent in to the governor and others must have often been sadly illiterate. It is therefore not strange that there were misunderstandings often and frequent embroilments. In one petition there is this reference to one of their troubles. "We complain of very unhandsome Chops, which have lately been affixed in public parts of the City, accusing us of Crimes, the mention of which is horrible to us: to them we attribute the frequent insults we meet in the Streets, and therefore desire they may be removed, and that the Government would not only protect us, but likewise our Merchants," etc.

There is a vivid account of the murder of an English sailor by a French officer. This gave rise to no little bother. The Chinese officers held an inquest but they were powerless to deal with the case as they were not courageous or strong enough to take full jurisdiction of the case. "The Chinese officials attempted in vain to persuade the European supercargoes to assume the charge of extraterritoriality in a case which concerned no Chinese person or interest: but in 1780 they claimed Chinese jurisdiction in the similar case of the *Success* and the *Stormont*."

This is a most valuable record of events of the early days. Dr. Morse has increased the obligation of the public to himself for this volume which is so full of incident and interest.

Mr. Humphrey Milford is also to be congratulated for the enterprise of the Clarendon Press in issuing such well finished productions.

E. M.

Histoire de la Concession Française de Changhai. Par Ch. B.-Maybon et Jean Fredet. Librairie Plon, Paris, 1929.

This scholarly work, which deals with the growth of the French Concession from the earliest days until the year 1875, fills a gap which has hitherto existed in the history of Shanghai and of Sino-foreign relations generally. It is the first history of the French Concession which has been written, and as the authors have had free access to the archives of the French Consulate General and have made the best use of this unique opportunity, this volume is likely to remain for all time the authoritative work on the early history of the Concession.

The authors wisely dismiss in two brief pages the geographical situation of Shanghai and other usual preliminaries and then plunge in *medias res* with a description of the mission of Monsieur de Lagrené, Envoy Extraordinary and Minister Plenipotentiary, who signed on October 14th, 1844—two months after his arrival in China—the Treaty of Whampoa, which secured to the French substantially the same privileges which had been secured to the British by Sir Henry Pottinger at Nanking two years earlier. It is curious in the present year of grace to read the instructions received by M. de Legrené from his Foreign Office in which he is told to arrange for French men-of-war to be stationed at the open ports in order to keep the *French* nationals in order and ensure that they respect the authority of the Consul.

The first French Consul at Shanghai was Monsieur C. de Montigny, a man of extraordinary courage and resolution, some of whose adventures are almost fantastic. There is, for instance, the story of the twenty French sailors who were wrecked on the coast of Korea and captured by the natives. Within 24 hours of receiving the news Montigny had chartered and fitted out a lorch and set off for Korea, returning three weeks later in triumph with his twenty compatriots. Had the French Consul during these first critical days been a man of less energy and determination than Montigny, it is likely that the French Concession would have been stillborn, for the obstruction on the part of the Chinese Authorities, the discouragements—even from his own Government—the physical danger and the discomfort with which he had to contend would have disheartened any ordinary man.

It is impossible in this review to do more than refer in the most summary manner to some of the outstanding events in the history of the Concession. One has to envisage it first as a mudflat intersected by innumerable filthy creeks and almost entirely covered by stagnant marshes, grave mounds, coffin dumps and ossuary jars, this desolate area being bounded by the Yangkingpang on the one side and the pullulating and pestilential suburbs of the Chinese City on the other. Little wonder that

during the early years it was difficult for the Consul to attract enterprise. Then came the Taiping Rebellion and the seizure of the City in September, 1853, by a band of brigands who held themselves out to be Taipings but were apparently unconnected with the main Taiping army—if it can be so called—which was then not nearer than Soochow. Then followed that desultory and long-drawn seige by the Imperial troops, the capture of the City and the subsequent operations against the Taipings, all described by the authors very vividly and with a wealth of incidents not recorded by other historians.

These events had two very important consequences affecting the future development of the Concession. In the first place the question of the defence of the two foreign areas gave rise to that difference of views between the French Authorities and the International Settlement which led the former to withdraw their provisional consent to the fusion of the two foreign areas and so sealed, for better or for worse, the fate of the French Concession as an independent unit. This incident was the cause of so much ill-feeling at the time and has been the subject of so much criticism since that the authors rightly devote considerable attention to it, quoting copiously from contemporary official correspondence in order to put the French case in a proper light. They certainly succeed in disproving the charges of bad faith; but whether the French policy of separatism has in the long run been to the general advantage, or even of special advantage to the French, is open to question.

The second of the consequences to which we have referred was even more important. The Rebels had destroyed all the Chinese houses clustered at the foot of the North wall of the City, the Imperialists had burnt down the whole of the Eastern suburb, other demolitions had been undertaken for strategic reasons by the French troops, and the soil in every direction had been upturned and covered with defensive positions, dikes, trenches and so on. When, after eighteen months occupation, the Rebels were driven from the City, the whole appearance of the French Concession had changed. All that squalid but dangerous labyrinth of hovels and alleyways along its borders had disappeared, and with it most of those coffin dumps and grave yards whose removal under normal conditions would have involved many years of labour and negotiation and much expense. Into this desolate area flocked in their tens of thousands refugees from the surrounding country which was then being ravaged by the Taipings. It was necessary to lodge them and to feed them. As if by magic whole districts became covered with houses run up in haste for their accommodation. Land hitherto valueless changed hands at huge prices and an orgy of speculation set in, in which for four hectic years high

and low, rich and poor, foreigner and Chinese, staked all they had or could borrow, huge fortunes being made and squandered.

The inflation of the population and the consequent difficulties of administration forced the Consul to summon to his assistance in 1862 a Council of five land-renters. This was the beginning of the Municipal Council as we know it now. The relations between Consul and Council were by no means consistently harmonious and the resultant friction was, according to our authors, to a large extent responsible for the deplorable Ningpo Joss-house riots which, serious as they were, we feel it is exaggerated to describe as "exceeding in gravity, in the history of Shanghai, even the events of May 1925." Perhaps in their immediate incidents, but surely not in their ulterior consequences.

The present volume brings us to the year 1875, and it covers not only the last known but by far the most interesting period of the history of the Concession. None the less we sincerely trust that Monsieur Fredet will not be discouraged by the regretted death of his scholarly collaborator from carrying to our own days in a second volume.

We feel that we owe a special word of thanks to the authors for the scrupulous fairness with which they have treated those incidents—alas, all too many in which the views of the French Authorities and their Anglo-Saxon colleagues were violently in conflict: it would have been easy to be jingoistic, but this fault is carefully avoided; in fact the authors go out of their way to record instances of friendliness or co-operation on the part of those colleagues and to pay them many a graceful compliment.

We have one criticism to offer, and that is that the special status of the French Concession is assumed rather than defined. In 1863, at one of the earliest meetings of land-renters, one of the persons present rose and inquired: "What is one to understand by the expression 'French Concession'?" The French Consul who was presiding was taken aback and could not give an answer. Finally, after much discussion, the meeting adopted the curious formula that "the origin of the French Concession and the authority exercised therein by the French Consul are explained by the special protection which France has always given to this territory!" Of course this is not an explanation, and to this day there are many people who find it difficult, to say what it is that makes the foreign area north of the Yangkingpang a "Settlement" and the area south of the Yangkingpang a "Concession." Our own view is that there is no essential difference between the two areas and that the difference is one of terminology only.

The book is well printed and there are agreeably few typographical errors (and those chiefly in Chinese names, for which there is some excuse) but it might well have been made up in a

less clumsy form. Four and a half pounds seems an unnecessarily heavy weight for a paper-backed volume of 450 pages.

B.

China—The Land and the People. By L. H. Dudley Buxton. pp. 333. Oxford, Clarendon Press. 15s. net.

This is a very comprehensive description of China including natural history, ethnology, agriculture, trade routes, culture, topography, geology and meteorology. It is illustrated with some thirty maps (mostly of a diagrammatic nature) and sixteen plates. Throughout an attempt is made to generalize and, while exception may be taken to some of Mr. Buxton's statements, the result is extremely useful. In dealing with primitive man the book was unfortunately produced too soon to have been able to record the *Sinanthropos* skull, but the author mentions the earlier tooth-finds of Choukoutien.

His division of China into Northern uplands, the Great Plain, and the Southern uplands is convenient but somewhat arbitrary, especially as his definition of the Great Plain differs considerably from any previous one and, if strictly applied, excludes from that area the very important section of the Yangtze delta extending from Shanghai to Hangchow, and includes much of Western Honan. Surely the Great Plain is sufficiently defined as the flood plain of the Yangtze and Yellow Rivers, including in the latter the old river bed up to Tientsin.

In the climatic section (by Mr. Kendrew) the recent investigations made in Japan as to the origin of typhoons should have received mention.

Nothing is given as to earthquakes or volcanic action.

The author wisely avoids dogmatizing as to the relations between afforestation and climate but indicates very clearly the damage which has been done by deforestation.

Taken as a whole, the book is extraordinarily good and should prove a most valuable source of reference.

H. C.

Portrait of a Chinese Lady. By Lady Hosie. pp. 404. Hodder and Stoughton: London.

No book of the year will be read with more delight by those who know China and the Chinese people than Lady Hosie's *Portrait of a Chinese Lady*—delight and profound satisfaction. Most of what it contains will seem very familiar, and because of that the portrait will be recognised as true to life, but the setting and the manner of portrayal are unique, and the effect is one of rare beauty.

To commend this book as entertaining and fascinating would be altogether too feeble and commonplace. It is that, but it is also a challenge. Beneath the lightness of touch, the rollicking laughter, and the tears, there is a strenuous purpose to bring mutual understanding between West and East; to shame those who show a contemptuous air towards the Chinese people; and in the minds of our Chinese friends to dispel that self-complacency and suspicion towards the westerner, which prevent them appreciating the best in us. The challenge will be felt no less by the Chinese than the English reader, and all the more effectively because of the admiration for the best in him which glows on every page. But the challenge is not obtruded; it meets us in casual chatter over cups of tea, in little jokes, or in a seashore stroll. Moreover, it comes in such a form as to preclude mere argument. To quote from the author's Preface:—"Sometimes small things usher in the mighty. It may be that the great solutions of inter-racial problems will come of themselves—as is the manner of great things. In any case, incontrovertible bases always remain for our mutual compassion."

The "Portrait" is a companion volume to *Two Gentlemen of China*, which appeared six or seven years ago. The style is the same, and the purpose, but there is much difference. Social and intellectual conditions have changed in China enormously since the early years of the revolution, and nowhere is the change more apparent than in China's womanhood. The title of the present volume indicates that it is mostly about China's women, whereas the earlier book was of men. But neither men nor women can be rightly seen and understood without each other; they intermingle in both volumes. The subject of the later one is really this—"Chinese character unfolding in the light of the new world which has opened to the East through intercourse with the West." China's national problems have grown in complexity in these recent years; so also have the personal and social problems of her people. Education has made rapid strides, and the younger generation has been so transformed by western ideas and culture that the portrait drawn five years ago looks antiquated by the side of the later picture. Lady Hosie had a simpler task in portraying the "two gentlemen" of the opening years of the revolution. Her portrait of the "Chinese lady" of to-day required a fuller background, a gentler touch, and deeper lines. Only a woman could have achieved the result, and only a woman with extraordinary insight and a very skilful hand.

Lady Hosie accompanied her father, Professor Soothill, when as a member of the Boxer Indemnity Commission he spent a year in China—1926-7. A transient visitor, travelling and sightseeing, meeting all sorts of people in a variety of social functions—scarcely

would we anticipate a solid book produced from such experience. But Lady Hosie *lived* in China as few of us have lived. *By lively interest in those she met*, she drew forth from them threads of human quality which, wöven into a narrative of that brief year, have given to us this picture of surpassing beauty. That Lady Hosie was extraordinarily fortunate in her acquaintances, in meeting some of the choicest and most refined of China's gentle folk, only partly explains this product. We are introduced all through the book to Chinese people of the old fashioned sort, the coolies and the country folk no less than to the modern intelligencia, and they are certainly no less attractive and interesting. One charming picture, which lingers in our minds, is of an old country couple visiting Shanghai for the first time, wandering bewilderedly about in one of the great departmental stores. As Lady Hosie pilots them up the lift, and turning from them greets unexpectedly the lady of her "portrait," we find ourselves admiring and understanding China, old and new.

It would be a most ungracious criticism to say that the personality of the artist herself is too conspicuous in the picture, insomuch that the reader is liable to become more interested in the subject of the author than in the author's subject, for this is the secret of the triumph which Lady Hosie achieves. Only by freely giving of herself could she have had this revelation of the things in Chinese character, which after all are not peculiarly Chinese, but broadly and deeply human—the things which they and we most need to recognise and appreciate in each other.

G. W. S.

A New Mind and Other Essays. By Dr. Evan Morgan. pp. 244. Kelly & Walsh, Ltd., Shanghai.

It is somewhat unfortunate that the title of this book conveys no idea of the significance of its contents, but those who have read the occasional contributions of Dr. Morgan to this and other journals will not be slow to anticipate the wealth of learning and illuminating interpretations of which these twenty-eight essays are full.

The subjects dealt with are very varied: One essay is on "The Perfect Life," and another on "The Introduction of Tobacco"; but there is one theme and thread throughout, and that is China. The book in reality is a survey of present-day tendencies in Chinese politics, viewed in the light of China's own history and the teachings of her sages. Most of the subjects treated are of universal interest, as will be evident from such titles as "The Exclusive Spirit," "The Committee Sense," "The Potential Power

of the Masses"; but they are treated as phases of China's recent development, and judged not by foreign standards but by China's experience as revealed in her own history. The author's aim is to bring the light of Chinese history to bear on present-day issues. His attitude towards the modern trend is critical, but never unfriendly. The appeal is not based on a prejudice against any particular political party or movement, but on profound appreciation of the great teachers which China has produced in the past and the strength of those principles which have been the cement of society in China throughout her long history.

We can think of no more stimulating exercise for the foreign-educated Chinese student than an attentive study of Dr. Morgan's essays. The volume will also be of special value to foreign students of things Chinese. The most interesting things about a people are not their external peculiarities, but their philosophy, their view of the world as expressed in their religious customs, their literature, and their national biographies. Into these regions we are introduced by these essays, and the general effect is to reassure us that the kaleidoscopic and catastrophic changes of recent years will not obliterate those strong characteristics which built up Chinese civilization and have preserved it through centuries of upheaval and chaos.

Books on China are in these days plentiful, but not many of them are of such enduring quality as this.

G. W. S.

Konfuzius und sein Kult. By Franz Xavier Biallas. pp. 130, 61 illustrations, 5 maps. Pekinger Verlag, Peking and Leipzig, 1928.

According to his introductory remarks, the author's intention was to give in popular form a short description of the cult rendered to Confucius at his home Kūfou. But, he says, this cult can only be understood when Confucius' life and work is known; these again require explanation in the light of the history of China's civilization, for the cult rendered to Confucius personally is but the visible manifestation of an attitude of mind which consists in reverence for the past and the desire to maintain those specifically Chinese elements of culture which had been handed down from pre-historic times and which the author calls "Confucianism in its wider sense."

The book divides itself into two parts, the first describing the life and times of Confucius, the second the rites performed at his grave. The first part is preceded by a short chapter giving a bird's eye view of the history of Chinese civilization from the earliest times to the birth of Confucius.

Then follows the story of Confucius' life and work, after which the spread of his teaching is followed right down to the days of the Republic. This part of the book would have gained considerably if the author had given not only in romanized form, but also in Chinese characters the names of persons and places and the titles of books mentioned. This refers also to the Bibliography and the notes. The list of posthumous titles given to Confucius by the successive rulers of China for instance would have gained very considerably in interest if the titles were given not only in German translation, but also in the original.

The second part of the book, as has already been stated, describes in great detail Kūfou, its graves and temples, and the ritual followed at the various sacrifices offered to Confucius. The description is completed by a large number of excellent illustrations and maps.

The tourist who takes an intelligent interest in the sacred places of Confucianism will find in this book an exceptionally well informed guide who will answer all the questions that are likely to be asked. But the book will be read with profit also by those who intend to take up the study of Confucianism more seriously, because it maps out the whole province in such a masterly way, gives all the main facts in their proper setting, mentions all those who took a part in the life of Confucius and the development of his doctrine and states clearly the various problems that require further elucidation.

U. B.

Tu Fu—the Autobiography of a Chinese Poet. With Poems Arranged and Translated by Florence Ayscough. pp. 450. London, Jonathan Cape. Boston and New York, Houghton Mifflin Co.

Mrs. Ayscough has attempted the difficult task (some would regard it as impossible) of enabling the English reader to appreciate Chinese poetry. She has even endeavoured to retain and translate the very emotion which moved and inspired the poet in the original compositions. The fame of Tu Fu has endured in China for over a thousand years. He lived in the 8th century of our era, but there have hitherto been few translations of his lyrics into other languages. Mrs. Ayscough helps us to appreciate the difficulties and in some measure overcome them by arranging the poems chronologically and sketching the life of Tu Fu, thus affording us a background and enabling us to see something of the experiences which underlay the writings of the poet—the successes and disappointments of his life; the favour and disfavour of the

court; the periods of war and imprisonment which gave birth to his dreams and sorrows.

The inherent difficulty of translating Chinese literature arises from the radical difference between Chinese writing and other national scripts. A Chinese ideograph or character is a picture; the words of our languages are only sounds. As we read we hear; as the Chinese read they see. Their poetry has indeed a rhythm, but it appeals to the eye no less than to the ear. To us a Chinese character is a fantastic composition of strokes to which we first attach a sound and then a meaning; to the Chinese it is a picture thought. Thus it becomes obvious that verbal translation can only faintly convey the intention of the author of the original. Mrs. Ayscough has endeavoured to overcome the deficiency by expanding a word into a phrase, and often thus makes evident and concrete to our minds what would otherwise have been vague and unimpressive. To quote the example mentioned in her Preface, the Chinese character for "oppression" or "cruelty" is composed of two parts—"tiger" and "claws." She renders it by the phrase "the tiger's claws of oppression."

Another almost insuperable difficulty for the translator of Chinese literature is the profusion of allusions to history with which it abounds: the allusions are often condensed into a phrase which will be radiant with significance for the Chinese scholar, but which would require pages of explanation for the foreign reader. Mrs. Ayscough has relieved us of this complication by confining her interpretations to the events of Tu Fu's life. Her aim has been to portray his personality through his poems.

We are taken back into China's ancient history, introduced to social conditions no longer to be found anywhere, even in China. Yet, shining through these strange colourings there are revealed those universal things which belong to the heart of man in all times and of all races. These found their expression in Tu Fu's poetical genius, and the forms of the expressions are related to the vicissitudes of his life. The translator's sympathy with her subject has triumphed over the technical difficulties, and she has succeeded in making Tu Fu's poetry, in some measure at least, intelligible to many to whom otherwise his compositions would have been almost meaningless.

G. W. S.

Sinism. By H. G. Creel. pp. viii, 127. Chicago. The Open Court Publishing Co. Price G. \$2.

And first as to the name. It is an unfortunate one. This is the day of -isms and readers will at once ask the -ism of what,

and the answer is SIN. If the author had used the usual -o-, the letter used to adapt first part of a double-barrelled word for connexion with second, and made *Sinoism* of it, the implication would not be so bad. The author felt the need of such a word for China to correspond to the word Hinduism, so Sinism was invented. But Hinduism stands for the polytheistic religion of the Hindus, only one department of their life: so really it would not serve the purpose he has in view. He desires something inclusive of the whole life. Two famous words were ready, the Tang-man, or the Han race. Tangism or Hanism. The second perhaps would sound better. But either would be more pleasing than Sinism. Better than all would be Hsia-ism. A great name for China and goes back to antiquity.

Now for the scope of the book. The word is used to denote a peculiarly Chinese world-view. The desire is to trace the stream of Chinese thought from the beginning.

To get a proper conspectus of the whole it is necessary to get at the origins and be free from Western bias. This is not easy. On page 4 the author says he is unable to place much faith in dates and events prior to Confucius. So, much of the ground has slipped from under one. In spite of this uncertainty the author says on page 7, "We have plenty of material . . . to make a picture of Chinese life as it was at the beginning of the Chou dynasty." Though the author desires to get clear of the past Western bias in dealing with Chinese ideas, yet the authorities relied upon and freely quoted are "Western eyes." So we are a bit involved in confusion.

What are the origins then? This subject is treated in the first chapter. Passing over the discussion of "Who are the Chinese and where did they come from?" the earliest trace of culture is fixed on as the *shê* (社). This is the sacred mound erected to the spirit of the soil or the spirit of the earth. The word is made of spirit and earth. Mr. Creel rightly places this as one of the earliest forms of culture. But he has not treated it in a way to get out of the idea all that is possible. In this way he defeats the end he has in view. His description is most meagre. He has said nothing of the *shê* being the centre of the social life in respect to its conferences, judgement seat of trials and of executions, of the sacrifices and other things. Further he only mentions one *shê*. If he had consulted Ma Tuan Lin (A.D. 13th century) he would find that there were five different *shê*: the *shê* of the people: the *shê* of the nobility: the *shê* of the prince, or king: the *shê* of the country (built by the people) and the great *shê* built by the emperor, on behalf of the people, and for the whole empire. Here we have an ample ground for creating ideas on the social and political life of the early Chinese.

Another early idea mentioned by the author is *T'ien*, Heaven. He thinks this concept has been over-emphasised as to its importance in early life. It is the royal cult and not the popular. In this the author is correct according to Chinese history. But he is not correct when he says, "It is the aristocracy not the people who sacrifice to it." The aristocracy had no part in it. The emperor alone sacrificed. He is the son of Heaven: he is such because he is related to one or the other of the constellations. The colour of the constellation gave the colour and divine authority to the dynasty and was of much significance. The origin of *T'ien* is sought by the author and the suggestion is made that the shepherds and the tillers of the soil had something to do with it. In that case, I remark, the cult must have had something popular about it at first. How was it that it passed out of their control and became a governmental business? This is not mentioned. Nor are there two minor items connected with this worship of heaven mentioned. They are minor but rather important. Once a year in some parts of China the people are allowed to worship heaven—soon after the days turn and begin to lengthen. And again the people on occasion "sweep the ground, place a mat on it, and offer sacrifice to heaven." Very simple but consonant with early ideas. It is the same in the O.T., no carved stones for the altar. The Chinese in the great Suburb Sacrifice were most particular that no implement should shape the stone used in the sacrifice.

If the author had drawn a much larger canvas of the origins of Chinese ideas, and had got clear of Western bias altogether, he would have been justified in including the following matters. The Suburb or *Chiao* sacrifice with its simple rites but elaborate preparation and correlative services such as the seclusion of the sacred animals, and the preparation of the different wines, of the brewing of which nothing is known to-day. Then we have the sacred music and the dances. Above all we should have the *Ming Tang* with all its ceremonies: the representative of the dead in the person of a worthy young member of the family, called "corpse" by Legge. He was so for the time but I prefer the other word. There is no more impressive and august ceremony. It may be argued that these were later developments and therefore outside the sphere of origins. That may be so. At the same time these powerfully influenced the people from earliest historical times and gave content to their culture and controlled their ideas. They are not later than two other factors given by the author, viz.: *Lí*, ceremonies, proprieties, and *Ho* (not *h'u*), harmony. These are two great factors, the work of the philosophers. The people know about proprieties and the idea has done much to soften the asperities of life: and harmony has had its share in directing social conduct.

The second chapter deals with Natural Philosophy. A better name would be Cosmic Ideas. The matters mentioned like *ho ch'i* (和氣) are all concerned with this rather than with any philosophy. If the author had taken the *ké chih* (格致) of the Great Learning and followed that to see if anything had been done in that direction it would be more satisfactory.

In C. 3 we have the origin of Sinism given. Harmony, the *Tao*, Feudalism and other things make up its chief characteristics. The author is insistent that the *Tao* is almost as integral a part of Sinism in general as of the system of *Tao Tse*. That is to say the concept value of the *Tao* in both is the same. Lao Tse's *Tao* he says is an extension of the concept in the *shu*. This should not be accepted without further consideration. On p. 122 it is stated "The highest ideal is the *Tao*, 'the way,' 'the road,' 'the path.'" We are quite ready to accept this interpretation. But this is not Lao Tse's meaning of the *Tao*. What he is trying to express by the word *Tao*—and he says the word cannot connote the power he means, the *Tao* that can be expressed in words is not the *Tao* it is the invisible force behind all things, self-sustaining, eternally giving without diminution of power: it created heaven and earth and nourishes all things, giving them beauty and strength. There is no such idea in the Classics. Further the Confucian idea of the *Tao* is of *yu wei* (有爲) and that of Lao Tse of *wu wei* (無爲) the first meaning action with effort or by means of human ingenuity: the latter, spirit action, or, as Dr. Hu Shih thinks, progressive evolution. Again take the opinion of the great essayist Han Yü. Speaking of the *Tao* of Lao Tse, he says that *Tao* is his *Tao* and not my *Tao*. He was the great Confucian expounder.

There is no space to deal with C. 4, Confucius and Confucianism: nor with C. 5, Lao Tse and Laoism, more than to say that the author does evaluate both thinkers highly. But he does not appreciate that Lao Tse gave a new content to *Tao* in that he does give it a religious content, hence we have *Tao chiao*. But *wu* in *wu wei* is not a negative, so *wu wei* does not mean "to do nothing." *Wu* has a positive meaning of acting according to the *Tao*.

The author has given us a laborious work: he has brought out things new and old. It will stimulate thought and arouse many criticisms. The subject has been treated in a somewhat scrappy way and the arrangement is not always clear.

In closing a word of protest must be made on the gratuitous attack on Dr. Legge, and the early missionaries. I shall quote the passage in full. "Many of the earlier studies of Chinese religion . . . were made by men who recognized but little the existence of a peculiar mode of thought, if indeed they did not deny the very possibility. Three reasons for this may be men-

tioned. The first is the inaccessibility of the country. The second is the difficulty of the language. Third, since these conditions prevented the early entry of unbiased scholars, in any number, into the Chinese field, the initial task of interpretation of Chinese history, philosophy, and religion was left almost entirely to Christian missionaries, men who by their very calling were usually unqualified for the labour of objective and critical scholarship. As a result, the Chinese Classics are still known to the West largely through the translations of such men as James Legge. One can only have admiration for the conscientious industry which Legge gave to his pioneering tasks, but that does not prevent the wish that they might have been performed by some one less determined to harmonize Chinese history with the book of Genesis."

Now this is a regular dog-in-the manger criticism. Mr. Creel could not have written his book but for these early writers. He has picked the brains of the men he tries to dishonour, for lack of scholarship critical faculty, and so on. A tyro knows that Dr. Legge was a great scholar in academical attainments. He was a fine critic, as the least acquaintance with his text and commentaries should indicate. If, as a student, and a profound one, he saw certain resemblances in the *Shu* and Genesis, and said so, the only remark to be made is, why shouldn't he? He is still the scholar and unbiased, and the thing to do is to show that he was not correct: even this is hardly necessary in view of the insignificance of the matter.

There is one other point which should not be passed over. On page 20 we have the following rich note recorded. "The fact that Chinese thought is so congenial to our own leads to the reasonable hope that American sinologists may surpass the European in this department of research." The echo is "hurry up."

E. M.

The George Eumorfopoulos Collection Catalogue of the Chinese and Korean Bronzes, Sculpture, Jades, Jewellery and Miscellaneous Objects. By W. Perceval Yetts. Vol. II; Bronzes; Bells, Drums, Mirrors, etc. pp. viii+99; +figs. 44; +plts. 75 (25 in colour). London, E. Benn. 12 guineas.

This volume completes the bronzes in the Collection, except those which come under the heading of sculpture. For the introductory essays the author has chosen as his subjects Bells, Drums and Mirrors. As he says in the Preface, a study of bells was needed as a supplement to the detailed account of archaic ritual vessels which appeared in the first volume; and drums also were essential to the ceremonial of ancient China. In these three essays Mr. Yetts explores many questions, bearing directly on the early

periods of Chinese civilization, which have hitherto been scarcely touched by Western writers. This statement applies specially to the Bells and Mirrors. There is, it is true, a large literature on the Bronze Drums; but it is in German and French. While summarizing the theories of origin advanced by Heger, Foy, Meyer, Hirth, De Groot and Parmentier, Mr. Yetts finds new reasons to support the belief that the Bronze Drums were derived from ancient Chinese sources. One of his chief arguments is based on archaic script. He points to a number of pictograms taken from inscriptions on both the Honan Bones and archaic bronzes to demonstrate the probability that prototypes of the Bronze Drums did exist in ancient China. These were made of perishable materials; but, for various reasons, bronze counterparts were made for and by the barbarians. "The Chinese successfully imposed the drum as an instrument of their diplomacy, because the bronze counterpart proved acceptable to the hereditary chieftains as a palladium and heirloom, as well as an emblem of participation in the Chinese hierarchy."

Mr. Yetts explains the relationship that exist between herons and the drums, and he discusses the influence exerted by shamanism. Also he raises the interesting point that the sorcerers (*wn*) may have had a closer connection with the classical dances than is generally recognized.

The essay on Mirrors is notably full of information which is fresh to Western readers. Hitherto the Japanese have been the most ardent and enterprising investigators of the Chinese bronze mirrors. Among foreigners, Hirth alone has written a short monograph on the subject, and it appeared in 1906 in the *Boas Anniversary Volume*. After discussing criteria to be obtained from dated mirrors, Mr. Yetts studies the origin of the Four Supernatural Animals (*ssü shên*) as emblems of the Four Quadrants of the sky. He traces at length the astronomical symbolism of these figures; and he is the first to prove that, contrary to the statements of many writers, the symbolic use of the Four is not older than about the third century B.C.

Among the many decorative motives displayed on mirrors, the Twelve Animals, scenes of the Taoist fairyland, and the grape and animals design are explained. On the subject of technique, Mr. Yetts makes several original suggestions. He shows reason for the belief that many mirrors were cast by the *cire perdue* process, and he advances the theory that the glossy black lacquer-like surface was not, as it generally believed, the outcome of accidental chances of environment. "The coating," he says, "may have been intentionally produced by mixing siliceous matter with the layer of the mould which comes into direct contact with the molten metal."

Perhaps the most important part of this volume is the study of a bell, which occupies nearly seven pages. It is important because Mr. Yetts achieves the rare feat of correlating with time and place a distinctive type of archaic Chinese craftsmanship. This he is able to do by identifying the man who caused the bell to be cast, as named in the inscription, with a historical personage. There is reason to believe that he was Wei Chiang, great-grandson of Pi Wan. It so happens that the *Tao chuan* (Legge, *Chinese Classics*, V, 453) contains a circumstantial account of a set of bells conferred on Wei Chiang by the Marquis of Chin in 561 B.C. These bells came from the Chêng State, and Mr. Yetts' theory is that the Eumorfopoulos bell also was made in the Chêng State after the same pattern. By a happy chance, Mr. Yetts has found another bell, decorated with a similar design, which also came from Chêng, as the inscription on it proves.

The 62 mirrors in the Collection provide a representative series of this most fascinating category of Chinese art. In date they range over more than a thousand years from about the second century B.C., and there are some Korean mirrors which may be later than this period. Belt-hooks are also represented by numerous examples, and many of them are of great beauty. Besides the categories already mentioned, the objects in this volume are diverse: tallies, seals, horse trappings, sword fittings, censers, "Scythian" plaques, etc. It is a volume of many and varied interests, and the plates are as perfect as those in the first volume. The coloured pictures are painted and reproduced with such consummate skill that the illusion of reality is almost uncanny. It is a credit to the publishing resources of the country that such a masterpiece of book production has been achieved entirely in England. The first Edition Club has given this volume fitting recognition by choosing it as one of the fifty best books of the year.

E. M.

The Lotus of the Wonderful Law. By W. E. Soothill, M.A. pp. 275. Oxford, Clarendon Press.

The importance of the Lotus Sutra as one of the most influential of Buddhist classics, has long been recognized, and a translation into English from the Sanskrit version was made by H. Kern of Leiden in 1909. It is, however, in its Chinese versions that "The Lotus" has won its fame. Of Chinese versions there have been several, but the one which has held the field is that of Kumarajiva, completed near the beginning of the fifth century of our era. It is a masterpiece of Chinese composition. Doubtless in its production, Kumarajiva had the aid of various scholarly Chinese. Copies

of the work are found on the lecterns of most Buddhist monasteries in China. Dr. Timothy Richard published a summary of its teachings twenty years ago under the title of *The New Testament of Higher Buddhism*. Prof. Soothill, with the collaboration of Mr. Bunna Kato, has made a complete English translation of the text, which is later to be published. The present work is an abridgement, omitting repetitions and less important details, but it covers all the twenty-eight chapters and is sufficiently full to afford ordinary students a comprehensive knowledge of the substance of the great Sutra.

In the Sanskrit, and also in Kumarajiva's version, each of the first twenty-one chapters consists of a prose discourse followed by a rendering of the same in verse. Chinese literary art is, in its way, unrivalled as a medium for the expression of delicate shades of meaning and beauty of rhythm, and the effect is such as no translation into a polysyllabic language could possibly reproduce. Yet in this, to a remarkable degree, Professor Soothill has succeeded. The prose discourses are rendered into English in a lucid and vigorous style, and the blank verse translations of the Chinese poetry convey a real impression of the classical grandeur of the text.

The first criterion by which a work such as this must be judged is not the literal accuracy of the translation but rather the extent to which it clearly presents those great ideas which through the original text have brought hope and comfort to countless human souls. Does the translation reveal those vistas which have captivated the hearts of men of high and low estate as they have studied and repeated the mystic words? Does any of the illumination fall on the reader as now, in a modern western language, he ponders these ancient teachings? If this be the test to apply to such a work, Professor Soothill has succeeded greatly. Together with Chinese learning, he has brought to his task a sympathetic understanding of this wonderful religious drama—not only of its beauty as a literary masterpiece, but also of the profundity of its spiritual appeal.

The translation is prefaced by an essay on the history, content and doctrine of "The Lotus." This introduction adds greatly to the value of the work. It is specifically a description and discussion of the Lotus Sutra, but it is also an interpretation of the significance of the great schism which has severed the Buddhism of China, Korea, Japan, Mongolia and Tibet from the Orthodox Buddhism of Ceylon, Burma and Siam. An appreciation of the difference between these two schools, the Northern and the Southern, the Mahayana (or Great Vehicle) and the Hinayana (or Lesser Vehicle) is indeed essential for an understanding of the teaching of the Lotus Sutra. Professor Soothill's exposition, whilst broadly

favouring the Mahayana school, is considerate and fair to the orthodox adherents of the older Buddhist tradition, which alone may, with historic accuracy, regard itself as perpetuating the teaching of Sakyamuni. The older tradition was of "Salvation through works": the doctrine of "The Lotus" is salvation through faith." To Southern Buddhism the latter is a repudiation of Sakyamuni Buddhist teachings, but the unknown author of the Sutra labours hard with the plea that the Buddha's earlier doctrines were but tactical and temporary, preparatory to the fuller light herein revealed. The transformation from a doctrine of laborious working for salvation to one of faith in deliverance brought by transcendental means, is the central theme of the classic.

An analogy between this development or transformation in Buddhist doctrine and the familiar contrast of "salvation by works" and "salvation by faith" in Christian teaching is inevitable, and this is only one of the many remarkable analogies which this translations of the Locust Sutra brings to light. Professor Soothill touches only warily upon the question of possible Christian influence as the explanation, but he leaves us certainly with a strong impression of similarity of direction, and of kinship in essential motive between the two great religions of salvation.

A profound respect for the masterpiece to which he introduces us is characteristic of Professor Soothill's comments, and we have no hesitation in commending this book as a valuable contribution to our knowledge and understanding of Buddhism in the Far East.

G. W. S.

A Brief Account of Diplomatic Events in Manchuria. By Sir Harold Parlett, C.M.G. Published under the auspices of the Royal Institute of International Affairs, 1929.

It is a truism—but one which is often forgotten—that in order to form a just estimate it is necessary to have the correct background. For instance, so many "experts" on China are content to know Shanghai and the Chinese they meet there, and forget that it gives them little idea of even the larger outports and still less of the huge mass of internal China, where conditions in particular, outlook and people differ materially from Shanghai, and have, and will have, an important bearing on affairs in China. Such "experts" get a wrong perspective and a wrong background which may be fatal.

It is in its provision of a correct and neutral background that Sir Harold Parlett's monograph on "Diplomatic Events in Manchuria" will be an invaluable guide to all students of affairs in the

Far East, in the future of which this part of China—which is yet not wholly China—bids fair to loom large. Sir Harold Parlett has exceptional qualifications for writing such a monograph. He spent thirty-seven years in the Consular Service in Japan. He was twice stationed in a consular capacity at Dairen, and, as Japanese Counsellor at Tokyo, he had every opportunity of keeping in close touch with Manchurian affairs, especially from the Japanese standpoint. In is in virtue of the latter, although he studiously, and rightly—in view of the purpose for which his monograph was written—avoids expressions of opinion and conclusions, that his monograph is peculiarly interesting to the student of things Chinese. Manchuria is a country “where three Empires meet.” Russia, since her Revolution, has fallen behind. The two main protagonists in recent years have been China, with her over-increasing population in those regions, and Japan, with her equally increasing economic interests—not so much in capital invested, as in her vital need of Manchurian resources and Manchurian markets. Since Sir Harold Parlett's monograph was written, Russia “has staged a strong come-back.” How strong is still unknown. She has shown, however, that she not only will, but can, effectively defend her interests when she so desires, and that her interests, at least in the Chinese Eastern Railway, are still a factor to be reckoned with.

In Sir Harold Parlett's historical background there is one important omission. Almost the entire original male population of Manchuria followed Nurhachi in his Manchu invasion of China in 1644. A writer on the “History of the Chinese Migration to Manchuria” which appears in the July, 1930, number of the *China Economic Journal* mentions this fact, and adds elsewhere that “the results of careful investigation cannot fail to show that despite several centuries of colonization, Manchuria was more aboriginal than Chinese at the time when the Chinese Eastern Railway was constructed”—hardly thirty years ago.

These facts bear on China's historical claim to Manchuria, notwithstanding her present actual claim in ninety per cent. of a population, now estimated at over twenty-five millions, in a country of which the estimated area is three hundred and eighty thousand square miles, or only fourteen thousand square miles less than the combined areas of France and Germany. This population, and especially this great area, are two further points to be remembered in the Manchurian problem. Other aspects of the problem will be found in various papers published in *Problems of the Pacific*, 1929, by Dr. J. B. Condliffe.

There is only one criticism to pass on the monograph. The map is admirable and the marginal headings most helpful. But, in the mass of names and events which necessarily make up even

this brief account of recent diplomatic events in Manchuria, an index would make a most valuable additional appendix and it is hoped that it may be included in any subsequent edition.

L.

Le Triple Demisme de Suen Wen. Traduit, Annoté et Apprécié par Pascal M. d'Elia, S.J. pp. cliii and 527. Imprimerie de Tousevei.

Father d'Elia has laid all those who are interested in the *San Min Chu Yi* under a deep and lasting obligation by his book. Not only are Sun Yat-sen's lectures made accessible to the western reader in an excellent French translation, but the whole territory covered by them is mapped out, and countless guide-posts make it possible to find at a glance the references to any given subject.

There is first of all a very well-written biography of Sun Yat-sen. This is followed by a careful and detailed analysis of the *San Min Chu Yi*. Having thus become familiar with the contents of the book, the reader is ready for the frank and full criticism of Sun Yat-sen's teaching which the author gives in his "Appréciation."

All this, however, is but an introduction to the *San Min Chu Yi* itself, which is, as already stated, translated into French: each lecture is subdivided into numbered paragraphs and preceded by a summary referring to the paragraphs by their numbers. The student's task is further facilitated by numbers in the margin giving the page on which the original text can be found in standard Chinese editions. Father d'Elia's book is a model for works of this kind.

The author is interested in the *San Min Chu Yi* mainly as a Roman Catholic priest and missionary. He is concerned with the influence this book will have on Chinese Christians, and realizes that it is the Church's duty to guide her children in a matter of this importance. His criticism of the book makes most interesting reading, but no cursory review would do it justice, and those interested must be referred to the work itself.

The author is a genuine friend of the Chinese people; he states that, like Pope Pius XI, he is actuated by sympathy for the noble Chinese race, and his whole book is a proof of it. But this sympathy does not blind him to the defects of Sun Yat-sen's work, the most obvious of which appear to him to be endless repetition as to the form; shallow optimism as to its tendency; superficiality in the treatment of the subjects introduced, and countless inaccuracies in the statements of facts.

His final conclusion is that from the Roman Catholic viewpoint there is nothing inherently wrong in the first two of Sun Yat-sen's

principles. The Church approves of "patriotism which remains within the bounds of natural and Divine law"; it "accepts all forms of government." What errors there are in Sun Yat-sen's teachings on these points will doubtlessly be corrected when they have been put to the test of actual experience.

The third principle—*Min Sheng*—raises much more delicate problems. The author believes, however, that Sun Yat-sen's teaching can be presented and interpreted in a way which will remove the apparent contradictions with the Church's teaching. The book can therefore be placed in the hands of Roman Catholic students, but should be taught by experienced and competent Roman Catholic teachers.

What gives Father d'Elia's work additional weight is its approval by his ecclesiastical superiors, and the letters from the Apostolic Delegate in China, Mgr. Costantini, with which the book opens and in which this high dignitary defines his views on the *San Min Chu Yi* and the honour which students in schools are required by the Government to render to Sun Yat-sen.

U. B.

Laboratory Manual: Division of Bacteriology. P. V. M. College.

An extremely valuable little booklet which, though it, as might be expected, follows almost entirely American schools of thought, cannot fail to fill a niche in every working Bacteriologist's desk throughout China.

Bacteriologists from other schools might question certain of the dogmas in the book, but will be impressed by the encyclopædic character of the information contained in so small a book.

In order to cram so much information into so compact a volume, a very condensed style has had to be adopted, and perhaps the only criticism one could make is that in places this stern exclusion of explanations and irrelevant detail renders it somewhat difficult to follow the rationale of certain operations.

This, however, cannot be adduced as a failure in the composition of the book, since it is clearly not meant for the absolute beginner, nor is it intended for the instruction of Bacteriologists, accustomed to other techniques, in regard to certain tests which they might wish to adapt to their own use.

The care with which this book has been designed is evident in the copious way in which reference is made to the original or most useful authority on any particular test. This and the extremely valuable reading references at the end of the book, which might almost be described as short instructions as to how to read as well as where, complete an extremely interesting and pleasant little booklet.

The chapter on the care of animals is peculiarly good and gives numerous hints as to suitable fodder, etc. It should be of great assistance to persons unacquainted with local conditions and food stuffs.

Glossary of Bacteriological Terms. P. V. M. College.

The Reviewer cannot state whether this extremely full and valuable book will serve its full purpose.

Whilst it is an ungrateful thing to criticise a work which has obviously been very carefully and painstakingly constructed, and which must have been a somewhat Sisyphean task, one cannot but wonder whether it is possible to convey in the Chinese language ideas alien to the construction of the language, as so many scientific and technical notions must be.

Such criticisms, however, are captious when applied to what is undoubtedly a very valuable contribution to Science in China, and without which it would seem impossible to convey to Chinese unacquainted with foreign languages any of the facts of bacteriology.

To compile such a glossary must have been a very serious labour and the Authors are to be congratulated. In fairness one should add that in spite of the criticism above, many of the phrases were readily understood by a Chinese of no technical knowledge.

Yenching Science Conference Papers. The Peking Society of Natural History Bulletin, Vol. 4, Part III, March, 1930.

This is another of the valuable contributions to the literature on China's natural history which the Peking Society of Natural History has put out since its inauguration. Dr. H. H. Hu's paper on "The Importance of Plant Ecology in China and a Suggested Procedure of Study" will appeal to those who have the study and teaching of botany in this country at heart, while Professor W. M. Porterfield's contribution on "The Morphology of the Growing Point of Bamboo" and Mr. J. C. Liu's "Important Bibliography on the Taxonomy of Chinese Plants" will appeal to the same class of reader.

"Laboratory Animals" is the name of a paper by Dr. A. B. Droogleever Fortuyn which also will be useful to biology teachers in China. Two papers on Chinese leeches bring this subject up to date. They are by Percy J. Moore, of the American Museum of Natural History, and Chenfu F. Wu, of Yenching University.

The inevitable check-list by N. Gist Gee of some branch of

China's zoology appears; this time on the mammals, though it is here called "Contributions toward a List of Chinese Mammals." In the foreword it states, "The compiler of this list has simply brought together the records from as many sources as possible, and has had no opportunity to check the specimens or to work out the synonymy of the species listed." Then why publish it? Why not wait till it has been checked and synonyms properly dealt with? Such attempts at giving the synonymy of certain forms as has been made are not satisfactory. As an example *Felis temmincki bainesi*, Sowerby, from Yunnan is given as a synonym of *Felis temmincki dominicanorum*, Sclater, from Fukien. Why? The two forms are certainly distinct, just as distinct from each other as *F. t. dominicanorum* is from true *temmincki*.

Again, to give *Selenarctos mupinensis*, Heude, *S. thibetanus wulsi*, *S. torquatus macneilli*, Lydekker, and *S. ussuricus*, Heude, as synonyms of *Selenarctos thibetanus* (Cuvier) is entirely wrong. Sowerby has shown that the species to which Heude gave the name *Selenarctos leuconyx* is not a member of this genus at all, but a member of the genus *Ursus*, in which the name *leuconyx* was already preoccupied. He renamed the species *Ursus clarki*. And why, we may ask, is *Trichaelurus manul* (Pall.) placed amongst the *Ursidae*? Does the author of the list think it is a bear? Where are *Ursus lagomyiarius* Sewerzow and *Spelaeus leuconyx* (Severtzow)?

Budorcas thibetanus, M.-Edw., the Szechuan takin, is not given, but *B. sinensis*, Lydekker, of Kansu, and *B. taxicolor mitchelli*, Lydekker, of Tachieulu, both obvious synonyms of the former, are included in the list.

A. DE C. S.

Shanghai Birds. By E. S. Wilkinson. North-China Daily News and Herald, Ltd. Price \$15.

In a review of this valuable work appearing in *The Ibis*, Twelfth Series, Vol. VI, No. 2, April, 1930, pp. 356-7, it is stated that the author has attempted to include various branches of ornithology which are not usually dealt with in a handbook of this class. This may be so, but in justice to Mr. Wilkinson and his ambitions it must be pointed out that he wrote the book for the Shanghai public, which knows little of ornithology, and not for a public already sophisticated in bird-lore, for which reason we feel that he was thoroughly justified in including the various branches of ornithology that he did. After all, it must be realized that there is very little literature of a general nature on Chinese birds, and we fail to see why contributions from an original observer are not always valuable, no matter where they appear.

The Shanghai nature lovers at any rate will appreciate what Mr. Wilkinson has accomplished, in publishing a book such as this with its beautiful coloured plates and detailed descriptions of the birds commonly seen in this district.

The book is divided into two parts, the first being devoted to general subjects, such as the identification and observation of birds, bird calls, the naming of birds, migration and so on; while the second part is taken up with a detailed description of birds arranged under their orders and families, with the popular and scientific names given. It contains twenty-three coloured plates by the well known bird artist, Henrik Gronwold, in many of which several species of birds are depicted. These with the descriptions make the identification of our local birds an easy matter even for the veriest tyro. Every garden owner in Shanghai should have a copy of *Shanghai Birds* in his library.

A DE C. S.

A Study of Shintō, the Religion of the Japanese Nation. By Genchi Katō, D. LITT. The Kyō-Bun-Kwan, Tokyo.

The content of this attractive volume by a learned Japanese professor is an exposition of the salient features of Shintō, claiming for it a place among the living religions of the world, possessing the universal elements which entitle it to kinship with Buddhism and Christianity; yet in its distinctive character and intrinsic genius an expression of loyalty in Japanese national life.

The book is the substance of lectures delivered by Dr. Katō in universities and colleges in Japan, but it will be regarded as a text-book for study and reference by all students of comparative religion. It is an apologetic, but scientific and judicial in tone, entirely devoid of propagandist argumentation. Adopting the historical method, the author traces the development of Shintō from the lower or primitive forms of nature worship or animism through phases of festishism, polytheism, totemism, phallicism, polytheism and pantheism, to its maturity as an ethico-intellectual cult of an intrinsically national character.

"The vital essence of Shintō manifests itself in an expression of that unique spirit of national service of the Japanese people, which is not only mere morality, but is their religion, culminating in Mikadoism of their own peculiar form of loyalty and patriotism towards the Emperor, who is at once political head and religious leader in a government constitutional yet theocratico-patriarchal."

Dr. Katō would have the student differentiate between State Shintō, which the Meiji Government in 1884 proclaimed to be non-

religious, (thus putting it entirely in a different class from Buddhism and Christianity), and Sectarian Shintō, which is distinctly religious and ethical. There are thirteen Shintō sects officially recognised in Japan. These are described and differentiated by Dr. Katō, and they are shown to owe their spiritual force to reverence for the ethio-religious principle of Sincerity. It is here that Dr. Katō finds an approach to religious universalism, though even Sectarian Shintō is not relieved from the bond of nationalism. Dr. Katō regards the Shintō principle of Sincerity as corresponding with the Christian principle of Love, and his concluding paragraph claims that the tenets of Christianity, Buddhism and Shintō stand fundamentally on one and the same principle. Vary though these religions do in form, yet in essence here they are the same.

G. W. S.

The Elements of Japanese Writing. By Commander N. E. Ise-monger. Quarto, pp. viii and 254. London, the Royal Asiatic Society, 74, Grosvenor Street, W. 1. Price 25s.

This is an excellent work but of which it is very difficult to point the many merits in a short review. The reviewer would like to say that this is the book for anyone who is thinking of studying the Japanese language. It seems to us to be full and clear in the various steps that are taken to explain the intricate structure of the Japanese language.

We can do no better than state some of the ideas presented, and methods adopted, by the author so as to furnish the reader with the object and the scope of the work.

The object is twofold: to give the student of the language "a sound foundation of general knowledge of the subject and to supply him with sufficient elementary instruction to commence the study of the language in an efficient manner, and to do so with the minimum of assistance."

The way the author proposes to attain this excellent object is (i) by giving a summary of Japanese writing. This is divided into periods, the first of which deals with the time when there was no indigenous script, and how the lack was made up by the adoption of Chinese writing. But this was difficult. How to adopt and adapt were the problems. To solve it was no easy matter. This is explained in the treatment of the second period. The two languages were fundamentally different. Japanese words were long, the Chinese short. So the sentences. As a rule Chinese sentences are short, the Japanese often very long and involved. The sequence is also the reverse in one and the other. Thus there are few points of contact and similarity. Was the difficulty of

adopting the Chinese script so great as to make it impossible to do so?

The arrival of Buddhism in Japan in A.D. 552 helped to solve the problem. In this way, the Chinese in transliterating some new names introduced by Buddhism into their own language did so phonetically. So the character became the medium of conveying the sounds of the spelling of the new words. There was no logical meaning in the new combination of characters thus formed but there was the sound and this gave the sound of the new names, etc. Thus the Chinese had already made the phonetic script. The Japanese likewise when they grasped this, used the character phonetically to represent their own sounds. This gave birth to Kana, "Borrowed name." The Japanese were on the way to get a written language. When the Chinese character is written in its entirety for a purely phonetic purpose then we have Manyogana. Then we have the Katakana and Hiragana. The Chinese characters had to undergo changes and fluxes and many devices were used to make them serve the purpose. All these things are to be found and fully explained in the chapters that deal with the historical evolution of the language: and (ii) by copious and clear practical examples and lessons illustrating the points explained. The student who masters these will certainly have a solid foundation on which to build.

This work also suggests how serviceable one nation may be to another. China has supplied or helped to supply Japan with a written language. How is it that the Japanese who are so quick-witted had failed to invent some kind of symbols for themselves? An interesting suggestion. Has an answer ever been tried? Then China was the giver of art to her neighbour. Two splendid contributions these. Japan has made good use of the gifts and possibly has made more use of these than the Chinese themselves. These are great constructive developments. How happy the world could be: how much richer it could have been if the world's history had been running on these lines instead of in the way of mutual destruction: the destructive spirit seems inherent in races. Witness Russia now destroying the precious monuments of her past civilization: and China too careless of the relics of her spiritual wealth.

E. M.

The Outline of the Capital Reconstruction Work. The Reconstruction Bureau, Japan, 1929. 94 pp.

This is an excellent summary of the prodigious task undertaken since 1923 in the reconstruction of Tokyo. By a rather

remarkable coincidence Dr. Beard had visited Tokyo in the winter of 1922 and made certain broad recommendations in June 1923. In September occurred the earthquake and he supplemented his report and had the unique opportunity of seeing a Government remodel a large city in one operation in general conformity with his recommendations.

Those who have visited Tokyo recently do not need to be told of the tremendous improvement which has been effected. This pamphlet gives many interesting details not the least important of which is the method of re-allotting sites in accordance with the new street blocks.

The total expenditure in Tokyo alone was of the order of seven hundred million yen and the successful accomplishment of such a task in seven years is a great testimony to the energy, capacity, organization and co-operation of the Japanese people.

H. C.

PRESENTATIONS TO THE LIBRARY

July, 1929 to June, 1930

BOOKS.		PRESENTED BY :
		<i>Publisher.</i>
The Book of Lord Shang. By J. J. L. Dyyvendak.		
Laboratory Manual, Division of Bacteriology. By C. E. Lin.		"
China, the Land and the People. By L. H. Dudley Buxton.		"
Sinism, a Study of the Evolution of the Chinese World-View. By H. G. Creel.		"
The Elements of Japanese Writing. By N. E. Isemonger.		"
Bhanja Dynasty of Mayurbhanj and Their Ancient Capital Khitching. By R. Chanda.		"
The Antiquities of Sind, with Historial Outline. By H. Cousens.		"
Come to Java, illustrated Guide to Java.		"
Glimpses of the East, N.Y.K. Official Guide, 1930.		"
Manuel de Meteorologie. By J. de Moidrey, S.J.		"
A Glossary of Bacteriological Terms		"
Records of State-Burial of President Sun Yat-sen, (總理奉安實錄).		"
First Annual Report of Academia Sinica, 1928-29.		"
Annual Report of the Yangtse River Commission, Ministry of Communications, 1927-28.		"
Catalogue of the Coins in India Museum, Calcutta. Vol. IV. Edited by J. Allan.		"
The Races of Java. By D. J. H. Nyessen.		<i>Author.</i>
Histoire de la Concession Française de Changhai, par Ch. B. Maybon et J. Fredet.		"
Tu Fu, the Autobiography of a Chinese Poet, A.D. 712-770. By F. Ayscough, D.LITT.		"
Shanghai Birds. By E. S. Wilkinson.		"
A Study of Shinto, the Religion of the Japanese Nation. By Genchi Kato.		"
A New Mind and Other Essays. By Evan Morgan, D.D.		"
Archæological Investigations in Kamchatka. By W. Jochelson.		"
Guide to Peking, and its Environs. By Fei Shi.		"
New Chinese Poems (遼塵詩錄). By Hanfei S. Feng.		"
Research in China, 4 volumes with Atlas.		<i>Mr. A. Hoettler.</i>
Report of the International Plague Conference held at Mukden, April 1911.		<i>Dr. Wu Lien-teh.</i>
Portrait of a Chinese Lady. By Lady Hosie.		"

PAMPHLETS.

PRESENTED BY :

	<i>Publisher.</i>
Der Gesetzmäßige Lebenslauf der Völker Chinas und Japans. By Hartmut Piper.	
Dr. Sun Yat-sen, his Life and Achievements.	"
The Sino-Russian Crisis.	"
Abolition of Extraterritoriality in China. By Li Tz-hyng.	"
Glimpses into the Problems of China. By F. D. Z.	"
A Brief Account of Diplomatic Events in Manchuria. By Sir H. Parlett.	"
The Outline of the Capital Reconstruction Work.	"
The Prehistory of Aviation. By B. Laufer.	"
Ostrich Egg-shell Cups of Mesopotamia and the Ostrich in Ancient and Modern Times. By B. Laufer.	"
Field Museum and the Child. By S. C. Simms.	"
The Field Museum—Oxford University Expedition to Kish, Mesopotamia, 1923-29. By Henry Field.	"
The Badoeys in South-Bantam (Java). By Dr. B. V. Tricht.	"
Convention for the Rendition of Weihaiwei, 1930.	"
Yenching Science Conference Papers.	"
Fourth Report of the China Foundation for the promotion of Education and Culture, 1929.	"
Chinese Affairs, a Weekly Survey of Important Events Relating to China, Nos. 32 up to date.	"
Proceedings of the Natural History Research Institute, No. 1 up to date.	"
Monthly Bulletin of the Academia Sinica, No. 1 up to date.	"
Monthly Bulletin of the Yangtse River Commission, No. 1 up to date.	"
Medical Bulletin of Tung Wen Hwei of Japan, 1929.	"
Chinese Medical Plants, Ephedra. By B. E. Read.	<i>Author.</i>
Differential Characters of Three Common Chinese Species of Ephedra. By J. C. Liu and B. E. Read.	"
Ephedrine, a Review of more recent Botanical Researches Alkaloidal content of the Crude Drug and Experiments with Ephedrine and Pseudo-Ephedrine to Elucidate Their Action. By B. E. Read.	"
The Action of Pseudoephedrine: II. Its Diuretic Effects. By C. Pak and B. E. Read.	"
The Lotus of the Wonderful Law. By Prof. W. E. Sorthill.	"
Important Bibliography of the Taxonomy of Chinese Plants. By J. C. Liu.	"
The Tungus, Negidal Tribes of the Amgun Basin: their future. By I. I. Gaoansvich.	"
Preliminary Report on the Chou Kou Tien Fossiliferous Deposit. By P. T. de Chardin and C. C. Young.	"
Preliminary Notice of the Discovery of an Adult Sinanthropus skull at Chou Kou Tien. By D. Black.	"
An Account of the Discovery of an Adult Sinanthropus skull in the Chou Kou Tien Deposit. By W. C. Pei.	"

- Interim Report on the skull of Sinanthropus. By D. Black. *Author.*
- A New Species of Hydromedusa. By Hsi-fan Hsu. ”
- Notes on the Gill-Rakers and their Related Structures of Hypophthalmichthys Nobilis and H. Molitrix. By P. W. Feng. ”
- Notes on an Apparently New or Rarely known Hard-shelled Turtle from Fuchow. By T. H. Chang. ”
- Contributions toward a list of Chinese Mammals. By N. Gist Gee. ”
- Gentes Herbarum. Vol. II, No. 3. By L. H. Bailey. ”
- The Ancient Capital of Yen. By J. C. Ferguson. ”

NORTH-CHINA BRANCH OF THE ROYAL ASIATIC SOCIETY

LIST OF MEMBERS, 1930.

Members changing address are earnestly requested to
inform the Secretary at once.

Name	Address	Year of Election
------	---------	---------------------

HONORARY MEMBERS

Ayscough, Mrs. F., D.LITT.	St. Andrews, New Brunswick, Canada	1906
Barton, Sir Sidney, K.B.E., C.M.G. . .	British Legation, Addis Ababa, Abyssinia	1906
Ferguson, Dr. John C.	3 Hsi Ch'iao Hutung, Peiping	1896
Forke, Dr. A.	The University, Hamburg	1894
Giles, Prof. Herbert Allen	Selwyn Gardens, Cambridge	1880
Lanman, Prof. Charles B.	Harvard University, Cambridge, Mas- sachusetts	1908
Lockhart, Sir J. H. Stewart, K.C.M.G.	6 Cresswell Gardens, South Kensington, London, S.W. 5, England	1885
Morse, H. B., LL.D.	Arden, Camberley, England	1888
Pelliot, Prof. Paul	38 Rue de Varenne, Paris VII. . . .	1901
Pott, Dr. F. L. Hawks.	St. John's University, Shanghai	1913
Putman, Herbert	Library of Congress, Washington . . .	1908
Sampatrao, H. H. the Prince	Gaekwar of Baroda, India	1898
Stanley, Dr. A.	2 Wildwood Road, Hampstead, London, N.W. 11	1905

Name	Address	Year of Election
------	---------	------------------

CORRESPONDING MEMBER

Williams, E. T.	Washington	1889
-------------------------	----------------------	------

MEMBERS

(The asterisk denotes Life Membership).

Abbott, W. G.	c/o Chief Sanitation Chemist, Shanghai	1926
*Abraham, R. D.	23 Peking Road, Shanghai	1914
Adams, Rev. A. S.	c/o Associated Mission Treasurers, Shanghai.	1923
Adlam, Miss Edith M.	Ellis Kadoorie School, Shanghai	1920
Ambrose, F. W.	S.M.C. Health Dept., Shanghai	1925
Ancell, Rev. B. L., D.D.	24 Minghong Road, Shanghai	1911
Andersson, Dr. J. G.	c/o Statens Histouska Museum, Stock- holm, Sweden.	1919
Archer, Allan	British Legation, Peiping	1915
Arlington, L. C.	Chinese Post Office, Peiping	1917
Arnold, Julean H.	Room 502 Dollar Bldg., 3 Canton Road, Shanghai	1904
Bahnson, J. J.	G. N. Telegraph Co., Shanghai	1909
Bahr, A. W.	41 West 49th Street, New York City..	1909
Bailey, R. M.		1925
Baker, D. C...	695 East Villa St., Pasadena, Cal., U.S.A.	1923
Barnett, Eugene E.	20 Museum Road, Shanghai	1926
Barrie, Dr. Howard	15 Peking Road, Shanghai	1920
*Bayne, Parker M.	Acadia University, Wolfville, Nova Scotia, Canada	1911
Beaman, W. F.	388 Avenue Joffre, Shanghai (cor. Rue Chapsal)	1921
*Beauvais, J.	Consul-General, Maison Duffan, Place Antoine de Moelhon, Ville franche de Rovergue, Aveyron, France	1900
Beltchenko, A. T.	Portuguese Consulate, Hankow	1918
Bendixsen, N. P.	G. N. Telegraph Co., Nagasaki, Japan..	1913
Bennett, N. R.	Shanghai Licensed Pilots' Assn., S'hai.	1928
*Bessell, F. L.	C. M. Customs, Antung	1905
Beytagh, L. M.		1910
Biallas, Dr. F. X.	709 Rue Ratard, Shanghai	1927
Biehl, Lieut. F. W.	U.S. Marines, 452 Harding Avenue, Galion, Ohio, U.S.A.	1929

Name	Address	Year of Election
*Bigel, Emile	Messageries Maritimes, 9/10 French Bund, Shanghai	1925
Black, S.	G. N. Telegraph Co., Tientsin	1910
Blackburn, A. D.	H. B. M. Consulate General, Shanghai	1917
Boey, P. L. Mingcheng	May Hall, Hongkong University, Hongkong	1929
Boesi, Dr. Guido		1920
Bonin, Dr. G. von	Dept. of Anatomy, Peking Union Medical College, Peiping	1926
Boode, E. P.	25 Bazarstraat, The Hague, Holland	1920
Borst-Smith, Rev. E. F.	20 Edinburgh Road, Shanghai	1928
Bos, W.	c/o Mackenzie & Co., Shanghai	1923
Bosworth, Miss S. M.	P. O. Box 725, Shanghai	1919
Bowden, V. G.	A. Cameron & Co. (China), Ltd., 21 Jinkee Road, Shanghai	1928
Bowen, Mrs. A. J.	University of Nanking, Nanking	1929
Bowra, C. A. V.	c/o Offices of C.M. Customs, 26 Old Queen St., Westminster, London	1897
*Box, Rev. Ernest	Medhurst College, Shanghai	1897
*Brace, Capt. A. J.	Chengtu, Szechuen	1921
Bremer, Miss A.	St. Mary's Hall, Shanghai	1929
Brenan, J. F., C.M.G.	British Consulate-General, Shanghai	1930
Brenneman, Mrs. J. J.	Liddell Bros. & Co., Ltd., Shanghai	1922
Brisker, M. G.	c/o The Thatched House Club, 86 St. James' Street, London, W.	1921
Bristow, H. H.	British Consulate, Newchwang	1909
Britland, Rev. A. J. D.	Church of England Mission, Peiping	1924
Brockman, W. W.	South Garden, Soochow	1927
Brooke, J. T. W.	Davies & Brooke, Shanghai	1915
Browett, Harold	8 Museum Road, Shanghai	1891
Brown, I. S.	11812 Winner Road, Independence, Missouri, U.S.A.	1927
Brown, N. S.	Butterfield & Swire, Shanghai	1930
*Brown, Thomas	La Roque, Sutton, Surrey	1885
*Bruce, Edward B.		1918
Bruce, Rev. J. P., D.LITT.		1916
*Buckens, Dr. F.		1915
Bugge, Rev. Sten	Lutheran Theol. Seminary, Hankow	1924
*Buma, C. W. A.	Marssum, Friesland, Holland	1921
Burdick, Miss S. M.	Baptist Mission, West Gate,, Shanghai	1909
Burkill, A. W.	2 Canton Road, Shanghai	1912
Burnie, C. M. G.	Union Ins. Soc. of China, Ltd., London	1923
Burt, Rev. E. W., M.A.	Tsingchowfu, Shantung	1928
Butland, C. A.	Asiatic Petroleum Co., Chinkiang	1920
Byerly, Miss A. E.	74 Ta Tsao Kai, Wuchang, Hupeh	1928
Caldwell, Master J. C.	The American School, 10 Route Petain, Shanghai	1930
Caldwell, Rev. H. R.	M. E. Mission, Foochow, Fu	1920

Name	Address	Year of Election
Carey, H. Foote	Woosung-Hankow Pilots, Shanghai ..	1928
Carl, Francis A.	Peiping	1906
Carlsen, N. P. V.	G. N. Telegraph Co. of Denmark, Tientsin	1928
*Carpenter, G. B.		1920
Carr, Paul R.	2923 Packard Street, Long Island City, N.Y., U.S.A.	1925
Cassels, W. C.	British Legation, Peiping	1921
Caudron, R. M.	Post Office, Tsingtao	1920
Chadsey, Mrs. Roy	American Drug Co., Shanghai	1930
Chambers, Rev. R. E., D.D.	Room 402, Missions Bldg., Shanghai ..	1928
Chang, F.	American Asiatic Underwriters, 11 The Bund, Shanghai	1924
Chang Hsin-hai, PH.D.	Ministry of Foreign Affairs, Nanking ..	1928
Chatley, Herbert, D.S.C.	Whangpoo Conservancy Board, Shanghai	1916
*Chen, W. Hanming	c/o North China Daily News, Shanghai	1923
Chieri, V.	c/o C. P. O. Chengtu, Sze.	1923
Chiu Pei-hao	The Bureau of Social Affairs, Municipality of Greater Shanghai, Nantao, Shanghai	1929
Christiansen, J. P.	G. N. Telegraph Co., Shanghai	1913
Claiborne, Miss Elizabeth	65 Nge Kai Aung, Soochow	1908
Clarke, Miss M. H.	McTyeire School, Shanghai	1928
*Clementi, His Excellency Sir C. ..	Government House, Sinigapore	1905
Clifton, Baroness		1921
*Cole, Rev. R. B.	Sien Yu, Fukien	1917
Cook, Capt. A.	31 Brenan Road, Shanghai	1929
Cooper, Miss G. L.	St. John's University, Shanghai	1928
Comijs, A. J.	Custom House, Shanghai	1919
Corrie, R. G.	Messrs. Butterfield & Swire, Shanghai	1930
Costenoble, H.	Messrs. Medicon, Ltd., Kiangse Road, Shanghai	1928
Couling, Mrs. C. E.	40 Birchington Road, Crouch End, London, N. 8	1916
*Cousland, Dr. P. B.	Vancouver, Canada	1908
Crampton, C. L.	21 Yuenmingyuen Road, Shanghai ..	1930
Cressey, G. B.		1925
Cressy, Rev. Earl H.	Amer. Bap. Mission, Shanghai	1928
Crow, C.	47 Peking Road, Shanghai	1913
Cumine, H. M.	48 Szechuen Road, Shanghai	1929
Cunningham, E. S.	American Consulate-General, Shanghai	1922
Currelly, C. T.	Royal Ontario Museum of Archaeology, Toronto, Canada	1923
D'Alton, V. L.	Chinese Post Office, Shanghai	1924
Danton, G. H.	184 Woodland Ave., Oberlin, Ohio, U.S.A.	1918
*Darch, O. W.	The British Imp. Oil Co., Ltd., Melbourne, Australia	1922
Darroch, Rev. J., D.LITT.	Room 212, Missions Bldg., Shanghai ..	1928
Davey, W. J.	101 Hart Road, Shanghai	1920

LIST OF MEMBERS

207

Name	Address	Year of Election
*Davidson, R.	c/o Mrs. Frew, 66 Leamington Terrace, Edinburgh, Scotland	1914
Davis, John K.	American Consulate-General, London..	1927
Davis, Dr. C. Noel	Municipal Offices, Shanghai	1910
Davis, R. W.	North-China Daily News, Shanghai . .	1924
D'Elia, Rev. Father P. M., S.J.	Bureau Sinologique, Siccawei	1928
De Korne, Rev. John C.	Jukao, Kiangsu	1927
*Deas, Stuart	Butterfield & Swire, Wuhu	1919
Diehr, C. O. M.	National Ministry of Finance, c/o Y.M.C.A. Bldg., Shanghai	1929
Dingle, Edwin J.		1917
Donald, William H.	8, Sweichingli, Sanchinglu, Mukden . .	1911
Donnelly, Ivon A.	Mackenzie & Co., Tientsin	1923
Drake, Rev. F. S., B.A., B.D.	Tsingchow Fu, Shantung	
*Drake, Noah F.	Fayetteville, Arkansas, U.S.A.	1928
*Drew, E. B.	Cambridge, Massachusetts, U.S.A. . .	1882
Du Monceau, Comte L.	Villers-la-Ville, (Belgium)	1909
Duncan, A. McL.	C. M. Customs, Shanghai	1922
Edmondston, David C.	Hongkong and Shanghai Bank, 9 Gracechurch St., London, E.C.	1917
Ely, John A.	St. John's University, Shanghai	1917
Ely, Mrs. J. A.	St. John's University, Shanghai	1917
Enders, Mrs. Gordon B.	1357 Avenue Joffre, Shanghai	1922
Engel, Max. M.	89 Kuan Yin Sze Hutung, Peiping . . .	1911
Englaender, Dr. A. L.	23 Peking Road, Shanghai	1928
*Eriksen, A. H.	Carolinevej 11, Hellerup, Denmark . .	1915
Essex Institute, Librarian	Salem, Massachusetts	1906
Evans, Joseph J.	Evans & Sons, Shanghai	1916
*Farley, Prof. M. F.	Fukien Christian University, Foochow	1924
*Fearn, Mrs. J. B.	c/o Calder Marshall, Esq., 1558 Avenue Joffre, Shanghai	1911
Ferguson, Dr. J. W. H.	c/o T. T. H. Ferguson, Esq., Bosch en Duin, Dan Dolder Post Office, Utrecht, Holland	1910
Ferrajolo, Capt. R.	Italian Consulate, Mukden	1920
Finch, A. B.	c/o Shanghai Times, Shanghai	1922
Firth, B.	Messrs. Wheelock & Co., Shanghai . .	1926
Fischer, Emil S.	Tientsin	1894
Fitch, Rev. George A.	Y.M.C.A., 38 Bubbling Well Road, S'hai	1921
Flemons, Sidney	S. M. Telephone Co., Shanghai	1917
Flint, Hugh		1924
Fong, F. Sec.	34 Scott Road, Shanghai	1930
Fox, Harry H., C.M.G.	British Legation, Peiping	1907
Franch, Rev. G. M.	British & Foreign Bible Society, Chengtu	1922
Fraser, M. F. A.	"Beaufort," Knapp Hill, Surrey	1924

Name	Address	Year of Election
Freeman, M.	Asia Life Insurance Co., 17 The Bund, Shanghai	1925
Fryer, George B.	4 Edinburgh Road, Shanghai	1901
Gabbott, F. R.	Messrs. Gabbott & Co., 32 Avenue Edward VII, Shanghai	1929
Gage, Rev. Brownell	Changsha	1915
Gale, Esson M.	Dept. of Oriental Languages, University of California, Berkeley, Cal., U.S.A.	1911
Galt, Rev. E. W.	Fenchow, Shansi	1924
*Gamble, Sidney D.	347 Madison Avenue, New York, U.S.A.	1922
Gardner, H. G.	c/o Hongkong & Shanghai Bank, 9 Gracechurch St., London, E.C.	1906
*Garritt, Rev. J. C.		1907
Gaunt, Percy	S.M.C., Chief Sanitation Chemist, S'hai	1921
Gaunt, Rev. T., M.A.	c/o C.M.S. 182 Range Road, Shanghai	1921
Gerhaz, J. F.		1929
*Gerken, Chas.		1922
Gibson, H. E.	c/o Robt. Dollar Co., Shanghai	1915
Gilliam, J.	c/o British Cigarette Co., Tientsin	1915
Gillis, Captain J. H.	American Legation, Peiping	1911
Goddard, W. G.	Box 1954, G.P.O., Melbourne, Australia	1929
Gordon, A. Howard	89 Peking Road, Shanghai	1924
Goullart, P.	24 Whangpoo Road, Shanghai	1930
Graham, Rev. David C.	Suifu, Szechuan	1924
Gran, E. M.	Messrs. Palmer & Turner, Shanghai	1930
Graves, Bp. F. R., D.D.	St. John's University, Shanghai	1918
Graves, Miss Lucy J.	St. Mary's Hall, Shanghai.	1929
Grierson, R. C.	C. M. Customs, Tientsin	1918
Grimmo, A. E. P.	Public Health Dept., S.M.C., Shanghai	1924
*Grodtsmann, Johans	China Export-Import & Banking Co., A.G., Hamburg, 15, Clockengiesserwall	1898
*Groenman, F. E. H.	Netherland Consulate-General, Shanghai	1929
Grosbois, Ch., M.A.	Ecole Municipale Française, Shanghai	1922
Grosse, V.	210 Rue Bourgeat, Shanghai	1912
Gull, E. Manico	China Association, London	1915
*Gunzburg, Baron G. de	9 Rue Pommers (XVI), Paris	1908
Gutt, C. J.	Scherings Limited, 4 Hongkong Road, Shanghai	1928
Gwynne, T. H.	c/o Postal Commissioner's Office, Hangchow	1913
Gyles, H. A., Commr. Capt.	Orchards, Whimble, Devon	1919
*Hackmann, H.	Hoofdweg 34, Amsterdam, Holland	1903
Hail, Rev. W. J., F.R.D.	The College of Wooster, 614 E. University St., Wooster, Ohio, U.S.A.	1922

LIST OF MEMBERS

209

Name	Address	Year of Election
Hammond, Miss Louise S.	A.C.M. Hsiakuan, Nanking	
Handell, T.	Haiho Conservancy, Tientsin	1930
Handley-Derry, H. F.	British Consulate-General, Chungking, Szechuan	1903
*Hangchow Christian College, President	Zak-kow, Hangchow	1924
*Harding, H. I.	British Consulate, Changsha	1914
Hardoon, S. A.	107 Nanking Road, Shanghai	1928
Hardy, Dr. W. M.	618 N. Broadway, Lexington, Ky., U.S.A.	1912
Harpur, C.	Municipal Offices, Shanghai	1901
Hart, Henry H.	Oriental Arts, 328 Post Street, San Francisco, Cal., U.S.A.	1924
Harvey, Rev. E. D.	Yale-in-China Office, Yale Station, New Haven, Conn., U.S.A.	1924
Hasbund, A. H.	Hotel Moderne, Harbin	1927
Hayes, L. Newton	68 Recreation Road, Tientsin	1924
*Hayim, A. J.	7 Peking Road, Shanghai	1928
Hayim, Ellis	7 Peking Road, Shanghai	1930
Heacock, Mrs. H. E.	c/o Messrs. Heacock & Cheek, S'hai	1921
Healey, Leonard C.	S.M.C. Polytechnic School, Shanghai	1913
Heaton-Smith, E. B.	Gibb, Livingston & Co., Shanghai	1922
Heeren, Rev. J. J., PH.D.	Shantung Christian University, Tsinan	1915
Heidenstam, H. von		1916
Hemingway, B.	Asiatic Petroleum Co., Newchwang	1922
Henchman, A. S.	Hongkong & Shanghai Bank, Shanghai	1929
Henke, Frederick G., PH.D.	643 William Street, Meadville, Pennsylvania, U.S.A.	1912
Henry, J. M.	Lingnan University, Canton	1922
Hers, Joseph	187 Route Magniny, Shanghai	1907
Hinckling, N. W.		1922
*Hilderbrandt, Adolf	8A Albrechtstr., Lichterfeld-Berlin, Germany	1907
Hind, H. M.	c/o Phoenix Insurance Co., Shanghai	1928
*Hippisley, A. E.	Hongkong and Shanghai Bank, London	1876
Hiron, C. J.	Sun Insurance Office, Ltd., 1 The Bund, Shanghai	1930
Hodges, Mrs. F. E.		1915
*Hodous, Rev. L.	Kennedy School of Missions, 155 Broad Street, Hartford, Conn., U.S.A.	1913
Hoettler, A.	c/o Deutsche Farben-Handelsgesellschaft, Waibel & Co., Box 1115, S'hai	1910
Hommel, R. P.	1 Kuang Hsiang Road, Tsingtao	1927
Howells, R. M.	S.M.C. Health Dept., Shanghai	1928
Hsia, Dr. C. L.	131 Connaught Road, Shanghai	1925
Hu Shih, B.A., PH.D.	49a Jessfield Road, Shanghai	1928
Hubbard, Rev. H. W.	American Board Mission, Paotingfu	1924
Hudson, Mrs. Alfred	Ningpo	1909
Hughes, A. J.	China United Assurance Society, S'hai	1909
Hughes, Rev. E. R.	71 Chaoufoong Road, Shanghai	1929
Hughes, W. E.	A.P.C., Soochow	1921

Name	Address	Year of Election
Hume, E. H., M.D.	c/o Post Graduate Medical School, New York City, U.S.A.	1922
Hummel, A. W.	c/o Library of Congress, Washington, D.C., U.S.A.	1919
Hutchison, D. C.	c/o J. D. Hutchison & Co., 1 Canton Road, Shanghai	1926
Hylbert, Mrs. L. C.	175 Route Dufour, Shanghai	1928
Hynd, R. R.	Hongkong and Shanghai Bank, Bombay	1913
Irvine, Miss Elizabeth	89 Arsenal Road, St. Catherine's Bridge, Shanghai	1910
Irvine, D. A.	Asiatic Petroleum Co., Shanghai	1913
Jacobs, J. E.	Bureau of Far Eastern Affairs, Dept. of State, Washington, D.C.	1922
Jamieson, Sir J. W., K.C.M.G.	H.B.M. Consul-General, Tientsin	1888
Jenks, Prof. J. W.	13 Astor Place, New York	1903
Johnson, N. T., American Minister	American Legation, Peiping	1912
Johnson, O. S., F.H.D.	c/o Wabash College, Crawfordsville, Indiana, U.S.A.	1927
Johnston, B. C. M.	Hongkong & Shanghai Bank, Shanghai	1926
Johnston, R. F., M.A.	Weihsaiwei	1907
Joly, P. B.	c/o Mrs. H. B. Joly, Legation Street, Seoul	1913
Jones, H. J. S.		1923
Jones, J. R., M.A.	The Secretariat, S.M.C., Shanghai	1924
Jong, Th. de J.	Netherlands Legation, Peiping	1914
Jordan, Dr. J. H., M.C.	Health Office, Shanghai	1922
Jorgensen, O.	G. N. Telegraph Co., Copenhagen, Denmark	1913
*Joseph, S. M.	c/o Cathay Hotel, Shanghai	1920
*Jost, A.	Charles, Rudolf & Co., Zurich, Switzerland	1912
Justesen, M. L.	c/o 8 French Bund, Shanghai	1913
Kann, E.	637 Avenue Foch, Shanghai	1929
Karlbeck, O.		1914
Karlgren, Dr. B.	University of Gothenburg, Sweden	1922
Keeton, G. W., B.A., LL.B.	Victor University, Manchester.	1926
Kellogg, C. R.	Fukien Christian University, Foochow	1919
Kennedy, George	211 Route Gustave de Boissezon, Shanghai	1929
Kennett, W. B.	Ellerman House, 19-21 Moorgate, London, E.C. 2	1918
Kent, A. S.	c/o B.A.T., Shanghai	1913
*Kern, D. S.	Robin, Manitoba, Canada	1912

LIST OF MEMBERS

211

Name	Address	Year of Election
Kilner, E.	Municipal Offices, Shanghai	1909
King, Mrs. D. K.	234 Rue Duplex, Shanghai	1930
King, Prof. Harrison	St. John's University, Jessfield	1927
*King, Louis M.	8 Purley Avenue, London, N.W. 2	1911
*King, Sohtsu G.	11 Kaka Hutung, Peiping	1924
*Klautke, Paul	c/o Mr. W. Trittel, Alt Moabit III, Berlin, N.W. 40	1924
*Kliene, Charles	41 Pingliang Road, Shanghai	1916
Klubien, J.	Ch. M. Customs, Swatow	1913
Kotenev, A. M.	Municipal Police, Shanghai	1924
*Krebs, E.		1895
Krisel, A.	21 Museum Road, Shanghai	1914
Krueger, Pastor E.	1 Great Western Road, Shanghai	1930
Kuck, Fritz W.	c/o Kaiser Wilhelm Schule, 1 Great Western Road, Shanghai	1930
*Kunisawa Shimbei	270 Hyakunin-cho, Ohkubo, Tokyo	1917
Lachlan, Miss A.	c/o Westminster Bank, Old Street Branch, City Road, London	1923
Lamson, H. D.	Dept. of Sociology, Shanghai College, Shanghai	1929
Lang, Robert	1427 Avenue Joffre, Shanghai	1924
Lanning, V. H.	c/o S'hai Exchange Brokers' Asson., Shanghai	1916
*Latourette, K. S.	2126 Yale Station, New Haven, Conn., U.S.A.	1912
*Laufer, Dr. Berthold	Field Museum of Natural History, Chicago	1901
*Laver, Capt. H. E.	Head Street, Colchester, Essex	1912
Leavens, D. H.	202 Broadway, Norwich, Conn., U.S.A.	1917
*Leavenworth, Chas. S.	79 Howe St., New Haven, Conn. U.S.A.	1901
Lechler, J. H., M.D.	C.M.S., Mienchuhsien, Sze	1929
Leete, Rev. Wm.	c/o American Board Mission, Tientsin	1918
Lefever, R. H.	Seneca Castle, N.Y., U.S.A.	1924
Lenhart, Miss L. E.	St. Luke's Hospital, Shanghai	1928
*Leslie, T.	Elmers Glen, Salfords, Horley, Surrey, England	1914
Lester, Miss E. S.	McTyeire School, 11 Edinburgh Road, Shanghai	1919
Linde, Mrs. A. M. de	c/o Frithjof Hoehuke, 17 Museum Road, Shanghai	1922
*Lindsay, Dr. A. W.	1911 Côte St. Antoine Road, Montreal, Canada	1910
*Lyttle, Edward S.	Casey, Lyttle & Co., 10 Hankow Road, Shanghai	1910
Lloyd, Mrs. Magdalen	597 Avenue Joffre, Shanghai	1930
Lockwood, W. W.	c/o Y.M.C.A., 20 Museum Road, Shanghai	1913
Lord, Rev. R. D.	c/o S.P.G., 15 Tufton Street, Westminster, S.W., England	1918

Name	Address	Year of Election
Lucas, S. E.	Chartered Bank, 38 Bishopsgate, London, E.C.	1906
*Luthy, Charles	C. Luthy & Co., 22 Kiangse Road, Shanghai	1910
*Luthy, Emil	8 Peking Road, Shanghai	1917
*Lyall, Leonard A.	Manor Farm, Piddington, Thame, Oxon, England	1892
Lyon, Rev. D. Willard, D.D.	Care Foreign Committee, Y.M.C.A., 347 Madison Avenue, New York City, U.S.A.	1927
Mabee, Fred C.		1912
Macbeth, Miss A.	c/o Chartered Bank of India, Australia and China, London	1915
MacGillivray, Rev. Dr. Donald	143 N. Szechuen Road, Shanghai	1908
MacNair, H. F. M.A.	The University of Chicago, Dept. of History, Chicago, U.S.A.	1920
Macoun, J. H.		1894
Maher, Joseph	296 Bubbling Well Road, Shanghai	1930
Main, Dr. Duncan	2 West Coates, Edinburgh	1900
Maitland, H.	Room 139, Hongkong & Shanghai Bank Building, Shanghai	1929
*Mamet, O.	10 Avenue Elisabeth, Tervuren, Belgium	1922
March, B. F., Jr.	The Detroit Institute of Arts, Detroit, Michigan, U.S.A.	1924
Margoliouth, Miss E. R.	Anglican Mission, Pingyin, Sung	1924
*Marsh, Dr. E. L.	Hongkong & Shanghai Bank Bdg., Shanghai	1908
Marshall, R. Calder	2 Peking Road, Shanghai	1908
Martin, Miss J. M.	Municipal Health Dept., Shanghai	1924
Martin, Mrs. W. A.	Bridge House, Nanking	1916
Martinella, A.	8 Italian Bund, Tientsin	1921
*Mason, Isaac, F.R.G.S.	54 West End Gardens, Shanghai	1916
Mather, Wm. A.	American Presby. Mission, Paotingfu	1926
Mathieson, Rev. J. C.	Canadian Mission, Peiping, Hopei	1929
Maxwell, Dr. J. Preston	P.U.M.C., Peiping, Chi.	1917
Mayers, Sidney F.	The British and Chinese Corporation, Ltd., Peiping.	1907
McCabe, P. J.	P.O. Box No. 1, Nankang, Harbin	1922
McEuen, K. J.	Hongkong and Shanghai Bank, Nagasaki, Japan	1908
McIntosh, Miss E. W.		1923
*McMillen, O. W.	Pui Ying Middle School, Canton	1923
McNeely, Miss M. V.	Kwang Hsueh Publishing House, 44 Peking Road, Shanghai	1928
McNulty, Rev. Henry A.	A. C. Mission, Soochow	1918
McRae, J. D.		1910
Mead, E. W.		1916
Meinhardt, Mrs. C. D.	U.S. Consulate-Gen., Shanghai	1928
*Meister, O., C.E., M.E.	c/o Sulzer Bros., 4 Avenue Edward VII, Shanghai	1922
*Melnikoff, D. M.	13 Panoff Flats, Hankow	1919

Name	Address	Year of Election
Mencarini, J.	c/o P.O. Box 795, Manila, P.I. . . .	1884
Meng, C. Y. W.	Ministry of Industry, Commerce and Labour, Nanking	1925
Mennie, D.	A. S. Watson & Co., Shanghai . . .	1916
Menzies, Rev. J. M.	Changte, Ho.	1914
*Merian, J.	2A Kiukiang Road, Shanghai	1921
Mesny, H. P.	59 Wing On Terrace, YC 32 Darroch Road, Shanghai	1911
Meyer, H. Fuge	Whangpoo Conservancy, Shanghai . .	1920
Middleton, W. B. O.	Middleton & Co., Shanghai	1930
Mironoff, Prof. N. D.	17 Yurimachi, Hoshigaura, Dairen . .	1924
Miskin, Stanley C.	Asiatic Petroleum Co., Hankow . . .	1918
Mitchell, T. E.	General Accident, Fire & Life Assurance Corp., 5 Hongkong Road, Shanghai . .	1926
Molines, Edouard	Crédit Foncier d'Extrême-Orient, H'kow	1920
Moninger, Miss M. M.	Hoichow, Tung	1916
*Moore, Dr. A.		1918
Morris, Dr. H. H.	St. Luke's Hospital, Shanghai	1909
*Morse, C. J.	1825 Asbury Avenue, Evanston, Illinois	1919
*Morgan, Rev. Evan, D.D.	143 N. Szechuen Road, Shanghai . .	1901
Mortensen, Rev. Ralph	23 Liang Yi Street, Hankow	1920
Mossop, A. G.	2 Peking Road, Shanghai	1925
Moule, Rev. A. C., M.A.	Trumpington Vicarage, Cambridge, England	1902
Munn, Rev. Wm.	c/o 89 Range Road, Shanghai	1922
Munro-Faure, P. H.	c/o A. P. C., Kiukiang	1921
Münter, L. S.	c/o "Rødbjerghavn" per HUMBLE, Langeland, Denmark	1910
*Munthe, Mrs.	43 Hsiao Tien Shui Ching, Hutung, Peking	1921
Murray, C. P.	American Consulate-General, Shanghai	1930
Musso, G. D.	German Bank Bldg., 71 Szechuen Road, Shanghai	1924
Nakajima, K.	Tung Wen College, Shanghai	1930
Nance, Prof. W. B.	Soochow University, Soochow	1922
Nash, E. T.	The Secretariat, S.M.C., Shanghai . .	1929
Neild, Dr. F. M.	3 Peking Road, Shanghai	1916
Newcomb, Capt. Frank	"Wood Thorpe," Nightingale Road, Godalming, Surrey, England	1917
Newman, Kenneth	15 Peking Road, Shanghai	1921
*Nielsen, Albert	c/o De-No-Fa, Oslo, Norway	1894
Norman, H. C.	c/o Miss Norman, 23 Queen's Road, Tunbridge Wells, Kent, England . .	1912
Norton, J. R.	St. John's University, Shanghai . . .	1928
Nystrom, E. T.	Shansi University, Taiyuanfu	1920
*Oakes, W. L.	c/o W. M. M. S. 24 Bishopsgate, London, E.C. 2	1919
*O'Brien-Butler, P. E.	c/o "Bansha," Plat Douet Road, Jersey, C.I.	1886

Name	Address	Year of Election
Odake, F.	Tung Wen College, Shanghai	1980
Oliver, A. W. L.	c/o Custom House, Shanghai	1924
*Othmer, Prof. Dr. W.	Tung Chi University, Woosung	1924
Ouskouli, M. H. A.	60 Kiangse Road, Shanghai	1927
Owens, A. C.	Wen Hwei Boys School, Am. Presby. Mission, Tengchow, Sung	1929
Paddock, Rev. B. H.	28 Cornelia Ave., Mill Valley, Cal., U.S.A.	1916
Pade, K. F.	G. N. Telegraph Co., Shanghai	1920
Pagh, E. K.	G. N. Telegraph Co., Shanghai	1908
*Palmer, W. M.	c/o Mr. F. H. Palmer, Plattsburg, New York, U.S.A.	1914
Papp, E.	Intelligence Office, Police Head- quarters, S.M.C., Shanghai	1929
Parsons, E. E.	28 Kiangse Road, Shanghai	1916
*Paterson, J. J.	Jardine, Matheson & Co., Hongkong . .	1922
Patrick, Dr. H. C.	22 Whangpoo Road, Shanghai	1912
*Patton, Rev. C. E., M.A.	Room 514, 23 Yuen Ming Yuen Road, Shanghai	1924
Pearson, C. Dearne	69 Kiangse Road, Shanghai	1908
Peffer, Nathaniel	c/o Guggenheim Foundation, 550 Fifth Avenue, New York City, U.S.A.	1918
*Peiyang University Librarian	Tientsin	1911
Penfold, F. G.	2 Peking Road, Shanghai	1916
Perkins, M. F.	c/o Dept. of State, Consular Bureau, Washington D.C.	1914
Petermann, Dr. B.	14 Park Road, Shanghai	1928
Petersen, I. C. V.	2 Hsi Tang Tse Hu Tung, Peiping . .	1906
*Peterson, R. A., M.A.	1914 Commerce Avenue, Indianapolis, U.S.A.	1924
*Pettus, W. B.	North China Union Language School, Peiping	1915
*Phelps, D. L.	1800 Thousand Oaks Boulevard, Ber- keley, California, U.S.A.	1929
Phillips, H., O.B.E.	British Consulate, Harbin	1912
Plews, Mrs. J. C.	c/o B.D.A., 1 The Bund, Shanghai . .	1929
Poate, F. W.	Mackenzie & Co., Shanghai	1928
Polevoy, S. A.	4A Hsi Ch'iao Hutung, Peiping	1917
Pollard, Robert T., M.A.	3439 Indian Road, Ottawa Hills, Toledo, Ohio, U. S. A.	1924
Porter, Harold	Peking Syndicate, Ltd., Hongkong & Shanghai Bank Building, Shanghai . .	1930
Porterfield, W. M.	St. John's University, Shanghai	1920
Pousty, F. E.	Ningpo	1915
Powell, J. B.	The China Weekly Review, 4 Ave. Edward VII, Shanghai	1918
Pratt, J. T., C.M.G.	Foreign Office, London	1909
Price, Dr. M. T.	Sociology Dept., University of Washing- ton, Seattle, Wash., U.S.A.	1925

LIST OF MEMBERS

215

Name	Address	Year of Election
Prideaux-Brune, H. I.	British Legation, Peiping	1914
Prip-Möller, J.	c/o Missionary Home, Shanghai	1929
Prip-Möller, Mrs. J.	c/o Missionary Home, Shanghai	1929
Raeburn, P. D.	118 Boone Road, Shanghai	1916
Ramondino, F.	Italian Consulate, Shanghai	1922
Reichelt, Rev. K. L.	Norwegian Consulate-General, Hongkong	1928
Reiss, Dr. F.	21 Museum Road, Shanghai	1923
Ritchie, W. W.	Postal Commissioner, Shanghai	1907
Robert, A.	Lunghai & Pienlo Railways, Shanghai	1930
Roberts, D.	St. John's University, Shanghai	1916
Rogers, J. M.	506 E. Lafayette St. Dothan, Ala. U.S.A.	1924
Roots, Rt. Rev. L. H.	American Church Mission, Hankow	1916
Rowe, E. S. B.	c/o Lady Barrow, The Grove, West Molesey, London	1907
*Sahara, T.	The "Sheng Ching Shipao," Mukden	1908
Sakamoto, Prof. Y.	Tung Wen College, Shanghai	1927
Sandor, H.	Asia Realty Co., Shanghai	1922
*Sarkar, Prof. B. K.	c/o Bangiya Sahitya Parishat, 2431, Upper Circular Road, Calcutta.	1915
Sawdon, E. W.	Kingsmead, Selly Oak, Birmingham	1916
Sawyer, J. B.	U. S. Consulate-General, Shanghai	1920
*Schoch, E.	Charles, Rudolph & Co., 43 Peking Road, Shanghai	1924
Schuurman, T. E.	Netherlands Consulate-General, Shanghai	1930
Schwarzl, M. G.	50 Yulin Road, Shanghai	1929
*Secker, F.	c/o Deutsche Stickstoff-Handels-gesellschaft, 2 Peking Road, Glen Line Bldg., Shanghai	1930
Senger, Miss Nettie M.	(C.B.M.) Liao Chow Sha	1923
Service, R. Roy	20 Museum Road, Shanghai	1924
Shanghai American School, Principal	10 Avenue Petain, Shanghai	1929
Shantung Christian University	Tsinan, Shantung	1922
*Shaw, Norman	c/o Inspectorate General of Customs, Peiping	1912
Shen, Wesley	National Council, Y.M.C.A., Shanghai	1930
Sheppard, Rev. G. W.	British & Foreign Bible Society, S'hai	1923
Shioya, T.	Bank of Chosen, 3 Kiukiang Road,	1922
Shirokogoroff, S. M.	16 Bak-tzi Lo, Tungshan, Canton	1923
Shu, Dr. H. J.	20 Rue de Paris, Hankow	1921
Silaby, Rev. J. A.	Peiping	1911
Simpson, B. Lenox	Peiping	1907

Name	Address	Year of Election
*Sirén, Prof. O.	National Museum, Stockholm, Sweden	1922
Six, Rev. Ray L.	318 Rich St., Mornan, Oklahoma, U.S.A.	1924
Skinner, Dr. A. H.	Hankow	1919
Skvortzow, B. W.	67 Poshtovaya Street, Harbin	1918
Smith, J. Langford		1908
Spiker, Clarence J.	American Legation, Peiping	1918
Soothill, Prof.	4 Bradmore Road, Oxford, England . .	1927
Souter, Wm. E.	Chinese-Foreign Famine Relief Committee, 12 Jinkee Road, Shanghai . .	1925
Southcott, Mrs. V. C.	6 Erh Tiao Hutung, Peiping	1919
Sokolsky, Geo. E.	16 Jinkee Road, Shanghai	1924
Sorge, Dr. Richard	Post Box 1062, Shanghai	1930
Sowerby, Arthur de C., F.Z.S.	8 Museum Road, Shanghai	1923
Stanford University Library	Stanford University, California, U.S.A.	1922
*Stedeford, Dr. E. T. A.	Eastmoor, Station Road, West Wickham, Kent, England	1919
*Stewart, Rev. J. L.	University of Saskatchewan, Saskatoon, Sask., Canada	1916
Stockton, G. C.	600 Rue Frelupt, Shanghai	1914
Stone, Mrs. E. S.	c/o Lt. Comde. Stone, Bureau of Navigation, Navy Dept., Washington, D.C., U.S.A.	1928
Strehlneck, E. A.	26 Kiangse Road, Shanghai	1909
Struthers, John	China United Apts., Shanghai	1930
Stursberg, W. A.		1919
*South Manchuria Railway Co., Library	Dairen	1910
*Suga, Capt. T.	N. K. K. Tokyo, Japan	1919
Sultz, Miss F.	43 Peking Road, Shanghai	1930
Swan, Mrs. A. H.		1928
Swann, R. N.	17 The Bund, Shanghai	1926
Tachibana, M.		1881
Talbot, R. M.	C. M. Customs, Taheiho, Manchuria . .	1915
Taylor, A. L.	43 Bubbling Well Road, Shanghai . .	1927
*Taylor, C. H. Brewitt	Cathay, Earlsferry, Scotland	1885
Taylor, W. H.	St. John's University, Shanghai	1922
Teesdale, J. H.	c/o Thatched House Club, London . .	1916
Temasi, Dr. G. de		1929
Thomas, Ivor	882 Dunsmuir Road, Victoria, B.C., Canada	1924
Thomas, J. A. T.	c/o Mustard & Co., Shanghai	1890
Thompson, A. B.	c/o J. D. Hutchison & Co., Shanghai . .	1928
Throop, M. H.	St. John's University, Jessfield, S'hai.	1912
Ting I-hsien	L. 580 Canton Road, Shanghai	1902
Toller, W. Stark	c/o Foreign Office, London S. W., England	1907
*Tochtermann, Karl	Schulstrasse 5, Bad Harzburg Bundheim, Germany	1900
*Torrance, Rev. Thos.	American Bible Society, Chengtu, Sze.	1922

LIST OF MEMBERS

217

Name	Address	Year of Election
*Trollope, Rt. Rev. Bishop, M.N.	Seoul, Korea	1911
Truebner, Joerg, PH.D.	Matthaikeichstr, Berlin, W. 40	1930
Tucker, G. E.	12 The Bund, Shanghai	1915
Tucker, Mrs. G. E.	12 The Bund, Shanghai	1915
Ungern-Sternberg, Baroness L. von		1924
University Library, The	University of Nanking, Nanking	1923
Unwin, F. S.	The Angela, Victoria B. C., Canada . .	1914
Van Corback, T. B.	51 Kiangse Road, Shanghai	1913
Vanderburgh, R. M.	Room No. 1, 49 Nanking Road, Shanghai	1927
Vandervort, Charles T.	Menlo Junior College, Menlo Park, California, U.S.A.	1930
Veryard, Robert K.	Y.M.C.A., Changsha	1917
*Vizensinovitch, Mrs. V.	73 Yu Yuen Road, Shanghai	1914
*Vogel, Dr. Jur. Werner	24 The Bund, 1 Fl., Room No. 9A, Shanghai	1930
Wade, R. H. R.		1918
Wagstaff, W. W.	c/o Arts & Crafts, Ltd., Shanghai	1922
Walker, Miss R.	St. Mary's Hall, Shanghai	1929
Waller, A. J.	Kelly & Walsh, Ltd., Shanghai	1916
Wang, Chung-Yu	63 Szeming St., S.D.A., Hankow	1924
Wang, Kochai C., B.A.	Chinese Dept. Kailan Mining Adminis- tration, Meadows Road, Tientsin	1929
Ward, H. Lipson	Platt & Co., 23 Peking Road, Shanghai	1928
*Warner, Mrs. G. B.	Oregon Museum of Fine Arts, Univer- sity of Oregon, Eugene, Oregon, U.S.A.	1925
Washbrook, H. G.	14 Princes Park Avenue, Golders Green, London, N.W. 11	1908
*Watson, P. T.		1920
Watson, R. A. C.	B.D.A., 1 The Bund, Shanghai	1930
Webb, Dr. H. W.		1928
Webster, Rev. James	Mayfield House, Melbourne, Derby, England	1911
Wernay, Mrs. Lucia	P.O. Box No. 1759, Shanghai	1929
Werner, E. T. C.	3 Yang-I-Pa Hutung, An-ting Mên Ta Chieh, Peiping	1915
White, Dr. Hugh H.	Yencheng, Ku.	1928
White, Miss Laura M.	143 North Szechuen Road, Shanghai . .	1916
White, Rt. Rev. Wm. C.	Bishop of Honan, Kaifengfu	1913
Whyte, Sir Frederick, K.C.S.I.	Majestic Hotel, Shanghai	1930
Whyte, Lady	Majestic Hotel, Shanghai	1930
Wickes, Dr. Dean R.	American Board Mission, Lintsing, Sung	1924
Widder, Emile	c/o P.O. Box No. 1168, Shanghai	1923
Wilbur, Mrs. H. A.	3 Route Duplex, Shanghai	1920

Name	Address	Year of Election
Wilden, H. A.	French Legation, Peiping	1917
Wilder, Dr. Geo. D.	American Board Mission, Peiping	1924
*Wilhelm, P.	72 Hart Road, Shanghai	1924
Wilkinson, E. S.	2 Canton Road, Shanghai	1911
Wilkinson, H. P.	c/o Thatched House Club, London	1909
*Williams, C. A. S.	C. M. Customs, Peiping	1919
Williams, Dr. J. T.	Room 501, Mission Bldg., Shanghai	1925
Wilson, G. L.	Palmer & Turner, Shanghai	1921
Wong, Y. W.,	Commercial Press, Ltd., 26A Paoshan Road, Shanghai	1927
Wood, A. G.	Gibb, Livingston & Co., Shanghai	1919
Wood, Mrs. Edwin	25 Kiaochow Road, Shanghai	1921
*Woodward, A. M. Tracey, F.R.G.S., F.R.N.S., F.R.P.S.L.	100 Route des Soeurs, Shanghai	1921
*Wright, S. F.	Inspectorate-General of Customs, Peiping	1921
Wu, John C.	c/o The Comparative Law School of China, 11A Quinsan Road, Shanghai	1930
*Wu Lien-teh, Dr.	55 Tung Tang Tze Hutung, Peiping	1916
*Yetts, W. Perceval, O.B.E.	4 Aubrey Road, Campden Hill, London, W. 8	1909
Young, R. C.	Municipal Offices, Shanghai	1912
Young, S. C.	Police Station, Gordon Road, Shanghai	1928
Zau, F. D.	International Dispensary, Shanghai	1928
Zwemer, Rev. Samuel M., D.D.	37 Sh. Manakh, Cairo, Egypt.	1917

TOTALS:

CLASSIFIED AS:—

Honorary Members	13	Residing in Shanghai	245
Corresponding Member	1	Residing elsewhere in China	119
Life Members	102	Residing in other countries	144
Ordinary Members	432	Addresses unknown	40

Total .. 548

Total .. 548

List 1929	637	Resignations	10
New Members	45	Deaths	3
		Remove	121

Total .. 682

Total .. 134

682

134

New Number 548

JOURNAL OF THE NORTH - CHINA BRANCH OF THE ROYAL ASIATIC SOCIETY VOLUME LXII—1931

CONTENTS

	Page
OBITUARY NOTICES	i
PROCEEDINGS OF ANNUAL GENERAL MEETING	iii
EARLY DAYS OF WESTERN MEDICINE IN CHINA. By Dr. Wu Lien-Teh	1
CLIMATIC CHANGES DURING HISTORIC TIME IN CHINA. By Coching Chu	32
BAMBOOS IN CHINA. By W. M. Porterfield	41
PRELIMINARY NOTES ON THE NATURAL HISTORY OF NANKING. By Dr. C. Ping	57
THE HISTORY OF THE DAYS OF THE WEEK. By Herbert Chatley, D.Sc. (Lond.)	83
CONTRIBUTIONS FROM THE HERBARIUM OF THE SHAN- TUNG CHRISTIAN UNIVERSITY. By Arthur Paul Jacot	94
CHINESE POTTERY AND PORCELAIN: AN APPRECIATION. By R. D. Abraham	107
CHINESE-MOSLEM CHRONOLOGY. By Isaac Mason	117
THE INDIAN FRONTIER. By Edwin Haward	120
THE CHINESE NATION AND THE DOCTRINE OF THE GOLDEN MEAN. By Tsai Yuen-Pei	131
THE WESTERN TRANSCRIPTION OF CHINESE. By Charles S. Gardner	137
CONFUCIANISM, DEMOCRACY AND NATIONALISM. By Yen- Ying Lu, M.A.	148
THE COSMIC SPIRIT. By Dr. Evan Morgan	153
THE ASIATIC ORIGIN OF SOUTH AMERICAN MAN. By J. J. Gapanovich	172
PASSING OF THE R. A. S. OLD PREMISES AT SHANGHAI. By Isaac Mason	199
REVIEWS OF RECENT BOOKS	201
ADDITIONS TO THE LIBRARY	220
LIST OF MEMBERS	223

BYE-LAWS RELATING TO COMMUNICATIONS TO THE SOCIETY

1. Every paper which it is proposed to communicate to the Society shall be forwarded to the Hon. Secretary for the approval of the Council.

2. When the Council shall have accepted a paper, they shall decide whether it shall be read before the Society and published in the Journal, or read only and not published, or published only and not read. The Council's decision shall in each case be communicated to the author after the meeting.

3. The Council may permit a paper written by a non-member to be read and, if approved, published.

4. In the absence of the author, a paper may be read by any member of the Society appointed by the Chairman or nominated by the author.

5. No paper read before the Society shall be published elsewhere than in the Journal without the permission of the Council, or unless the Council decide against publishing it in the Journal.

6. All communications intended for publication by the Society shall be clearly written, on one side of the paper only, with proper references, and in all respects in fit condition for being at once placed in the printers' hands.

7. The authors of papers and contributors to the Journal are solely responsible for the facts stated and opinion expressed in the communications.

8. In order to insure a correct report, the Council request that each paper be accompanied by a short abstract or newspaper publication.

9. The author of any paper which the Council has decided to publish will be presented with twenty-five copies: and he shall be permitted to have extra copies printed on making application to the Hon. Secretary at the time of forwarding the paper, and on paying the cost of such copies.

Agents for the Sale of the Society's Publications:—

SHANGHAI, HONG KONG & SINGAPORE:

KELLY & WALSH, LIMITED.

LONDON: KEGAN PAUL, TRENCH, TRÜBNER & CO., LTD.:

38 GREAT RUSSELL ST., LONDON, W.C. 1.

PARIS: ERNEST LEROUX, RUE BONAPARTE, 28.

PEKING: LA LIBRAIRIE FRANCAISE.

Application for Membership, stating the Name (in full), Nationality, Profession and Address of Applicants, should be forwarded to "The Secretary, North-China Branch of the Royal Asiatic Society, Shanghai." The name should be proposed and seconded by members of the Society, but where circumstances prevent the observance of this Rule, the Council is prepared to consider applications with such references as may be given. Remittances of Subscription for Membership (\$5 per annum, which entitles the Member to a complete annual set of the Journal for the year in which payment is made) should be addressed to "The Treasurer, North-China Branch of the Royal Asiatic Society, Shanghai." A Member may acquire "Life Membership" by payment of a composition fee of \$50.

Editors and authors wishing to have their works reviewed in the *Journal of the North-China Branch of the Royal Asiatic Society* are requested to send *two* copies to the Editor of the Journal, one copy being presented to the reviewer, the other remaining in the Society's Library. Papers intended for the Journal should be sent to the Editor.

It has been decided by the Council that the Society's publications shall not for the future be issued to any Member whose Subscription is one year in arrear.

It is requested that Subscriptions be sent to the Treasurer at the beginning of each year. Forms for payments may be obtained from the Secretary, by which members having a Bank account in Shanghai, can authorize a Bank to make the necessary payment at the appointed time every year. This is a great convenience to members, and to the Honorary Officers of the Society.

JOURNAL
OF THE
NORTH CHINA BRANCH
OF THE
ROYAL ASIATIC SOCIETY
FOR THE YEAR 1931.

VOL. LXII.

SHANGHAI:
KELLY & WALSH, LIMITED.
1931.

OFFICERS FOR 1931-1932.

President

Vice-Presidents

Curator of Museum

Librarian

Hon. Treasurer

Editor of the Journal

Councillors

H. CHATLEY, Esq., D.Sc.

ISAAC MASON, Esq.

Rev. EVAN MORGAN, D.D.

A. DE C. SOWERBY, Esq., F.Z.S.

Miss M. V. MCNEELY.

F. B. WINTER, Esq.

Rev. EVAN MORGAN, D.D.

J. F. BRENNAN, Esq., C.M.G.

Ch. GROSBOS, Esq., M.A.

C. L. HSIA, Esq., M.A., B.Sc., Ph.D.

A. J. HUGHES, Esq.

HU SHIH, Esq., B.A., Ph.D.

J. R. JONES, Esq., M.A.

C. KLIENE, Esq.

Col. M. H. LOGAN, O.B.E.,

M.C., M.Inst.C.E., F.S.I.

Rev. F. L. HAWKS POTT, D.D.

Rev. G. W. SHEPPARD

G. WILSON, Esq., F.R.I.B.A., F.S.I.

WU LIEN-TEH, Esq., M.A., M.D.,
B.C.H.

R. D. ABRAHAM, Esq.

Hon. Secretary

VOL. LXII, 1931
EDITED BY G. W. SHEPPARD

CONTENTS

	PAGE
OBITUARY NOTICES	i
PROCEEDINGS OF ANNUAL GENERAL MEETING	iii
EARLY DAYS OF WESTERN MEDICINE IN CHINA. By Dr. Wu	
LIEH-TEH	1
CLIMATIC CHANGES DURING HISTORIC TIME IN CHINA. By	
Coching Chu	32
BAMBOOS IN CHINA. By W. M. Porterfield	41
PRELIMINARY NOTES ON THE NATURAL HISTORY OF NANKING.	
By Dr. C. Ping	57
THE HISTORY OF THE DAYS OF THE WEEK. By Herbert	
Chatley, D.Sc.(Lond.)	83
CONTRIBUTIONS FROM THE HERBARIUM OF THE SHANTUNG	
CHRISTIAN UNIVERSITY. By Arthur Paul Jacot	94
CHINESE POTTERY AND PORCELAIN: AN APPRECIATION. By	
R. D. Abraham	107
CHINESE-MOSLEM CHRONOLOGY. By Isaac Mason	117
THE INDIAN FRONTIER. By Edwin Haward	120
THE CHINESE NATION AND THE DOCTRINE OF THE GOLDEN	
MEAN. By Tsai Yuen-Pei	131
THE WESTERN TRANSCRIPTION OF CHINESE. By Charles S.	
Gardner	137
CONFUCIANISM, DEMOCRACY AND NATIONALISM. By Yen-Ying	
Lu, M.A.	148
THE COSMIC SPIRIT. By Dr. Evan Morgan	153
THE ASIATIC ORIGIN OF SOUTH AMERICAN MAN. By J. J.	
Gapanovich	172
PASSING OF THE R. A. S. OLD PREMISES AT SHANGHAI. By	
Isaac Mason	199
REVIEWS OF RECENT BOOKS	201
ADDITIONS TO THE LIBRARY	220
LIST OF MEMBERS	223

PLATES

Illustrating—

FACING PAGE

BAMBOOS IN CHINA	48, 49
CONTRIBUTIONS FROM THE HERBARIUM OF THE SHAN- TUNG CHRISTIAN UNIVERSITY	102
CHINESE POTTERY AND PORCELAIN: AN APPRECIATION	112, 113
PASSING OF THE R.A.S. OLD PREMISES AT SHANGHAI ..	200, 201

OBITUARY

Arthur Stanley, M.D., B.Sc., D.P.H. (Lond.). D.
March 28, 1931.

It was only a few months before the death on Easter Sunday, 1905, of Dr. Joseph Edkins that I, as Secretary of this Society, had succeeded in persuading Arthur Stanley to interest himself in the Museum which had drifted into desuetude for lack of any one with the necessary time and knowledge to care for it. Dr. Stanley joined the Council as Curator of the Museum just as Dr. Edkins, who had been connected with the Society since its organization, finished his last work on its behalf by acting as Vice-President for several years. Thus Dr. Stanley was in direct descent from the founders of the Society and it is not too high praise of him to say that he upheld worthily our best traditions.

As Secretary I obtained a special grant that year from the Municipal Council of Tls. 500 to help in the overhauling of the Museum. This small sum was sufficient in the hands of Dr. Stanley with the voluntary assistance which he brought from the Health Department to make additions and improvements. The Museum continued to grow in size and arrangement under his management until his resignation in 1921 on account of his retirement. The Annual Reports of the Museum written by Dr. Stanley are found in the Journal commencing with Vol. XXXVII (1906) and ending with Vol. LII (1921). No one has been privileged to do so much for the Museum as Dr. Stanley. His last act as Curator was to present his own collection of the reptiles and amphibia of China to the Museum.

He was deeply interested in all aspects of Chinese Art. Once he spent a delightful week with me in Peking going over all the specimens which we could find in private

collections and in the Government Museum. During those days of intimate association I was impressed with the keenness of his artistic sensibility and with the extent of his reading. He contributed five articles to the Journal on art subjects—metal work textiles, wood-carving, ink rubbings and a contrast between Chinese and Greek ideals. All of these contributions represented original work on his part.

His work for the Society was recognized by his election as President in 1920 and as Honorary Member in 1922. He is one of the pillars upon which the North China Branch of the Royal Asiatic Society has been built. *Si monumentum requiris circumspice.*

John C. Ferguson.

Bertram Lennox Simpson ("Putnam Weale").

Mr. B. Lennox Simpson died in the latter part of 1930 as the result of a long illness consequent upon bullet wounds inflicted by assassins. His hectic career, as a journalist, as an adviser to various Northern governments and in connection with the Maritime Customs Service in 1896-1901 and in 1930, made him a public figure, but to the members of the Royal Asiatic Society he was principally known as a powerful and prolific writer on Chinese matters. His books fall into two classes, political essays and *genre* fiction. The first forms a long series of at least ten works, commencing with *Manchu and Muscovite* in 1904 and terminating with *The Vanished Empire* in 1926. The second, containing some twelve items, starts with what many consider his best book, *Indiscreet Letters from Peking*, and ends with *The Port of Fragrance*.

Mr. Simpson had an extraordinary power of description which made his novels almost unrivalled in respect to Chinese "atmosphere." The political prophecies in his serious works were not so happy, although always interesting, and time alone can show whether the generalizations he was so fond of have any permanent value.

He joined the Society in 1907.

H.C.

PROCEEDINGS

ANNUAL GENERAL MEETING

The Annual General Meeting of the North-China Branch of the Royal Asiatic Society took place on June 19th, 1931, in the Great Hall of the Cathedral School, the chair being taken by the President of the Society, the Rev. F. L. Hawks Pott, D.D. There were present a number of Councillors of the Society, Members, and the Honorary Secretary, Mr. R. D. Abraham.

The Chairman in opening the meeting stated that the past year had been most eventful. Until comparatively recently the Society had been very actively in operation, but thanks to the success of the great drive for funds for the new building in which the Society is to have its home, the Society is now in a period of transition. The old building has been razed to the ground, and for a time the Society has been deprived of the use of its museum and library.

The actual raising of funds and drawing up of plans had called for a great deal of time and labour on the part of some officers of the Society, and the Chairman placed on record the Society's appreciation of their work. Miss M. V. McNeely had worked on the packing and reclassifying of books, Mr. A. de C. Sowerby on similar work with the museum specimens, Mrs. Sowerby on publicity, and Mr. Wilson and the building Sub-Committee on the raising of money for the building. The Chairman paid a special tribute to the services of the Hon. Secretary, Mr. Abraham, during the year.

Chinese Councillors.

Referring to the proposed list of officers for the ensuing year, the Chairman pointed out that the names of three Chinese gentlemen appear as Councillors of the Society. When the Society was formed, the Chairman stated, it was impossible for Chinese to co-operate in its activities, one great difficulty being that of language.

All that had now been removed. Chinese have given lectures to the Society in English, no less than four having been delivered last year. Everybody would be glad of the growing co-operation of Chinese in the Society's work, a particular example being the donation of Tls. 20,000 for the building fund made by Dr. Wu Lien-teh.

With increased facilities, the Chairman considered that the Society could now look forward to a greater cultural and intellectual influence in the life of the community.

Reports of Officers.

Miss M. V. McNeely, the Society's Librarian, in her report stated that there had not been much chance of increasing the library in view of the transitional period, but nevertheless 60 new books had been added, while a few books had been given new bindings: most of the latter work, however, would have to wait until the new building was occupied.

As all the books had to be taken from the old building and packed away temporarily in cases, the opportunity had been taken of revising the catalogue, which had last been made in 1915. Thanks to the good work of the two Chinese members of the library staff and of a Society Librarian of 25 years ago who happened temporarily in Shanghai, this work was done thoroughly.

The library now consists of 10,660 volumes and 63 plates and maps, these figures not including a number of Chinese and Russian volumes which are awaiting classification for the new catalogue, which should be ready when the move into the new building is made.

Mr. A. de C. Sowerby, Curator of the Museum, stated that as the museum was closed he had nothing to report except that all the specimens had been carefully packed for storage, and that no specimens had been received recently most probably because contributors knew that the museum was closed.

The report of the Hon. Treasurer, Mr. A. C. Henchman, was read by the Secretary.

The Hon. Secretary, Mr. R. D. Abraham, in his report stated that the following lectures had been given during the year:—

"The History of the Days of the Week." Dr. H. Chatley, D.Sc.

"The Ascent of the Karekoram Mountains." Prof. C. Visser, PH.

"The Chinese People and the Doctrine of the Golden Mean." Dr. Tsai Yuan-Pei.

"Early Days of Western Medicine in China." Dr. Wu Lien-teh, M.A., M.D., B.CH.

"Java and Bali." Mr. A. de C. Sowerby, F.Z.S.

"The Mountains of Formosa." Miss S. M. Reddan, B.A.

"Chinese Pottery and Porcelain: An Appreciation." Mr. R. D. Abraham.

"Bamboos in China." Dr. W. M. Porterfield, PH.D.

"The Natural History of Nanking." Dr. Chi Ping, PH.D.

"Climatic Changes During Historical Times in China." Dr. Coching Chu.

"The Cosmic Spirit." Rev. Evan Morgan, D.D.

"The Indian Frontier." Mr. E. Haward.

He added that on learning that Prof. Ph. C. Visser was in the vicinity of Shanghai the Society approached him through his Consul and he very courteously telegraphed his acceptance of the invitation, fixing a date for his paper. The Members of the Society were deeply grateful to him for giving a highly instructive paper illustrated with beautiful lantern slides.

Pleasure had also been expressed on all sides that the Society had been favoured with so many valuable lectures by Chinese scholars, some doing the honour of travelling down from Nanking specially for the purpose of speaking before the Society.

During the year 51 new members had been elected and seven re-elected, making a total of 58, while eight resigned. The deaths had been recorded with regret of Dr. A. Stanley, Dr. P. B. Cousland, Mr. K. Nakajima, Mr. B. Lenox Simpson, Dr. G. Truebner, Dr. D. MacGilivray and Capt. F. Newcomb. Dr. Stanley had been Curator of the Museum for sixteen consecutive years, from 1915 to 1919. He also tabulated the specimens of the entire museum and to this day the labels on the specimens were an indication of his zeal and devotion to the Society.

Generous Contributions.

Continuing, the Hon. Secretary stated that by now it was common knowledge that the Shanghai Municipal

Council had at last seen their way to make a substantial grant, amounting to Tls. 50,000, towards the cost of re-building. Added to this Dr. Wu Lien-teh had made the most generous personal donation of Tls. 20,000. His action was all the more encouraging in that it was a gesture of appreciation of the Society's work by a noted Chinese scholar.

With the donor's kind consent, the Council of the Society had decided to name the Lecture Hall after Dr. Wu.

There had been other generous donations from various members of the community, both Chinese and foreign. At the present moment it seemed that the Society might yet have to make recourse to the concession made by H. M. Government to raise further money by means of a mortgage. There was still time, however, for this most undesirable contingency to be avoided if the public would come forward and subscribe the balance of about Tls. 40,000 yet required.

The report of the building sub-committee on the new building was presented by Col. M. H. Logan. He stated that temporary premises had been rented at 45 Peking Road at a rent of Tls. 175 a month, tenancy commencing on April 1. As these premises were quite close to the site of the old building, moving would be quite a simple matter when the new building had been completed. Although other temporary premises might have been found at a slightly lower rent, in the opinion of the sub-committee those now rented were the most suitable.

The amount of contributions to the building fund, promised and received, was approximately Tls. 110,000. Tenders for the sale and demolition of the old building on Cadastral Lot 20 were received in May, and the building was sold for Tls. 2,400. In this connection it was interesting to note that the original cost of the building was Tls. 2,700. The old building had now been demolished and the site cleared.

Plans for the proposed new building had been completed, and tenders received for the general construction. Final tenders for heating, lighting, water, sanitary installation, metal windows and lift had not yet been received, but it was estimated that the final cost of the building would amount to Tls. 150,000. This figure did not include cost of furniture, for which some provision would have to

be made. While some temporary economies might be possible, such as the omission of the lift, it would be necessary to raise further funds to the extent of Tls. 40,000 to complete the building in a satisfactory manner.

It had been suggested that a mortgage could be effected on the land and building, and as the upper portion of the building would be revenue-producing, it was probable that such a mortgage could be arranged. It was to be hoped, however, that this would not prove to be necessary, and efforts would be made to obtain further contributions.

A reasonable tender having been received for the general construction of the building, it would be possible to commence work before the end of the current month and for the building to be completed within nine or ten months.

Subscription Raised.

On the proposal of Mr. I. Mason, seconded by Dr. H. Chatley, two resolutions were passed, one increasing the subscriptions and the other fixing a price for copies of the Journal of the Society. In proposing the first resolution Mr. Mason pointed out that the subscription had remained unchanged, and at a low figure, for many years, and that it was now desirable to raise it in view of the increased cost of everything and the needs of the new building.

The resolutions were as follows:—

1.—That beginning with 1932, the annual dues of members shall be \$10 for those residing at Shanghai, and \$7.00 for those residing elsewhere in China. G.\$2.50 for U.S.A., 10/- for those residing in England and elsewhere.

A residence of more than half of any year at Shanghai shall constitute resident membership.

The annual dues may be compounded by one payment of \$80 for life membership.

2.—That the price of the Society's Journal to non-members in China shall be \$7.00 and abroad 10/- equivalent beginning from Vol. LX (1929).

That the announcement at the back of the Journal shall read:—

Members of the Society of five years' standing or more are entitled to purchase back numbers of the Journal for personal use, at a reduction of 20 per cent. on the above prices. A discount of 10 per cent. is allowed to the public on a single purchase totalling \$50 or upwards; and 20 per cent. if a complete set of the Journal as far as can be supplied, is purchased. These discounts are only available if the books are ordered through the Hon. Secretary.

The meeting terminated with a vote of thanks to Dr. Hawks Pott, Mr. Mason voicing the society's appreciation of his services as President, and wishing him bon voyage and a speedy return to Shanghai from his trip home. Dr. Hawks Pott thanked the society for its appreciation, and congratulated it on having chosen an excellent successor to himself in the person of Dr. Chatley.

Officers for the year elected at this meeting were:—

President, Dr. H. Chatley, D.Sc.; Vice-Presidents, Isaac Mason, Esq., Rev. Evan Morgan, D.D.; Curator of Museum, A. de C. Sowerby, Esq., F.Z.S.; Librarian, Miss M. V. McNeely; Hon. Treasurer, F. B. Winter, Esq.; Editor of the Journal, Rev. Evan Morgan; Councillors: J. F. Brennan, Esq., C.M.G., Ch. Grosbois, Esq., M.A., C. L. Hsia, Esq., M.A., B.Sc., Ph.D., A. J. Hughes, Esq., Hu Shih, Esq., B.A., Ph.D., J. R. Jones, Esq., M.A., C. Kliene, Esq., Col M. H. Logan, Esq., O.B.E., M.C., M.Inst.C.E., F.S.I., Rev. F. L. Hawks Pott, D.D., Rev. G. W. Sheppard, G. Wilson, Esq., F.R.I.B.A., F.S.I. and Dr. Wu Lien-teh, M.A., M.D., B.C.H.; Hon. Secretary, R. D. Abraham, Esq.

DONATIONS TO THE BUILDING FUND OF THE ROYAL ASIATIC SOCIETY from June 14th, 1928.

	\$		\$
Sir J. W. Jamieson (£50)....	69.16	Sorge, Dr. R.	25.00
Fischer, E. M.	50.00	Sandor, R. (£50).....	69.06
Leavens, D. H.	100.00	Arlington, L. C. (£25).....	34.53
Couling, Mrs. C. E. (£100)...	138.60	Joseph, S. M. (£50).....	69.06
Taylor, C. H. Brewitt (£100)...	138.31	Abraham, R. D. (£200).....	} 414.36
Butler, B. E. O'Brien (Hkg.\$20)	21.44	Abraham, D. E. J. (£100)....	
Giles, H. A. (£10.10.0).....	109.57	Maher, J. P.	15.00
Gyles, Commander H.	25.00	Winter, R. S.	8.81
Stanley, Dr. A. (£50).....	69.35	Andersen, Meyer & Co., Ltd.	
Gale, E. M.	25.00	(£500)	689.18
Norton, R.	10.00	Shanghai Land Investment Co.	
Trollope, M. N. (£2.2.0).....	24.25	(£2,500)	3,445.90
White, Bishop	25.00	Nash, E. T.	10.00
Spiker, C. J.	10.00	Dekorne, J. C.	20.00
Ansell, B. L.	20.00	Krisel, A.	25.00
King, S. G.	25.00	Luthy, A. (£15).....	20.67
Wilkinson, H. P. (£25).....	34.63	Fischer, E. (Tsin. \$20.00)....	19.75
Giles, H. A. (£10.10.0).....	124.65	„ (Hkg. \$1.00).....	1.05
Frazar, F. M.	10.00	„ (Sts. \$3.40).....	8.01
Paph, Ed.	3.00	Groenman, F. E. H. (£50)...	68.92
British-American Tobacco Co.		Hsia, C. L.	20.00
(£2,500)	3,453.04	Hamilton, Dr.	17.00
Koo Tsze Ping (£500).....	691.56	McNulty, H. A.	10.00
Davis, Dr. C. Noel (£100)....	139.50	Hayim, E. (£1,000).....	1,376.46
H. & S. B. C. (£1,000).....	1,392.76	Shahmoon, E. (£20).....	27.53
A. P. C. (£2,500).....	3,419.97	Gaunt, T.	10.00
Lowder, H. G.	5.00	Melnikoff, B. (£50).....	68.82
Morgan, Rev. E. (£50).....	68.63	Wilhelm, P. (£25).....	34.41
Morris, H. E. (£500).....	688.71	Lieu, O. S. (£500).....	687.76
Hayim, A. J. (£500).....	688.71	Hammond, L. S.	15.00
Benjamin, Mrs. H.	10.00	Barton, Sir S.	150.00
Burkill & Sons, A. R. (£1,000)	1,377.40	Wilkinson, E. S. (£100)....	137.08
China Realty Co. (£1,000)...	1,375.52	Arnold, J.	50.00
Mason, I. (£40).....	55.02	Saunders, M. T.	10.00
Cumine & Co. (£100).....	137.74	Speyer, S. C. (£20).....	27.42
Bahr, A. W. (£250).....	344.35	Lunt, W. H.	10.00
Sale of T. E. Chu's Publication	1.00	Moses, A. E. (£100).....	136.89
Shanghai Power Co. (£1,000)	1,883.13	Jansen, Miss E. (£10).....	13.69
King, Paul H. (£200).....	276.62	Ferguson, John C.	500.00
Throop, M. H.	25.00	Jones, J. R. (£50).....	68.45
Kann, E. (£25).....	34.44	Levy, S. E. (£50).....	68.07
Roberts, D.	25.00	Thomas, J. A. (£50).....	68.31
Hawks Pott, F. L. (£100)....	137.74	Goodtmann, J.	50.00
Chatley, Dr. H. (£50).....	68.87	Liddell, J. H. (£500).....	683.99
Blackburn, A. D.	20.00	Jost, A. (£200).....	273.60
Graves, F. R.	25.00	Munn, W.	5.00
Chang, F.	10.00	Caldbeck Macgregor & Co.	
Meister, O.	20.00	(£500)	680.73
Franck, G. M.	10.00	Cost of Old Building Materials	
Wu Lieu-Teh, Dr. (£10,000)...	13,774.10	(£2,400)	3,283.17
Schuurman, T. E.	50.00		
Burdick, Miss S. E. (£25)....	34.44		
Beaman, W. F.	10.00		
Ansell, B. L.	10.00		
			44,243.89

OFFERS OF MATERIALS OR SERVICES.

Crittall Manufacturing Co.	Steel casements
Pilkington Bros., Ltd.	Glass
Wilkinson, Heywood & Clark	Paint
Duncan & Co.	Roofing
China Woodworking Co.	Joinery
Tai Shan Brick Co.	Bricks
Soy Chong	Metal Work
Sing Tai	Electric Wiring
Asia Glass Co.	Glass
R. H. Felgate & Co.	Paint
Malcolm & Co.	Heating, Plumbing, Engineering Services
Mr. A. Corrit	Structural Engineering Services
Tankai & Co.	Stonework and Terrazzo
Sin Jin Kee	General Construction
Kailan Mining Co.	

ROYAL ASIATIC SOCIETY, NORTH CHINA BRANCH.

RECEIPTS.		EXPENDITURE.	
Balance on 1st March, 1930	\$ 206.37	Wages ..	\$2,048.91
Balance in London Current A/c. transferred to Shanghai ..	229.09	Taxidermist ..	187.10
<i>Subscriptions:—</i>		Coolie Hire ..	97.00
Annual ..	\$3,106.04	Miss Barchet ..	281.25
Life ..	804.44	H. M. Silva ..	65.97
	3,910.48	Cumshaw ..	102.25
<i>Grants:—</i>		Kelly & Walsh, Ltd. ..	1,466.38
Shanghai Municipal Council ..	\$1,375.08	A. P. C. for Cases and Cartage ..	170.00
French Municipal Council ..	273.97	Packing of Library Books ..	79.20
	1,649.05	Rent ..	480.44
<i>Interest on Debentures:—</i>		Taxes ..	36.82
Shanghai Waterworks Co. ..	\$ 87.86	Light ..	264.92
Mackenzie & Co. ..	86.50	Water ..	67.35
Shanghai Municipal Council ..	119.90	Coal ..	187.60
	294.36	Repairs ..	102.58
<i>Interest on Current Account</i>		Shanghai Municipal Council Land Tax ..	836.04
Hire of Hall ..	21.05	Chinese Government Land Tax ..	1.80
Hire of Lantern ..	21.00	Hire of Chairs ..	36.00
Sale of Journals ..	1,754.89	Insurance ..	521.08
Sale of Boxes ..	30.00	Refund on Journals ..	142.22
Cumshaw from Football Association to Staff ..	2.00	Lantern Slides, etc. ..	23.00
Redemption of Shanghai Municipal Council Debentures ..	1,654.41	Postage and Telegrams ..	117.66
Peking D. D. on Shanghai ..	50.10	Typewriter purchase and cleaning ..	142.00
Debit Balance on 27th May, 1931 ..	70.52	Sundries ..	48.00
		Shanghai Municipal Council Debentures purchased ..	1,751.86
		Kokka Publishing Co. (Subscription) ..	213.76
		Presbyterian Mission Press (Subscription) ..	10.00
		China Digest (Subscription) ..	10.00
		India Society (Subscription) ..	17.77
		China Journal (Subscription) ..	12.50
		Transferred to the Building Fund ..	115.81
		<i>Advertising:—</i>	
		North-China Daily News ..	\$301.08
		China Press ..	206.20
		Shanghai Times ..	91.41
		Evening News ..	12.46
		Printing ..	611.15
	\$10,383.32		132.90
			\$10,383.32

Audited and found correct,
 A. F. CLARK,
 SHANGHAI, 27th May, 1931.

A. S. HENCHMAN,
 Hon. Treasurer,
 Royal Asiatic Society, North-China Branch.

LIST OF SECURITIES HELD BY THE H. & S. B. C. FOR THE
ROYAL ASIATIC SOCIETY.

Title Deed B.C. Lot 12416, with Declaration of Trust attached.
 1 Debenture Mackenzie & Co., Ltd., 6% 1915 @ Tls. 700 (1st Mortgage).
 8 Debentures Shanghai Waterworks Co., Ltd., 8% 1921 @ Tls. 100 each.
 2 Debentures Shanghai Municipal Loan, 6% 1925 @ Tls. 100 each.
 5 Debentures Shanghai Municipal Loan, 6% 1926 @ Tls. 100 each.
 1 Debenture Shanghai Municipal Loan, 6% 1926 @ Tls. 500.

EARLY DAYS OF WESTERN MEDICINE IN CHINA

By Dr. WU LIEN-TEH

Chinese Medicine has a long glorious history of its own, extending back to the days of Emperor Shen Nung (2737-2705 B.C.), patron deity of agriculture and medical science in this country, but the purpose of this paper is not to delve into that rather mysterious and complicated subject, but merely to trace as far as possible the early connection of ancient Cathay with western (or modern) methods of treating sickness. In order to do this, we must ascertain the occasions when East and West first met in China and see if any exchange of medical ideas took place at such meetings.

So far as we know, it was during the reign of Wu Ti (140-87 B.C.), greatest of the Han sovereigns, when the Chinese Empire first extended its domains westward, that the earliest Euro-Asiatic contact took place, and this with the Romans largely through Turkestan to Ctesiphon on the Tigris, to Palmyra, the Persian Gulf and Gulf of Suez, thence to Alexandria and Rome. Horace, Virgil, Ptolemy, Pliny the Elder and other writers have left their records behind on behalf of the West while Ssu-ma Ch'ien (145-74 B.C.), the great historian of the Han Dynasty, was mainly responsible for our knowledge of Chinese chronological history up to 104 B.C.

Buddhism was officially introduced into China about A.D. 67 at the time of the later Hans, though a golden image of Buddha was supposed to have been brought back from Turkestan about 123 B.C. Anyhow, it was the Eastern Han Emperor Ming Ti (A.D. 58-76) who openly encouraged the new cult, which, originating in India, has had a profound influence upon Chinese culture and perhaps medical and scientific thought. The T'ang Dynasty came and went, medicinal springs where the

2 EARLY DAYS OF WESTERN MEDICINE IN CHINA

beautiful Yang Kuei-fei drank and bathed were described in the capital of Chang-an, the exciting game of polo was imported from Persia, and ideas of alchemy were exchanged with Arabia, but little or no authentic information is available as to the practice of western medicine having been introduced by foreign visitors or returned travellers.

The first European physicians working in China were probably scattered among the learned foreigners on the staff of the Mongol conquerors. In fact, it is stated that these *fuhlihs* (or Franks) established a charitable hospital in Peking in A.D. 1272. However, information handed down in regard to them is so vague that they appear almost as legendary figures. There is also reason to believe that some medical activity was displayed by the Nestorian Christians, whose first churches were built in Honan as far back as A.D. 635.¹ Later we read of the Nestorian Mar Sergius (or Sargis), a physician from Samarkand, who in 1277 or 1278 was appointed governor of Chinkiang and built monasteries in and near this city, where probably medical aid was given to the poor.

China was visited in the latter part of the thirteenth century by Roman Catholic missionaries, and in 1307 the Franciscan, John of Montecorvino, reached Cambulac (Peking) and was appointed Archbishop by Pope Clement V.

The closing of the overland route to China led to a break in missionary endeavours to reach the country, until the sea route became better known. Francis Xavier attempted to reach China, but died in 1552 on an island off the coast of Kwangtung. From that date, however, China has been visited by a constant stream of Roman Catholic missionaries, particularly Jesuits. Their scientific knowledge soon won them the favour and esteem of the Chinese. Two of their number became Presidents of the Board of Mathematics (controlling the observatories and calendar affairs) in Peking.

Western practitioners had probably been working in the Portuguese Colony of Macao since its foundation. We know definitely that in A.D. 1569 the Misericordia Hospital (*Santa Casa da Misericordia*) was founded by Bishop D. Belchior Carneiro.² Here medical aid was

¹ A. C. MOULE: *Christians in China before 1550*, 1930.

² J. C. THOMSON: *Chinese Recorder*, Vol. XIX.

confined to Europeans only, as the relations between Chinese and foreigners in those days were not in the nature of friendly intercourse. About the same time, however, a start was made in providing medical relief by the Jesuit Fathers. Among the converts of the great Missionary Matteo Ricci (1552-1610) was the minister Hsu Kuangchi (Ko Lau) who received baptism under the name of Paul. His youngest daughter, called Candida in missionary annals, showed the same religious piety as her father.³ Her history was quite remarkable. Married at sixteen years, she became a widow at thirty. Thereafter she devoted her whole life to religious works, specially in the provinces of Kiangsi, Hu-Kuang and Szechwen, whither she followed her son Basilius, Intendant General of the Posts and Navigation. Among the charities instituted by her in those parts was a foundling hospital and orphanage. As Du Halde says, "the number of these children was so great that, notwithstanding all the care taken, upwards of two hundred died every year."

Soon afterwards the ranks of the Jesuit Fathers in China were joined by a great scholar and physician, Father Jean Terrenz (or Terrentius), called Schreck before he took holy orders. Born in A.D. 1576 at Constance in Switzerland, he became widely known and appreciated as physician, philosopher and mathematician. Skilful and successful cures at home endeared him to royalty and princes, who conferred upon him exceptional favours.⁴ Yet at the age of 35 he renounced all splendours and joined the Jesuit Order. Being attached to the Overseas Missions, he embarked from Lisbon together with another Father in April, 1618. Arrived in the East, he undertook long journeys in India, Malacca, Sumatra, Cochin-China and China, everywhere collecting samples of minerals, plants and animals as well as undertaking climatological and ethnological studies. Being an excellent painter, he supplemented his collections with creations of his brush, with the intention of embodying all in a bulky volume called *Plinius Indicus*. Besides his manifold activities he found time to practice medicine and to convert patients cured by his skill.

³ DU HALDE: *General History of China, etc.*, London, 1791.

⁴ PFISTER: *Notices, Biogr. and Bibliogr. sur les membres de la Soc. de Jesus en Chine.*

Arriving in Macao in 1621 this brilliant man was— incredible to relate—first sent to Hangchow to work as an ordinary missionary, and was summoned to Peking only when his services were required for revising the calendar. He concentrated all his energies upon this task which was not only of the greatest importance for the Chinese Government, but at the same time provided the *raison d'être* for the presence of Jesuits in China. Whilst still in the preparatory work he died, A.D. 1630. His *magnum opus*, *Plinius Indicus*, was unfinished at the time of his death and never published. Among less important works which appeared during his life time, one on structure of the human body published in the Chinese language deserves attention. Though later critics have, with some reason, dealt harshly with this small treatise (being poor both in text and illustrations) the historical importance of this first attempt to bring western medical knowledge to Chinese scholars should not be underrated.

Mention may be made in passing of Father Michael Boym (1612-1659) who in his turn tried to bring some knowledge of Chinese medical lore to the West by writing the *Clavis medica ad Chinarum Doctrinam de Pulsibus*. This comprised (a) four books by Wang-chu-ho on the pulse; (b) a treatise on the aspect of the tongue in different diseases; and (c) an exposition on simple drugs, prepared by the missionaries according to the directions of Chinese authors. The whole manuscript together with a few other fragments was sent in 1658 by Father Couplet to Batavia to be dispatched thence to Europe. But due to disagreement between the Jesuits and the Dutch Company the author's name was suppressed and the book was published in 1682 by Andreas Cleyer, Protomedicus to the Company, under the title *Specimen Medicinae Sinicae*. Even some learned compilers of our times consider this as the authentic edition, although a book bearing the name of the right author and under its original title was published in 1686.

Still more interesting than the achievement of Boym were those of other Jesuit Fathers who, though not properly qualified medically, had an opportunity to prove to the court at Peking the superior qualities of certain western medicines. The famous Emperor K'ang Hsi (1655-1723) was attacked in 1692 by a malignant fever which was relieved by Fathers Gerbillon and

Pereyra administering some medicinal lozenges prepared for Louis XIV of France. Later, when recurring symptoms of Tertian ague appeared and defied the skill of the imperial physicians, proclamations were issued that anyone knowing of a remedy against this ailment should at once impart it to the Court where a special Commission would test it. The missionaries possessed a pound of cinchona bark which had been received by Father de Fonteney from India. They offered this and three patients confined in the Palace for experimental treatment were speedily cured by its action. Encouraged by this the emperor partook of the remedy with the same spectacular result.

Soon after his recovery, K'ang Hsi rode fearlessly from the palace into the city with a great following, and permitted the people, who as a rule were driven away whenever the emperor appeared in town, to remain in the streets, an event which had never happened before. Among those accompanying His Majesty were the four Fathers, Gerbillon, Bouvet, Fonteney and Vissdelon: they were allowed to stand while even the highest officials went down on their knees and touched the ground with their foreheads. In a loud voice, the emperor, turning towards the missionaries, said: "You Europeans have always served me with zeal and affection, and I have not the least thing for which to reproach you. Many Chinese mistrust you, but I, who have carefully watched your movements, am so convinced of your honesty and probity that I openly and publicly say: 'You shall be believed and trusted.'" K'ang Hsi then proceeded to tell the people how ill he had been and how the foreign guests had restored him to health again. A huge and commodious house within the First Court of the Palace was presented to the Jesuits.

We have noted that Terrentius had already compiled a book on human anatomy in Chinese. A more elaborate attempt in this direction was made by Father Dominique Parrenin (1669-1741) who translated *L'anatomie de l'homme suivant la circulation du sang, et les nouvelles decouvertes par Dienis*, into the Manchu (Mandarin) dialect. To the eight volumes of this translation the author added a ninth dealing with Chemistry, Toxicology and Pharmacology. After five years' labour this task was finished and he submitted the work to the aged emperor. Perhaps through intrigues of the court

physicians, it was never printed. At least two handwritten copies of this work are extant.⁵

It stands to reason that the charitable acts instituted by Candida were continued and enlarged by successive missionaries, specially the homes for foundlings in whose souls, rather than their bodily welfare, the Church was interested. It is certain that about A.D. 1700 an organisation of lay Christians existed which provided among other things for the care of the sick. Besides, we know of quite a number of qualified medical men in the ranks of the Order who performed signal services for the indigent ones. Mention must first be made of Brother Bernard Rhodes (1645-1715), who arrived in China in 1699. Being able to benefit several patients who had been treated in vain by the native practitioners, he soon won general confidence and opened a kind of dispensary for the poor in his house. Even the Court officials were impressed by this foreign doctor who, contrary to the native practitioners, "talked little, promised little, yet performed much." The emperor himself was twice relieved by Brother Rhodes, once for palpitation of the heart, the second time for a boil on the upper lip. The treatment of the latter ailment necessitated the removal of a few hairs from the scanty beard of the emperor—a delicate operation which was entrusted to one of his eunuchs. Great was the ire of the emperor when he detected that *four* of the precious hairs had been clipped whereas *three* would have been sufficient!⁶ It would seem that Brother Rhodes gradually became regular medical attendant to the emperor, whom he accompanied on his travels. To reward the Order for these services the emperor handed over gold ingots, then worth 200,000 francs.

Later Brother Joseph da Costa (1679-1747) worked from A.D. 1715 onwards in Peking, where he kept a regular dispensary maintained by the gifts of paying patients. The work was continued by Brother Etienne Rousset (1689-1758), from 1719. He accompanied the emperor K'ang Hsi during his last journeys, as physician and apothecary. Brother Rousset was generally known under the name of the Charitable Physician, and large crowds attended his dispensary. Another much loved physician was Brother Emmanuel de Mattos (1725-1764)

⁵ One in Dudgeon Library, one in Russian Legation, Peking.

⁶ DUDGEON: *Chinese Recorder*, Vol. III.

who arrived in Peking in 1751. He was an able surgeon and, though urged by his superiors to become a full priest, he preferred to remain a brother so as to have more time to care for the sick poor. Through constant overwork he contracted lung tuberculosis and died in 1764. The last of this series of physicians was Brother Louis Bazin (1712-1774) who spent the remaining six years of his life in Peking after a romantic career in Persia and India.

Reviewing these early medical activities of the Jesuits, it must be stated that, though full of early promise, they left but few permanent traces. The reasons are not far to seek. It would seem that the Superiors of the Order did not realise the great importance which medical work might play in propagating the faith, or, because they possessed a strong foothold in Peking through their mathematical and astronomical skill, they paid insufficient heed to medical matters. Terrentius, for instance, with his splendid medical training, was first sent to Hangchow and only called back to the capital for consultation upon the calendar. Brother de Mattos was urged to become a full priest, and thus curtail his usefulness as a surgeon. Nevertheless, it is possible that the Jesuit Order would have continued to send out medical men to China if their whole work had not been cut short by the dissolution of the Society of Jesus in 1773. More than a quarter of a century elapsed before a fresh attempt to introduce European methods into China was made by the British doctors in Canton and Macao. Before discussing this epoch in Chinese medicine, it may be well first to cast a glance upon the medical activities of the Russian Ecclesiastical Mission in Peking.

Most of the regular missions dispatched from Russia possessed a medical man on their staff. The first was Pulart, a graduate of the Moscow Academy, who arrived with the Archimandrite Hilarion in 1716. In the same year there arrived also in Peking a British surgeon engaged by the Russians. The story is that the Emperor K'ang Hsi wrote to the Tobolsk Governor to recommend him a good physician and also some *serviceable physic for pleasure* (apparently vitalizer or aphrodisiac). A British surgeon of the St. Petersburg Hospital, called Thomas Garwin in the Russian records (his real name was probably Harwin), was selected. Together with some engineers sent by the Czar, this English doctor reached Peking in November, 1716. All that we can find

of his medical activity there is that he was once permitted to feel the pulse of the emperor. By the spring of 1717 he had already left the capital. Dr. John Bell of Antermomy (*sic*), the author of the curious work, *Travels from St. Petersburg in Russia to Diverse Parts of Asia* (Glasgow, 1763), also came to Peking with a Russian embassy. He arrived in November, 1720, and left in the following March. The Russian doctors seemed to have confined their attention to their own countrymen, the descendants of the valiant defenders of the fortress Albazin on the Amur River who were brought to Peking by Chinese soldiers in 1688.

Allusion has been made already to the early existence of a European hospital in Macao. The Portuguese doctors who started it were gradually joined by Dutch physicians and later on by British medical officers. The first mention of a Dutch doctor is found in the year 1735, while in the chronicles of A.D. 1779 a Mr. Abraham Leslie, junior surgeon to the British factory, is mentioned. He was presumably an able man, for he was recommended for promotion to the post of senior surgeon, but certainly he was smart in business as well, lending his savings at high interest to the Chinese merchants. On one occasion, when one of his debtors got bankrupt, the doctor forcibly seized his house, disobeying the orders of his superiors to return to the factory. He proceeded similarly on a second occasion, though, as the chronicler drily remarks, "he had certainly received more than the original principal." Leslie made himself so obnoxious that he was finally arrested by the Council in 1781. In 1783 he visited India, where he was bold enough to complain personally to the Governor-General who, however, refused to support his claim.

Since Leslie's time one or two doctors had been permanently employed by the East India Company at Canton and Macao (between which two places the staff alternated, Macao being chosen for the off-seasons). Allusion can rarely be found to any medical aid given by them or their Dutch colleagues to the Chinese. In fact, the only occasion they treated such patients seems to have been when Chinese were wounded by Europeans. This is easy to understand since the Chinese laws of that period held anyone responsible for the death of a person to be guilty of murder and liable to execution. The foreigners therefore took a vital interest in the recovery of any Chinese who had been wounded by one of them. Apart

from these comparatively rare occasions, the foreign doctors, like the rest of their compatriots, seem to have lived and worked quite separately from the Chinese. The desire to introduce Jenner's method of vaccination for smallpox into China finally bridged this chasm. The earliest attempts in this direction date back to June 1803, when a dispatch was received from the Governor-General in Council of the East India Company, in which he intimated his wish to see this method, which had come into general use in the British possessions in India, applied in China as well. The Governor-General therefore advised the Committee to consult the principal mandarins. Meanwhile, a supply of vaccine, sent by the Bombay Governor, was actually received in October, 1803. With the aid of the *hong* merchants it was tried upon a number of healthy Chinese children but without success, "the virus having from the length of passage been deprived of its virtue." Fortunately another method of obtaining an active virus was effected. To describe this event we had best quote the words of Dr. Alexander Pearson, surgeon to the British factory, who, unlike his Portuguese colleagues, made the method available to rich and poor alike and was principally, if not solely, responsible for its gaining firm root among the Chinese population. In a report of 1816, Dr. Pearson wrote:

"In the spring of 1805 . . . the vaccine was brought by Mr. Hewit, a Portuguese subject and a merchant of Macao, in his vessel, upon live subjects from Manila—His Catholic Majesty having had it conveyed by suitable means and under the care of professional men across the South American continent to his settlement in the Philippine Islands. I observe that one of them (D. F. X. Balmis) states himself to have introduced the practice in this country; but before his arrival in China it had been quite extensively conducted by the Portuguese Practitioners at Macao, as well as by myself among the inhabitants there and the Chinese, and the accompanying tract, drawn up by me, had been translated by Sir G. Staunton into Chinese and published several months previous to his arrival. As I deemed the inoculation on any subjects connected with the foreign society, or with the Settlement of Macao, nugatory towards an establishment of the practice in China, it was from the beginning conducted, first at some expense, by inoculations at stated periods among the natives, and of them necessarily the poorest classes, who dwelt crowded together in boats or otherwise. . . ."

The beginning was naturally difficult, but Pearson continues,

"The method soon sprang into favour amongst the Chinese, who though very conservative in their feelings, when once convinced of the benefit of any new method, take it up very readily, and great numbers were brought to be operated on during the period of the raging of small-pox in the course of the winter and spring months of 1805-1806."

Pearson now needed more help than the casual attention given him by his compatriots in the factory, and from 1806 onwards he employed Chinese assistants, recruited from the employees of the factory. The most prominent of these was Yao Hochun, called A. Hequa by the foreigners and nicknamed Dr. Longhead on account of the extraordinary length of his head. It is said of him that in the thirty years of his activity he vaccinated one million of people. Moreover, he taught the art to his son and thus became the founder of a family of distinguished vaccinators.

Sir Edward Jenner in England soon learnt of the success attained in China. In a little tract called *Results of Vaccination*, is a letter from one John Barrow, who transmits to Jenner a copy of Sir George Staunton's treatise and informs him of the results achieved, adding that "thus the English at length, as well as the other Europeans, have established their claim (which though last is not least) on the gratitude of the Chinese." The great discoverer of vaccination (Jenner) was evidently much impressed, because there is an entry in his diary that the Chinese seemed much readier to resort to vaccination than the English people nearer home.

However, things in China did not progress as well as during the panicky days of 1805-06, when thousands were vaccinated at a time, the Chinese assistants of Dr. Pearson working both locally under his immediate supervision and in the country districts. However, as soon as small-pox ceased to be epidemic, "the evil and the remedy against it were equally forgotten." The preservation of the virus in those days, when only vaccination from human being to human being was practised, necessitated regular vaccination the whole year round, but this was not always possible in China. Twice it was necessary to reintroduce virus from the Philippines, and twice it was found alive in the rural areas, though dead in Canton. Gradually, however, all difficulties were overcome. The principal *hong* merchants established a fund for the gratuitous vaccination of the poor at all times and a small present was given to parents bringing their children. By this means it was

possible to perform vaccination every ninth day throughout the year. Gradually the art also spread to the adjacent provinces and several attempts, at first futile, were made to introduce it into the capital, Peking. Finally this became successful in 1828 through the good services of the prefect Tseng, who had formerly served in the South. (Among the descendants of the Albazines in Peking, vaccination was practised from 1820 by the doctors attached to the Russian Mission who had introduced it to Kiachta on the Russian-Chinese frontier as early as 1805).

By the time Pearson left China (in 1832) his great work had already been firmly implanted.

In his final report Pearson highly commended Chinese vaccinators, particularly A. Hequa, whom he called "a man remarkably qualified for the business, by his accuracy of judgment, method and perseverance." In the 1843 report of the Medical Missionary Society was published this eulogy, "the name of Alexander Pearson will ever be associated with those who have proved benefactors to mankind." Sir Andrew J. Ljungstedt, the President of the Swedish Factory and author of the book *Macao and China*, said in 1834, "Dr. Pearson will ever live in the memories of the foreign residents in China, as an attentive and sympathising friend, as well as skilful physician."

A description of the steady penetration of vaccination into the rest of China is interesting but space does not allow even a brief sketch. Therefore I will turn to the second stage on the road of modern Medicine in China, namely, the foundation, in the year 1820, of a dispensary for Chinese at Canton by John Livingstone, surgeon to the East India Company, and the Rev. Robert Morrison, D.D. We possess but little information about the former, "the first person who systematically brought medical aid within reach of the Chinese." It would seem that he had been in China since 1808,⁷ although Morse, the chronicler of the British Company, mentions him for the first time in 1812, when serving as Assistant Surgeon under Pearson—with an "annual share" of \$1,000. In the lists for 1815 Livingstone figures already as surgeon, though still drawing the same salary up to 1825. Soon afterwards he apparently returned to England on long leave, for in 1827 Thomas

⁷ J. C. THOMSON: *Chinese Recorder*, Vol. XVIII.

R. Colledge figures as Assistant Surgeon under Dr. Pearson. In 1829 Livingstone is reported to have died at sea while returning to China. The life history of Rev. Robert Morrison is better known. Born in Northumberland as the son of a religious family, he offered his services in 1805 to the London Missionary Society (founded in 1795). In the next year he took up a short course of medical study for missionaries at St. Bartholomew's, London. At the same time he began the study of the Chinese language through the manuscripts at the British Museum, in which arduous labour he was helped by a Cantonese student, Yong Samtuk.

Morrison left for China in 1807. Because of the petty hostility of the East India Company to Protestant missions and missionaries he had to travel via America, which country he reached after having been 109 days at sea. He then took passage via Cape Horn and arrived at Canton on September 7, 1807, where, with the aid of two Roman Catholic Chinese, he energetically pursued his language studies. In 1809 he joined the East India Company, drawing £500, as interpreter, and the same sum as instructor in the Chinese language. Dr. Pearson was one of his pupils in 1812. For printing and circulating his translation of the Bible by stealth, he was dismissed by the Company in 1815. In the next year he joined the Amherst Embassy as an interpreter and thus travelled to Peking. In 1823 he went to England, returning again to China in 1826, and died in 1834 at Canton.

As can be gathered from a valuable article, *Historical Landmarks of Macao*, by Thomson,⁸ Livingstone's idea in founding the dispensary was not only to give aid to the poor sick, but to find out whether the Chinese Pharmacopoea "might not supply something in addition to the means now possessed of lessening human suffering in the West." He therefore invited the co-operation of Dr. Morrison on account of the latter's great command of the language. A Chinese medical library consisting of upwards of 800 volumes was installed with a complete assortment of Chinese medicines. A respectable Chinese physician, Dr. Lee, was engaged; occasionally a herbalist attended to explain the properties of the various articles supplied by him. Livingstone and Morrison spent one to two hours every morning at the Institution to supervise

⁸ *Chinese Recorder*, 1887.

and assist Dr. Lee, who seems to have been in actual charge. Some help was evidently also given by Dr. Pearson, for he wrote in 1821:

"I have also been able to give pretty constant attendance and have had an opportunity of observing the details of Chinese practice, in from about 10-15 cases daily."

Strange to say he spoke only of Morrison as the founder and regular consultant of the dispensary and did not mention his regular assistant Livingstone.

The success of the dispensary was evidently assured from the very beginning, as shown by a statement of Livingstone himself republished in the above-mentioned article by Thomson.

"Already much good has been done, much suffering has been relieved (hundreds were treated), and upwards of 300 patients have made very grateful acknowledgment for renovated health. . . . Besides our commercial intercourse, which is not always helpful to friendly sentiments between man and man, we have hitherto had little or no opportunity of establishing with them those friendly reciprocations of beneficent acts which must ever constitute the firmest bonds of social intercourse. Such attempts as this seem calculated to produce speedily the best results. . . . I am certain we have, in the short time in which the institution has existed, fully proved that we are both able and willing to do them much good; and that both they and we have much useful information to impart to each other."

I have not been able to establish definitely how long this institution was maintained. As has been said, Morrison left China on furlough in 1823, while Livingstone went away after 1825, destined never to return again to the field of his benevolent activities.

Their places remained empty for but a short time. In 1827 Dr. Thomas Richardson Colledge (known as the Chinaman's Friend), an old Rugby boy and Assistant Surgeon to the East India Company, began medical work for the Chinese at Macao. A very sympathetic account of Colledge was published in 1834 by Sir A. Ljungstedt under the anonymous name of "A Philanthropist." Here praise is bestowed upon the East India Company, whose liberal policy "allowed to their medical servants salaries so ample that they were satisfied, and went about doing good" and a fitting tribute is paid to the doctors themselves who

"were not the formal practitioners of their profession; they entered into the chambers of the sick, carrying healing and balm to the mind as well as body; they were patient hearers of the often-told and long details of enervated, distressed and melancholy minds . . ."

Sir A. Ljungstedt quotes copiously from the medical pioneer's own records, some of which are here given. In a statement written at Macao in 1832 Colledge says:

"In the year 1827, I determined to devote a large proportion of my time, and such medical skill as education and much attention to the duties of my profession had made my own, to the cure of so many poor Chinese sufferers of Macao and its vicinity as came in my way. My intention was to receive patients labouring under every species of sickness, but principally those afflicted with diseases of the eyes. . . .

"During that year my own funds supplied the necessary outlay. . . . In 1828 many friends who had witnessed the success of my exertions in the preceding year, and had become aware of the expenses I had incurred, came forward to aid in the support of a more regular infirmary. . . .

"Thus the hospital grew up upon my hands; confidence was established amongst a people who had been accustomed to consider foreigners as barbarians, incapable of virtuous, almost of human, feelings; and the number of my inmates was regulated only by the limits of my accommodations. Two small houses have been rented at Macao, capable of receiving about forty patients. . . .

"The more opulent and respectable classes of Chinese have in the last three years added their names to the list of subscribers; and have, by giving the hospital the sanction of their support, much enlarged the circle of its usefulness. The E. I. Company has written of it in terms of approbation, and when applied to, has liberally supplied it with medicines."

He concludes that:

"Independently of the practical benefits conferred on suffering humanity, it is most desirable that the enlightened nation to which I belong should be known in this country as possessing other characteristics than those attaching to us solely as merchants and adventurers. As charitably anxious to relieve the distress of our fellow-creatures, we may be remembered when the record of our other connections with China has passed away."

Many Chinese testimonials, some still extant, praise Colledge's good deeds, but perhaps the most fitting tribute to him was a painting by George Chinnery, an exiled Irish artist residing at Macao. This shows an elderly Chinese woman blind with cataract led by her son to Colledge for aid. The operation was successful; in fact, the patient was on the point of returning home when the painting was made.

Besides his clinic at Macao, Colledge, assisted by Dr. Bradford, an American physician hailing from Philadelphia, opened in 1828 a free dispensary at Canton, where big crowds of sufferers were relieved. The work was later carried on by Bradford and Cox, Assistant Surgeon to the Company, and it appears that the

institution existed until its closure preceding the first Anglo-Chinese war (1840).

The Ophthalmic Hospital at Macao shut its doors in 1832, when—owing to the departure of Dr. Pearson—Colledge found no more time to attend to it. During the five years of its existence, some 6,000 patients had been treated. Remarkable as this achievement is, it forms but a portion of the benefits conferred by Colledge. For, though he himself modestly deprecated it, his example as well as his reports and papers were instrumental in directing the attention of the missionary circles in America and Europe to the splendid opportunities for *medical* missionaries in China and led to the early dispatch of the first and greatest of them, the Rev. Dr. Peter Parker.

This great man, of whom it was truly said that "he opened the gates of China with a lancet when western cannon could not heave a single bar,"⁹ was born in Massachusetts in the year 1804 and graduated at Yale both in theology and medicine. Appointed by the American Board of Commissioners for Foreign Missions, he left New York in 1833 on board the *Morrison* and arrived at Canton on October 26, 1834. Soon afterwards (December) he left for Singapore to study the Chinese language. There he opened a dispensary for Chinese where more than one thousand patients were treated from January to August, 1835.

Returning to Canton, he opened on November 4 of the same year a hospital and dispensary in Factory No. 7, Fung-taihong, San-taulan Street, a site quite near the foreign factories. It was fortunate for the young institution that this building belonged to Howqua (his real name was probably Wu Tunyuen), the richest of the *hong* merchants and the only one who had with westerners other than strictly business relations. For he waived aside the rent which had been settled at \$500.00 per annum.

In Parker's first quarterly report, he mentioned that the building had on the second floor a large room, where 200 patients could be comfortably seated and prescribed for; in addition the house afforded shelter to at least forty in-patients. Though it was planned to admit cases

⁹ Rev. Dr. Beadle, quoted by THOMSON: *Chinese Recorder*, Vol. XIX.

of all kinds if they were "of peculiar interest and praise," it was resolved that a single class of patients would probably furnish more than enough work. Eye diseases were chosen, because they were most common and the native practitioners were usually helpless against them.

To characterise the exceptional success of Parker's undertaking from the very beginning, a record left by himself may be quoted:—

" It was after long effort that a place was found for a hospital, and when at length a suitable building was rented and previous notice had been given, on the first day no patients ventured to come, on the second day a solitary female afflicted with glaucoma came, the third day half a dozen, and soon they came in crowds. It is difficult to convey to a person who has not visited the scenes of the hospital a just idea of them. He needs to be present on a day for receiving new patients, and behold respectable women and children assembling at the doors the previous evening and sitting all night in the street, that they might be in time to obtain an early ticket for admission. He needs behold in the morning the long line of sedans, extending far in every direction; see the officers with their attendants, observe the dense mass in the room below, stand by during the examination and giving out tickets to the hall above, where they are prescribed for, urgent cases being admitted at once, while others are directed to come again at a specified time. . . . Great numbers of patients are thus relieved every day, exhibiting more and more the confidence placed in the physician. . . ."

The idea to run the institution as an ophthalmic hospital, which—as we have seen—was never quite strictly adhered to, was soon given up altogether, general cases and especially surgery being taken up in addition. Kerr summarises in his *History of the Canton Hospital*:

"The surgical operations called forth the wonder of all, and well they might, for the excision of tumours, the operation for cataract, the removal of stone from the bladder, were methods of relieving suffering which had never been heard of; and indeed the astounding fact became known that surgical instruments and operations were unknown throughout the empire."

This statement undoubtedly is exaggerated, but there is no doubt that new and hitherto unheard-of surgical methods were first tried in this real cradle of western medicine in China. Mention may be made of the first lithotomy operation in 1844 (stones of the bladder are uncommonly frequent in Canton), the first ether anaesthesia in 1847 and the first chloroform narcosis a year afterward. That bold operations could be confidently undertaken even before these methods to relieve

pain were introduced, was possible because of the courage and apparent lack of nerves of the Chinese patients, repeatedly commented upon by pioneers of those days. Another favourable factor was that wound infections, which made the contemporaneous surgical wards in Europe such haunts of horror, were practically unknown in the Canton Hospital.

The foreign merchants residing in Canton not only took great interest in Parker's work by contributing liberally to its modest needs (the expense for the first quarter was \$454.84) but also visited the hospital, and some actually assisted Dr. Parker in his operations. Notable among the latter was Mr. W. Jardine, who—though he had given up his original profession of ship surgeon to the East India Company—was ever ready to lend to Parker all the assistance he could. In spite of this and the ready help from his colleagues, Parker soon felt the need of native assistance. In 1837 he began with a class of three promising youths to whom he gave, in addition to practical training, theoretical instruction—apparently in the English language. The best of these students was Kwah Ato, a nephew of the famous painter Lamqua (pupil of Chinnery). This man soon became most proficient in surgery, so that many operations, even serious ones, were entrusted to his skilful hands. He continued to serve in the Canton Hospital under Drs. Parker and Kerr except during the wartime of 1856-58 when he enlisted as surgeon to the Imperial forces sent from Kwangtung to fight the rebels in Fukien. Here he narrowly escaped death when the rebels surrounded a city in which he had opened a military hospital. For these services and as the first western-trained surgeon to the Chinese military forces he was rewarded by a crystal button with the title of mandarin of the fifth rank. On restoration of peace he returned to the Canton Hospital as Dr. Kerr's senior assistant, and from 1866 taught Practical and Chinese Medicine at the newly opened medical school. The remaining period of his life was spent in lucrative private practice. Kuan Ato died in 1874 and after him came a succession of Kuans as doctors.

But we must return to the year 1836, when Drs. Colledge and Parker, together with the missionary Elijah C. Bridgeman (founder of the *Chinese Repository*), made a joint appeal for the foundation of a Medical Missionary

Society in China. This, the first Medical Missionary organisation in the world, was actually inaugurated at a meeting held under Mr. Jardine's chairmanship in the rooms of the Canton General Chamber of Commerce on February 21, 1838. Dr. Colledge (though absent) was elected President, Parker, W. Jardine, G. T. Lay and E. C. Bridgeman Vice-Presidents, Dr. Alexander Anderson, the successor of Colledge as surgeon to the British Factory, Recording Secretary, while among the members we find not only the names of physicians but of many business men, some very prominent in after years. The only Chinese member for years was Howqua, ever a generous helper of Parker's work. The lofty programme of the society provided for medical missionary work in China on as large a scale as possible, adding that "while the Society's agents, who will be looked for from Missionary Boards in Christian lands, will ply their art, they will educate young Chinese in it and reflex benefits will accrue to medical science from discoveries in China." The first general convention of the young Society was held in 1843.

The earliest practical step taken by the Society was to send Dr. Parker, during the time in which the Canton hospital underwent extensive repairs, to Macao to carry on hospital work in a house purchased by them (July-October, 1838). Parker then returned to Canton to continue the work until June, 1840, when the disturbed state of affairs in China stopped it.

The fateful year of 1839, when the troubles leading to the first Anglo-Chinese war became threatening, saw the arrival of two more medical missionaries destined to play most important parts in the introduction of western medicine.

The first of these was Dr. William Lockhart who was commissioned by the London Missionary Society and arrived in January, 1839. The Macao Hospital, left vacant since Parker's return to Canton, was placed under his care, but in September he was compelled to leave on account of the measures taken by the Chinese Government against Britishers. He retired temporarily to Batavia, studying the Chinese language under the Rev. Medhurst and practising medicine amongst natives and immigrant Chinese alike.

The second new missionary was also an Englishman, Benjamin Hobson, born in Northamptonshire in 1816 and

a graduate of University College, London. Arriving in China in September, 1840, he jointly with Dr. W. B. Diver took charge of the Macao Hospital, while Dr. Lockhart, who had re-opened the institution a few months earlier, left for Chusan. The occupation of this island by the British seemed to offer suitable opportunities for medical missionary work. His hopes were realised, for by February 1841, when the withdrawal of the troops made a longer residence impracticable, over 3,500 patients had been treated, including many non-surgical cases. In addition, he attended the members of the Chinese Coolie Corps from the Canton district which had been formed to serve as a service detachment to the British army.

Lockhart returned to Macao, where he remained until the end of the war. After the treaty of Nanking in 1842, he proceeded to Hongkong in the hope of being sent immediately to Chusan, but was retained until the summer of 1843. He supervised the building of the Medical Missionary Society's Hospital in that new British colony. This was placed under Hobson's care, the Macao hospital having been disposed of. In July 1843, Lockhart resumed work in Chusan, achieving the same success as before. It became clear, however, that the port of Shanghai, just opened to the foreigners, would afford much ampler facilities. Thus, after he had paid two visits to this city towards the end of 1843, he closed the Chusan establishment in January, 1844, and the following February started the Society's operations at Shanghai. However, before considering these post-war activities, we must see how Parker fared during the war.

During the hostilities of 1839 the Canton hospital was removed from the factory to Dr. Parker's own residence and then to the Canton dispensary, evacuated by the British doctors. Finally, on June 7, 1840, it was again closed by reason of the blockade of Canton by the British; on the closing day there was still an attendance of some 200.

Parker, with the approval of the Society, left early in July, not so much to recuperate his health as to preach the cause of medical work to England and America. His hope was to raise a permanent fund for maintenance and enlargement of the Society's operations, as well as the education of Chinese pupils. He took with him a collection of paintings of the more remarkable cases, showing both the condition of each malady and the appearance of the patient after cure, donated by his

admiring friend, the painter Lamqua; these he afterwards presented to Guy's Hospital Museum. Suffice it to say that Parker's presentation of the cause met everywhere with encouraging success and even led to such permanent results as the founding of the great Edinburgh Medical Missionary Society.

The war ended, Dr. Parker, who had married in America a niece of the statesman Webster, again reached China and with his bride took up residence at Canton on November 5, 1842. This was in direct opposition to the old regulation "that neither woman, guns, spears, nor arms of any kind can be brought to the Factories." Mrs. Parker was the first foreign lady to reside at Canton, living as a "lone woman without a single female companion for many months." Curious reference is made to her in a memorial presented to the throne by the Imperial Commissioner Koying, hereafter a patient of Parker:

"Another point, it is the wont of the barbarians to make much of their women. Whenever their visitor is a person of distinction, the wife is sure to come out to receive him. In the case of the American barbarian Parker and the French barbarian Langrene [? Lagrene], for instance, both of these have brought their foreign wives with them, and when your slave has gone to their barbarian residences on business, these foreign women have suddenly appeared and saluted him. Your slave was confounded and ill at ease, while they, on the contrary, were greatly delighted at the honour done them. The truth is, as this shows, that it is not possible to regulate the customs of the Western States by the ceremonial of China, and to break out in rebuke, while it would do nothing towards their enlightenment, might chance to give rise to suspicion and ill-feeling."

Dr. Parker re-opened the hospital on November 21 in the former premises. Old Howqua, the landlord, demurred at first, remembering the trouble he had when an inquest was held upon a beggar who had died in the hospital. He soon gave in, however, and when asked about the rent he refused any, saying:—"My own heart likes this business too; if any repairs are necessary, just call on my compradore and he will see that they are attended to."

This grand old man died of enteritis on September 4, 1843.

The success of the Canton Hospital became greater than ever, sometimes about one thousand persons being present on a receiving day. Yet the great changes engendered by the war were bound to reflect themselves

upon the Medical Missionary Society, which owed its existence to the foreign community resident formerly at Canton but now removed largely to Hongkong. The crisis came in the year 1845 when the Hongkong members demanded that meetings be held at their place and questioned the administration of a sum of \$5,000.00 collected by Parker in America. The committee demanded control of this sum, whereas Parker wanted to use it at his own discretion, a claim which was afterwards endorsed by the American donors. The result was that two committees and societies functioned, each claiming to be the original society and each having for its President Dr. Colledge, who lived in England. Attempts to reconcile the parties failed and the two societies continued to exist side by side until, as far as I could establish, the Hongkong Society quietly passed away. Colledge remained President of the Medical Society for 40 years, that is, until his death in 1879 at the age of 82.

It will be well to refer here to the further history of Parker. Having acted with Dr. Bridgman as joint secretary in the negotiations of the U.S. Treaty with China at Macao on July 3, 1844, and as interpreter at the exchange of treaties at Pun T'ong, Canton (December 31, 1845), Parker was appointed U.S. Chargé d'Affaires. In 1847 he severed his connection with the American Board of Missions, but continued until 1855 his medical services at the hospital and amongst the foreign community, so far as his diplomatic duties permitted. Naturally, more and more of the medical work devolved upon his able Chinese assistants. In the spring of 1855 Parker returned to the United States, the charge of the hospital having been transferred to Dr. John Kerr, who had arrived in 1854. Appointed U.S. Minister Plenipotentiary, he once more visited China, but left the country for good in 1857 and took up his residence at Washington. When Dr. Colledge died in 1879, Parker became his successor as President of the Medical Missionary Society, showing great interest in its welfare until his death on January 10, 1888, at the advanced age of 84 years.

We may return now to the discussion of the activities after the war. One favourable point of the treaties, concluded in the years 1842-1844 between China on one hand and the United States and France on the other, was the insertion of the so-called Toleration Clauses which allowed foreigners the right to build hospitals and

schools as well as places of worship in the treaty ports. Thus we find that in this period not only the work in Canton was safely continued but that medical missionaries gained a firm footing in other cities formerly not accessible to them.

Mention may first be made of the old port of Amoy where trade with Spain and the Philippines had been carried on for several years. Here the work was started in 1842 by Dr. William Henry Cumming, who opened a dispensary at Ku-lang-su, a small island adjoining the port. He was soon joined by Dr. J. C. Hepburn. Both had to retire after a few years' work on account of ill-health. Their successors did not fare better, while Dr. Ino. Carnegie, who took over the hospital in 1859, soon severed the connection with his mission to join a local firm of medical practitioners. There being no new medical missionary available, he agreed, however, to carry on the hospital work—a voluntary service which was continued by his successors. This was very fortunate, because it enabled Dr. (later Sir) Patrick Manson, who arrived in Amoy in 1871, to take charge of the hospital and start his epoch-making discoveries in tropical medicine.

The year after the opening of Amoy, work was started in Ningpo by Dr. Lockhart, who during a visit in summer 1843, treated about two hundred patients. In fact, it appears that he was doubtful for some time whether to make this place or Shanghai his future permanent residence. As we have seen, he finally decided upon Shanghai, while the post at Ningpo was filled towards the end of 1843 by Dr. D. J. Macgowan who, being generously supported by the foreign community of Bengal, was able to open a small hospital in 1845. Two interesting features of medical relief were started here: (a) treatment of opium addicts; (b) lectures on anatomy before the practitioners and students of the city with the aid of models from Paris, some plates and one skeleton. Considerable interest was evinced by the class, one of which became Dr. Macgowan's valued assistant.

We have seen already how Dr. Lockhart commenced regular work in Shanghai in February, 1844. This was first carried on in a Chinese house, situated apparently in a southern suburb of the city and rented by the Hong-kong Medical Missionary Society. The institution was a great success from the start:—

"As soon as the hospital was opened," writes Lockhart, "and its purpose became known, crowds of people came daily to the house, urgently, often boisterously, requesting to be attended to. The applicants were not only residents in Shanghai, but many came from Su-chau [Soochow], Sungkiang and other cities in the vicinity, and also from the island of Tsung-ming."

In 1846 it became necessary to provide ampler and better accommodation for the "Chinese Hospital," as the establishment was then called. No footing could be found within the city itself, so a piece of ground situated more than a mile outside the north gate had to be chosen. Here a building with a large hall for out-patients and commodious wards was erected, the total cost together with land being \$3,200.00. The property was vested in the hands of some British residents at Shanghai, conditionally that it be always used for the purpose of a hospital. About the same time, in accordance with a wish of the subscribers to the Medical Missionary Society, a local committee was formed consisting of Messrs. Dallas, Shaw, Beale and R. Lockhart.

The improved accommodation added much to the usefulness of the hospital. The best proof that it enjoyed the confidence of the people is:

"That during the various attacks on Shanghai city in the uncertain times of the Triad, Taiping and other rebellions, both sides agreed, though Dr. Lockhart's hospital was very inconveniently situated for the hostile forces in their attacks on the city, to steer as clear of it as they could and particularly to avoid damaging it with their artillery; and both sides found the hospital ready to accommodate, to its fullest capacity, their wounded and their sick."¹⁰

Like most of the medical missionaries in those early days, Lockhart did his best to train assistants, one of whom, called Chun-fu, showed unusual ability. Dr. Lockhart went on furlough in 1857, his place being taken temporarily by Dr. Hobson, who after a year had to go home too on account of ill-health. The medical work was then carried on by Chun-fu with the occasional assistance of local practitioners until in 1860 Dr. James Henderson arrived on behalf of the London Missionary Society to assume charge.

The next port we have to deal with is Foochow, opened to foreign commerce in 1844. It was not till six years later that the first medical missionary, the Rev. Wm. Welton, arrived (1850). Though many sufferers

¹⁰ BRAYTON BARFF: *North-China Herald*, 1926.

applied for relief, his work was at first hampered by the hostility of the literati, who resented the fact that Welton had obtained a portion of a temple near their schools. The dispute was finally settled by Dr. Welton removing to another temple nearby. Here he continued his activity until 1856, when his health became so debilitated that he was obliged to seek rest first at Shanghai, then in England. He did not recover, and died in 1858. The regular medical work at Foochow came to a standstill until 1870, when Dr. and Mrs. Osgood arrived.

Reference has been made already to the construction of a hospital at Hongkong by Dr. Lockhart and its opening by Dr. Hobson (June 1, 1843). Like the other early institutions this soon prospered; the number of patients for the first two years was over 7,000, so that in 1845 extensions became necessary. Hobson from the first paid particular attention to the training of pupils. In his 1845 report he bestowed special praise upon one of them, Ahsam by name, whom he considered capable, like himself, of running a hospital. Hobson adds:—

“I am very anxious to see a medical school established in the immediate vicinity of this hospital in Hongkong. And from the facilities such a desirable and useful institution as this would give to China, I trust no efforts will be spared to carry this project into effect.”

The failing health of Mrs. Hobson made it necessary for the doctor to accompany her home in autumn 1845, but she died during the voyage. Dr. Hobson returned in 1847. During his absence the hospital had been kept open, first by Dr. Alfred Tucker,¹¹ surgeon to the Naval Hospital Ship, and the Colonial Surgeon, Dr. Francis Dill; then, after the untimely demise of these two merited physicians, by Dr. A. Balfour.

Soon after Hobson had resumed his labours in 1847, it was intimated to him by the Directors of the London Missionary Society that he should go to Canton where no English Missionary had been stationed since the death of Dr. Morrison in 1834. Complying with this wish he succeeded in April, 1848, in obtaining a house in the western suburb of Canton, at Kum-li-fau. The hospital established there became so popular that in 1854 it had to be moved to more spacious premises. Hobson was

¹¹ It was largely due to Dr. Tucker's efforts that in 1845 a “China Medical Missionary and Chirurgical Society” was organised, of which institution he was the first president.

fortunate in having a most skilful helper in Ho Kingmun who performed all smaller operations and fulfilled the duties of a resident surgeon.

In 1854 and 1855, when fighting between the Imperialists and the members of the Triad Society took place, the institution was busy in caring for the wounded. The strain of this work proved too much for Dr. Hobson and he left for Shanghai in December, 1854. Ho Kingmun, however, ably carried on with the assistance of Dr. Walter Dickson. He was afterwards rewarded by the government with a white crystal button, corresponding to the sixth rank. During the fight native physicians were employed by the government to care for the sick and wounded outside the hospital. Those with the militia were paid *according to the number of cures they effected*. Naturally they preferred to send all serious surgical cases to the hospital, which in 1855 cared for nearly 30,000 patients, 10,000 of these being new ones.

Successful as Hobson's hospital practice was, its importance is surpassed by another undertaking which he had started at Kum-li-fau. This was the compiling of Chinese textbooks on medical subjects, being translations of well-known English textbooks. The first was an *Anatomy and Physiology*, followed by a volume dealing with the principles of *Physics*. Next came a work on the *Principles and Practice of Surgery*, another on *Midwifery and Diseases of Children* and finally a treatise on the *Practice of Medicine and Materia Medica* together with an *English-Chinese Medical Vocabulary*. The engravings illustrating the books (many from original drawings made by Hobson's friend and volutary helper, Dr. Dickson) were executed by Chinese artists in Canton.

The success of these publications was from the first assured. The greatest compliment to the author lay perhaps in the fact that they were several times republished by the Chinese, the *Anatomy and Physiology* at the instance of the father of the Viceroy of Canton. Publications of the whole series were made in Japan as well. Hobson's books remained for many years the standard works in Chinese, and their influence not only upon the Chinese in touch with western medical men but upon the scholars in general cannot be over-stated.

We come now to another crisis in the intercourse of China with the foreign powers, leading to the war waged with interruptions between the years 1856 and 1860 and resulting in the conclusion of treaties which reaffirmed,

among other things, the right of foreigners to build or open hospitals and similar institutions in the treaty ports. This specific clause, as well as the security afforded to foreigners by the various treaties, gave a mighty impetus to their medical work. Before dwelling upon this, we must contemplate how far the war interfered with the organisations already existing. The military operations being mostly restricted to Canton and its environs, the work at other medical posts appears to have been carried on without much disturbance. In Canton, however, it was completely interrupted. The premises of the Missionary Hospital there, which had served all purposes since the early days and had continued rent free by Howqua's heirs, were destroyed by fire on December 14, 1856, when the foreign factories were burned by the Chinese. The dispensary, where most of the medicines were kept, had received the same fate in October.

Hobson's hospital did not fare any better. It being situated in the vicinity of some large batteries in the western suburbs, the British Consul insisted upon evacuation in October, 1856. Scarcely anything was removed, as hopes for an early adjustment of difficulties were entertained. For some time the Chinese in the neighbourhood voluntarily stood watch over the premises and their contents. But their protection had to be gradually withdrawn and soon only the bare walls remained. Dr. Hobson himself removed to Shanghai in February, 1857, where he carried through the press his work on Surgery. Towards the end of the same year, when Dr. Lockhart was compelled by domestic circumstances to return for a while to England, Hobson was in charge of the Shanghai Hospital for Chinese until, a year later, his own health necessitated a furlough.

The interruption of the work was not of long duration. Dr. Kerr re-opened the Medical Missionary Society Hospital in 1858 in a Chinese building in Chang-sha street in the southern suburbs, where it remained until removed in 1866 to its present site. The Kum-li-fau institution was also re-opened in 1858 under Dr. Wong Fun, the first Chinese to have graduated in medicine abroad. Dr. Wong Fun (Wong Cheuk Hing) was a native of Heong-san district in Kwangtung and was first a pupil in the school of the Morrison Education Society under Samuel R. Brown. Together with two other Chinese students (Yung Wing and Wong Shing) he accompanied his teacher to America and took a degree in literature. He

then proceeded to Edinburgh where—supported by the benevolence of some foreign merchants at Hongkong—he studied medicine from 1848-1853. He passed with honours, taking several prizes, and, after graduation as the fifth of his class, he took up post-graduate work in pathology and anatomy. When a student he was already under the influence of the Edinburgh Medical Missionary Society. As a graduate he offered his Services to the London Missionary Society and was sent to China. Arriving in 1857, he first opened a dispensary in Hongkong but next year removed to Canton. He was superintendent of the Kum-li-fau hospital for about two years only, resigning on account of a dispute over the fraudulent and commercial conduct of some converts. He returned to Canton, where he soon became prosperous in private practice and was eventually appointed Customs Medical Officer. He contributed many valuable articles to the Customs Medical Reports and took, from 1866 onwards, a prominent part in the school work of the Missionary Society hospital, which he was in charge of during Dr. Kerr's furlough in 1867. Having amassed a large fortune Wong Fun died on October 12, 1878.

Wong Fun's place in the Kum-li-fau Hospital was successively occupied by Drs. Happer, Carmichael and Dods until the establishment was amalgamated with the Medical Missionary Society Hospital and thus came under Dr. Kerr's control (1865).

During and soon after the war, some interesting medical activities connected with military operations were carried on. We have mentioned already the signal services rendered during the Triad and other rebellions by Lockhart's Shanghai hospital. Worthy tasks of a similar nature were undertaken by the Catholics as well. Their mission had already established a hospital in 1849 at Tong-kia-tou, Shanghai, to take care of the refugees driven from Kiang-nan Province through famine after a disastrous flood. This establishment was probably of a temporary nature. Medical work was certainly taken up again in the same place during the occupation of Shanghai by the "Small Swords" (1853-1855). Like the Protestant Missionary Hospital, the church and residence of Tong-kia-tou lay between the two combating parties. Father Lemaitre not only remained at his dangerous post but cared for the wounded soldiers in a small building which ordinarily served as a Customs house (October,

1853). Brother Saguez, a trained layman, was sent from Zi-ka-wei to help him, but more skilled help became necessary. Such was obtained from the commander of the French man-of-war *Cassini*, who gave permission for his surgeons Fallier and Hubac to work in the hospital. This was heartily responded to by Fallier especially. Among the patients cared for was a future Viceroy of Nanking, who ever remained grateful to the Catholic missions. Aid was given to civilians as well as the military; in fact, a report of May, 1854 says that equal numbers of both were cared for. When the siege was over, the work probably came to a standstill for about ten years, after which Brother Bernard resuscitated it with much success, caring for thousands of patients until his death in 1867.

During the war the French General Montauban organised a military hospital next to the St. Joseph's Church of Yang-king-pang, Shanghai, which was kept open as long as there were French detachments in the city, but had evidently ceased to exist before 1864. It does not seem that medical aid was given to civilians on any large scale on this occasion.

During the occupation of Tientsin in 1860, the British established a small hospital there for the treatment of the wounded and sick of their Chinese Coolie Detachment, the doors of which were open also to the general public. Though this was a temporary undertaking only, it is of historical importance insofar as Li Hung-chang obtained here his first insight into the benefits of western medicine. He never forgot the lesson and in 1881 personally opened a hospital in Tientsin, known as the Viceroy's Hospital, and remained its generous patron.

An interesting episode of a military nature is the organisation of the medical work in Gordon's "Ever-Victorious Army," a well-trained Chinese detachment under foreign officers, engaged in suppressing the Taiping revolution during the years 1862-64.

The medical service of the detachment was in the hands of Dr. A. Moffitt, up to that time assistant-surgeon of H.M. 67th regiment, assisted by two other medical officers. A stationary hospital and a field detachment were organised—the former at Sungkiang first and later at Quinsan. The attendants were supervised by a young Chinese scholar who soon became most expert,

especially as a compounder of medicines. The field establishment was organised on the lines still used in the British army medical service nowadays. Usually two large covered boats served as its base, and from here the wounded were brought to Quinsan in Chinese gun-boats. Partly on account of the well-organised work and partly because the firearms of the Taipings were not of a very destructive nature, the results obtained were excellent. Colonel Gordon testified:¹²

"That the confidence felt by all ranks of his force in the surgical skill of the principal medical officer was of signal service in nerving their minds for any enterprise, however hazardous."

In the *Lancet* (August 11, 1866) it was stated that:

"It is impossible to over-estimate the good done by Dr. Moffitt, not only to the force in which he served with so much distinction, but to the reputation of his profession and country."

One of the important consequences of the second Anglo-Chinese war from a medical viewpoint was that western medical work in Peking, interrupted for almost a century after the last Jesuit Fathers had gone, could be taken up again. The pioneer here, as previously in Shanghai, was Dr. Wm. Lockhart, now a F.R.C.S., who arrived in the capital as Senior Physician to the British Legation on September 13, 1861. He saw a few patients at first while staying as a guest of Mr. Bruce, the British Minister. As soon as he managed to settle down (October 23) in some premises adjacent to, and rented from the British Legation, such crowds came that the total number had reached 22,144 by the end of 1862. He continued to work until 1864 when, relieved by Dr. J. Dudgeon, he took up private practice at Blackheath in England. He died in 1896, long survived by his widow. In 1865, when the Legation wanted the premises for their own needs, the hospital was removed to a Buddhist temple on the Great East Street, now known as Hatamen Street. This Hospital is now named after Lockhart and is the nucleus of the present Peking Union Medical College.

New hospital accommodation in Shanghai had been provided some years previously. The site and plant outside the North Gate were sold in 1861 and a new building erected on Shantung Road. Thus the "Chinese

¹² ANDREW WILSON: *The Ever-Victorious Army*, London, 1868.

Hospital" founded by Lockhart in 1844 became from now onwards to be known under the name of the "Shantung Road Hospital."

Soon afterwards new hospital premises were also procured for the foreigners at Shanghai who had hitherto been cared for in the "Shanghai Hospital," from 1861-1864 under Dr. Henry W. Boone. The accommodation becoming insufficient, shares were sold for the establishment of a new hospital, some French priests, among them Father Lemaitre (died 1863), taking a prominent part in the organisation. A big building was rented from the banker Yang Taki, situated on the French Bund at the corner of Rue Colbert. The establishment was opened on January 1, 1864, the nursing being placed in the hands of the French Sisters of St. Vincent de Paul. It was first known under the name of the "French Hospital," its present designation of the "General Hospital" coming into common use only when it was removed in 1877 to its present site north of the Soochow Creek.

In 1866 another important undertaking was started. With a capital fund of M.\$84.00 (!) and in a house the rent of which was M.\$5.00 per month, a dispensary was opened by the Reverend (afterwards Archdeacon) Thomson and Rev. H. N. Woo, the medical service being undertaken by Dr. J. Macgowan. Soon many patients attended and an appeal was made in the newspapers for additional funds, which resulted in the prompt subscription of Tls. 700.00. With this, 13 houses were purchased at a cost of ten taels each and on the land thus acquired a small hospital was built, known at first—on account of its location—as the "Hongkew Hospital." Several physicians, including Dr. Jamieson, volunteered their free services. In 1880 the institution moved to its present site donated by Li Chiuping and assumed the name of "St. Luke's." In 1881 the Gatzlaff Hospital, which had existed in a back street for about 20 years, was amalgamated with it.

As after the first, so after the second war, advantage was taken of the opening of new treaty ports. Thus Dr. William Gauld began to work at Swatow in 1863, Dr. F. Porter Smith in 1864 at Hankow, while in 1864 Dr. James Maxwell reached Formosa after a voyage in a sailing vessel lasting nearly six months, and opened a hospital at Takow. This was so greatly appreciated that

"Go wherever you will (not excluding some savage districts)
'Ma I-seng' is spontaneously spoken of and kindly inquired
after. . . ."¹³

Dr. Maxwell removed in 1866 to Taiwanfu, his place at Takow being filled by Dr. (afterwards Sir) Patrick Manson, newly appointed Customs Medical Officer to the Port.

Here I may conveniently end my narrative. While it has been possible in the foregoing pages to furnish an outline of the main events connected with the early introduction of western medicine into China, a summary of what may be gathered between the lines of the contemporary records is now called for.

The hospital of those days formed just a rough shelter for in-patients, who were expected to provide their own food, clothing and often bedding. No trained nurses were available, the care of the sick being usually left in the hands of relatives and friends, though pioneers like Peter Parker did not hesitate to sit for nights at the bedside of some patients upon whom they had performed serious operations. Greatly to their credit, the doctors amidst their manifold duties found time to teach their assistants. But, as in the case of physicians in medieval Europe, their pupils were more like apprentices than proper medical students. It was rarely possible for the overworked clinicians to interest themselves in scientific or public health matters. Even if they did, there was at that time no medium in China for recording their observations except in the hospital records, which had to be written to attract lay subscribers at home rather than medical readers.

With the year 1860 came the dawn of new era. The organisation of a properly-paid Customs Medical Service by Mr. (later Sir) Robert Hart from the year 1863 resulted in the publication of a series of valuable Customs Medical Reports, to which the best practitioners of the time contributed. This and the establishment of a regular medical school attached to Canton Hospital (1866) are the harbingers of the third great chapter of modern medicine in China.

¹³ MYERS: *Customs Medical Reports*, 1881-82.

CLIMATIC CHANGES DURING HISTORIC TIME IN CHINA

By COCHING CHU

I. *Introduction.*

While variation of climate from one geological era to another has been established beyond any doubt, the question of climatic changes during historical period is still controversial. Recently, however, a large amount of valuable work has been published dealing with this mooted problem, which tends to prove that there is at least a moderate variation in the amount of solar radiation during the last three or four thousand years.¹ The change may not have been progressive, but it came in the form of pulsations, one century or millennium got drier or warmer than the preceding, while the succeeding century or millennium may again have become humid or cold, something similar to the vicissitude of weather from one day to another.

In depicting the climatic conditions in China during the past ages there are four main sources from which we may draw material: (1) Phenological records in the Chinese classics; (2) accounts of floods and droughts in the Chinese annals; (3) date of earliest frost and snow and number of severe winters kept in old chronicles; and (4) instrumental meteorological records. Climatic events recorded in old chronicles and classics are necessarily sporadic, but with careful interpretation, proper inferences may be drawn from them. We will now proceed to discuss these items in turn.

II. *Phenological Records in Chinese Classics.*

Phenology has been defined as the science treating of the influence of the climate on the recurrence of the

¹ G. C. SIMPSON: "Past Climatic ,," *Nature*, London, December 28, 1929, pp. 988-991.

annual phenomena of animal and vegetable life.² The influence of match of seasons upon animal and vegetable life must have been noticed by the ancient men and the dates of sowing and harvesting of farm crops appear in the old chronicles of various people. Chinese classics are particularly rich in phenological records, a whole chapter on the monthly agricultural calender, flora and fauna 月令, in *Li Ki* 禮記, or the *Book of Rites*, is practically devoted to it, similar mention of the proper time for the first appearance of migratory birds, the blooming of certain species of trees and the like, appear in *Huai-Nan-Tze* 淮南子 (Chap. 5), *Annals of Lu* 呂氏春秋, and the *Book of Chow Kung* 周書. The four books mentioned above agree substantially on the date when a certain phenological event should occur. It is believed that the chapter on the Agricultural Calender in the *Book of Rites* was derived from *Annals of Lu*, written shortly after the establishment of the Ching 秦 dynasty (246 B.C.). *Huai-Nan-Tze* was written in the early part of the Western Han dynasty, about 120 B.C., and the *Book of Chow Kung* probably came still a little later, although reputed to be written by Chow Kung himself. Now in this period of two hundred years (250-50 B.C.) or so, the middle basin of the Yellow River, especially the provinces of Shensi and Honan, was holding the centre of the stage of civilization in China, and the phenological records mentioned in these books must be construed as pertaining to this region.

By comparing the records contained in these classics with the present phenological data, we can obtain some idea of lateness or earliness of season at the beginning of the Christian era. Three of the four classics mentioned above used the lunar calendar in reckoning phenological occurrences, which fact would make strict comparison between these records and modern data difficult. But in the fourth one, the *Book of Chow Kung*, the solar calendar was followed throughout, beginning the year with 立春 (February 5 or 6).

Of seventy-two entries in the meteorological calendar of this book, no less than fifty-two were of phenological significance. Of these some were based on mistaken ideas, like the change of hawk into cuckoo in the spring; while others had names of plants and animals the species

² According to Whitney's "Century Dictionary" quoted in F. J. WRIGHT: *The New Nature Study*, London, 1929, p. 259.

of which were hard to identify. For the present only three phenological events will be discussed: *i.e.*, the blooming of the peach trees (*Prunus persica*), the commencement of song by the cuckoo (*Cuculus micropterus* and *Cuculus canorus telephonus*), and the first appearance of the house swallow (*Hirundo rustica gutturalis*). These three are chosen, firstly because their identity are least doubtful, and secondly because their recurrences in the spring are still watched at some meteorological stations in China.

At present, very few places in China make phenological observation. The most extensive collection of phenological records of the present day in China is probably to be found in Father H. Gauthier's *La Temperature en Chine*³ in which more than a dozen places have remarks on phenological happenings day by day. According to these records the house swallow first appears in Ningpo the middle of March, in Shanghai and Wuhu by the end of March, and in Chefoo by April 10. The peach blossoms appear in Shanghai on March 25, in Wuhu about April 1, in Pei-Hsien, in the northern part of Kiangsu, about April 6, and in Chefoo and Hwang Hsien about April 24. The Indian cuckoo begins to sing in the lower Yangtze Valley by the beginning of May, followed by the common cuckoo two weeks later. Since the year 1929, the Institute of Meteorology at Nanking is also keeping phenological records. For the past two seasons the house swallow was first seen in the capital about April 9, and departed by the end of August or the beginning of September⁴ and an Indian cuckoo was first perceived in the spring on or about May 5.

Now, according to the meteorological calendar in the *Book of Chow Kung*, the blossoming of peach trees was put down at March 5, the first appearance of the swallow at March 21, and the first singing of the cuckoo at April 26. The departure of the house swallow was said to happen on or about September 12.⁴ These dates (in the spring) when compared with present records are any-

³ H. GAUTHIER: *La Temperature en Chine*, Shanghai, 1918.

⁴ In Shanghai the house swallow remains until August or later, and in Nanking swallows are rarely seen in September. See E. S. WILKINSON: *Shanghai Birds*, Shanghai, 1929, p. 143.

where from one week to one month too early, and bearing in mind that these old records are most probably valid for the central Yellow River Valley, it seems that the season during the beginning of the Christian era in China must be more open than it is now.

The mildness of the climate of this period was suspected by early Chinese writers such as King-Lu-Siang 金履祥 of the Yuan dynasty.⁵ Recently a writer in the *Historical Journal of China* also maintains that the climate of the Yellow River Valley during the Han dynasty was warmer and wetter than it is to-day, basing his argument on the extensive cultivation and use of bamboos and mulberries.⁶

III. *Accounts of Floods and Droughts in Chinese History.*

It was Sir Alexander Hosie who first made an examination of the number of floods and droughts contained in Chinese chronicles from the T'ang to the Ming dynasties, the results of which were published in the *China Review* and the *Journal of North China Branch of the Royal Asiatic Society*.⁷ Some years ago the writer, with the help of his colleagues in the Department of History of South-eastern University of Nanking, made another analysis of these records in a paper published in the *Geographical Review*.⁸ This analysis reveals that the ratio of number of droughts to the number of floods is great in the fourth, sixth and seventh centuries and again in the fifteenth, while it is comparatively small in the twelfth and fourteenth, indicating the former periods

⁵ 秦嘉謨編月令粹編卷二十三月令孟春之蟄虫始振句下,嘉慶十七年本史學雜誌二卷三四合期,蒙文通著,中國古代北方氣候攷。

⁶ *Historical Journal of China*, Vol. II, Nos. 3 and 4, September, 1930: "On Past Climate of North China," by Mon Wen-Tung.

⁷ "Droughts in China, A.D. 620-1643," *Journal North-China Branch of the Royal Asiatic Society*, Vol. XII, 1877, pp. 51-89.

"Floods In China, 630-1630," *China Review*, Vol. VII, 1878, pp. 371-372.

⁸ COCHING CHU: "Climatic Pulsations during Historic Time in China," *Geographical Review*, Vol. VI, No. 2, April 1926, pp. 274-282.

as predominantly dry, and the latter periods wet, as shown in the following table:—

TABLE 1.—RATIO OF DROUGHTS TO FLOODS IN CHINA.

Period	Ratio of Raininess	Remarks
A.D.		
100– 200	1.98	
200– 300	1.60	
300– 400	8.20	Dry
400– 500	2.06	
500– 600	4.10	Dry
600– 700	3.30	Dry
700– 800	1.32	
800– 900	1.80	
900–1000	1.80	
1000–1100	1.70	
1100–1200	1.04	Wet
1200–1300	1.80	
1300–1400	1.05	Wet
1400–1500	2.25	Dry
1500–1600	1.95	

According to Dr. C. E. P. Brooks of the London Meteorological Office,⁹ “if a considerable number of droughts were recorded in one century, the rainfall of that century was abnormally low; similarly a large number of floods and storms suggests a heavy rainfall.” The absolute number of floods and droughts per century, however, does not indicate anything; it is the ratio between the two that is of significance.

In this connexion it may be mentioned that extensive emigration took place from China during the two dry periods mentioned above, namely, in the seventh and fifteenth centuries. Recently in an article on *Changes of Climate in the Old World*, Dr. C. E. P. Brooks has shown that the dry period of the fourth to eighth centuries, and the wet period of the twelfth to fourteenth were not limited to China alone, but synchronous with several areas in the old world.¹⁰

⁹ C. E. P. BROOKS: *Climate through the Ages*, London, 1926, p. 328.

¹⁰ C. E. P. BROOKS: “Changes of Climate in the Old World,” *Quar. Jour. of the Royal Meteorological Society*, Vol. LVII, London, January 1931, pp. 13-30.

IV. *Date of Latest Snowfall and Number of Severe Winters.*

In the Chinese encyclopædia, *Tu Shu Tsi Cheng*, there are three chapters devoted to the records of damaging frosts, severe colds, and the like. These data have been embodied in the following table along with those of Europe as given by E. Brückner¹¹ from A.D. 500 to 1600.

TABLE 2.—NUMBER OF SEVERE WINTERS IN EUROPE AND CHINA.

Periods	China	Europe
A.D.		
500- 600	19	
600- 700	11	
700- 800	9	
800- 900	19	11
900-1000	11	11
1000-1100	16	16
1100-1200	24	25
1200-1300	25	26
1300-1400	35	24
1400-1500	10	20
1500-1600	14	24

The number of severe winters per century in China decreases from the sixth century to the eighth, rises to a maximum between the twelfth and the fourteenth, and decreases again in the fifteenth, thus showing the period from A.D. 1100 to 1400 to be particularly cool. The rigours of winter during these centuries can be confirmed by the date of spring snowfall recorded in the *History of Southern Sung dynasty* from A.D. 1131 to 1260 at Hangchow, then the capital of South China. The average date of latest snowfall for each decade of years during that period was April 9, almost a month later than the date of latest spring snowfall during the period 1905-1914.

In a diary kept by one Kuo Tien-Si¹² from September 9, 1308 to December 2, 1309, various notes on current

¹¹ EDUARD BRÜCKNER: "Klimachwankungen seit 1700 nebst Bemerkungen über die Klimaschwankungen der Diluvialzeit" Abhandl. herausg. von A. Penck, Vol. IV, No. 2, Vienna, 1890, p. 268.

¹² 元郭大錫日記至大元年戊申八月廿七日至二年己酉十月卅日。

weather were entered. On October 7, 1308,¹³ the diarist arrived at Hangchow at midnight, and made this entry: "Air frosty under moonlight, bitingly cool" 霜月皎潔寒氣逼人. Snow was first noted at Hangchow on December 14, and then again on the fifteenth. On January 1, 1309, the diarist went from Wusih to his home at Tang Yang. It snowed on the way, and by January 3 the boat was frozen thick in the river and was covered with icicles, so that he was obliged to go on horse-back. Snow was entered in the diary on February 3-10, 1309, and again on March 9-11 of the same year. While the record of one season at one place cannot give any indication of the general run of climate of a country in a certain period, the winter of 1308-09 happened to be one of more than average rigour in the lower Yangtze Valley, for rivers around Wusih seldom freeze to such an extent as to stop communication.

V. Instrumental Records.

Rainfall measurement was made in China as early as the Han dynasty, mention of it appearing in various Chinese literatures, but unfortunately no numerical data have been preserved. The earliest instrumental meteorological record in China that covers any length of time does not go back more than one hundred years. The most valuable collection of early Chinese meteorological records along modern lines is probably to be found in the researches of Dr. H. Fritsche, Director of the Russian Observatory at Peking. His long series of observations made at Peking, from 1841-55, 1860-61 and 1869-74, covering altogether twenty-three years, is particularly valuable.¹⁴

It will be interesting to compare this series of observations with the data kept at the Central Observatory of Peking for the period 1915-1924¹⁵ as shown in the table facing this page.

¹³ The dates were originally made in the Chinese calendar, but transformed into the Julian Calendar by the aid of Pierre Hoang's *Concordance des Chronologies Néoménique Chinoise et Européenne*, Shanghai, 1910.

¹⁴ H. FRITSCHÉ: "The Climate of Eastern Asia," *Journal North China Branch of the Royal Asiatic Society*, Vol. XII, 1878, pp. 127-335.

¹⁵ Taken from *Tsing Hua Weekly*, Vol. XXXII, No. 6, pp. 8-12, "The Climate of Peking," by S. C. Hwang.

清華週報三十二卷六期黃夏千著北平之氣度,又北平中央觀象台觀象叢報一卷至六卷。

TABLE 3.—METEOROLOGICAL DATA OF PEKING FOR THE PERIODS 1841-1874 AND 1915-1924.

Mean Temperature (°C.)													
Month Period	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Mean
1841-1874	-4.6	-1.4	5.1	13.8	19.9	24.3	26.1	24.6	20.1	12.5	3.8	-2.4	11.81
1915-1924	-4.6	-1.3	5.3	13.9	20.1	24.8	26.3	25.3	19.8	12.5	3.9	-2.8	11.93
Range of Temperature (°C.)													
1841-1874	7.4	4.7	9.7	10.4	10.7	10.8	7.5	7.6	8.6	9.9	7.5	7.5	8.8
1915-1924	11.3	10.7	12.0	12.0	13.3	12.8	9.8	9.3	10.9	12.7	11.4	10.0	11.6
Relative Humidity (%)													
1841-1874	58	59	54	49	51	61	76	76	68	60	58	58	61.0
1915-1924	62	56	52	48	51	59	76	78	71	66	60	62	61.6
Prevailing Wind Direction													
1841-1874	NW	NW	NW	S	S	S	S	N	NW	NW	NW	NW	
1915-1924	N	N	N,SW	SW	N	SW	S	N	N	N	NNW	N	
Extreme Temperature (°C.)													
	Absolute Maximum						Absolute Minimum						
1841-1874	36.3						-15.3						
1915-1924	37.9						-16.3						
Rainfall (mm.)													
1841-1874	2.8	5.1	7.1	14.0	42.1	89.4	237.2	152.1	73.0	17.5	8.7	2.9	651.9
1915-1924	1.3	2.5	6.5	5.8	32.4	61.0	259.3	144.5	36.2	14.4	8.1	3.5	575.5
Rainy Days													
1841-1874	2.0	3.0	4.0	4.0	7.0	11.0	14.0	11.0	8.0	3.0	3.0	2.0	72.0
1915-1924	3.4	2.6	5.0	5.5	9.3	13.3	17.6	14.3	9.8	5.6	4.0	3.1	93.5
Absolute Variability of the Amount of Precipitation (mm.)													
1841-1874	29	28	27	56	104	195	497	347	286	46	32	20	822
1915-1924	3	6	14	21	113	127	580	310	117	52	27	7	804
Cloudiness (%)													
1841-1874	20	24	32	39	40	40	54	47	35	24	23	18	33.8
1915-1924	24	28	36	42	46	55	53	49	40	27	27	28	37.5
Amount of Precipitation and Number of Rainy Days in Peking, 1915-1924.													
Year	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	Mean		
Amount of P.	655	422	781	513	566	277	255	838	379	1059	575.5		
Rainy Days	90	99	97	94	90	100	76	97	97	84	93.5		

LIBRARY
UNIVERSITY OF CALIFORNIA
RIVERSIDE

Taking first the temperature, the mean annual differs only by one tenth of a degree centigrade, the Central Observatory series being the higher of the two. With regard to the mean monthly, the second period was warmer in spring and summer from March to August inclusive, and also in November, but colder in the months of September, December and February, the difference being greatest in the month of August, amounting to 0.8° C. The range of temperature is not comparable for the reason that the Russian series used periodic maxima and minima, while the Central Observatory series used non-periodic, with the consequence that the second series has a range much greater than the first.

With regard to the mean annual relative humidity, no appreciable difference exists between the two series. The monthly means, however, differ slightly, the second series being drier in the months of February, March, April and June, but wetter from August to January inclusive. It seems therefore that the climate of Peking during the first part of the twentieth century is slightly cooler in autumn and winter, but a little warmer in spring and summer, than the middle of the nineteenth century; or in other words, the climate of Peking is becoming a little more continental during the last ninety years or so.

The rainfall data seem to confirm this conclusion. The amount of mean precipitation decreases by 12% in the second period, but the July rainfall, which occupies more than 40% of the total in both series, actually increases by 10%. Although the first period covers twenty-three years and the second period only ten, yet the absolute variability of the latter period is really greater when we take into consideration the fact that the second period has less rainfall than the first. All this goes to show that the climate in Peking in the beginning of the twentieth century fluctuates more, and hence is more liable to go to the extremes. For the present, we cannot make any comparison between numbers of rainy days of the two series, for we do not know exactly just what constitutes a rainy day in the Russian series. Another point to be noted is that even though the first period has more rainfall in every month except July, yet the reverse is the case with the cloudiness.

In making such a comparison, difference of exposure and instrumental error must be taken into consideration.

In the present case, however, it is not the difference of mean temperature or total amount of precipitation which attracts our attention, but rather, it is the seasonal distribution of each element which concerns us the most. Any instrumental error should affect the data of all seasons alike, while the defect in exposure would make its presence felt most seriously, at least in the case of rainfall, in the total value.

Several recent writers have alluded to the evidence of desiccation of North China. Thus Sir Aurel Stein has found in the drying up of the bed of Etsingol and the abandoned city of Khara-Khoto the unmistakable evidence of desiccation of northern Kansu since late medieval times,¹⁶ and Mr. A. de C. Sowerby of the *China Journal* also alleged the approaching desert condition of North China on the ground of encroachment of sand within the city walls of Yuling Fu in Shensi.¹⁷ While the comparison made above shows no indication of any drastic change of climate, it does seem to prove that the degree of continentality in North China has been gradually increasing during the last ninety years.

¹⁶ SIR AUREL STEIN: *Innermost Asia*, Oxford, 1928, Vol. I, pp. 459-460.

¹⁷ ARTHUR DE C. SOWERBY: "Approaching Desert Conditions in North China," *China Journal of Science and Arts*, August, 1924.

BAMBOOS IN CHINA

A Survey of the Morphological Characters that Distinguish Species

By W. M. PORTERFIELD

The bamboos of China represent a group of useful plants not to be equalled anywhere else in the world. Among the novel sights that meet the eyes of travellers to far eastern countries not the least are the growing bamboos. The unique character and beauty of living bamboos have never failed to impress the newcomer to China. From Marco Polo down to the present, explorers and tourists alike have remarked on the bamboos and on the products made of them. Not only do the beauty and useful character of the plant, but also some of the habits discovered by those whose interest have carried them to more extended observations strike the stranger as little short of amazing. Robert Fortune (1857), during his residence among the Chinese, was sufficiently interested to measure the daily growth of bamboo shoots and found that "one could almost see them growing." He found too that the greatest rate of growth took place during the night. The frequent references to bamboo made by writers are in part due to the fact that it is so widely distributed and, therefore, so often comes to notice. Every section of the country, with the exception of the extreme north, has its representatives. The present 490 species of bamboo occupy a great deal of the tropical and sub-tropical territory of the world, and in their adaptations to different habitats and climates, furnish mute testimony to a long evolutionary history. Though keen in their universal love of moisture, they have radiated over many types of environment from the low-lying plains of China to the valleys and even to the high ranges that bound the western frontier. It will be remembered how Capt. Kingdon Ward (1924), while crossing the high passes between the upper Salween and Taron rivers on

the Burma-Thibet border, had to fight his way through dense brakes of snow-covered bamboo cane at 11,000 feet. Wherever they are found bamboos serve as a great source of satisfaction to the people. The materials furnished by the various species have for centuries, in one way or another, met every vital need as well as satisfied the widespread human craving for aesthetic expression in literature and art. In a word, bamboo in China has provided such scope for human exploitation that it is not exaggerating to speak of a once great bamboo civilization which, even in this age of machinery and steel, survives in the interior and country districts.

Before passing on to the main body of the paper, a few prefatory remarks are needed in explanation of the point of view which I have adopted. The title of this paper plainly directs attention to kinds of bamboo rather than to bamboo collectively as found in China. The character of bamboo as a plant I have discussed elsewhere (1925) and, therefore, need not take the time now to repeat myself. I limit my remarks strictly to material bearing on "bamboos" rather than on bamboo, assuming that the simple facts are already known. In so doing I shall avoid the tediousness of definitions and introductions which, in view of the fact that most persons have already seen, heard or read about bamboo, I am sure are superfluous. The discussion of uses also has no concern with the present paper. In the first place, to residents of China the usefulness of bamboo is axiomatic; in the second, a detailed account of the uses and of the kinds of bamboos applied to such uses represents the subject-matter of a book in itself. It is incumbent upon me, therefore, to adhere to the principles I have laid down and embark upon a discussion along lines which I have felt have long been needed and upon which I have long wanted to write. Bamboo furnishes very fine material not only for serious consideration from the standpoint of cultivation as a crop plant, but also for the study of certain physiological problems of morphogenesis. But unless we know with what species we are dealing, a great part of the value is lost. In the past the descriptions of species have not been carried through systematically enough for one to identify the kinds with ease. Consequently my object is to call attention to a possible basis for more systematic descriptions along morphological lines that will make the work of identification more possible and less a problem than a pleasure.

With the exception of India, Brazil and Japan are China's only competitors in bamboo production, and it is not altogether improbable that many of the generalized Japanese forms were originally migrants from the continent. Since the cultivation of many varieties has been going on for centuries, it is difficult to state definitely where these may have originated. They may have been introduced from other regions and have since become indigenous, as is the case with many of our garden species. A very good illustration of the general fact is the recent introductions of certain Chinese forms such as *Phyllostachys bambusoides* Sieb. et Zucc.¹ into the United States, where they have become fully established.

It is customary to differentiate bamboos on the basis of their habit into two great groups, the monopodial and the sympodial² types. The former are runners and form great forests owing to the fact that the culms develop from buds on the nodes of an extensive rhizome, while the latter are clump-forming because the shoot-buds spring from the basal nodes of the old culms. The useful Chinese species are for the most part monopodial and are, therefore, from lack of crowding more likely to produce straight culms than the cespitose forms. As far as I can be sure there are sixty-six species of bamboos native to China. These comprise eight genera. Of the species twenty-four belong to the genus *Phyllostachys*, all of which are monopodial; fifteen belong to the genus *Arundinaria*; and thirteen are cespitose forms belonging to the genus *Bambusa*. The remaining species are scattered among the genera, *Sasa*, *Fargesia*, *Dendrocalamus*, *Pseudostachyum*, and *Schizostachyum*. Most of the east China bamboos are *Phyllostachides* while around Canton there are more species and varieties in the region comprised by Kiangsu and Chekiang provinces, seventeen of them being *Phyllostachides*. Nine species³ of *Phyllostachys* are of recognized commercial value and are sold by local bamboo merchants. The rest of the forms are ornamental and are to be found in gardens. A collection of fourteen specimens sent down from Luchow in the province of Szechuen does not reveal very clearly their generic differentiation owing to the smallness of the sample pieces.

¹Galloway (1925). ²McClure (1925).

³See Appendix for local Chinese names.

The classification of bamboos is founded, as it is with the rest of the grasses, on flower characteristics: the general habit and character of the inflorescence, the arrangement of the spikelets, the number of fertile and sterile flowers in each spike, the number of stamens, the number and character of the various orders of floral bracts, the seed characters, and the vegetative cycle. It is a logical and certainly a reliable basis of differentiation, for of all plant characters those of the floral organs are the least variable. There is in the case of bamboo, however, an insurmountable difficulty, namely the great scarcity of flowers. Only in comparatively few cases can flowers be readily found wherewith to make identifications. Brandis (1899) calls attention to the fact that by their method of flowering, bamboos fall into three groups; those which put out flowering shoots annually, those which flower gregariously only after regularly recurring periods of years, and lastly, those which flower at irregular intervals. Those of the first category might be identified by floral characteristics because of their greater availability, but not so those of the other two.

While the specificity of flower characters has been established, the same cannot be said of their periodicity. The forms falling into the last two categories flower rarely, and furthermore the time of flowering cannot as yet be predicted with any degree of certainty. Investigators like Brandis (1899), Mitford (1896), Seifrizz (1920) and Kawamura (1927) have contributed authentic records of flowering for many species and have discussed the causes of gregarious flowering as such, but until the records are more complete and at least four flowering dates, *i.e.* three vegetative periods, for each species shall have been established, this class of data cannot be said to determine specificity. It is true that in a few cases the periodicity is fairly well known. For example, *Bambusa arundinacea* Retz⁴ growing in the West Coast districts of India flowered in 1804, 1836, and in 1868, thus indicating intervals of thirty-two years. To make our records complete, we ought to know what happened in those districts around 1900 and on the strength of that confidently to predict the next flowering in 1932. There is also a certain amount of positiveness regarding the periodicity of the climbing bamboo, *Chusquea abietifolia*

⁴ Brandis (1899).

Griseb.,⁵ of Jamaica, but there is need of further data to clinch the matter. On the other hand, even with the observations he had at hand, Sir Dietrich Brandis (1899) was unable to piece together a complete history of the flowering of *Bambusa polymorpha* Munro in Pegu in 1859 and in subsequent years. Such evidence in its present state, I reiterate, while contributory, is not conclusive. Nevertheless, it does point to the fact that ultimately the specificity will become firmly rooted and a clear line will be drawn between irregular bloomers, if they exist at all, and those whose irregularity is due to the breakdown of their flowering cycle. In China we have too few of these necessary preliminary observations. It behooves all students and interested observers, therefore, to set their minds to the task of making careful records of any cases of flowering which they may see; the time, the place, whether gregarious or not, the length of the active flowering period, the extent of subsequent death to the vegetative parts, a careful analysis of the inflorescence, the seed characters, and observations on their germination as well as on the seedlings.

In presenting lists of bamboo from different parts of China, it is necessary sometimes to use local names, because positive identification in most cases is not yet possible. Obviously this is very unsatisfactory for permanent usage, since the same bamboo is very often called by different names in different sections of the country. A case in point is that of the square bamboo, *Phyllostachys quadrangularis* Rendle. Locally this bamboo is known as *Faung tsok* 方竹, while in Szechuan the name *Tsi djuh* 刺竹, "the prickly bamboo," is found. Around the city of Luchow in the same province the name *Shih Ke tsoo*, 四季竹, "the four seasons bamboo", is well known for the same species, while the picturesque name *Fu Lao Djuh* 扶老竹, "bamboo supporting the old," persists in certain Buddhist ecclesiastical circles. In order, therefore, to establish a standard system of bamboos, comparative work on a large scale must be undertaken. This would not only serve to differentiate the species definitely but would also in large measure clear up the existing confusion in the nomenclature. At present there are a great many names which could very well be dispensed with. Moreover there is a prevailing vagueness in regard to the use of them.

⁵ Seifris (1920).

They have been variously applied and carelessly interchanged with others no less dimly defined, so that the active labour of identification is made doubly difficult. We may illustrate the point very well with Mitford's (1896) own experience when importing species of bamboo native to China into England for his famous bamboo garden. He ordered *Phyllostachys Quiloi* and was sent *P. mitis*, and has when asking for *P. mitis* been furnished with *P. Quiloi*, *aurea*, and *viridi-glaucescens* with a few true *P. mitis* intermixed. He goes on to say that even at Kew *P. bambusoides* was for years represented by a magnificent plant of *P. viridiglaucescens*. Mitford himself differentiates between *P. bambusoides* and *P. Quiloi* while Camus, whose book on the taxonomy of the bamboos is the most authoritative to-day, makes *P. bambusoides* synonymous with *P. Quiloi*. So where do we stand? It is manifestly impossible to advance under such unsettled conditions.

Since the method of flower analysis for the specific identification of our Chinese bamboos is difficult under the circumstances, one must look for other dependable characteristics by which to differentiate them. A careful study reveals the fact that there are three general classes of characteristics which are significant: (1) The morphological which concerns the general habit of the plant with special reference to the form and structure of the culm; (2) the physiological which more specifically deals with the growth characteristics; and (3) the ecological which covers its distribution and special environmental relations.

The morphological characteristics are distributed between the general habit, and the particular structure of culm, branches, leaves, and shoots. The flowers I have already discussed elsewhere in this connexion. The general habit has been referred to in a previous paragraph by the terms monopodial and sympodial. This is a character of major importance and may be used to assist in the identification of the plant with a major group. A monopodial bamboo of East China might belong to one of three different genera, *Sasa*, *Arundinaria*, or *Phyllostachys*, while a sympodial form might belong to any one of several genera headed by *Bambusa*. A further difference among the monopodial forms can be made by distinguishing between the loose-running types and those which form dense brakes. An example of the former is our *Mau tsok*, 毛竹 (*P. pubescens*) and of the latter the brush bamboo (*P. nidularia*.) Height, though a variable character

depending on climatic conditions to a certain degree, can within limits be used as a further aid to identification. In general, from the standpoint of height there are arborescent (from 30 ft. up), frutescent (15 to 30 ft.), small (3 to 15 ft.), dwarf (1 to 3 ft.), and climbing species. *P. pubescens* and *P. bambusoides* are good examples of monopodial arborescents, *P. quadrangularis* and *P. nigra* of monopodial frutescents, *P. congesta* and *P. nidularia* of small monopodials, and *P. ruscifolia* and *Sasa tessellata* of dwarf monopodials. If by observation one can thus couple the term monopodial with a categorical term like arborescent for instance, the number of possibilities in the systematic range of names is considerably reduced. A species that can be described as a sympodial arborescent of giant proportions would at once suggest forms like *Dendrocalamus giganteus* and species of *Gigantochloa*, while *Bambusa nana* Roxb., a form of which is planted in Jessfield Park, might be implied by the characterization small sympodial.

While the diameter of the culm is correlated with height, not all tall forms are necessarily thick. Slenderness is a specific characteristic which may be further modified by wood quality. All arborescent forms throughout their length taper from the base upwards, while, among frutescents, some forms as our *Zak tsok* 石竹 appear to be of the same diameter for the major part of their length. Because of mechanical considerations, these forms are necessarily limited to the shorter class of bamboos. By way of compensation for loss of diameter in cross-section as it were, the wood is harder, i.e., there is a greater concentration of fibre bundles in the wood and additional deposits of minerals like silicates in the periphery, so that the culms are more rigid and therefore more stiffly erect. This is the "rock bamboo" just mentioned exactly. An idea of the stony hardness of some bamboos may be had from a statement made by Capt. Kingdon Ward (1924) to the effect that the forest fires which he had observed on the hillsides of north-west Yunnan were started by the rasping of bamboo culms on each other until the heat caused by friction set the whole forest ablaze. Difference in wood hardness accounts for the arching character of the *Mau tsok* 毛竹 (*P. pubescens*) and the spike-like appearance of *Mau kying tsok* 毛錦竹 (*P. bambusoides*). I have heard, though I cannot give definite details, that one investigator has taken up the shape, size, and distribution of the fibro-

vascular bundles together with the relative thickness of wood and central cavity with a view to identification when nothing but a piece of the culm is at hand. Evidently this character is deemed sufficiently specific to be diagnostic.

Many small monopodials and even some larger forms in their upper regions exhibit a tendency to zigzag, the slant of the internode being always toward the side which has the branches. If now the sheathing leaves of the young culm before abscission can be visualized in position as the upward extension of each internode, the resulting impression will lead to some interesting suggestive speculation and possibly some feasible interpretation relative to the true morphological character of the culm. Is the culm cauline or pre-eminently foliar in nature? Some types of bamboos characteristically possess this zigzag trait in greater degree than others and hence it may be used as a secondary mark of distinction. It may be observed that *Arundinaria* and *Bambusa* species do not exhibit this tendency. In origin it is undoubtedly connected with another characteristic of internodes which is of marked generic importance, namely, flattening or grooving on the face opposite the branches. Together these two characters are but realizations of morphogenetic impulses effected through the relative time difference in the formation of the branch primordia. In the genus *Phyllostachys* these two traits are well defined. The branch buds appear earlier than they do in the other genera, so that the pressure exerted serves not only to depress the adjacent face of the expanding internode, but actually also to divert slightly the axis of elongation. *P. nigra* and *P. nidularia* illustrate these two characters very well.

The prominence of the nodal ridge, its distance above the sheath ring, and the color history are further details of observation that help in establishing identity. Prominence of node and separation from the circular scar left by the sheath are correlated characters. The more prominent the nodal ridge, the greater the distance separating the ridge from the ring. *Phyllostachys Nevinii* Hance, locally known as *Li tsok* 黑竹, is a good contrast in this respect to *P. pubescens* on the nodes of which the ridge is raised very little and the sheath ring almost exactly coincides with the ridge. By color history is meant the color changes from the time the internode is first uncovered by the sheath through the period of hardening to the complete adult stage when no further



FIG. 1.

Phyllostachys pubescens H. de L.
 Mokanshan.

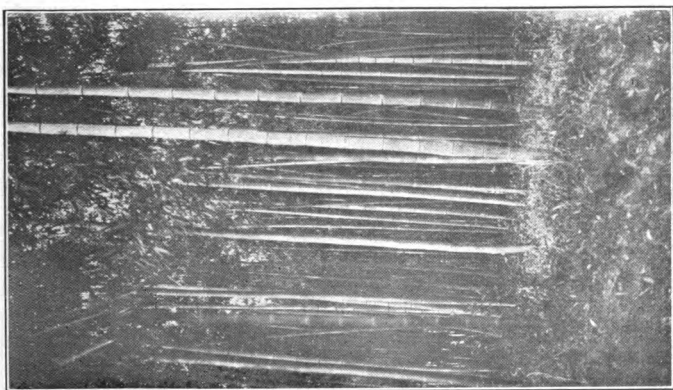


FIG. 2.

Phyllostachys bambusoides Sieb. & Zucc.
 Shanghai vicinity.



FIG. 3.

Arundinaria aureo-striata Hort.
 Mokanshan.

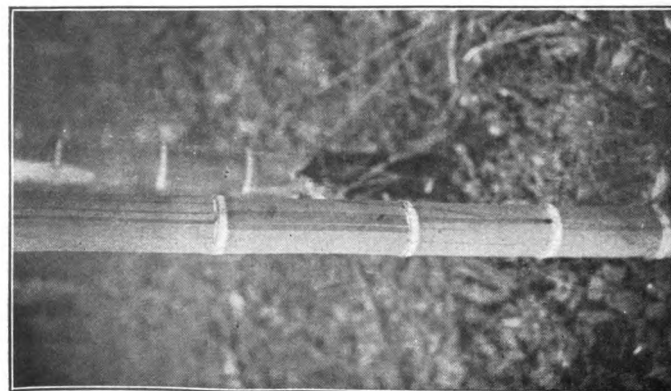


FIG. 4.
Phyllostachys Castillonis Mit.
 Mokanshan.

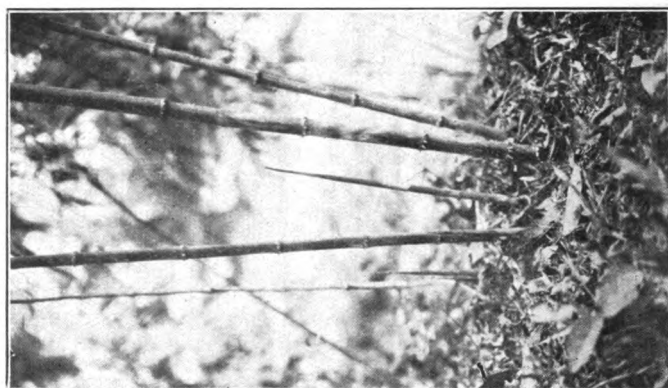


FIG. 5.
Phyllostachys quadrangularis Rend.
 St. John's University, Shanghai.



FIG. 6.
Phyllostachys nigra. Mun.
 St. John's University, Shanghai.

growth takes place. In some cases the bright green of the fresh culm may persist, as with our local *Boo kyi tsok* 雷鷄竹 (*P. puberula* Makino), in others the green will turn to other shades, greenish-yellow, gold, brown, and black. With the exception of the last the final color is reached only after three to eight years. *P. quadrangularis* turns an indeterminate gray after the first year and *P. nigra* by the end of its first summer begins to display a growing accumulation of purple stippling at the base of each internode which spreads like a rash upwards over the whole until by mid-autumn the culm is a uniform homogenous colour, a black-purple which becomes a dead black as time passes. Striped forms like *P. Castillonis* Mitford do not change and are of course unmistakable. They are more easily identified than the others. With color, surface texture should be included for consideration. The different types that are found may be mentioned as follows; glossy, striate, tomentose, scabrous, and rugose. They are exemplified respectively by *P. mitis*, *P. nigra*, *P. pubescens*, which displays a tomentum for only a short time, *P. quadrangularis*, and *P. Marliacea*, a Japanese form which is the only one I have seen with wrinkled internodes. These characters are sufficiently constant to use as identifying marks.

A very interesting character of the culm, which bears close examination for identification purposes, is the length of the internodes. The observer will note that the distance between nodes varies in different parts of the culm. A study of this point will show that this is not haphazard but follows a definite progression. Starting from the basal nodes, which are short, the length of the internodes increases to a point usually below the middle of the culm and then gradually diminishes as the tip is reached. A chance measurement of internode length, therefore, will indicate nothing. In general all one can say is that the internodes are short or that they are long. But this factor can be made specific, and so of value, by careful serial measurements which when averaged will, provided there are enough samples, furnish a specific index of internode length.

As with trees so with bamboos, the branching habit is characteristic. The number of branches at each node, if definite, is usually constant and is an important fact to note. The fact that adventitious shoots do or do not appear anew at the nodes each year is likewise noteworthy. Our *Phyllostachides* have either two or three

branches at each node, one of which is usually larger than the others. In subsequent years there are no additions to these. The special of *Sasa*, on the other hand, have only one branch at each node, while *Arundinaria* and *Bambusa* are characterized by fascicled branches to which additions are made from time to time. The relative length of the branches and the angle of divergence with the culm, while helpful descriptive traits, are more variable perhaps than the more definite characteristic of branch structure. Along with other points of difference *P. pubescens* is distinguished from *P. mitis* by its solid branches. In *P. mitis* the internodes of the branches are hollow. Unfortunately this observation is not carried through all the descriptions. If it had been, some doubtful identifications would stand a chance of clarification. The question of the height on the culm at which branches make their appearance varies within limits depending on external factors, especially light, but only general statements can be made. Branches clothe the entire culm of *P. nidularia*, while those of *P. bambusoides* commence high up and are relatively shorter.

All descriptions of bamboos make careful note of the leaves. To the casual observer bamboo leaves all look alike, but there are decided differences. Size and color are the most obvious characters. In general a bamboo leaf is oblong lanceolate in shape with an acuminate apex and tapering or rounded base, but there are variations and all sorts of distortions of the average configuration. *Arundinaria graminea* Makino, for instance, a species found in Jessfield Park, has a linear lanceolate 22.8 centimeters long by 1 centimeter wide, very grass-like as its name implies, while beside it in the same plot of ground stands a dwarf species, *P. ruscifolia*, whose leaves are the direct antithesis of the other. In the latter the leaves are disproportionately foreshortened so that, though short, they are still broad. In shape they are ovate lanceolate and in length 9.5 centimeters by 2.1 centimeters wide. *Sasa tessellata* has the largest leaves of any bamboo. They are both broad and long, being 45 centimeters long and 10 centimeters wide. Queerly enough, in contrast to those of this dwarf species the arborescent *P. pubescens* possesses small narrow leaves.

In color the leaves of *Arundinaria aureo-striata* Hort. provide a striped variegation in green and yellow. *Sasa albo-marginata*, a dwarf garden variety related to *S. tessellata*, possesses large leaves that die back from the

edges with the coming of the frosts, leaving a white margin. This accounts for its other specific name, *albo-marginata*. The massed leaves of this species make a beautiful bank against a dark background of trimmed evergreens. Marks of this kind are distinctive and final in determinations of kind. With the ordinary green-leaved forms differences in shades of leaf color must be supplemented by observations on texture, marginal variations, the number of veins lateral to the mid-rib, and the characteristic number of leaves in the terminal clusters. It is a trait of *P. ruscifolia* that each small branch ends with a single leaf, while the characteristic cluster of *P. nidularia* is two. Threes and fives are very common combinations. It is very interesting to note with reference to marginal variations that, in such clusters as these, very often the edges of the leaves facing away from the tip of the cluster are roughened with fine serrations while the inner edges are smooth. This asymmetry is sometimes carried further in the unequal division of the blade, the greater half having an extra vein and the base of the blade on that side being prolonged downward beyond the other so that the base as a whole is oblique. I have only seen one form like this and that was a Japanese *Arundinaria* which I found on the Hakone hills.

Of major importance is the character of the venation. By holding up the leaf of a *Phyllostachys* species to the light one can just make out the tiny cross-veins that connect the larger parallel veins running the length of the leaf. This is known as tessellated venation and is another mark by which larger groups can be distinguished. For example, the leaves of the *Bambusa* forms are not tessellated. They are instead striately veined, *i.e.*, they possess only parallel veins. It is claimed that foliar tessellation has an ecological significance and that those forms which exhibit this feature are hardier than those which do not. Stipular hairs or bristles flanking the base of the leaf petiole are present in some species and absent in others and therefore have a descriptive value. These are easily knocked off and some fall off naturally, so that the end of the growing season is the best time for determining this trait, and not later.

No one has yet properly emphasized the importance of the shoot as a source of clues to identity. To my mind the bamboo shoot is the one unique part of the plant of which the morphology alone would be sufficiently distinctive and reliable to determine the specific name. By

virtue of its embryonic nature the shoot is practically free of all external impressions and its form and structure are true reflections of its inherent nature. Its characteristics are truly diagnostic. Besides general shape and size, the attributes of the protective sheaths must be carefully noted. It is really this part of the shoot that tells the story. The sheath is a modified leaf base and the limb or pseudophyll which surmounts it is the homologue of a leaf. While the internode is elongating, the sheath leaf functions, but when it ceases to grow, the sheath undergoes abscission, that is, it dies and falls off. Some sheaths, however, are very persistent and never do become detached, for very much the same reason doubtless that the leaves of the oak tree fail to fall when they die. Some *Arundinarias* are like this. Color markings, texture, and surface-covering are traits peculiar to the sheath proper, while average length, color, and habit describe the limb. At the juncture of limb and sheath is the ligule, a membranous collar that fits snugly against the surface of the internode. This may be high or low, its upper edge either entire or irregularly cut and lobed, and, as in the case of the leaves, its flanks may be occupied by stipules known as suricles which are usually fringed with bristles or hairs. Who, having once seen the great shoots of *P. pubescens* with their broad blotched furry sheaths, can ever forget them? Just as striking is the annual spectacle staged in April when like the emerging spears from Cadmus's crop of dragons' teeth, multitudes of spikelike shoots of *Sasa albo-marginata* Mak. et Shib. push up out of the soil. Finally edibility and the season of germination must not be overlooked among the important facts. Some shoots are identified with good food and some are not. The latter are woody or bitter. Among the most delicate and choice for eating are the shoots of *P. quadrangularis*.

In this brief resumé of morphological differences in bamboo, I have by no means covered the range of variations in the characteristic specific features, but the discussion will suffice to demonstrate the desirability and, I hope, feasibility of establishing a system of classification based on external structure. Morphological specificity implies physiological as well as ecological entity, since structure, function, and response are all three correlated and are but the outward expressions of an inherent nature, so that I shall here merely mention without discussion the chief traits exhibited in the two latter cate-

gories. Physiologically, identity may best be suggested by growth behaviour. The season of growth, the extent of the grand period, the rate of growth, daily periodicity and the average response to climatic factors, constitute the classes of evidence. Spring-growers like *P. nigra* and *P. quadrangularis* respectively respond to the climatic factors of moisture, temperature, and wind in their own way. This is reflected in the character of their growth curves, but when averaged and referred to a theoretical constant, suggests an index of specificity. Elsewhere⁶ I have shown that Robertson's constant for the rate of an autocatalyzed monomolecular reaction with its biochemical significance gives the most faithful indication of the specific nature of shoot growth in bamboos. A tabular view of the K values for our Chinese species would demonstrate, as much as any other form of analysis, true specificity.

The distribution of each species of bamboo in China is as yet unknown. In general it is governed by ecological factors comprised within the organic and inorganic environments and by the responsive capacity of the species. Moisture, altitude, seasonal change, alternation of wet and dry periods, soil, vegetable and animal life including man all have a definite bearing. Without discussing the point further I shall present below the list of Chinese bamboos together with what facts are known of their distribution.

<i>Sasa albo-marginata</i> Mak.et Shib.	Shanghai, St. John's University, Jessfield Park. (Introd.)
„ <i>auricomma</i> Cam.	
„ <i>variegata</i> Cam.	Shanghai, St. John's University. (Introd.)
„ <i>tessellata</i> Mak.et Shib.	Chekiang, Mokanshan.
<i>Arundinaria aureo-striata</i> Hort.	Chekiang, Mokanshan.
„ <i>Wilsoni</i> Rend.	Hupei.
„ <i>Faberi</i> Rend.	Szechuen.
„ <i>rigidula</i> Cam.	Szechuen, Tchenkeoutin.
„ <i>nitida</i> Mit.	Hupei. Szechuen.
„ <i>Simoni</i> A.et C. Riv.	Shanghai (? Introd.)
„ <i>sparsiflora</i> Rend.	Hupei, Mts. 2,700-3,200 ft.
„ <i>flexuosa</i> Hance	Kwangtung.
<i>Arundinaria Fargesii</i> Cam.	Szechuen, Tchenkeoutin.
„ <i>dumetosa</i> Rend.	Hupei
„ <i>densiflora</i> Rend.	Kiangsu, Shanghai, Jessfield Park (Introd.). Chekiang, Mokanshan.
„ <i>sinica</i> Hance.	Hongkong.
„ <i>Hindsii</i> Mun.	Hongkong.

*Porterfield (1928)

<i>Arundinaria graminea</i> Mak.	Shanghai, Jessfield Park. St. John's University (Intro- d.)
„ <i>szechuanensis</i> Rend.	Szechuen, Wa-shan.
<i>Fargesia spathacea</i> Franch.	Szechuen, Tchenkeoutin.
<i>Phyllostachys bambusoides</i> Sieb. et Zucc.	Kiangsu, Chekiang, Fukien. Hupeh.
„ <i>Castillonis</i> Mit.	Chekiang, Mokanshan.
„ <i>puberula</i> Mak.	Yangtse Valley. Hupeh, Changyang.
„ <i>nigra</i> Mun.	Kiangsu, Shanghai St. John's University, (Intro.) Sze- chuen, Luchow.
„ <i>Veitchiana</i> Rend.	Hupeh.
„ <i>montana</i> Rend.	Szechuen, Mt. Omei.
„ <i>pubescens</i> H. de L.	Kiangsu, Western Hills.
„ <i>flexuosa</i> A. et C. Riv.	Chekiang, Mokanshan. Kiangsu, Shanghai, St. John's University. (Intro- d.)
„ <i>Stauntoni</i> Mun.	
„ <i>Henryi</i> Rend.	Hupeh, Nanto.
„ <i>Faberi</i> Rend.	Chekiang, Ningpo.
„ <i>Nevinii</i> Hance	Kangtung, Danes Island. Kiangsu.
„ „ var <i>Hupehensis</i> Rend	Hupeh, Ichang.
„ <i>congesta</i> Rend.	Kiangsu, Wusih. Hupeh, Patung, Ichang, Chang- yang.
„ <i>nana</i> Rend.	Hupeh, Ichang.
„ <i>heteroclada</i> Oliv.	Kiangsi, Kiukiang. Hupeh, Nanto. Szechuen, Ta- chieniu, 9,000-13,000 ft.
„ <i>nidularia</i> Mun.	Kiangsu, Chekiang, Kiangsi, Hupeh, Szechuen, Kwang- tung.
„ <i>ruscifolia</i> Hort.	Chekiang, Mokanshan. Kiangsu, Shanghai, St. John's University (Intro- d.)
„ <i>mitis</i> A. et C. Riv.	
„ <i>aurea</i> Carr.	
„ <i>viridi-glaucescens</i> A. et C. Riv.	Kiangsu.
„ <i>violascens</i> A et C. Riv.	
„ <i>Mannii</i> Gamb.	
„ <i>quadrangularis</i> Rend.	Szechuen, Luchow. Hunan, Changsha. Chekiang, West Lake, Kiangsu, St. John's University (Intro.).
<i>Bambusa tulldoides</i> Mun.	Canton, Hongkong.
„ <i>breviflora</i> Mun.	
„ <i>nana</i> Roxb.	
„ „ var. <i>Alphonse Karri</i>	Shanghai, Jessfield Park (Intro.)
„ <i>Marliac.</i>	Shanghai (Intro.)
„ <i>vulgaris</i> Schrad.	Kwangtung, Lingnan Univ. Campus.
„ „ var. <i>striata</i> Gamb.	

<i>Bambusa Beecheyana</i> Mun.	Kwangtung, Canton. Honam Is., Szechuen, Kia-ting-fu.
" <i>Oldhami</i> Mun.	Kwangtung, Honam Is.
" <i>Macroculmis</i> A. et C. Riv.	
" <i>arundinacea</i> Retz.	
" <i>spinoso</i> Roxb.	Kwangtung, Honam Is.
" <i>flexuosa</i> Mun.	Canton.
" <i>teba</i> Miqu.	
<i>Bambusa multiplex</i> Rausch.	Kwangtung, Nam Hoi. Hainan Is.
" <i>Cantori</i> Mun.	Hongkong.
<i>Dendrocalamus affinis</i> Rend.	Szechuen, Mt. Omei.
" <i>latiflorus</i> Mun.	Hongkong, Hainan Is.
" <i>strictus</i> Nees.	Kwangtung, Ying Tak.
<i>Pseudostachyum polymorphum</i> Mun.	Hupei.
<i>Schizostachyum chinense</i> Rend.	Yunnan mts. S-E. 8,000 ft.
" <i>dumetorum</i> Mun.	Hongkong.
" <i>hainanense</i> Mer.	Hainan.

Altogether there are eight genera and sixty-six species, counting those introduced. A list of Chinese names of local bamboos is appended to this paper.

In conclusion I should like to repeat that this paper is not meant to be a taxonomic work on bamboos of China, but merely constitutes an approach to such a work in the future. I hope the outline of the problem of specific identification has been made clear enough and the appeal for systematic morphological descriptions strong enough to enlist the attention of some young men among the ranks of scientists. The way is now open for the student adventurer with ambition and I think the present survey is sufficient to make him realize the magnitude of his task as well as the great need for it. We look forward to the time not far distant when we may come to know more familiarly the bamboos of China.

BIBLIOGRAPHY.

- FORTUNE, ROBERT: 1857, *A Residence Among the Chinese*, London.
 FREEMAN-MITFORD, A. B.: 1896, *The Bamboo Garden*, London.
 BRANDIS, SIR DIETRICH: 1899, "Biological Notes on Indian Bamboos," *The Indian Forester*, XXV, 1-25.
 FORBES, F. B., and W. B. HEMSLEY: 1903-1905, "Index Florae Sinensis," *Journ. Linn. Soc.*, XXXVI, 434-449, London.
 SARGENT, C. S.: 1913, *Plantae Wilsonianae*, Cambridge.
 CAMUS, E. G.: 1913, *Les Bambusées*, Paris.
 TSUBOI, ISUKE: 1916, *Illustrations of the Japanese Species of Bamboo*, Japan.
 SEIFRIZ, WM.: 1920, "The Length of the Life Cycle of a Climbing Bamboo," *Am. Journ. Bot.*, VII, 83-94.
 WARD, CAPT. F. K.: 1924, *The Romance of Plant Hunting*, London; *From China to Hkamti Long*, London.

- McCLURE, F. A.: 1925, "Some Observations on the Bamboos of Kwangtung," *The Lingnaam Agric. Rev.*, III, 40-48.
 GALLOWAY, B. T.: 1925, "Bamboo: their Culture and Uses in the United States," *A. S. D. A. Bull.*, 1329, 1-46.
 PORTERFIELD, W. M.: 1925, "What is Bamboo?" *Chin. Journ. Sci. & Arts*, III, 153-158.
 1928, "A Study of the Grand Period of Growth in Bamboo," *Bull. Torr. Bot. Club*, LV, 327-405.
 KAWAMURA, S.: 1927, "On the Periodical Flowering of the Bamboo," *Jap. Journ. Bot.*, III, 335-349.

APPENDIX A.

Names of local bamboos of commercial value.

PRACTICAL FORMS.

毛竹	竹	<i>Mau tsok</i>	<i>Phyllostachys pubescens</i> H. de L.
毛竹	竹	<i>Mau kyung tsok</i>	" <i>bambusoides</i> Sieb. & Zucc.
石竹	竹	<i>Zak tsok</i>	" <i>sp.</i>
青雞	竹	<i>Boo chi tsok</i>	" <i>puberula</i> Mak.
球竹	竹	<i>Jeu tso</i>	" <i>viridi-glaucescens</i> A. & C. Riv.
草干	竹	<i>Tshau koen tsok</i>	?
簕竹	竹	<i>Mih tsok</i>	?
鳳凰	竹	<i>Li tsok</i>	" <i>Nevinii</i> Hance.
生竹	竹	<i>Sung tsok</i>	" <i>aurea</i> Carr.

GARDEN FORMS.

時好	竹	<i>Zhau tsok</i>	<i>Bambusa Vulgaris</i> Schrad.
黑竹	竹	<i>Huh tsok</i>	<i>Phyllostachys Nigra</i> Mun.
方竹	方	<i>Faung tsok</i>	" <i>Quadrangularis</i> Rend.

PRELIMINARY NOTES ON THE NATURAL HISTORY OF NANKING

By Dr. C. PING

Biological Laboratory of Science Society of China

The Biological Laboratory of the Science Society of China has been devoting a part of its time and means to making a biological survey of the Yangtse Valley. The Natural History of Nanking is a part of the work that has been undertaken by its staff. Although Nanking with its vicinity is comparatively limited in area, its fauna and flora represent practically all those found in the regions from Wuhu down to Shanghai along the Yangtse River. Due to the pressure of other work and limited means, the staff of our Laboratory has not been able to have the fauna of this locality thoroughly surveyed. This work is, however, progressing without interruption, and we are in hopes that some years from now we shall have a comprehensive report on the local fauna published from the Laboratory. The account I am presenting here consists of only a bird's-eye view of our fauna, in which I have to make many omissions owing to our incomplete knowledge of this subject.

Before describing to you the fauna which has been engaging our time and energy for these few years, I desire first to sketch to you the geographical features of Nanking. The city is situated on the right bank of the Yangtse River. The topography around the city is varied. On the western side a low range of loess-covered hills, 100 to 200 ft. in height, intervenes between the city and the Yangtse River. The Purple Mountains, just outside of the north-eastern corner of the city wall, dominate the city. Still farther away from the city, toward the north-east as well as the north, there is a comparatively long range of hills called Mu Fu Shan, which runs along the south bank of the Yangtse

River; toward the east, south-east and south there are also hilly regions, among which the best known are Tong Shan or Hot Spring Hill, Fong Shan or Table Mountain and Nu Shoo Shan or Oxhead Hill; while to the south-west of Nanking there is a wide plain, in spite of some hilly regions which are comparatively far away from the locality with which we are concerned. Thus Nanking is partly embraced by mountains on its north, east and south and partly bordered by the Yangtse River on its west and north. Within this area there are numerous ponds and small and large canals as well as small prominences. In such varied topography the fauna deserves our attention.

Secondly, let us consider its climatic features, which have profound influence on the local organisms. "Nanking is situated in the same latitude as San Diego, California, or Jerusalem, Asia Minor. Its climate is continental. It has high annual ranges in pressure and temperature, summer rainfall and monsoon winds."

Having no high mountains in its vicinity serving as barriers, Nanking, according to the weather report by Dr. C. C. Chu, is exposed to polar airs in winter and is apt to be invaded by warm and humid airs in summer. "Cold waves," brought here by the north-western winds in winter, may hold their sway for two or three days at a time, and bring the temperature down to 10° C. below zero or even less. In summer, "hot waves," with a temperature of 40.2° C. or over, sometimes occur. These are, however, the extremes. On an average, there are seven months in a year, from the middle of March to the middle of November, which makes the growing season, when Nanking is free from frost.

There are two rainy seasons a year in Nanking. The first one is in the month of April and the second in June and July. In September heavy precipitation sometimes occurs when there is a typhoon passing by Nanking. From October to March most of the precipitation falls as cyclopic rainfall. The winter in Nanking is a dry season, and the snowfall never amounts to very much, with the exception that once in every so many years it is very heavy. Usually after a snow storm, snow covers the ground only for a day or two, then disappears. In comparison with regions situated in the same latitude along the east coast of North America, Nanking is drier in winter and wetter in summer.

The relative humidity is comparatively small in

winter, increases a little in April, but decreases in May. The onset of the *Mai-yü* or "plum rain" or "mould rain" in June, however, causes an increase. In July the relative humidity reaches its maximum, and after this month it declines until the minimum is reached in December. In comparison with North China the relative humidity in Nanking is great in winter.

Thirdly, we should touch upon the vegetation of this region. According to my colleague, Professor S. S. Chien, the vegetation of Nanking is chiefly rural in nature. The greater part of this locality has been disturbed and very little natural vegetation is to be found. There are a little over one hundred families of plants including the Cryptogams, of which the most abundantly growing ones are only five or six, such as the rose family (*Rosaceæ*), the bean family (*Leguminosæ*), the grass family (*Graminææ*), the spurge family (*Euphorbiaceæ*), the mint family (*Labiataæ*), the daisy family (*Compositæ*). The comparatively common ones number in the neighbourhood of twenty, such as the sedges (*Cyperaceæ*), the willows (*Salicaceæ*), the walnuts, (*Juglandaceæ*), the chestnuts (*Fagaceæ*), the birches (*Betulaceæ*), the elms (*Ulmaceæ*), the mulberries (*Moraceæ*), the pinks (*Caryophyllaceæ*), the laurels (*Louraceæ*), the crowfoots (*Ranunculaceæ*), the cresses, (*Cruciferæ*), the ruees, (*Rutaceæ*), the trees of heaven (*Simarubaceæ*), pistaches (*Anacardiaceæ*), the euonymus (*Celastraceæ*), the jujubes (*Rhamnaceæ*), the vines (*Vitaceæ*), the firmiana 梧桐 (*Sterculiaceæ*), the parsleys (*Umbelliferæ*), the primroses (*Primulaceæ*), the verbenas (*Verbenaceæ*), the nightshades (*Solanaceæ*), the bell flowers (*Campanulaceæ*), and so on.. All the rest of the families are rare and not likely to be found in this part of the country.

The above are the three cardinal factors which have influence on the distribution and existence of the fauna of Nanking, although in many respects such an influence may not appear very conspicuously.

Invertebrates.

In discussing the animal life of Nanking, which is our theme proper, I would like to proceed from the lower organisms to the higher ones, in accordance with the natural order of zoological scale. The fresh water micro-organisms, the *Protozoa*, will be the first form. Nanking, as already mentioned, has numerous ponds and canals, both large and small, distributed in the

city as well as in its suburbs. A collector could not fail to meet them frequently on his excursions. The soil, the water and the vegetation vary in different ponds or ditches; so also varies the life of unicellular animals. As far as our investigation goes we have more than 160 species of *Protozoa* recorded. Besides the already known species, which are more or less of universal distribution, some new species, like *Urostyla paragrandis*, *Stichotricha accuminata*, *Euplotes novemcarinata*, *Holophrya vlatericallaris*, and *Choanostoma pingi* have been recently described. There are one species of *Amæba*, one of *Hyalosphenia*, one of *Phacus*, one of *Cryptomonas*, one of *Mallomonas*, three of *Holophrya*, three of *Choenia*, one of *Spothidium*, one of *Porodon*, one of *Lionotus*, one of *Pleuronema*, one of *Cyclidium*, two of *Blepharisma*, one of *Stylonichia*, one of *Historia*, one of *Aspedisca*, etc., which are not determined and still under investigation, and most of these are likely to prove new to science. The common forms as *Amæba proteus*, *Arcella vulgaris*, *Arcella discoides*, *Actinophrys sol* (the sun animalcule), *Euglena virides*, *Euglena deses*, *Euglena spirogyra*, *Eutriptia viridis*, *Chilomonas paramoecium*, *Synura uvella*, *Dinobryon sertularis*, *Chlamidomonas pulviculus*, *Pandorina morum*, *Volvox perglobator*, *Coleps hirtus*, *Didinium nasutum*, *Losophyllum lamella*, *Colpoda cucullulus*, *Paramoecium caudatum* (the slipper animalcule), *Spirostomum ambiguum*, *Stentor polymorphus*, *Urostyla grandis*, *Stylonichia mytilus*, *Vorticella nebulifera*, *Vorticella campanula*, etc., are found in most of the ponds and canals, among them the most pretty ones are the species of *Euglena*, *Pandirina*, *Volvox*, *Chlamidomonas*, etc., which are brilliantly coloured and often make the water intensely green in the spring season, when they appear in abundance, while *Synura*, *Actinophrys*, *Stentor*, *Vorticella*, *Coleps*, *Arcella*, etc., afford a great deal of interest by their fascinating structures and forms. The above mentioned forms are easy to collect in Nanking and afford excellent opportunities for physiological, ecological and experimental studies. The unknown and new species of the unicellular animals must be far greater in number than those with which we have come in contact, and important and interesting discoveries are awaiting conscientious workers in zoology.

The *Porifera*, or fresh water sponges, of Nanking are very little known. They grow on the bricks and stones along the banks of rivers and canals as well as on

the pillars of bridges and the posts, logs, etc., in ponds and lakes. There are so far two known genera, and as to how many species we have not been able to ascertain. They are *Spongilla* and *Trochospongilla*. One species of the latter is *philotiana*, but it is believed that there must be quite a number of species of these two genera and also of other genera of this group which deserve a thorough survey.

Of the fresh water *Coelenterata*, there is a very common form in the ponds and lakes, and this form is believed to be of very wide distribution. This is *Hydra vulgaris*. In the spring, summer and autumn it is easily found in the comparatively quiet water of lily ponds. Usually a good number of them could be found on the stems of submerged plants, looking like rootlets. They can be kept alive for a considerable length of time in an aquarium placed at the window, and under a moderate sunshine they become extended, moving around with the upper parts of their bodies and tentacles, catching food in the water, and once in a while moving from one place to another along the stem of the aquatic plant by looping or dragging.

The earthworms of Nanking consist of nine species so far as records show. Those which were described some years ago are *Pheritima hupeiensis*, *Pheritima heterochaeta*, *Pheritima pingi* and *Pheritima hawayana*, and those which have just been described recently as new species are *Pheritima vulgaris*, *Pheritima vulgaris agricola*, *Pheritima kiangsuensis* and *Pheritima obscuritopora*. I have been informed that there are two other genera, for each of which there is a representative species. They are *Allolobophora caliginosa*, subsp. *trepozoides* and *Drawida japonica*. Among them *Pheritima vulgaris* and *Pheritima pingi* are fairly common. These creatures are all beneficial to agriculture as Charles Darwin pointed out. They turn the subsoil to the surface and frequently make the land more porous and are able to convert a poor soil into a more fertile one. That is the reason why the experienced gardeners and vegetable growers seem to be quite appreciative of their presence in their gardens, although they may not really understand how the actual benefit is done by them. Among these Nanking forms *Pheritima kiangsuensis* is the largest and attains when fully grown a length of 350 mm., while all the others are below 300 mm. As a whole the Nanking earthworms are comparatively small.

The habitat of these worms varies: some of them live in comparatively wet and damp places and others live in comparatively dry places. The very common earthworm lives in the same nest, with or at least very near to the nest of the mole cricket, and it could be easily located by following the sound that the latter produces in the evening. Common folk often believe that the sound they have often heard in wet shaded places is the noise produced by the earthworm and that the earthworm is an animal which can produce a certain kind of music like most of the orthopterous insects.

Of the phylum *Annelida*, we have another group of interesting animals. Whole species have been largely surveyed in Nanking. These are the leeches. Most of the species are aquatic and a few are found in damp places. There are altogether eight species, namely, *Glossiphonia lata* Oka, *Glossiphonia* (*Helobdella*) *nuda* Moore, *Hemiclepsis geei* Oka., *Erpobdella octoculata* Oka, *Hirudo nipponica* Whitman, *Odontobdella blanchardi* Oka, *Whitmania levis* (Baird), and *Haemopsis acranulatum* (Whitman). Of these species *Whitmania levis* is a large sized one and very commonly found in Nanking. The leeches are very accessible to the zoologist. As Nanking is rich in ponds and canals, some of the common ones are found in the shallow water along the shores. Frequently, when a small rock is turned over, one or two leeches are found. They are often closely attached to the under surface of the rock by their sucking apparatus, difficult to be taken off. This animal was much used by the medical practitioners in the early days in Western countries for releasing the blood of patients. It has never, however, been very much cared for by the old fashioned doctors in Nanking. Very few land forms are found, and those living in damp places are all small in size. There is not such danger of getting sucked by them as is frequently the case in Hainan, or in the Yen Tong mountains in the southern part of Chekiang, where, when a person walks in the bamboo forest, the creature often creeps into the sleeve or trousers, fastening its sucking dish to his skin. Except to the zoologist, the members of this group of animal are regarded as useless forms.

There are quite a number of oligochaetous worms, such as *Nais*, *Tubifex*, *Aeolosoma*, etc., found in the fresh water, and these alone will form an interesting group of study, but our knowledge of them is too scanty. Concerning the flatworms, we know three genera, whose

species have not yet been identified. One of them is a land form, *Placocephalus*, which is about two feet in length, and often found in comparatively dry soil. This genus is characterized by its broad flattened head, flattened body with rounded lateral margins, a dark median line on its dorsal surface in the anterior third of its body, and by being very slimy all over its body surface. When it is found, it is often covered with dirt due to the sticky substance it secretes. There seems to be only one species of this genus, whose specific name has not yet been ascertained. Two species of *Planaria* are frequently found in Nanking. One is slightly larger than the other, and its genital organs could be easily identified under the magnifying lens, while the smaller one has its caudal region more reduced and pointed and its genital organs are not clear even when carefully stained. The internal structures of this form could not be studied without resorting to histological methods. Evidently investigations on the internal organs of this form in comparison with those of the larger one will reveal a great deal of interest to students of microscopic anatomy. The larger species is common and lives in small pools with rocky bottoms. It is strange that the habitat for this form is not always shady. The habitat for the smaller species is shaded and cool. The third genus we come across is *dendrocoeleum* which is a small worm. We do not know its specific name. It is found in small ponds of comparatively clear water.

There is an enormously rich field for the study of parasitic forms including both the flat and the round worms. Owing to the fact that our research is confined to the normal side of zoology and our means are limited, none of the members on our staff has undertaken the task of surveying any such group, but this field cannot be too long neglected, and we are expecting soon a general systematic study of the helminthology of Nanking to be started at our laboratory.

The Nanking waters afford an interesting group of small organisms, the rotifers. They appear in fairly good numbers in the spring, summer, and autumn. There are about ten genera which are under investigation at our laboratory. As they are microscopic, they have escaped the attention of the zoologists who have only occasionally visited Nanking and are interested in higher forms. Aiming at a comprehensive survey of the local fauna, we are just beginning to direct the interest of our students

to the small organisms. After the fresh water *Protozoa*, which have been under investigation since the beginning of our laboratory, this group has been recently taken up. As far as our knowledge goes at present, the rotifers of Nanking are of the following genera: *Notommata*, *Proales*, *Diaschiza*, *Epiphanes*, *Brachionus*, *Mytilina*, *Euchlanis*, *Lecanes*, *Monostyla*, *Colurella*, *Trichocerea*, *Synchaeta*, *Polyarthra*, *Asplanchna*, *Testudinella*, *Floscularia*, *Sinantherina*, *Lacinularia*, *Philodina*, *Rotaria*, etc. These wheel-bearers are unique creatures to the microscopist. Their life histories and ecology deserve a thorough study. This investigation is progressing at our laboratory, where we are keeping in touch with a few specialists on this group in different countries and are in hopes that not long from now we may have a preliminary report on it.

Coming to the mollusks we have about five or more genera of Pelecypods which are *Corbicula*, *Anodon*, *Unio*, *Mycetopus*, *Monocondylæa*, etc., and about nine or ten genera of Gastropods which are *Alycaeus*, *Bithynia*, *Paludina*, *Cyclophorus*, *Hyalina*, *Helix*, *Buliminus*, *Stenogyra*, *Clausilia* and *Limax*. The statement I am making here is based upon Heude's work on the terrestrial and fresh water *Mollusca* of China. It seems to me that all the species of the above mentioned genera may not cover what Nanking has produced, and a more thorough survey of the molluscan fauna of this particular region is highly necessary in order to reveal more species, both old and new, to our knowledge. An intensive collection has just been initiated by our staff, an appreciable number of specimens has been accumulated, and in the course of years this group may be entirely cleared up. The weather of Nanking is very damp, especially in the spring and summer, due to excessive rain. Snails like *Limax*, *Clausilia*, *Cyclophorus*, *Helix*, *Stenogyra*, etc., are easy to find as they creep on the walls and doors of deserted houses. In the ponds and lakes where *Elodeas*, duck-weeds and waterferns flourish, a good number of *Unio*, *Anodon*, etc., are frequently met with at the bottom. *Paludina* could be obtained, while in the shallow streams both *Paludina* and *Anodon* are hunted by the labourer class as food article, and *Corbicula* and *Unio* are used for the same purpose, but not so extensively as the other two.

Next, we touch upon a most important group of invertebrates, the Arthropods, or the joint-legged spineless animals, to which the insects, the spiders, the

various crustaceans, etc., belong. This is the largest group of the animal kingdom, and is of great economic importance. In studying the Natural History of Nanking the Arthropods are considered to be the richest source of knowledge and information. All that we know about this group in our locality is far below the mark which we have been expecting to reach ever since we started our faunal survey in Nanking. Now we have only a general idea about the crustaceans, some of the spiders and a few of the insects. Of these the life histories and ecological relationships have not yet been observed. The crustaceans consist of more than twenty species, those of the smaller size, the *Entomostraca*, are the fairy shrimp, *Branchinella* sp., and the *Apus*, which are pretty creatures of appreciable size in this group, and commonly found in the pools, ditches and rice fields of shallow and clear water in the spring and summer; the water fleas, consisting of about fifteen species such as *Diaphanosoma brachyurum* (Lieven) of the family *Siaidae*; *Daphnia psittacea* Baird, *Simocephalus vetulus* (Müller), *Scapholeberis mucronata* (Müller), *Ceriodaphnia mejops* Sars, *Ceriodaphnia quadangula* (Müller), *Moina* sp., *Ilyocryptus spinifer* Herrick, *Chydorus sphaericus* (Müller) of the family *Daphnidae*; *Cyclops affinis* Sars, *Cyclops leuckarti* Claus, *Cyclops seerulatus* Fischer, *Cyclops visinus* Uljanin, of the family *Cyclopidae*; *Cypris crena* Turner, *Cypria ophthalmica* Jurine, *Herpetocypris intermedia* Kaufmann of the family *Cyprinidae*, which are found in great abundance in the ponds, serving as a good supply of food to fresh water fishes. The gold fish breeders collect them when they are in abundance after a period of rains and cultivate them as food reserves for gold fish when dry weather prevails. They are economically very valuable to the pisciculturalists and their life histories and the technique employed in rearing them in large quantities must not be neglected when scientific method is adopted in developing fish breeding industry in this country. The larger crustaceans, *Malacostraca*, have a much smaller number of species. There are two species of crabs: *Eriocheir sinensis* Milne-Edwards and *Potamen denticulatus* Milne-Edwards, and two species of shrimps: *Caridina denteculatus* (De Haan) and *Palaemon sinensis* (Solland). Both the crabs and the shrimps are of economic importance, and they are sought by people for food. Although they are not very large in size, yet they can be obtained in great numbers and sold at a cheap price. Usually in the autumn

they attain their maximum size and appear in comparatively large numbers, the local fishermen catching them in the shallow water of rivers and lakes as well as from the nests on the banks and dikes, etc. The crabs form a sort of delicate food in the autumn, so they are sought most urgently by the fisherman and found in large quantities on the fish market.

Our knowledge of the spiders of Nanking is rather meagre. Except the very common ones, of which we know some technical names, the biology of this group has not been studied. In our record there are about thirty-two or three genera, and among them we know only some of the species, while a number of them are only known by their genera. They are found in the spring, summer and autumn, and only very few can be obtained in the winter. The best time to catch them is the early spring when the grasses in the field have not grown very high, but later than this period they are very hard to obtain, for when the grasses are thick and high, the spiders have excellent places for hiding, and they are very quick in running off and skilful to escape catching by dropping themselves into the grass field. Of course a few of them can be obtained from their webs in the woods as well as in the deserted houses and barns, and several aquatic species frequently collect together with other aquatic animals, but most of them are found in grass fields. The following are the spiders we have in our collection; *Uloborus* sp., *Psechrus minus* Chamberlin, *Loxosceles rufescens* (Dufour), *Scytodes thoracicia* (Latreille), *Selenops bursarius* Karsch, *Pholcus opilio-noides* (Schranck), the comb footed spider, *Theridion tepidarium*, Koch, *Argyrodes bonadea* (Karsch), *Argyrodes nephilae*, *Arianmes flagellum* (Doleschall); *Eucta chinensis* Chamberlin; the orb weaves, *Tetragnatha* sp., *Tetragnatha cliens* Chamberlin, *Verucosa*, sp., *Leucauge retracta* Chamberlin, *Leucauge veterasceus* Chamberlin, *Nephila clavata* Koch, *Argiope aequior* Chamberlin, *Miranda zabonika* Chamberlin, *Aranea multiplicans* Chamberlin, *Aranea pia* Chamberlin, *Aranea quadrata* (Clerk), *Aranea sericata* (Clerk), *Gasterocantha* sp.; the funnel webbed spider, *Agelena labyrinth* (L.), *Tegenaria* sp.; the wolf spiders, *Lycosa* sp., *Lycosa pseudoannulata* (Böseberg & Strand); the lynx spider, *Oxyopes sertatus* Koch, *Neoscono* sp., *Tarantulas* sp.; the dictynids, *Dictyna* sp.; the sheet-web weaves, *Linyphia* sp.; the crab-spiders, *Misumena* sp., *Clubiona* sp.; the nur-

sery-web weavers (*Psisouridae*) ; the ant-spiders, *Synemosyna formica* (?), *Uroctea complactilis*, and *Uroctea indica* (?) Among them the so called weaving bride, *Nophila clavata*, is common and very interesting. It has beautiful greenish and yellowish bands around its abdomen, and it makes its web on the comparatively low trees or shrubs and is quite approachable to the field zoologist. The most common one is the fly killer, or "fly tiger" as it is generally called, *Menemoris confusus*. It is generally found running on the wall, on the roof or on the floor of the house, looking for its prey, the house fly. It frequently jumps on the back of the fly and has it caught from behind, carrying it away for eating, but once in a while it also remains motionless, waiting for the fly to alight on its back, then it raises its middle pair of legs to hold the fly on its back and runs away with it. *Uroctea complactilis* or the "wall penny" is frequently found on the wall of an old house in spring and summer. It is so flattened that the thickness of the body is almost like a sheet of paper, and it looks almost transparent when it is held toward the light. The internal structures must be unique, but so far we know nothing about them. It is considered worthwhile for one to study the morphology and development as well as the life history and ecology of this form from the pure scientific view-point. A few other species of the comb-footed spiders (*Theridion*), orb-weavers *Aranea* (*Epiera*), *Domestica*, *Tetragnatha*, etc., commonly run across in gardens and deserted houses, are all harmless creatures, and as a matter of fact are beneficial, because they prey on insects, especially mosquitoes and houseflies.

The last group of invertebrates I am going to touch upon is the largest and most important one, the insects. Our laboratory has not devoted very much time to the local insects, for there is a Bureau of Entomology under the support of the Kiangsu Government at the National Central University, which is very close to our laboratory, and, in carrying on division of labour we look to the Bureau for information concerning the local insects. According to the list furnished me by my friend Professor G. P. Jung, Director of the Bureau, about two hundred species of insects have been determined, and of course those whose species have not been determined must be far greater in number. Of these local insects I will mention only those which are of great economic import-

ance and also those which are very interesting from an aesthetic point of view.

The locust, *Locusta migratoria* L., is the most important one. Every year immense damage had been done to crops before the Bureau came to put a check on it. Outside of the city of Nanking waste land is met in every direction besides the cultivated fields. The locusts lay their eggs in the soil of the unploughed field, and in the winter, as Nanking very seldom has a heavy snow, the eggs are well protected from being killed by frost and snow. When the warm weather comes in the spring, they are hatched and the nymphs acquire their growth in the grass fields. At about the second and third stage of nymphal development they crawl out of the fields, spreading on to the country roads and climbing up the stems of reeds, grasses, shrubs and trees. They are easy to destroy during this period, for their wings have not been developed and they are not able to fly. I have often stamped on quite a number of them when taking a walk along a path in the suburbs. They could be picked up by hand or driven to any place in masses and crushed with any mechanical means. The radical method of fighting this pest is of course to eliminate the waste fields. If the fields are thoroughly ploughed in the autumn or early winter, the soil is turned up and becomes much looser, the eggs of the locusts are mostly exposed to dry weather and cold temperature and will be unable to avoid being frozen in the late winter. In so doing, the outbreak of the locust's pest could be greatly checked next year. Another remedy in fighting the locust is by spraying poison. According to the economic entomologist, wheat bran, orange juice, water, syrup and white arsenate are mixed and used as a bait which works most effectively. The Bureau of Entomology in Nanking has, however, not resorted to either of these fundamental methods, and the method they are adopting in checking the pest is a very simple one and has served a good purpose every year. Taking advantage of the cheap labour in this country, the Bureau sends out every year a number of trained field men, each of whom acts as a leader to a large number of policemen and farmers, "swatting" the nymphs of locust by tons. Throughout the season the pest could be checked to a great extent and a large amount of money saved by this simple but effective method.

The next important injurious insects are the two kinds of rice borers, *Chilo simplex* Butl. and *Schoenobius*

incertellus Wk. The entomologists at the Bureau have every year spent a great deal of energy and time in fighting against this kind of pest. They work on the stems of the rice and are deeply hidden at the bases of the leaves or inside the stems so they will not be affected by any sort of spraying. There are two simple ways of checking them employed by the entomologists there. One is to catch the adults with trap lanterns in the rice fields, another is to collect and destroy the eggs, for it is fortunate that the insects lay their eggs on the leaves of the rice plants, quite within reach for collecting. All these are used by the farmers under the direction of the trained field men sent out by the Bureau.

The diamond borer *Earias chromataria* Wk., is a great cause of damage to the cotton growers and engages the attention of the Bureau. The life history of this insect has been carefully studied and the method of controlling is to pick the larvae by hand.

Besides, the cotton aphid (*Aphis gossypii* Plov.) the mulberry moth (*Bombyx mandarina* Moore), the termites, etc., all do great damage to agriculture and industry. The Bureau is from year to year preparing men as well as means to wage warfare against them.

The ways of keeping down mosquitoes and house flies have proved practical and comparatively simple for the past years, owing to the cheap labour in Nanking. The mosquito wrigglers are taken out with an ordinary net from the stagnant pools and dumped on the dry land. By employing a large police force in the city and in the suburb most of the pools could be visited and worked in such a manner, the wrigglers soon dry up and die on land. Consequently the annoyance of the adults is reduced to a great extent. In dealing with houseflies the grubs are killed in the manure holes, visited by the directed policemen and coolies under the staff of the Bureau, with a solution of potassium cyanide of suitable strength. While the campaign is going on every year, propaganda is issued so as to encourage people to report on where they have discovered pools with mosquito wrigglers and manure holes with grubs. According to the report issued by the Bureau the result is quite satisfactory, the expenses are not particularly great, and the harm produced by these two kinds of insects is considerably reduced.

The above are some of the injurious and obnoxious insects we have come across most frequently in Nanking. I am now coming to some others which have aesthetic

value and are interesting from the naturalist's point of view. So far as we know, there are about thirty species of butterflies determined. We find five species of the swallow tails, which are *Papilio xuthus* L. *Papilio palytes* L., *Papilio machaon chinensis* Verity, *Papilio alcinous mansonensis* Fruh, *Papilio bianor* Cram, all pretty and brilliantly coloured insects, while the others like most of the Nymphilids are also graceful and fascinating in making observations on their habits and ecology. The old friend of the lepidopterist, the white cabbage butterfly, *Peiris rapae* L. is found fairly commonly in Nanking. This form is undoubtedly most universal in its distribution. The other one of the same family, *Anthocharis bambusarum* Oberth. and of *Lycaenidae*, *Chrysophanus phlaeas chinensis*, all beautiful forms to the lovers of nature. The dragonflies have been studied by Prof. J. G. Needham for the last few years, the life histories of most of them have been worked out and are described in his monograph on Chinese *Odonata*. The damselflies, the beetles, the wasps, the crickets, which are graceful and interesting creatures, are still awaiting survey and classification.

As a whole Nanking is considered as a rich field for the entomologist, the fresh water insects fauna being particularly worth studying. We are planning to secure more funds for making a survey of this fauna in the lower Yangtse Valley, and are in hopes that not long from now our plan may materialize and the work will be started along this direction.

So much for the invertebrates, of which our knowledge is so incomplete, and which will occupy us for years to come before a comparatively comprehensive report could be put out in order to furnish accurate information to these who desire to know something of the fauna of the region.

Vertebrates.

Concerning the vertebrates, of which the number of species is much smaller, we have most of them determined and reported upon in our publications.

Fishes.

There are fourteen families of fishes, so far as we have found, namely, *Polydontidae*, *Acipenseridae*, *Engraulidae*, *Salangidae*, *Cyprinidae*, *Siluridae*, *Anguillidae*, *Scombresocidae*, *Ophiocephalidae*, *Serranidae*, *Anabantidae*,

Soleidæ, *Gobiidæ* and *Mastacembelidæ*. Of the species of the above mentioned families I desire to pass some remarks on some of the most economically important ones. The carp, *Cyprinus carpio* L., is found in the rivers and lakes very commonly. It is a good game fish and has a long history in regard to its food value. It is common in Central and North China but not typical of Nanking. The small carp, *Carassius auratus* matches the carp in food value, and it often turns up red and white in coloration, showing its tendency of becoming gold fish. They are kept in the lily ponds in the gardens and parks as a kind of ornament and beauty, for they are much larger in size than the gold fish and the changed coloration under domestication are just as fanciful as that of the latter. The serpent head, *Ophiocephalus argus*, Cantor, is a very common species. It attains a good size, and its flesh is also fine. This fish is commonly found on the market practically all the year round and constitutes one of the dishes which the people value so much. Like these species three species of culter, *Culter brevicauda* Guenther, *Culter erythropterus* Basilewsky, *Culter recurviceps* Richardson, two species of *Hypophthalmichthys*, *Hypophthalmichthys nobilis* Richardson and *H. molitrix* Cuvier and Valenciennes are very common in the rivers and lakes. Next to them the silver fish (ice fish) *Salanx cuvieri* Cuvier and Valenciennes, the sword fishes, *Coilia nasus* Schlegel, *Coilia rendahli* Jordan and Seale, *Coilia ectenes* Jordan and Seale, the pond loach, *Misgurnus anguillicaudatus* Cantor, the sheat fish, *Parasilurus asotus* (L.), the cat-fish, *Pseudobagrus fulvidraco* Richardson, the eel, *Anguilla japonica*, T. & S., the half-beaked garfish, *Hemiramphus sajori* Schlegel, the Mandarin fish, *Siniperca chuatsi* Basilewsky, the loo fish or Japanese sea bass, *Lateobrax japonicus* Cuvier and Valenciennes, are all valuable game fishes found in the streams and ponds in the suburb of Nanking. The slime carp, *Myxocyprinus asiaticus nankinensis* Tchang, is a new variety recently described. This fish is not so common as others, but its peculiar shape makes it easy to identify. Besides, its long dorsal fin, its somewhat concave dorsal margin anterior to the dorsal fin, its thick lip and its great body depth are quite characteristic. The sturgeon is once in a while caught from the Yangtse River not far from the City of Nanking. There are two different kinds of sturgeons, one is called the Chinese sturgeon, *Acipenser sinensis* Gray, and the other is the Yangtse beaked sturgeon,

Psephurus gladius Guenther. The former reaches over ten feet in its mature size and is easy to recognize by the rows of body scutes along the median lines of the dorsal, lateral and ventral surfaces. The scutes are more or less flatly conical in outline and their bases are rhomboidal. The head is depressed, the snout projecting, pointed and triangular, the mouth inferior, eyes small and tail heterocercal. There are four short barbels below the snout. The colour of the skin of this fish is a fine slate above and white below. The young forms of this species are frequently found in the fish market in the spring and early summer. They are not only found in the Yangtse River near Nanking but also in the region above and below this locality. As this species is partially marine and as it ascends the river during its breeding season, it may be found in the region near Hankow and Ichang, and I had once on my collecting trip secured a number of the young forms from the fish market in Woosung. The meat of the fish when young is very delicate and much liked by the people. The Yangtse beaked sturgeon resembles in general appearance the shark. I had a specimen collected from the Yangtse River with its length about 130 cm. and another time the head of the fish was bought from the fish market measuring about two feet. The length of the fish in maturity may be in the neighbourhood of twenty feet. Its body is spindle-shaped with its anterior region depressed and posterior compressed, and the skin is smooth. Its snout is produced in the form of a flat blade with the tip pointed and base widened and thickened. It has the mouth inferior with numerous small teeth in both jaws, small eyes, and a heterocercal caudal fin. The colour of the fish is greyish-brown above and whitish below. Like the Chinese sturgeon this fish is much sought by the people for food.

Amphibians.

The amphibian fauna of Nanking consists of a comparatively small number of species, as far as our knowledge now goes. There is only one species of salamander, *Triturus orientalis* (David), which is neither found in the city of Nanking nor in its suburb. In collecting this form for study we have to go to Shih Hsia Shan or Loong Tan which is about fifteen miles east of Nanking. They are found in the ponds near the temples. This form of animal seems to be well adapted to comparatively clear and still water with plenty of aquatic plants therein.

The salamander is between three and four inches in length (9-10 cm.). Its back is dusky brown and its belly either bright orange or red with black spots evenly and loosely distributed. Its tail is compressed. It is interesting to note that this form is to be found only in the above mentioned regions, so far we have not been able to run across any of it in other localities in the neighbourhood of Nanking.

The tailless amphibians of Nanking are represented by two species of toads, eight species of frogs, and two species of tree-frogs. The frogs, which are most commonly found in our ponds, lakes and rice fields, are the golden-lined frog, *Rana nigromaculata*, which has three varieties, namely, *nigromaculata* (Hallowell), *reinhardtii* (Peters) and *mongolia* Schmidt, and the lake side *Rana tigrina rugulosa* Wiegmann, is fairly large in size but less common. Its skin is quite warted on the back and its colour is olive-green. The golden lined frog is smaller than the tiger frog, and its colour is bright green at certain times of the year, with two conspicuous yellow lines on its sides. It is an edible form and it is sought by the people in Nanking as a food article. The lake side frog is a still smaller one, and appears in great numbers. In the spring and summer its skin is grey marked with numerous black blotches of considerable size and with a buff streak along the median line of its back. In the autumn or early winter when it is found before its hibernation, its skin may be pinkish and the blotches may be very dull brown and the back streak may be very inconspicuous or entirely absent. This species has a very wide distribution. In addition to the above species we have three more species of frog, namely, *Rana plancyi* Lataste, *Rana chensinensis* David, and the wood frog *Rana japonica* (Guenther) which are slender forms. The first one is commonly found in water and the latter two are less common. We have a burrowing toad in Nanking, *Kaloula borealis* (Barbour). It is comparatively stout in shape with a rather small head. Its body is rather smooth, with many small warts on its upper surface, no longitudinal ridges are present and its chest has a fold extending transversely from axila to axila. Its coloration is dark greyish brown above and darker at the tips of the small warts, its posterior and flanks lighter, its under side either uniformly dirty white or of flesh colour, and its throat is generally light greyish brown with white spots. This form is generally found in the north of the Yangtse

River, at Pukow, Lu Ho and other localities, and Nanking is supposed to be the southern limit of its distribution. Two species of tree frogs are found in our locality. One is *Hyla arborea immaculata* Boettger, which is a slender form with its disks on the digits only slightly expanded and the other is *Hyla chinensis* Guenther, which is stouter than the former one with more dilated disks. These two frogs are beautifully green on the back and yellowish or white on the under side in order to harmonize with their environment. The latter species has many dark spots on the lateral surfaces of the hind limbs and on the flanks, which are very distinct. This characteristic enables one to distinguish these two in the field. They often make considerable noise in the rainy season during the night, and they live in the woods, jumping on the branches, often staying on the large leaves of the tree or on the stems of the reeds, and also are often found in the fields. Next to them we ran across the *Microhyla*, which we know, by its generic name, as a small frog. It is the smallest one among all of the local frogs. The entire length from its snout to its vent does not exceed 20 mm. The back of its body is olive-brown or greyish olive, its small warts are tinged with red or dark gray. There is a dark band extending from the tip of its snout, across the eye, along the side of the back a little above the flank to the groin. Its limbs are marked with oblique dark bars dorsally and its throat and chest are generally brownish or grayish with white spots. This small creature is land loving, always found in wet soil, and has never been found in water. The two species of toads are common forms, yet one of them, *Bufo bufo bankorensis* Barbour, seems to be of comparatively limited distribution. While *Bufo bufo asiaticus*, Steindachner, and *Bufo bufo japonicus*, Schlegel, have quite a wide distribution. *Bufo bufo bankhorensis* differs from *Bufo bufo asiaticus* by the skins of its limbs being not so warty and its body not so stout.

Reptiles.

Of this group we have made an almost comprehensive survey. It is by no means a large group. So far as records go, we have eight species of lizard, two species of turtle and fifteen species of snake. The lizards are *Gekko japonicus* (Duméril and Bibron), *Plestiodon latiscutatus* Hallowell, *Plestiodon elegans* Boulenger, *Plestiodon chinensis* Gray, *Leiopisma laterale* Boettger, *Sphenomorphus indicus* Gray, *Takydromus wolteri* Fisher,

and *Takydromus septentrionalis* Guenther. The wall-lizard, *Gekko japonicus*, is very common in Nanking and it is different from the other two species of the same genus, *Gekko swinhoensis*, which is common in North China, and *Gekko palmatus* Guenther of West China and the interior, by its numerous and comparatively large tubercles and rudimentary webs between the toes. This form is confined to the coast region from Hongkong to Shantung and up the Yangtse River at least as far as Ichang. It is said that it is constantly spreading by being carried in cargoes. It has extended its range as far as Korea and the Ussuri country. The blue tailed lizard, *Plestiodon elegans*, is very common in Nanking. The bright blue colouration of the tail is an indication of its immature stage. In the adult the tail is rather buff but no longer blue and the sides of the body are speckled with scarlet or pink. This form is commonly known as the elegant skink. It extends its range to Chekiang and Fukien. I have found this species in both Putoa and Amoy. The Chinese skink, *Plestiodon chinensis*, is like the former species in the blue colouration of the tail when it is young, and the scarlet or pink blotches on the sides of the thorax and neck in the adult stage, but it could be easily distinguished from the former one by having only three longitudinal yellow lines on the back while the former one has five, and also three irregular series of whitish spots when it is mature. The other skink, *Plestiodon latisculatus*, is more slender than the other two and it is readily distinguishable from them by its uniform pale olive grey colour above, with a dorso-lateral whitish band and a dark brown band extending from the eye over the ear opening and continuing on the tail nearly to its tip. The long tailed lizard, *Takydromus septentrionalis*, is also very common. It is characterized by its slender body, strongly keeled scales and extremely long tail. Its back has a brown band dotted with black and bordered with a yellowish green line. Along its side runs a black line. The side is greenish blue and the underside greenish white. A similar, but smaller and less common species is *Takydromus wolteri*, whose colour is brownish grey without distinct lines on its back and sides. These two forms are often found in grass fields and also running on the tops of shrubs. The small lizard, *Leiolopisma laterale*, is often found on the top of the city wall. Its scales are minute and smooth and its limbs are weak and slender. The Indian lizard, *Sphenomorphus indicus*, is considerably larger than the foregoing species, and it can easily be dis-

tinguished from it by the black spots or its back, which are conspicuous and sometimes form two rows on each side.

Most of the above mentioned lizards are found under rocks and fallen tree trunks and very inactive early in the spring. A good place for collecting them is Hsih Hsia Shan. In the late spring, summer and fall they are very agile, running very fast in the rocky and grassy fields. Rock crevices are the best places for them to hide when disturbed.

Alligators have never been found in Nanking, but I have received a large specimen about six feet long from Tong Tu about thirty miles west of Nanking and about thirty miles east of Wuhu, where most of the alligators are found. The name of the creature is *Alligator sinensis* Fauvel.

The two common turtles in Nanking are the soft shelled or mud turtle, *Trionyx sinensis* Wiegmann, and Reeves' terrapin, *Geoclemys reevesii* Gray. The former is characterized by its soft leathery shell and absence of scales on the limbs or other parts of the body, and is very common in the rivers of Nanking, being used for food. The latter has a hard shell, which has three ridges on its carapace, one along the median line and one on each side of it. there are yellowish stripes and patterns of various shape on the head, especially on the cheeks. This turtle is also very common in our ponds, often crawling on land, where it can live for a considerable length of time.

Now I shall make a few remarks on the last group of our reptiles, the snakes. We have up to now found fourteen species of snakes in Nanking. Among them I want to mention, first of all, three species of *Natrix*. The ringed snake, *Natrix annularis* (Hallowell), is marked with numerous black vertical bars, which are continued on the vinaceous cinnamon ventor, joining their fellows of the opposite side as half rings or alternating with them. The tiger snake, *Natrix tigrina lateralis* (Berthold), which is most numerous found in Nanking, is deep green or olive green above and greenish white below, marked with alternative red and black spots or short bars, the red spots being confined to the anterior region of the body, while the black ones become smaller and smaller toward the tail, and the deep green colour predominates on the posterior portion of the body and tail. The fishing snake, *Natrix piscator* (Schneider), lacks brilliant colours, but has five or more series of black spots above and three rows of black

bars on each side. Of these three forms the ring snake is found in the upper Yangtse Valley as far as Kiukiang, perhaps still farther up, along the lower region down to Shanghai, in Chekiang and in Fukien. The tiger snake is known as being fairly common in North and Central China, and our record shows that it is also found in Chekiang besides Nanking. The fish snake is also widely distributed in South China. Besides Nanking, it has been found in Wenchow and I once collected a few in Amoy. It is impossible to give details of all the local snakes. I shall now pass over the rest of those of the family *Natricidae*, merely enumerating a few names: the Chinese collared snake, *Sibynophis collaris chinensis* (Guenther), *Holarchus chinensis* (Guenther), *Enhydris chinensis* (Gray), *Zamenis spinalis* Peters, *Zaocys dhumnades dhumnades* (Canter), the red banded snake, *Dinodon rufozonatum rufozonatum* (Cantor), and four common snakes, namely, the curved tailed snake, *Elaphe taeniura* (Cope), the two spotted snake, *Elaphe bimaculata* Schmidt, the red backed snake, *Elaphe rufodorsata* (Cantor), and the keeled snake, *Elaphe carinata* (Guenther). With the exception of *Enhydris chinensis*, which is said to be more or less poisonous, all these are harmless forms. There is one poisonous species of the family *Crotalidae*, the short-tailed Halys viper, *Agistrodon halys brevicaudus* (Stejneger), whose general colour is ashy brown with a series of large round dark brown or black edged spots, and a broad dark stripe on its temporal region. It has been said that the green bamboo snake, *Trimeresurus gramieneus* (Shaw), is also found in Nanking, but so far I have not been able to discover this beautiful species either in this locality or in nearby regions.

Birds.

Of the birds there are between four and five hundred species, roughly estimated. About one-fifth of them are the extremely common ones. It is unnecessary to make an enumeration of them all, but the following few are noted. These common birds represent thirty or more families and I here mention them according to their natural order. Of the grebe family (*Podicipedidae*) we have the Eastern little grebe, *Podiceps ruficollis poggei* (Reichenow); of the cormorant family (*Phalacrocoracidae*), the common cormorant, *Phalacrocorax carbo sinensis* Shaw and Nod.; of the heron family (*Ardeidae*), the pond heron, *Ardeola bacchus* Bp., the little bittern,

Ixobrychus sinensis (Gm.), the great bittern, *Botaurus stellaris orientalis*, Buturlin, the grey heron, *Ardea cinerea jouyi*, Clark, the night heron, *Nycticorax nycticorax* (L.); of the duck family (*Anatidæ*), the mallard, *Anas platyrhynchos* L., the golden-eye, *Clangula clangula* (L.), the mandarin teal, *Aix galericulata* L., which is the most beautiful member of its group, the bean goose, *Anser fabalis* (Latham), the pygmy goose, or cotton teal, *Nettion coromandelianus* Gm., the common teal (*Nittea crecca* L.); of the falcon family (*Falconidæ*), the osprey (*Pandion haliaetus* L., etc., of the kite family (*Buteonidæ*), the sparrow hawk, *Accipiter nisus* L., the black-eared kite *Milvus melanotis* T. and S., etc.; of the pheasant family (*Phasianidæ*), the ring-necked pheasant, *Phasianus torquatus* Gm. and the Japanese quail, *Coturnix japonica*, T. & S.; of the rail family (*Rallidæ*), the moorhen, *Gallinula chloropus* L., the watercock, *Gallicrex cinerea* Gm., the coot, *Fulica atra* L., the white breasted water hen *Amaurornis phoenicurus*, Penn.; of the Plover family (*Charadriidæ*), the Eastern dotterel, *Ochthodromus veredus*, Gould, the grey-headed lapwing, *Microsarcops cinereus* (Blyth); of the jacana family (*Jacanicæ*), the pheasant tailed jacana or water-pheasant, *Hydrophasianus chirurgus* Scopoli; of the gull family (*Laridæ*), the laughing gull, *Larus ridibundus* L., the yellow-legged herring gull, *Larus cachinnans* Pallas, etc.; of the pigeon family (*Columbidæ*), the spotted-necked dove, *Streptopelia chinensis*, Scopoli, the blue pigeon *Columbia livia intermedia*, Strickland, the oriental turtle dove, *Streptopelia orientalis*, Latham, etc.; of the cuckoo family (*Cuculidæ*), the Eastern common cuckoo, (*Cuculus canorus telephonus* Heine, the Indian cuckoo, *Cuculus micropterus micropterus*, Vahl., etc.; of the kingfisher family (*Alcedinidæ*), the little blue kingfisher, *Alcedo ispida bengalensis* Gm.; of the owl family (*Strigidæ*), Whiteley's owlet, *Glaucidium whiteleyi* (Blyth); of the woodpecker family (*Picidæ*), the Yangtse green woodpecker, *Picus canus guerini* Malh., the pied woodpecker, *Dryobates canbanisi* (Math.), the spark-headed woodpecker, *Yungipicus scintilliceps* (Swinhoe); of the lark family (*Alaudidæ*), the skylark, *Alauda arvensis* L.; of the wagtail family (*Motacillidæ*), the white faced wagtail, *Motacilla leucopsis*, Gould; of the babbler or laughing thrush family (*Timeliidæ*), the spectacled laughing thrush, or *hwamei*, *Trochalopteron canorum* L.; of the ousel or thrush family (*Turdidæ*), the grey backed ousel, *Turdus*

hortulorum Sclater, the red-tailed ousel, *Turdus naumanni* (Temm.); of the warbler family (*Sylviidæ*), the Eastern great reed warbler, *Acrocephalus arundinaceus arundinaceus* T. & S., the Chinese bush warbler, *Horornis canturians*, Swinhoe, etc.; of the bulbul family (*Pycnonotidæ*), the white headed bulbul, *Haringtonia leucocephala* (Gm.), the common bulbul, *Pycnonotus sinensis* (Gm.); of the swallow family, the Eastern house swallow, *Hirundo gutturalis* (Scop.), etc.; of the minivet family (*Campephagidæ*), the grey minivet, *Pericrocotus cinereus*, Lafresnaye; of the drongo family (*Dicruridæ*), the Chinese hair-crested drongo, *Chibia hottentotta brevirostris* Cabanis; of the waxwing family (*Ampelidæ*), the Bohemian waxwing, *Ampelis garrulus* L.; of the shrike family (*Laniidæ*), the bull-headed shrike, *Lanius bucephalus* T. & S., etc.; of the titmouse family (*Paridæ*), the silver throated tit, *Aegithalos glaucogularis* Moore; of the crowtit family (*Paradoxornithidæ*), Heude's crowtit, *Paradoxornis heudei* David, Webb's crowtit, *Suthora webbiana* Gray; of the oriole family (*Oriolidæ*), the Eastern golden oriole *Oriolus diffusus*, Sharpe; of the crow family (*Corvidæ*) the Chinese blue magpie *Urocissa sinensis* (L.), the Eastern common magpie, *Pica pica sericea*, Gould, the pied jackdaw, *Coleus dauricus* (Pallas), the large billed crow, *Corvus macrorhynchus* Bp., the azure-winged magpie, *Cyanopica cyanus swinhoei* Hartert, the collared crow, *Corvus torquatus* Less., etc.; of the starling family (*Sturnidæ*), the grey starling, *Spodiopsar cineraceus* (Temm.), the crested mynah *Aethiopsar cristatellus* L.; of the finch family (*Fringillidæ*) the yellow throated bunting, *Emberiza elegans* Tenn., the bull-headed hawfinch, *Eophona melanura* (Gm.), the grey-headed bunting, *Emberiza spodocephala melanops* (Pallas), the ruddy sparrow, *Passer rutilans* Temm., the tree sparrow, *Passer montanus* (L.), the siskin, *Spinus spinus* (L.), the chestnut bunting, *Emberiza cioides* Temm. These are the most common birds we have in our collection, but this is by no means an exhaustive list of the local birds and there must be quite a number of them we have not collected. As a non-ornithologist, I believe what I have noticed must be only the extremely, or at least comparatively, common ones.

Mammals.

The last and the highest group of vertebrates, the mammals, are of a small number of species in Nanking.

This is largely due to the dense population, lack of forests and unrestricted hunting. Along the Yangtse River as well as on the island, Pa-kwa Chow, the river deer, *Hydropotes inermis* Swinhoe, is frequently found. This animal has no horns at all, the male having a pair of tusks. The forelegs are shorter, so that the deer looks low in front. The meat of this deer is eaten by the people in Nanking. The wild boar, *Sus paludosus* Heude, is found in the mountains not far from the city of Nanking, such as Pao Hua Shan, Hsia Hsu, etc., but it is not so common as the river deer. This animal is of good size and very fierce. It habitually rubs its skin on the trunks of pine trees, consequently its skin is covered with terpine here and there and it is hard to be killed with small shot. Once it is startled, it runs most wildly and would break the trunk of a small tree when it hits it. In the Yangtse River we often get specimens of the finless river porpoise, *Neomeris phocaenoides* Cuvier. This animal can be seen on the river not far from the city. Its length reaches about four feet when mature. It migrates up in the river and travels as far as Ichang and also gets into the Tung Ting Lake. The wolf, *Canis lupus tschiliensis* Matsch., still persists in the mountains, like Pao Hua Shan, etc., but it is no longer found in nearby localities of Nanking. It looks in many respects like the European wolf. The mink, *Mustela davidiana* M.-Edw., is found in the old houses and deserted gardens in the city. Its fur is much in demand by the Chinese pen shops, for the hairs are used for making brush pens. There are two badgers, which are once in a while caught in the farm yards in the suburb. The so-called dog badger, *Meles leptorhynchus*, M.-Edw., is comparatively small and slender in form, but the sand badger, *Arctonyx leucolaemus* (M.-Edw.), is much heavier and larger in size with much coarser hair. The two can be readily distinguished from one another by the comparatively dark brownish hairs of the latter and much lighter colouration of the cheek region of the former. The rodents of Nanking consist of two species of mice, two rats and one hare. The mice are the common house mouse, *Mus musculus* L., and the field mouse, *Micromys pygmaeus*, M.-Edw., the former of which is common almost everywhere. The rats are *Rattus humilatus* M.-Edw. and *Rattus norvegicus subsp.*, while the hare is *Caprolagus sinensis* (Gray), which is also frequently found. In the winter season both pheasants and river deer have been brought to the city by hunters and

the hare is also occasionally obtained on the market. The porcupine, *Acanthion (Hystrix) subcristata* (Swinhoe), is common in the regions not very far from Nanking, such as Chingkiang. I was presented with a skin, but its original place was not ascertained. Of the insect-eating mammals, we have one species of mole, *Mogera sp.*, and one species of hedgehog, *Erinaceus hanensis*, Matschie, both of which are rare, and of the bats, we have two species, a slightly larger brown bat, *Rhinolophus rouxi sinensis*, Anderson, and a smaller bat, *Ia io* Thomas, which are common and easy to collect in the summer season. There may be one or two more species of this animal that I have not been able to find in this locality. As a whole the mammalian fauna of Nanking is small and some of the species do not appear in any numbers.

The above is the faunal outline of Nanking. This is however a very incomplete one. There is an enormous field for further studies, many gaps are to be filled up and many new discoveries to be made by conscientious students.

In conclusion I may say that Nanking has four interesting features as far as the study of zoology is concerned.

1. It has a varied topography. Inside the city wall and in the immediate suburbs there are hills and dales and canals, wood lots and bamboo thickets. It affords excellent accessible collecting fields. The zoologist does not have to go very far from his laboratory when he desires to make field observations on the animal forms on which he is working. Now that both the Purple Mountains and the Yuan Wu Lake are under the law prohibiting hunting, both birds and mammals are well protected in these regions and they can be studied alive in their natural environment by ecologists and field zoologists.

2. This locality represents the entire lower region of the Yangtse Valley from Wuhu to Woosung. The faunas of Nanking are found very similar to those in any other localities in this section of the Yangtse Valley. If a comprehensive study of the faunas could be accomplished, a large percentage of the animal forms of the lower Yangtse Valley could be identified without much difficulty.

3. Nanking has the Northern climate in the winter and high humidity and sub-tropical weather in the spring and summer, which are different from the north. The faunas under such influence afford very interesting phenomena for ecological investigations.

4. The fresh water invertebrates are especially interesting. As already mentioned, we have a large number of species of aquatic *Protozoa*, and we know so little of our fresh water sponges and worms and insects, besides there are such rich fields for making investigations on the fresh water mollusks, fishes and birds. Pond culture and economic studies on these faunas could be nicely carried on and limological researches are highly necessary for this region.

As there are so many forms of our fauna which are known, the Biological Laboratory of the Science Society of China is making its utmost effort to survey them, with the aim of adding something to our knowledge of the natural history of Nanking.

THE HISTORY OF THE DAYS OF THE WEEK

By HERBERT CHATLEY, D.Sc. (Lond.)

This particular subject is neither Asiatic nor Chinese in first aspect, but there are enough Asiatic and Chinese elements in it to make it of interest to some members of the Society, and it is one of the few subjects in which there are some early connexions between Occidental and Chinese cultures.

* * *

Just in the same manner as the geologist glimpses in the fossils discovered in rocks the ancient history of life on earth, so the historian can glimpse the ancient history of man and his mental life in the fossil fragments which exist in the speech and the customs of the present day. The week itself and the names of the days of the week are such fossil fragments, with the most intricate and interesting history.

First of all, with regard to the word "Week." The meaning of the word is said to be "Change." There are various related words in the different forms of "Wachs," to grow, which occur in the German languages, and it occurs in the Latin form "Vix," an obsolete word which is the root in the English word "Vicissitude." "Week" occurs in all Teutonic languages as applied to a period of seven days. It appears first in Gothic in the gospels of Ulphilas in the fourth century.

The institution of the week is however most decidedly taken from the Jews. It is true that its universal observance arose in Europe with Christianity, but, as I shall endeavour to show, it was in general use in many parts of Europe slightly before Christianity came. Before that time it is not very easy to show that it was in use by any nation other than the Jews. According to the accepted traditions of the church and Judaism, it is a definitely Jewish thing. The reputed origin of it is given in the Old Testament, but biblical scholars and orientlists are inclined to push it back a little further, and are

generally of opinion that it has something to do with the worship of the moon in Babylonia. The biblical association of "New Moons" and "Sabbaths" is a pertinent fact in this connexion.

It is rather an interesting fact that the two cities of Abraham, Ur of the Chaldees and Harran, in the north of Mesopotamia, were both closely associated with stellar worship. The city of Ur was famous for the worship of the goddess of the moon, "Sin." Harran was, and persisted for many centuries as, an important centre of Sabaeism, the worship of the stars. I shall have more to say of this phase of the question presently. For the moment all I would say is that the week is probably of lunar origin. Its association with the moon is very obvious; in fact a little too obvious. Two real periods associated with the moon are: (1) That which we ordinarily call the Lunar Month, of $29\frac{1}{2}$ days, the period from new moon to new moon, or from full moon to full moon, which varies a little from month to month; (2) The period in which the moon travels round the heavens, from one star back to the same star. That period is $27\frac{1}{3}$ days. A quarter of it is not quite seven days, and a quarter of the other period is $7\frac{3}{4}$ days; the approximate average between the two quarters is $7\frac{1}{4}$ days. Even a quarter of a day's difference in a short period like that is of tremendous importance, because it means that after a very short time, about three weeks, the error is enough to put it quite out of step with the moon and in actual fact the week is practically useless as a lunar period.

Various hypotheses have been discussed as to this discrepancy, one of the principal being that a week was not originally as it is now, a fixed period of seven days, but simply the interval between the 7th, 14th, 21st, and 28th days of the moon, the result being an unequal interval at the end of the lunar month, with 8 or 9 days. However that may be, it is almost certain that the week is derived in some such manner from the moon, and that we certainly got it from the Jews. As to it having existed amongst other peoples, I shall discuss that point presently.

My main theme is as to the *names* of the days of the week. In this connexion I would point out, first of all, that the Jews did not have any names for the days of the week. There is no reference in the Bible to the individual days of the week except the Sabbath (Saturday), although there is a reference to the day before the

Sabbath as the eve of the Sabbath. Individual days went by number. The same feature occurs in some other countries (Portugal, Russia, Basques). In Russia the days of the week are arranged similarly to ours, the Saturday being called the Sabbath but the Sunday is "the day of no work," and the Monday "the day after," and so on by numbers. The Basques have an analogous system with two half-weeks. In Portugal Sunday is called *Domingo* and the other days, the first, second, third, fourth, fifth and *Sabado* (Saturday). Apart from these instances we have generally the names of the seven days with which you are all familiar, but with certain variations and translations.

Now when do these days first occur, what do they mean and where do they come from? That is the main subject I want to speak of.

They are first heard of clearly and definitely about the beginning of the Christian era, and, after a period of about 200 years, they became fixed in practically every country in Western Europe, and to a certain extent in what is called the Near East. In their earliest form, which I shall deal with presently, they correspond definitely with the seven planets, and it is practically certain that, whatever their earlier history may have been, they established themselves first of all through Chaldean astrologers in the Roman Empire. From the time of the invasion of Babylonia by Alexander in the 4th Century B.C. until the dissolution of the Roman Empire, Chaldeans, i.e., Mesopotamians, of various kinds came to Rome as astrologers and diviners and brought Babylonian astrology with them. This astrological week became current about the 1st century B.C., so that we find references to these names once or twice before Christ and frequently afterwards.

In A.D. 350 or thereabouts, Constantine the Great identified the week day of the traditional resurrection of Christ with the day of the sun and legalized the early Christian practice of making that day of paramount importance. He was for the majority of his life a sun-worshipper, and there is no doubt that he was strongly influenced by this worship, even in his protection of Christianity. Whether there is any real conclusion to be drawn as to his attaching great importance to Sunday as the day of the Sun is not clear, but it would be quite in keeping with other events of his reign.

What do these names mean and where do they come

from? In their original Greek and Latin forms they are as follow, taking them in their regular order: Sunday, the day of the Sun; Monday, the day of the moon; Tuesday, the day of Mars; Wednesday, the day of Mercury; Thursday, the day of Jupiter; Friday, the day of Venus, and Saturday, the day of Saturn.

This order is one relating to the planets. The seven planets or the five wandering stars, together with the sun and moon, have been known for some 4,000 years at least. This particular order is, however, not a natural one at all. It is not an order in which you can arrange them from any of their astronomical characteristics, but nevertheless it is an order which can be arrived at from the natural order by a very simple arithmetical process.

The most natural order of the planets is that according to their speeds, commencing with Saturn. Saturn goes round the heavens once every thirty years, Jupiter in twelve years, Mars about two years, then the sun, one year, Venus, which obviously goes faster at times than the sun, but averages also one year, Mercury, still faster at times, but again averages one year, and the moon, one month. That is the natural order as seen from the earth. We are not concerned with what the velocities really are, but what they appear to be.

Now if you take this series and write it over and over again, and start at any place, you will find that the 1st, 25th, 49th, 73rd, 97th, 121st, and 145th items occur in exactly the order of the names of the days of the week, and while there are some alternative hypotheses, it is practically certain that the rationale of the process is that astrologers started with a system of days of 24 hours, and they said that to each hour there is a planetary influence. These hours were then arranged in the order of the planets as they are seen from the earth. Thus, starting with Saturn and running through the day, the first hour of the day is devoted to Saturn and is known as Saturn's hour, the 8th is also Saturn's hour as is also the 15th and 22nd. The 23rd will be Jupiter's hour, the 24th Mars' and the 25th the Sun's. In other words the first hour of the day *after* Saturn's day is the Sun's. Now if you start the same system all over again, you will find that the 1st hour of the next day is the Moon's, the 1st hour of the following day Mars' and of the next day Mercury's, and the next Jupiter's, the next Venus' and we come back again to the 1st hour of the 8th day, which is again Saturn's. That is perhaps rather difficult to follow, but if you think of it in

this way, that 24 is 7 times 3 and 3 over, you will see that the new series comes from the first one by moving up 3 places at a time. So if you take the order of the planets and move along it 3 places at a time, you will find the exact order in which the days of the week are named. This system has been in existence for 2,000 years. This particular origin was known to the Greek writer, Dio Cassius, who wrote in the 2nd century and said that the whole system was a new one and had originated with the Egyptians. There is, however, no trace in Egyptian chronology of the seven-day week, and in this respect he was almost certainly wrong, but he was quite right in saying this was the manner in which this order originated.

In order to understand anything further about it, one must look for three things. First we must see where the planets were first discovered, all seven of them. Secondly, one must find a place where the planet Saturn was important, and thirdly one must have the 24-hour division of the day current. All these conditions are met in Mesopotamia. In Phoenicia, the god El, who corresponds to Kronos or Saturn, must have dominated the Sabbath if the Phoenicians knew of that institution, and in Mesopotamia Ninib was his equivalent.

These points will help us to go on a little further. At the moment I want to say more about these names. The first known record of the planetary name of a day occurs in the writings of the poet Tibullus, a contemporary of Julius Caesar, who speaks of "The sacred day of Saturn." In the writings of Justin Martyr and Clement of Alexandria (2nd Century) we have references to the day of the Sun and to the days of Mercury and Venus, both in Latin and Greek forms. As I said, the writer Dio Cassius, who also lived in the 2nd Century, mentioned that the whole system was a newly established one.

How are we going to explain the variations which occur all over Europe in these names, and how do we get these peculiar English, German and Scandinavian forms? Do they exactly correspond? In this connexion I would mention that a well-known writer on Scandinavia, Du Chaillu, thought there had been once in Scandinavia a five-day week and that the names followed from the five Scandinavian gods in the same order as we have now, and from them have come the names as they occur with many Teutonic peoples. That the order of the names so originated is quite impossible, because it is the planetary order, which compels the conclusion that the Teutonic

names were translated from Latin by equating the Teutonic gods, which the Romans thought corresponded, with the Roman gods (or more strictly speaking, with the Greek gods that the Romans worshipped). The names in English (which I imagine you probably know) Sunday and Monday are perfectly obvious and occur in Anglo-Saxon manuscripts prior to the year A.D. 1000. Sunday occurs in the form of *Sunnandaeg* in the laws of Ine in the year A.D. 700, Monday as *Monandaeg* and Tuesday in the form of *Tiwesdaeg* occur in Anglo-Saxon books in A.D. 1000. Wednesday as *Wodnesdaeg* occurs in the Anglo-Saxon gospels about A.D. 950, *Donresdaeg* or Thursday occurs in Anglo-Saxon books of A.D. 1000 *Frigedaeg* or Friday and *Saeternes daeg* or Saturday occur about A.D. 900. Thus we can say that the present forms go back certainly to the 6th or 7th Century. Nevertheless, the fact that they come in exactly the right planetary order makes it practically impossible for them to be of purely Teutonic origin. Tiw or Tyr is a god of whom very little is known, but according to the few records, he was a god associated with fighting. Woden (generally called Odin) is perfectly well-known and is quite definitely associated by Tacitus and other Roman historians with the god Mercury. Thor had certain attributes in connection with thunder and was definitely associated with Jupiter by the Romans. Freya is often confused with Frigg, the wife of Woden. She was also associated with much the same things as Venus and in the case of Saturday, which we have in the Anglo-Saxon as *Saeternesdag*, this is not even a translation. It has been suggested that there was an actual Scandinavian god Saeter corresponding to Saturn, but all the evidence is that Saturday is what it appears to be, Saturn's day.

With regard to other languages, there are interesting deviations. If we take the French series, *Dimanche* is a corruption of *Dominicus* or *Dominica* and this occurs in similar forms in the other Romance tongues. *Dominicus* means the Lord's Day, but a very interesting thing is that in Wales and Brittany which were, so to speak, shut off from the world by Teutonic invasion, we have the primitive Welsh form *Dydd Sul* and similarly in Brittany *Dissul*, both meaning the day of the Sun and not the Lord's day. Saturday also has some very interesting variations. In all countries except Scandinavia and the low German countries (Holland, Frisia, England) you have the word *Sabbath* as the equivalent of Saturday. In French you

have, for instance, *Samedi*, which is a corruption of *Sabbath-Dies*. In other countries the forms *Sabbato*, *Samstag*, *Sabado*, *Subbota*, *Es-Sabt*, etc., all of which are variations of the Hebrew word *Sabbath*.

With regard to the other days, *Monday* corresponds to *Lundi*, a corruption of the Latin form *Lunae Dies*; *Tuesday* corresponds to *Mardi*, *Martis Dies*, and so on. There are again some curious variations. *Wednesday* for instance in the high German countries is called *Mittwoch* ("Mid-week") and there is no very definite record of it in the form of *Woden's Day* in these countries, but *Thursday* and *Friday* are uniform in all Teutonic countries. One rather interesting and amusing form occurs in *Scandinavia*—where *Saturday* is called *Laugrdragr* (*Lordag*) which means washing day, or possibly may relate to the ancient Scandinavian god *Loki*, who may have been identified with *Saturn*.

So you find that throughout Europe these names occur in forms which can all be considered corruptions or translations of the Latin style, which was simply a series of planetary days, *Sundays* and *Saturdays* in some countries being replaced by names meaning the Lord's day and the *Sabbath* respectively.

This is a very fascinating subject when you make a comparison of the linguistic and dialectic forms of the names, finding the changes and noting the extraordinary conservatism of man. There is a complete survival of the Latin forms in *Wales*, *Brittany*, *Cornwall* and probably also the *Isle of Man*, also a partial survival in *Gaelic*. There is a remarkable stability about the system and the distribution shows that the names must have been introduced in the Latin form into many places before Christianity was adopted. Ecclesiastical influences always tended to abolish such reminders of heathenism, but the names were so firmly set that, when Christianity was adopted in these countries, these names survived in most cases, only *Saturday* and *Sunday* being sometimes changed. There are a few exceptions, as I mentioned before, such as in *Portugal* and *Russia*, where the names were modified.

So much for the history of the days of the week in the Christian era. Now what about the period before? In connection with the earlier period it is difficult to get exact details, because records are so fragmentary. There are, however, certain interesting data. First of all it should be mentioned that in 1869 *George Smith*, one of the early explorers in *Mesopotamia*, discovered a clay tablet which

was part of a calendar and in which it was stated that the 7th, 14th, 19th, 21st and 28th days of the moon were taboo to the King and to certain other people, for certain purposes. Even the word "Sabbath" is said to have been applied to these taboo days, but there is some controversy as to this. A few years later a large number of cuneiform tablets was discovered which formed part of a collection of omens drawn up by Babylonian astrologers from the appearance of the stars and sky (the "Observation of Bel"). In this collection there was one group of tablets which seemed to refer to the seven planets in the order in which they occur in the names of the day of the week. This particular conclusion is not, I think, quite accepted by Assyriologists nowadays. They doubt if the seven names are what they were at first thought to be. At one time it was thought quite definitely that this order of the seven planets actually went back to this collection of tablets which is reputed to have been compiled or partly compiled in the time of the first Sargon (1700 B.C.), but there are lots of difficulties about it. These inscriptions are very hard to translate because they were written in a curious oracular manner and in a double system of writing, so that beyond the fact that certain days of the month were taboo, and that there was in some instances an arrangement of seven days, it is not yet certain that the ancient Babylonians knew what a week was or anything about the seven planetary days of the week. When we come down to a later period, things are rather different. In the so-called Seleucid period, after the conquest of Babylonia by Alexander, Babylonian astrology became much more precise and comparatively valuable for astronomical purposes. There is, however, no indication that the seven-day week was employed for *chronology* in Egypt, Babylonia, Greece or Rome. These all had their own particular systems which mostly went along lines like those of the Chinese lunar calendar. It is almost certain that late Babylonian astrologers developed this planetary week system purely for astrological purposes. The peculiar system of naming the planetary day after the first hour of the day in itself suggests astrological ideas. Long before that time the seven planets had been associated with the seven gods of Babylonia, who had a number of attributes which correspond broadly to those which later European astrological books attributed to the seven planets.

The city of Harran had an extraordinarily long his-

tory and was not finally destroyed until the 13th Century A.D. It was in existence 3,000 years B.C. and practically throughout the whole of that period, even right up to the 10th Century A.D., it was a city of star-worship and a group of Sabaen pagans lived there. These people must not be confused with a similarly named Christian sect with whom they had no connexion. They had this planetary week before the time of Christ.

The history of Harran is rather complicated. There was a curious interchange of culture and astrology between Harran and Greece and Rome on the one hand and between Harran and Baghdad on the other. This was quite possibly the centre in which the seven-day planetary week originated. There is nothing to confirm it, but you can conjecture if you wish that Abraham got the system from the same city about 2,000 B.C. and transmitted it in a non-astrological form to the Jews, but that would be pure conjecture.

Now about the week in China. As you know the week is now very well-known among Christians in China by the name *Li-Pai*, which is obviously of recent missionary introduction. It, however, entered China much earlier in connection with these peculiar forms of Christianity known as Manichaeism and Nestorianism and also, in connexion with astrology, since the T'ang Dynasty. The seven planet cycle which occurs in China and corresponds to the order of the days of the week is an astrological one. From very ancient times throughout Asia there has been a distinct division of the ecliptic or path of the moon into 28 asterisms (*Nakshatras* in India, *Hsu* or "Resting places" in China). Actually, as I have said, the moon travels round the stars in $27\frac{1}{4}$ days and consequently the method of 28 divisions cannot be an exact one. Four of the star groups of these 28 are alluded to in the Chinese "Book of History" in Chou times and a 28-day system might go back to that time, but is not recorded. These 28 divisions have been allocated by astrologers to the planets. You will find that the Chinese have a similar arrangement to that which we have in our week days, but it almost certainly has been borrowed from the Indian series, which again probably came from Harran. So all that you can say about the planetary-week in China is that the series of planets in the same order does occur in astrology in China (also in Arabia and India), but purely in connexion with astrology, not in popular practice or chronology. As you know, not until comparatively

recently when Western culture became known in China, was the week at all observed by the Chinese except in connexion with Christianity.

I would say one last thing in connexion with drastic reform of the calendar. Mr. Cottsworth, who recently lectured on this subject in Shanghai, has explained the proposals of the League of Nations, but there is one curious weakness about the whole system of revision which should be considered, *viz.*, it depends entirely on the predominance of the seven-day which is not a measure from an astronomical point of view and is an arbitrary division of time based on a seventh day of rest. It means nothing except that, so that it is perhaps a little questionable whether any drastic reform should be tied down to a seven-day week. In Russian a five-day week has been talked of. One rest-day in five would be perhaps a more convenient arrangement than the present. The week is purely an arbitrary division in time and apart from traditional religious associations has no real meaning.

The seven-day week is thus, as I said at first, a very interesting fossil of the ancient life and thought of man.

BIBLIOGRAPHY.

L. DE SAUSSURE: "La Série Septénaire, cosmologique et planétaire," *Journal Asiatique*, Vol. CCIV, Paris, 1924.

A. WYLIE: "On the Knowledge of a Weekly Sabbath in China," *Chinese Recorder*, Vol. IV, Foochow, 1873.

Encyclopaedia Britannica, *Encyclopaedia Biblica*, *Jewish Encyclopaedia*, sub voces "Sabbath," "Week," "Days," "Stars," "Astrology," etc.

Oxford English Dictionary, Names of the Days.

JACOB GRIMM: *Teutonic Mythology* (Stallybrass' translation), Vol. I. pp. 122-130, London, 1880.

ALEXANDER PHILIP: *The Calendar*, Cambridge, 1921. (Not always reliable).

R. A. PROCTOR: *The Poetry of Astronomy*, London, 1881.

"Mélanges sur la Chronologie Chinoise," *Var. Sin.*, No. 52, Shanghai, 1920.

A. H. SAYCE: "The Astronomy and Astrology of the Babylonians," *Proc. Soc. Bibl. Arch.*, Vol. III, 1874.

D. CHWOLSON: *Die Ssabier und der Ssabismus*, St. Petersburg, 1856.

- ALEXANDER HUMBOLT: *Cosmos* (Sabine's translation), Vol. III, Note p. cvi.
- W. LOTZ: *Quaestiones de Historia Sabbati*, 1883.
- E. SCHRADER: *Der Bab. Urspr. d. siebentägigen Woche, Studien und Kritiken*, 1874, p. 343, etc., *Die Keilinschriften u. d. Alte Testament*, 1883.
- E. MAYER: *Ursprung der sieben Wochentage, Zeitschrift d. Deutschen Morgenlandischen Gesellschaft*, 1883, p. 453, etc.
- J. F. FLEET: "The Use of Planetary Names of Days in India," *J.R.A.S.*, Oct. 1912.
- PALLADIUS, *Chin. Recorder*, Vol. VI, 1875, pp. 147-8.
- "A China Sabbath," *Notes and Queries in China and Japan*, Vol. IV, p. 15.

CONTRIBUTIONS FROM THE HERBARIUM OF THE SHANTUNG CHRISTIAN UNIVERSITY¹

By ARTHUR PAUL JACOT

VI. AUTUMN FLOWERS OF THE TSINAN PLAIN.

The period of rains may begin in early June—or not until August in a drought year. The June rains are usually few, but markedly heavier than those of spring, which are the fag end of north-eastern storms. In fact they are drenching enough to cause the summer rainfall seeds to take notice and bestir themselves. The whole period is one of rapid development. Grey-greens change to bright greens, grass-greens, and even blue-greens where the soil is rich in humus. There is no such marked sequence as occurred through the springtime. This is largely due to the rainfall flora's consisting chiefly of annuals—thus resembling a desert flora which awaits the heavy though infrequent downpours of such arid regions. This fact, coupled with the custom of being elsewhere during the summer, leads me to treat of the summer flora, not chronologically but by family and other convenient groups and to include with them the few autumn flowers which are but a lagging element of the summer rains. Howbeit, this is certain, when one returns from the coast or mountain side, one is confronted by a new host of plants, most of them tall and rank in growth, forming a dense vegetation which, with the crops, covers everything. Such a mass can only be dealt with by comparisons. The spring flora, though present usually as old leafage, is here omitted.

The Grasses and Sedges.

Of these groups, the most conspicuous is that of the grasses (and sedges). The simplest introduction to this

¹ This is a continuation of the series begun in Vol. LIX (1928) of this Journal.

group is by way of the crop plants. By their fruit we shall know them. In the grasses the fruit is a seed (like a wheat seed) enclosed in a chaffy pocket, so we may divide the crop plants by the arrangement of their seed pockets (or flowers): whether (1) in a single head like the wheat or common millet, or (2) in slender, diverging heads like the maize head (not the long-haired, female cob), or (3) in a diffuse panicle like the sorgum (*kao-liang*). The millet (Italian millet) is a *Setaria*. All the grains are arranged in a dense head which, in cultures, is so heavy as to droop. Three other grasses have this arrangement:

Setaria viridis, one of the most abundant annual grasses, springing up anywhere it finds bare earth, varies much in appearance but always has its single erect head of coarse, bearded grains. It may be only six inches high in poor, dry soil or a foot and a half in rich soil among other weeds. In this semi-arid plain, the head may be two to four centimeters long. The colour may be quite reddish to a vivid grass green.

Tragus aliena is chiefly a wayside annual, spreading laterally from its root mass rather than upward. It is at once distinguishable because its seed pockets are ornamented by about five, slender, raised ribs which bristle with recurved, hook-like barbs, giving each pocket the appearance of a burr. In fact they are burry enough to stick to woollens and would thus be disseminated along the pathways if it were not for their lowly state (eight to twelve centimeters high).

Imperata cylindrica is at once the king of this group and the farmers' pest. A perennial by reason of its long, horizontal, rooting, underground stems (rhizomes), it pushes its way out of sight of the farmers' eyes all through his fields and absorbs the food and water of his crops by under "handed" means. It can only be eradicated by digging out its every underground bit—including those of the roadside or fieldside—which is usually neglected by the farmer and therefore the plant is never absent. For us it is a thing of beauty, for it raises its large, silky-silvery heads, quite free from leaves, high (six decimeters) above the surrounding plants. To add to its shining aspect, the heads are so large that they are usually gently or gracefully bent and wave about on their slender culms before every breeze. They may be seen already "in flower" in late spring, being nourished that early by their copious underground absorbing and storage system.

The second group, typified by the maize tassel, com-

prises seven species. These all have their seed pockets (in the maize it is only the male flowers) arranged along slender branchlets (rhachises) diverging from a common point or closely spaced points (subgroup A), or from widely spaced points (subgroup B), thus forming an erect panicle which may be loose (if made of only three to four widely spread rhachises) or compact, if with branching rhachises. In the maize there is a long central rhachis, the prolongation of the main stalk, but in the grasses of subgroup A this central axis is usually absent (first five species).

Chloris virgata is the most abundant and ubiquitous of this group. An annual which crops out everywhere in unoccupied territory, after the first heavy rains, it greets us in September with hundreds and thousands of greenish to ruddy heads composed of seven to eight (4-15) closely held, hairy fingers which together look very much like a point brush, each mounted on its own stiff culm.

Andropogon ischaemum is the most abundant on undisturbed land, as on the hillsides, graves, field margins, but never on plowed or frequently disturbed land. This is due to its being a perennial which forms dense mats. The leaves are short and almost entirely confined to the mats, while the long, very slender culms rise at least five decimeters, to sway their slender, not wide-spreading, usually ruddy, five (2-13) fingers, well above the other plants. The flowers or seed pockets, rather loosely scattered along the hairy rhachises, are quite slender and have one, sharply bent, modest bristle. Thus this plant is far more slender and graceful than its stiff, stout culmed, shaggy headed, predecessor.

Syntherisma sanguinalis is an annual, sprawling about on the cultivated fields or disturbed, uncovered earth. Its flower fingers are usually three (2-9) in number, wide spread and always green. The seed pockets are almost always distant from each other, leaving bare spaces between them on the rhachises which are thus seen to be undulate. Since in our region the seed pockets are gray-bearded, we recognize it as the subspecies *S. s. ciliaris*.

Capriola dactylon is to be found only in special places where it forms carpets or good sized rugs (colonies) due to its copiously branching, tough, almost woody, above ground runners (stolons). Its fruiting heads are rarely held three decimeters high and the fingers are so much spread out as to often curve backwards. The seed pockets are fine, hard, shining, furry edged, pointed and

closely aligned in two overlapping rows, thus forming the daintiest, most clean cut head of this group. South of Tsinan it is found almost exclusively in the grassy draws utilized as roadways; among the fields north of the town where more moist, it is of more general distribution.

Eleusine indica has wide (to 5 mm.), flat, green fingers forming the coarsest head of any of this group. One side of the rhachis is completely hidden by the seed pockets while the other is completely exposed. In harmony with its coarse nature is its presence along paths, field edges and even in the fields, but very locally. It seems to spread slowly, though an annual, but is very tenacious once established, withstanding a great deal of trampling.

Molinia (Diplachne) serotina belonging to subgroup B, is at once recognized by the large dense clumps or stools it forms, and by the position of the leaves along the stalk which is at right angles, making a very striking rake-like pattern when a culm is held out by itself, and giving the clump itself a very characteristic appearance of geometric airiness. Not only do the leaves grow out at right angles to the culm but the fingers of the head as well. These fingers moreover are very few flowered and fine, so that this species has the skimpiest head of these grasses. In the late fall, winter and spring it is conspicuous by reason of its roundish clumps (to two decimeters in diameter) of very fine, decurved, leaves, no other grass forming any such leaf heads in this region.

Echinochloa crusgalli has a similarly arranged fruiting head but the seed pockets are large and coarse, often ruddy (mahogany green), and the coarse, leafy, often branching and reclining culms grow singly or a few together. This coarse, annual, "barn-yard grass," about the Tsinan region, grows in the arroyo bottoms, especially where pools formed during summer, and other moist, waste ground where animals have trampled. It is much commoner north of the city.

Themeda triandra is the coarsest, tallest of the grasses of the region. Although a typical hill species it is sometimes found on the plain, at least near the hills, and will make a good growth if given the chance. Its chief characteristics are the arrangement of the seed pockets, a few together in a flattened tassel or fan-like cluster, mounted on a slender (two centimeter or so) "pedicel." The upper edge of this fan bristles with long, angled awns.

A rusty tan is its predominant colour, giving a characteristic ruddiness to the areas occupied by it.

The third group consists of plants in which the seed pockets are so spaced about as to give the plant a shaggy or tufted appearance entirely lacking the definite head and orderly arrangement of the preceding. The first three of these have the seed pockets without awns or bristles, the last two with.

Eragrostis minor can be easily recognized because the seed-pockets are arranged in tiny, flattened cones whose scales (the seeds) are lined up in two rows. These little seed cones are mounted on very fine, hairlike rhachises which are arranged alternately along the main rhachis so that the many cones (100-150 or even more) form a paniced head. Thus the plant combines neat solidarity with fineness and airiness. It is a common, annual weed of the plowed fields.

Eragrostis megastachya, less common, is very similar but has no silky hairs on the base of the leaf, though the tongue of the leaf (behind the culm) has them, and the cones are about three millimeters broad, as well as being generally bigger.

Eragrostis pilosa, found chiefly in the arroyos or dry stream beds, has these cones much smaller, unflattened, ragged, and arranged in a closer, more broom-like head.

Aristida adscensionis forms broom-like growths on the graves, and on newly opened earth. It can be easily recognized by its long, slender seeds crowned by three, longer, stiff awns which are always ready to stick into ones clothes, if the sharp pointed seed does not.

Stipa bungeana is the most graceful and finest of the grasses of the plain when in flower-fruit. The leaves are short and when dry not only curve about but fold up lengthwise to form a slender trough. The clums stand up far above the meagre leaf cluster bearing along half its length a sprinkling of seed pockets whose single awn is so long and curved (besides being twice, angularly bent) as to give the heads a very soft and graceful air as they hang over with their weight of awns, these awns usually eight centimeters long (the seeds but five millimeters) being sixteen times longer than their seeds! One may well say that this species has mostly gone to whiskers. Some species of *Stipa* are poisonous or injurious to stock.

This species grows chiefly on undisturbed graves and terraces.

Cyperus rotundus is a plant that might be mistaken for a grass. Thanks to its triangled (three sided) "culms" it is easily recognized as a sedge. As it is a common cultivated field weed (reaching a height of four to six decimeters) it represents an exception to the usual habitat of the sedges. The seed pockets are arranged along fingers much as in maize but on a much smaller scale and without the central axis. But most different, many tassels (or panicles) spring from a common point, making a sort of double panicle. At this point of union, as in most sedges, there are (one to) several leaf blades. Having a root system which sends out long, plant-forming runners, it is as much of a pest and even more difficult to eradicate (because of the fineness and darkness of these runners) than is *Imperata cylindrica* (above).

The other two species of sedge (*Carex*) have already been described as spring plants. This therefore completes the grasses and sedges, the most graceful, the daintiest of the flowering plants.

Composites.

Another fairly large and easily recognizable group is that of the composites, which have aster-like flowers. These divide into three types or subgroups: (1) those with a fringe of coloured petals as in the asters; (2) those without petals at all; (3) those in which the whole flower is made up of petals as the dandelion.

Bidens pilosa bipinnata, better known as beggar ticks or Spanish needles because of the way their long, stiff seeds terminated by two or three barbed prongs or spines, attach themselves and stick to one's clothes, has aster-like flowers with but two to four or five, short, yellow petals. The leaves are compound and neatly cut up (see this Journal, Vol. LIX, p. 201, figs. 7-8). The plant forms a stiff, almost bushy, annual growth about two feet high in waste places, especially on stone dumps.

Inula britannica may not be a plant of the plains but is a fairly common perennial on terraces between fields south of Tsinan, and last year appeared in my garden. It also has an aster-like flower of yellow petals but unlike *Aster hispidus*, it forms stiff, upright stems with elongate-lanceolate, pubescent to silky haired leaves averaging seventeen millimeters wide and nine centimeters long.

Scorzonera macrospermum usually makes its peren-

nial debut in the spring, but its large, fuzzy heads are conspicuous, chiefly on our September return. It is of the dandelion group though one would never guess it as it is without coloured petals, at least in this region. One sees it as a bud with fuzzy tip just showing between the tightly closed involucre bracts or as fine haired brushes forty centimeters long. The seeds are seventeen millimeters long with a very short neck bearing a conical cap whose rim bears the long (23 mm.) feathery bristles as a crown or feather duster. The leaves are slender, lanceolate with cottony coating. Plants may attain four or five decimeters on graves or terraces but seldom attain full growth before being cropped by knife or teeth.

Erigeron canadensis is a tall, columnar plant growing in waste places, especially abandoned fields. The single, tall stalk is lined all around with lanceolate leaves, except for its upper third or fourth which is strewn with the tiny, apparently petal-less, flowers, arranged in panicles. For all its height, often two meters, it is an annual.

Artemisia scoparia is another bearer of petal-less flowers which are even smaller than those of the preceding. The plant is low and very branching with the twigs tough and quite reddish, verging on mahogany red. The leaves have already been described in this Journal (Vol. LIX, p. 208, figs. 14-21). Very common in Arbor vitae groves, on terraces and undisturbed land.

Artemisia annua has slightly larger flowers, a much greater stature (to one and a half or even two meters), and well developed, crysanthemum-like but very thin, bright green leaves. Its outstanding characteristic, however, is its fragrance or pungent aroma, especially noticeable on being bruised or crushed in the hand. An annual of waste lands, it may also be found on the north side of buildings and in out-of-the-way corners. These last two species may be responsible for hay fever in some persons.

Trailing and "Climbing."

A group which is easily recognized but has no botanical or racial affinities, are those which are so flabby stemmed as to lie about over the ground or, by propinquity, grow (usually but erroneously referred to as climbing) over erect objects. Of these, the first three have harsh stems and leaves while the remainder are smooth and even hairless.

Humulus japonicus or wild hops, has harsh, palmately cut, five pointed-lobed, coarsely toothed leaves with long

petioles attached on opposite sides of the stems. The flowers are of two kinds: small, greenish-yellow, male flowers in loose panicles from axils of leaves, and on other plants catkin-like clusters also springing from the leaf axils. Thus this plant is bi-sexual. The stems are long (to two or more meters), and very tough, ribbed, and with minute, downwardly directed prickles. It is common in waste corners and dumps, especially stone piles.

Rubia cordifolia is a brittle plant growing in shady places, usually under other plants. The stem is four-angled, and these edges as also the leaf edges are lined with barbs or minute prickles all turned downward so that it can be rubbed or stroked one way only. Its chief characteristic is that its leaves, which are elongately heartshaped and fairly long stalked, are arranged in whorls along the stems. The flowers are very small, usually five pointed starlets arranged in axillary cymes. Late in the fall, green and later red berries enclose the black, somewhat depressed, two-ridged, shagreen-surfaced seeds.

Trichosanthes kirilowii is the third harsh (though much smoother than the preceding), trailing plant. It is the wild melon of this area. The leaves are very variable in shape (see figs. 1 and 2), with a hair-spring, three-branched tendril on the opposite side. From the axils of the leaves spring the long petioled flowers, a male and a female, side by side. The female is single and leafless, the males grouped two or three (or more) together, each with his covering leaf. The female is slender and yellow, sitting in a long gown (the calyx-pedicel), with very fuzzy (fimbriate) petal ends. The males are much smaller, stouter, green, with unexposed petals. The fruit is early gathered by the early risers (ovoid to ovoid-oblong, 9-10 cm. long by 5-7 cm. in diameter).

Cynanchum chinense is a trailing milk-weed, as any one plucking its elegantly formed, heart-shaped, whitish-green leaves will find. It bleeds milk at every fracture. The pods are very slender (to ten centimeters long), and usually three or four together, spreading widely from each other. Occasionally on terraces and graves.

Columella japonica is at once recognizable by its pedate leaves (fig. 3), duplicated by no other plant of this plain. As a herbaceous grape, it bears on its axillary, stout, stiff peduncle, a flattened cluster of small, green, later blackish berries. Frequently bifurcate tendrils spring from opposite the leaves. It may be found at the

edges of fields, at the foot of terraces facing northward, and such sheltered places, but is not common.

Cuscuta chinensis is the only flowering parasite of the plain. Being a parasite it is leafless, has waxy, innocent, pure-white flowers and golden or orange threads for stems found twined about leguminous and other plants, sucking nourishment through tiny false-roots. This species differs from other *Cuscutas* in that the flowers have strong, nobbed carinas, free styles, and fimbriate throat scales.

Aristolochia contorta also has heart-shaped leaves but the sinus is deeply and squarely cut out (fig. 4), and they are not milky. Its axillary flowers are unique (when present), for they constitute a slightly widening tube with bulbous base and flaring, tongue-like tip, terminated by a filamentous extension (fig. 5). Though generally yellow, the flower is suffused with dull green on the outside, and may attain a length of three centimeters.

Strikingly Differentiated.

The plants in this group have no one outstanding characteristic in common, but each has its own striking character by which it may be differentiated from any other within this group or the following group.

Salsola kali is at once recognizable because all its leaves are reduced to awl-like or scale-like points, making the deviously curved but roundish compacted stalks very harsh, even prickly to the touch. If it has flowers, one would never guess it, so inconspicuous are they—and their fruit. It is common along roadsides and waste places.

Portulaca oleracea is easily identified by its very thick, juicy, fleshy stems and leaves. Its pale yellow, five petaled flowers give place to a lozenge-shaped capsule which breaks open about its waist, doffing its upper, conical half to reveal its jet black, shining seeds. The leaves are obovate, fat and perfectly simple. Springing anew after each downpour from seeds of the previous seeding, it may easily be encountered in fields and gardens on bare earth, as a lace-like, somewhat ruddy mat.

Cynanchum sibiricum is conspicuous only in late October, especially after it has lost some of its leaves because of the large pods. If one is broken open it is found to be packed with sticky glistening material while the edges of the pod wall also exude milk. It is a milk-weed, like one of the above trailers, but it forms a bushy growth, the tips of the branches often extending beyond



the leaves as loosely curling, undeveloped twiners. The leaves are strap-like, i.e., of equal diameter throughout, to slightly lanceolate, pointed at the tip, rounded to abruptly tapering at the base, and borne on a very short but *distinct* petiole.

Lycium chinense is striking by reason of (1) its being a bush, though very low, (2) its pale purple flowers and later (3) its abundance of bright red, ovate berries. The very pale and drooping branches bear slender prickles. Its leaves are ovate, decurrent on the rather short petiole, and often covered or eaten up by a small, black slug which smears the lower leaves with its frass. This slug is the larva of a beetle (*Lemna decempunctata* Gebl.) which is black above except for the yellow wingcovers.

Galium verum is at once recognizable because of its very harsh leaves which are arranged in whorls along the stems. These leaves, moreover, are very slender, with a thick mid-rib along the under surface and the edges conspicuously curled under, making them appear quite thick and longitudinally ribbed. It forms a stiff, bushy growth about three decimeters high, with the branches terminated by elongate panicles of small, yellow flowers resembling those of its close relative *Rubia cordifolia* (above). At Tsinan it is found chiefly along the north foot of the hills, but also occurs on the plain.

Xanthium strumarium is immediately recognizable by its green, oval burrs (12-15 mm. long), which grow in clusters about the axils of the leaves and branch tips. The harshly pubescent leaves are heart-shaped but with the edges very much cut up by shallow lobes and pointed teeth. The stiff bush-like plant with rather large leaves for this region, may be found erecting its two to three feet of coarseness along roadsides, at dumps, in waste nooks and corners frequented by man.

Solanum nigrum is recognizable by its white, star-like flowers and round, black berries. The glabrous, oval leaves have edges which are sinuous more than bluntly toothed. It forms a frail, often shapely, oval plant, growing sparsely in shady places, usually on the north side of houses, walls, and such sun shade.

Lespedeza striata, like the next species, is unique among these fall plants, in having the leaves made up of three leaflets which are oval with prominent feather-like veining on the under surface. The slender, brownish, gracefully curved, repand branches with the small leaflets, form a lacy mat. At the base of the petiole are two con-

spicuous, brownish, chaffy stipules longer than the hirsute petiole. The flowers are whitish but the keel has the tip deep violet to bluish, and gaping open. It is occasional here and there under other plants in burial grounds and overgrown land, dying annually.

Lespedeza daurica differs from the preceding in having long (6-10 cm.), tough, straight, branches; needle-like, short, stipules; oblanceolate, blunt, long petioled leaves. It is dimorphic. One form has terminal panicles of conspicuous yellowish flowers which are usually sterile, and smaller leaves. The standard stands widely spread showing its two fimbriated red flames. The other form has small, inconspicuous, seed-bearing flowers, a few in the axils of the leaves. It is by far commonest about the field terraces; perennial.

Unattractives.

The remaining plants may be grouped as unattractive because they lack showy flowers or parts and are often coarse, common, wayside weeds. By their fruits we shall know them. The first three bear their fruit in conspicuous, terminal, leafless panicles; the first four have broad, the last two slender leaves.

Rumex obtusifolius has its brown triangular seeds hanging quite separately and independently on nodding pedicels longer than the seed with its three, broad, fringed, clasping, leaf-like "petals." A closer examination will show these peculiar leaf-like "petals" to be coarsely reticulate-veined and to have, when green, a short, stout, reddish midrib. Later the whole turns brown and is then known to children as coffee-grounds. The leaves are two to three inches long, shaped very much like a human tongue. Found in waste places, especially sheltered corners; not common; perennial.

Amaranthus retroflexus has its shiny black, elongate seeds set in a crown of five, tiny petals and protected by (two to) three, slender, sharply pointed bracts which make the whole panicle quite rough and harsh to the touch. The rough leaves are angularly oval, somewhat lozenge-like, with a blunt tip and protruding midrib, and a base which runs gradually down onto the long, pubescent petiole. Waysides, waste land, dumps, very common; annual.

Chenopodium opulifolium has its dull black, flattened seeds set in a recovered, flattened cup, with no armament whatever, so that the slender panicle is quite smooth and

seemingly dusted with whitish powder, as also the underside of the leaves and the young stems. The leaves are deltoid (as broad as long), with a few, squarish, blunt, irregular teeth and blunt tip. This annual weed is very common all about the campus on waste land. Other species of *Chenopodium* should be looked for in this region.

Acalypha australis has three, roundish, mat brown seeds in a three lobed capsule. It is these three lobed bodies, harboured by a heart-shaped bract, and clustered in the axils of the slender petioled leaves, which are characteristic of this species. In robust specimens these green-backed, fruiting bodies are found in pairs at the ends of slender pedicels. The leaves are oval, to two inches long, bluntly pointed, with ten to twelve, blunt teeth which make the leaf margin look crenelate. The bracts are often flushed with ruddy along their margins. Common in the bean fields or other shady spots.

Kochia scoparia, known to some as fire-bush or summer cypress, has seeds much like those of *Chenopodium* but their cups are five winged and seem set in a fuzzy, silver haired nest, in the axil of a strap-shaped leaflet, and grouped in cob-like heads subtended by a much longer, strap-shaped leaf. The whole plant forms a dense, oval mass with copious, stiff, erect branches. For all its bushy appearance it is an annual of waste places, possibly a garden escape.

Polygonum aviculare is a prostrate to semi-erect annual of the arroyo bottoms. Its oval leaves, rarely two centimeters long hereabouts, are scattered alternately along the tough stems, each with a cluster of two or three, tiny, red tipped flowers, encompassed in a two-parted, lacerated, brownish stipule. The stems are roundish and striate, but the young tips are squarish, branching at wide angles with each other.

Omissions.

The following should have been included in the spring flora for early May.

Echinosperrum lappula anisacanthum is a forget-me-not flowered annual of waste places, whose pale and inconspicuous flowers give rise to rugose little nutlets longitudinally lined with minute, almost soft spines, terminated by two recurved barbs. These spinules are in two rows and in our variety the spines of the two rows are unequal in length. These burry nutlets are mounted alternately along the branches, each subtended by a tiny,

lanceolate leaflet. The whole plant has a definite central axis with branches springing from the axils of the lanceolate three to five centimeter long leaves. The plant is rough-hispid, like its close relative *Bothriospermum*.

Fall Recrudescence.

An interesting phenomenon of the fall flora, is that as the temperatures approach those of the spring, certain flowers which bloomed in the springtime at a certain temperature, bloom again in the fall, when their favourite temperature is reached. Thus a part of the spring flora reappears, but in reversed order. For instance on November 21st the following were in bloom: *Astragalus scaberrimus*, *Oxytropis bicolor*, *Erodium stephanianum*, *Viola prionantha*, *Lactuca denticulata*, *Euphorbia lunulata*, *Taraxacum*, *Aster altaicus*; November 14th, *Potentilla flagellaris*, *Lactuca versicolor*; November 30th, in addition to most of the above, *Gueldenstaedtia multiflora*.

Acknowledgements.

Besides being indebted to the host of botanists who laboured to accumulate the knowledge stored in books and periodicals, I am especially grateful to the late Father Francois Courtois of the old Zikawei Museum, and to Father Henri Belval of the new Heude Museum, Shanghai, for information which they very kindly gave me in great detail.

Corrections.

In an earlier article in this Journal, Vol. LIX (1928), page 207, *Lespedeza virgata* should be *L. daurica* (Laxm.) and *L. juncea* should be *L. caraganae* Bunge, while on page 211 *Grewia parviflora* is now called *G. biloba*. In Vol. LXI (1930), p. 146, fig. 11 should be *Convolvulus arvensis*.

CHINESE POTTERY AND PORCELAIN: AN APPRECIATION

By R. D. ABRAHAM

The present Paper was prepared during a holiday where no books of reference were available.

A break from the deafening roar of Shanghai traffic and busy days very soon brought images to mind of a bygone age, and the fascination lay not a little in the knowledge that the art pertained to the land we live in and to the people we live amongst, and more so at a time like the present when the country is in turmoil and the majority of the people live in terror of their lives.

It is at such a time that Art, the delightful and pure art of China, conjures up thoughts that inspire one to philosophical thinking along paths that lead to a strange yet happy calm.

An inspiration was felt to record these feelings, but in a subject like this—Chinese Pottery and Porcelain: An Appreciation—it was, I fear, great presumption to make the attempt without books of reference. However, the subject has been attempted, and your kind indulgence is craved for this Paper in that it lacks scholarly references and scientific data. It is, indeed, a Paper for the layman.

About a decade ago, Dr. J. G. Andersson discovered by excavation in Honan fragments of pottery of which the body, the glaze and, what is most important, the designs, resembled similar fragments discovered in India, in Persia, in South-western Russia and on the Mediterranean Coast; the geological strata in which these fragments were found were at least 5,000 years old.

This discovery upsets our preconceived notions as to the age of pottery, the use of glaze, the design for its embellishment and the connexion which evidently must have existed between peoples so far distant.

We discuss affairs to-day which happened millions of

years ago, and yet one feels a thrill that China was in communication with India and Europe at least 5,000 years ago, and that Pottery was world-wide in its use.

The potters must have lived in a civilised age, to judge by the pottery produced, of which specimens have been discovered.

The impression that these specimens make on one certainly leads one to ponder, for here we have irrefutable evidence of Pottery, and good specimens of that ware, of more than a thousand years previous to the Chow Period, which formerly was thought to be the oldest period with which pottery, consisting of coarse clay—vessels crudely shaped with matted or striated design, could be connected.

Sir Aurel Stein refers in his book *Innermost Asia* to discoveries he has made in Seistan in Eastern Iran of fragments similar to those of Dr. Andersson's discovery. This is all that we know of the history of these remote times. Further discoveries must be made, more scientific data obtained, for, as Mr. G. K. Chesterton states, science must make further headway to *correct* perhaps many of what are our present scientific beliefs. When reading Mr. Chesterton's article on this subject, these excavations of Andersson and Stein were called to mind.

One is reminded, too, of a comparatively recent article in a leading magazine in which certain oriental archaeologists claim now to have made discoveries, which very discoveries were made known to the archaeological world some years ago, and yet no acknowledgement is made of this fact in their report.

The next period is the Chow, and of this period numerous specimens of bronze and jade have come down to the present day, many of the pieces being in perfect preservation. It gives us an excellent idea of the arts and crafts of that period, and an insight into the minds of the people, to realize that all of the bronzes (if "all" is not too sweeping a statement) were made for ritual purposes while jade pieces, too, had ritual significations. This was the age of Confucius, and propriety held sway. Bronze vessels were made in sets to stand before the ancestral shrine. Everything had its proper signification. Jade, in particular, was carved for symbolic purposes. Jade was worn on ceremonial occasions, and advantage was taken of its resonance to cause a pleasant tinkling when the wearer moved.

It is a strange thought that Aaron, Israel's High Priest, should in his canonicals have golden bells so that

his approach could be similarly made known by their tinkling.

It is a far cry from the Sinaitic Desert to the State of Lu—yet there are these “touches of nature” which shew that “the whole world is kin.” A little thought on this matter will impress us as to the futility of war and hatred amongst men, and of how pleasant it is “to dwell as brothers in unity.”

But what of the Pottery of the Chow period?

These do not give any indication of the splendid works in bronze and jade. What has become of the early “pottery” civilization that we discussed at the beginning of this Paper? Have there been civilizations equal to ours in bygone years and now lost? Will the same thing happen in our own case? “There is nothing new under the sun” preached Koheloth.

We now come to the Han Period, a most prolific period in the history of Chinese art, in magnificently wrought bronzes in which the soul of the artist poured itself into his handiwork, making his creations pulsate with the very essence of life and energy. They are small pieces very often, but are none the less monumental in conception and in execution.

The pottery of the Han period shews the same genius that we see exhibited in bronzes and sculptures of this age.

The biscuit is usually reddish—not too thick, and in some instances quite thin—and baked hard, affording an excellent example of, as Hobson calls it, porcelaneous pottery, the fore-runner of true porcelain.

An illustration will be seen in the picture of the flat shaped bottle of the Han Dynasty, Fig. 1.

The biscuit is reddish, thin, and there is for this type of ware quite a sharp resonance on percussion.

The piece is finally modelled and there is balance, proportion and technique.

You will notice that there is a gentle swelling at the bottom of the piece which gradually narrows down as it reaches the top, culminating in a comparatively large spout and capped by a stopper. Allowance is made for the vessel to be carried in suspension. Presumably this piece is a copy of a soldier's portable water bottle in bronze and perhaps shews Siberian influence in modelling and design. The copying of bronze pieces in pottery was quite common in China.

The question of the fluxing material comes next. The

Han glazes are not very thick, though the whole surface of the ware is well covered, terminating in thick drops at the bottom of the piece. The glaze, after the lapse of many hundreds of years, in the course of decomposition, assumes a delightful golden iridescence with silver fleckings here and there. The master hand of nature has thus enhanced the artistic work of man.

The same general characteristics enumerated above as to the manufacture of the ware apply also to this piece with the exception of the biscuit, which is not as hard and is much thicker.

There are also clay figures of men and animals executed in this period: some of them are painted. This class of funeral ware was carried on down to the Sung period and later.

The execution of these pieces of the Han, Tang and Sung Periods is, as I have already said, remarkable for strength and life.

The thought often comes to mind of how Chinese art compares with Egyptian, Roman and Hellenic art, and very often one is at a loss what to think. The discoveries in Tutankhamen's tomb are gorgeous. There are gold plated furnishings, beautiful ebony carvings, inlay work of the most intricate and delicate nature. We are overcome by the pomp, glory and luxury of Egypt. Look at the marvellous statuary of Rome and of Hellas and one is dumbfounded! Chinese art, and Chinese civilization (for art is the crystallization of civilization) seem to shrink before these giants of Egypt and of Greece.

Yet in quiet moments the simple calm of Chinese art will steal upon you unawares and give you comfort. A fleeting colour of russet autumn, the fresh green of spring—these seem to be caught and detained for your delectation. It is as if the philosopher-artist, the nature-loving artisan, had gone out into the green fields and woods and, sitting by limpid streams, was taught that beauty lay in simplicity, in line, in proportion and in colour. With these reflections, perhaps the gorgeousness of Egypt will not carry all before it.

And again, with European art the human body has been emphasised; the perfect human form was the highest form of beauty. In China, man is but a dot in the universe; he is of small account. But nature is incomparable. Colour has a prepossessing charm.

Such thoughts begin to bring relief, but how shall we know that they are not erroneous, seeing that our only

experiences are gained from photographs? The following lines by Siren seem to give support:—

“One finds examples which by the purity of their lines and harmony of proportions reach the level of individual masterpieces, and may be placed by the side of the most famous Greek vases.”

He goes even further and says:—

“It may be questioned whether products of the Greek artists ever expressed the same expansive energy and plastic force . . .”

Sumerian art—the little we know of it from excavated specimens—shows a wonderful sense of line, design and proportion. Further excavations are looked forward to with keen expectation.

The following dynasty, the Tang, was also conspicuous for its great art achievements. The painting of this period was remarkable for its strength and virility. It is said that when the painting of a certain period is of a high order then it follows that all the works of art of that period must be good.

Clay formed by the potter, in the beginning by hand and later by the wheel, into vessels which were baked, made the first earthenware vessels, but these were too porous to contain liquids. Later on, in the evolution of the clay vessel, came the introduction of powdered stone, making it harder and able to hold liquids; this was the second stage of what Hobson calls *porcelaneous stoneware*. It is now easy to imagine that enterprising potters experimented both with clay (chiefly *Kaolin*) and stone, until the former clumsy vessels were later made light to handle, smooth to the touch, safe for the retention of liquid and modelled either for beauty or for utilitarian purposes. This brings us to the third stage in the evolution of porcelain. In the Tang period, as far as is known, the culmination was reached, i.e., the evolution of pottery into porcelain. True porcelain must possess three qualities:—(1) Hardness, (2) Translucency, (3) Clear resonance on percussion.

The word “evolution” has been used quite often; it is a favourite term in these days. It correctly defines the word “change,” and instinctively the feeling comes to one that changes were not wrought by chance nor of their own accord. We see that anxious thought and experiment were required, and that there were direction, system and method. Perhaps those artist-potters felt that when they pondered over the problems of the universe

they too had an inkling of the meaning of that evolution of which we talk to-day.

The two-handed vase shown in Fig. 2 shews that shapes were borrowed from foreign lands. This specimen is in the shape of a Greek Amphora, but it is already being adapted to suit Chinese symbolism for, as you will notice, the handles are composed of two dragons, one heavier than the other, representing the dual principals Yin and Yang. Chinese artists have borrowed ideas from foreigners here and there, but these have not been of any particular importance: the art of China in the main is indigenous. This piece is also classed as porcelaneous stoneware.

While on the question of shapes due to outside influences, Figs. 3, 4 and 5, all of the Sung Dynasty, will prove interesting.

It is generally known that pigments were used for the decoration of pieces in these early days. At first designs used to be impressed on the soft clay, *e.g.*, a leaf would be used to give a naturalistic design, but it is not generally known that enamel colours, over glaze, were also employed with success.

Chinese Records describe a ware, called Ch'ai, made about the end of the five dynasty period. The records state that these pieces were as thin as paper, the fragments sharp as a razor and the colour like the "blue of the sky after rain." For many years this was considered a fanciful description by enthusiastic antiquarians. A few years ago, however, excavations on some ancient sites revealed porcelain answering to the above description with the one exception that the pieces are not quite as thin as the paper we know to-day. We can add one more quality to those described above, and that is Translucency, for if the pieces are held up to a strong light peculiar flakes, resembling snow flakes, may be noticed: the combination of age, and the infiltration of soil has caused this beautiful effect. The workmanship of these pieces exhibits the highest skill in the art of pottery and in the kiln.

Bearing in mind these beautiful pieces, chaste both in colour and form, we will leave this epoch and now glance at the Sung Period.

This era inherited artistic genius from its forerunner the Tang, but the art of Sung was mellow, as if the youth and energies of the Han and Tang periods were softened and harmonized in the age of Sung. Mellow tones constituted the chief attraction of the Sung Dynasty, rather than precise potting: the biscuit was chiefly of the porce-



FIG. 1.—HAN DYNASTY: Soldiers (?) Flask.

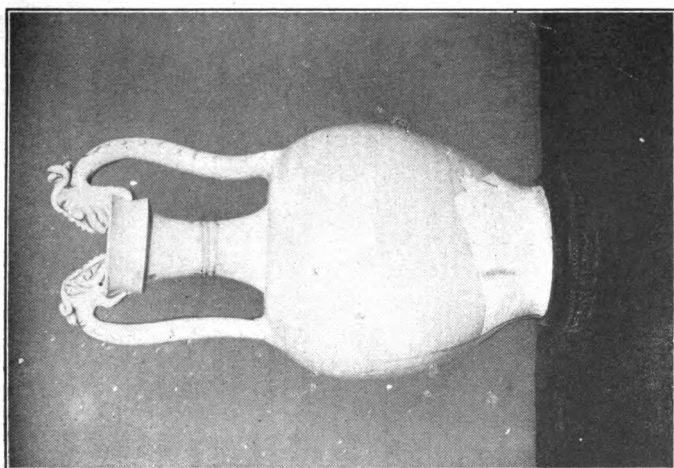


FIG. 2.—T'ANG DYNASTY: Greek-shaped Amphora.

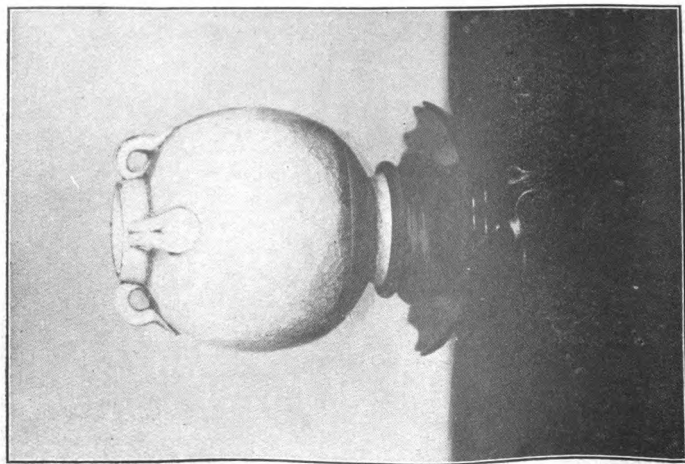


FIG. 3.—SUNG DYNASTY: Shensi "oil bottle."

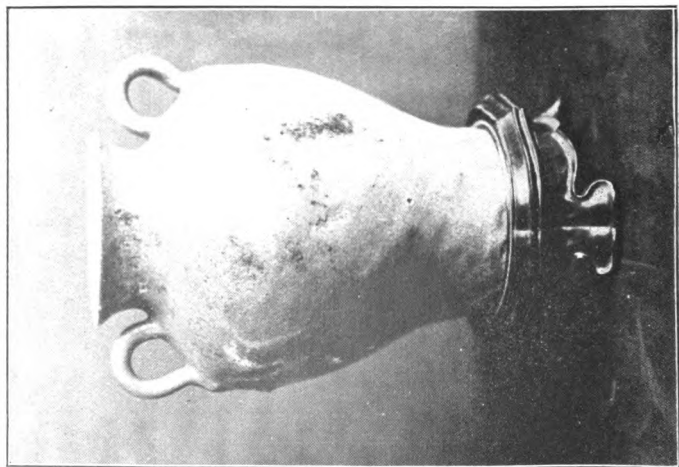


FIG. 4.—SUNG DYNASTY: Chun type.

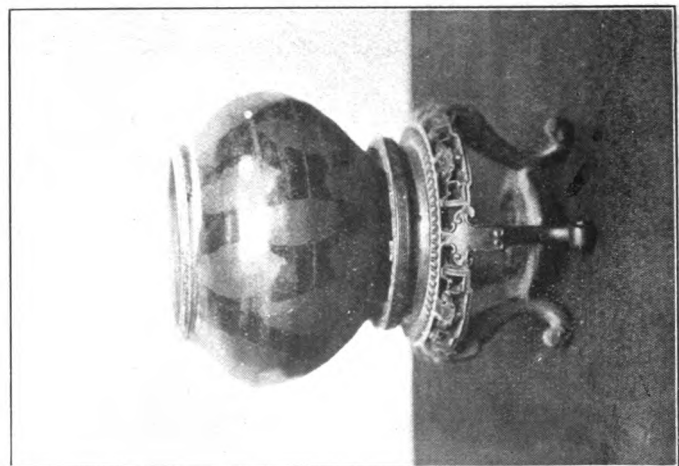


FIG. 5.—SUNG DYNASTY: Chien type.

laneous stoneware type—with the “stoneware” in many cases not very pronounced.

The glaze of the type known as Chun Ware was of a strawberry purple hue breaking into lavender mottling and grounds: this is the fore-runner of the typical flambe glazes of later times.

The colours are beautiful, but the forms and shapes are heavy.

In several cases of this type of ware, the biscuit, together with fluxing material, was put into the kiln, whereupon air was introduced; the oxygen assisted in a chemical combination which produced purple and red patches on the surface, but these patches could not be produced in any required position nor could their colours be determined; the result was considered a “trick of the kiln.”

The Lungchuan Ware of the Sung Period has been well known almost all over the world for several centuries. The ware is heavy and capable of rough handling—hence it was suitable for export. In Africa this ware was venerated in that it was claimed that if poisoned food was placed on a plate of this ware, the glaze would change colour. In Europe it was prized as the famous celadon are, for the colour of the glaze.

The colours of the Lungchuan glaze are known as olive green, onion green, etc., from the various tones of green employed. Some of the colours approach a bluish-green of the Ying Ching type. The decorations of the bowls and vases are very often in relief and sometimes incised on the body, the glaze covering the incised design giving an artistic effect of high value.

The celadons of the Sung Period were one of the popular wares coming from China; another fairly common ware of the Sung Dynasty is the Tzu Chow Ware. The glaze is yellowish-white on which are decorations in black, the brushwork being particularly “lively.” Another form of decoration was the design in high relief, with two shades of the same coloured glaze to accentuate the decoration.

Another variation of the Sung glazes is the Chien Yao Ware—mirror black glaze, with brown fleckings: this was known as the “Hare fur” design owing to its resemblance to a hare’s pelt. These bowls are also decorated with russet spots known as “iron rust” designs. Beautiful beyond description are the bowls of this type decorated in the interior with light brown flecks in the

midst of which small branches or bamboo sprays, or an autumn leaf, may be perceived. Truly a high artistic achievement; it is with bowls such as this type that the famous Japanese Tea Drinking Ceremonies are performed.

The next glaze to discuss is the beautiful Ting Yao glaze. The biscuit of this glaze is of a fine-white porcelain on which a lustrous creamy fluxing material is used. The result is one which causes the beholder to experience a thrill of pure delight. The effect on the ware is further enhanced by the decoration in low relief, or incised design under the glaze, of peonies, lotus, phoenix, geese, etc., all executed with a symmetry and harmony possible only in an artist possessed of a deep love of nature. In the Ming Dynasty this, it is said, was the most prized of all Sung wares.

There are three important types of this ware:—

Tu Ting—earthy or yellowish in colour;
Fen Ting—flour white in colour;
Pai Ting—the white Ting.

The Ting ware was a highly prized Imperial ware; no defects or black spots were to be allowed on the surface.

The next period is the Yuan period, which endeavoured to keep up the Sung Tradition. This dynasty lasted only eighty years and the ruling house was foreign. There were many famous artists who lived during this dynasty and whose works are admired to this day. There was, however, no special feature in the works of art of this period to comment upon.

The next epoch was the Ming, and those dealing with this period are always severe on the works of art of this dynasty. They say that Ming Dynasty art is influenced by Confucianist teachings, which bound life by a system of codes of propriety and correctness, thereby stultifying enterprise and keeping genius in check.

This is true to a certain extent, but that Confucian teaching successfully held the population of China in the path of peace and common-sense, and encouraged a sincere respect for "right reason" or Justice, is no mean achievement.

Many years ago—before China became "civilized"—a dispute could be settled as soon as one of the contending parties would admit, "This belong reason." That was

what Confucianism did for China—made these “farmers of forty centuries” into a lovable people guided by the precedence of common sense and reason.

And what of art? A troubled sense possesses one: shall licence destroy the joy of beauty and harmony? Is there no middle course? When we look at the art of Ming we find the answer to our question: it is in the affirmative.

The Blanc de Chine and Blue and White Wares of this period are well known and highly esteemed.

“Kwan Yin” was very often made of this ware and what greater tribute to the genius of Ming than that Ming Blanc-de-Chine “Kwan Yins” have been piously revered in Europe as representing the Madonna? Kwan Yin, or Avalokitesvara of India, as modelled by a Chinese artist in beautiful white porcelain to become later an object of deep religious veneration in Europe! Confucius said: “All within the four seas are brothers.”

It is true that many of the Ming pieces are heavy, that the figures and designs are very often grotesque, and the colours are florid: while recognising these faults, let us also in justice to this dynasty record the great art of the era.

The next period, the Ch'ing Dynasty, was fortunate in that two of their long-lived rulers, though of Tartar origin, worked devotedly for the advancement and glory of China—Kang Hsi and Chien Lung. Art, more especially porcelain, developed under their encouragement and patronage. Pottery became a glorious art, and decoration became intricate. Egg-shell porcelain was made so tender and delicate that it seems almost sacrilege to handle these pieces to-day. A delightful riot of colours prevailed, and three and five-coloured pieces became the vogue.

The Sung traditions, however, were not lost, and charming pieces with glazes of a single lustrous colour were highly prized and to-day are the objects of deep admiration. The rich claret red, sang-de-boeuf, is one of these.

The glaze beloved in China and the delight of Europe and of America is that famous glaze with the fanciful name “Peach bloom.”

This glaze is of an attractive rose pink in which may be seen green spots, the whole effect being reminiscent of the bloom of the Peach. This glaze was used only on small pieces—vases, stamp boxes and water pots

for the Scholar's table. Such articles were indeed things of beauty.

Much has been written on the origin of Chinese Art and of the outside influences on it—Greek, Buddhist, Mohammedan, Siberian and European.

Other art has also been compared to Chinese art and speculation is rife on this matter but the preponderance of evidence is that the art of hCina is indigenous.

Where pottery and glazes actually originated is unknown. May we not take a lesson here from Natural History and plead for a common origin? Consider that well known bird, the Kingfisher, whose original habitat is believed to have been in Malay. To-day over one hundred and sixty specimens of this specie are known to science and the bird is to be found almost everywhere.

We have not discussed designs, methods of decoration, nor shapes; suffice it to say that many of the designs were religious in significance; some of them conveyed good wishes and felicitations; others were purely decorative. The shapes were probably at first formed on utilitarian grounds only, and later became elaborated.

CHINESE-MOSLEM CHRONOLOGY

By ISAAC MASON

Moslem writers in China have made a curious mistake in their chronology when transmuting into Chinese periods, with the result that serious errors have been made in fixing the times of certain out-standing events such as the birth of Mohammed, the year of the Hegira (A.H.), and the first introduction of Islam into China.

The most famous Chinese-Moslem writer, Liu Chia-lien, who wrote over two centuries ago, gives the year of Mohammed's birth as 丙寅 during the time of Chung Ta T'ung 中大同 of the Liang dynasty 梁紀, which would correspond to A.D. 546 or 547; and the Hegira as the 19th year of K'ai Hwang 開皇 of the Sui dynasty 隋紀, i.e., A.D. 599. These events are ante-dated by 23 or 24 years, and other events are correspondingly mis-dated.

It should be noted, in passing, that the Chinese Cycle 甲子 method of calculating a year does not quite coincide with the Western system of months, so a particular cyclical designation may cover parts of two A.D. years; hence the hesitation in definitely fixing the A.D. year for a particular event.

The Moslems do not seem to have been much concerned about the chronological inaccuracy referred to, or to have attempted to explain or correct it. But others have endeavoured to discover how the mistake has arisen. In my article on "The Mohammedans of China," which appeared in the Journal for 1929, the matter is discussed, and a quotation from Mr. M. Broomhall is given, showing that between the Arab lunar year and the Chinese luni-solar year, there is a difference of almost exactly eleven days a year, or about three years in a century. The quotation continues:—

"M. Deveria has suggested that at some date, perhaps A.D. 1351, when the mosque at Canton was

restored, the Chinese Moslems transmuted their Arabic chronology into Chinese, and being ignorant of the variations between the lunar and solar years of the two systems, simply counted back the Arab years since the Hegira as so many Chinese years, thus antedating by twenty-three to twenty-four years the date they had in mind."

This was an ingenious suggestion, and gave the clue to what I believe to be the real solution of the problem. Not being quite satisfied with the date of the restoration of a mosque as being the occasion of the transmuting of the chronology, I looked for a more probable reason, and found it in the historical record that in the second year of Hung Wu—the founder of the Ming dynasty—which was A.D. 1369, there was a Moslem Chief Astronomer, who, with a number of Mohammedan officials, was employed in rectifying the Chinese calendar, and at the same time they apparently essayed to co-relate the Moslem calendar with the Chinese. The year A.D. 1369 would be A.H. 770, and by counting back that number of Arab years without considering the variation between lunar and solar years, the period A.D. 599 was arrived at as the year of the Hegira, which, however, is 23 years before that event took place, in 622. The addition of three years per century to the shorter lunar years would bring the chronology to be about correct. There can be little doubt that it was in A.D. 1369 that the calculation was made, and as it was made in connection with the then Board of Astronomy, it is strange that there should have been this omission to take into account the variation in the length of years.

The year A.D. 599 having been officially fixed as the time of the Hegira, Mohammedan writers appear to have accepted it without realizing the mistake, and Liu Chiai-lien simply counted back the years of Mohammed's age at the time of the Hegira, and thus arrives at 546 or 547 as the year of the Prophet's birth, which is stated to be in the time of the Liang dynasty, while actually it was in 570, at the time of the Sui dynasty. Mohammed's death is given as occurring in A.D. 608 or 609, which was long before his removal to Medina, and his subsequent career.

It is strange that Liu Chiai-lien says that the 60th year of K'ang Hsi—in which he was writing his famous work—was A.H. 1123, equivalent to A.D. 1711, whereas it

was actually 1721, an error of ten years. This is accounted for by Liu's omitting to make the correction of three years per century between the lunar and solar calculations, for the period of 352 years between 1369 and 1721.

We conclude, therefore, that the Moslem astronomers, and later the Chinese-Moslem historians, have, by their inaccuracy, confused chronology, and led to much misunderstanding. Some rectification has since taken place, and current Moslem publications bear the correct A.H. and A.D. years. But we know of no serious effort having been made to rectify the misleading of the past, and in the interests of historic accuracy, the earlier mistakes should be publicly corrected, and the history of Mohammedanism in China revised accordingly.

THE INDIAN FRONTIER

By EDWIN HAWARD

Probably there are many who will welcome the opportunity of studying India apart from the burning topics of recent political controversy. The story which I am endeavouring to tell is one which is all too little known and has features possibly unique in the current history of the world. The only country which in recent years has had a similar problem is possibly France with Morocco, but there conditions lend themselves more readily to final solutions. The North-West Frontier of India is India's vulnerable point. Of the six thousand miles which go to make her borders, three thousand have the sea for their frontier. Roughly, about two thousand consist of the impenetrable curtain of the Himalayas and the wild hilly country of the North-East and extreme East where Burma marches with China. But there remains, roughly, a thousand miles from the Pamirs to the mouth of the Indus, constituting the North-West Frontier line. Perhaps the best idea can be obtained from a glance at the map. The North-West Frontier, then, means the tract of country running from the Hindu Kush in the north down to Chaman in the south, bounded on the west by Afghanistan and on the east by the Indus. The boundary proper between India and Afghanistan is called the Durand Line, after the British negotiator who arranged the demarcation in 1893. The Durand Line is not co-terminous with what is known as the Administrative Border. In other words, there is between the Administrative Border and the Durand Line a tract of what is called Independent Tribal Territory, over which the British administration exercises nominal control and does not completely administer, as, for instance, in Baluchistan or in the settled districts of the Frontier Provinces. The Tribal Territory, sometimes called No Man's Land, is inhabited by about 500,000 fighting men, about 120,000 of whom are armed with modern rifles. These tribes are split up into clans, under feudal chiefs. They have a

common kinship with the Afghans in that they are of Pathan origin, some of them having the Greek strain—relic of the invasion of India by Alexander the Great. They are constantly at enmity with each other, and they can combine in sections for internecine warfare, as also for warfare against either Afghanistan or against the British Raj. I will not weary you by attempting, even if I could, to give you a comprehensive list of the different tribes. I will merely mention three who have persisted in securing the limelight during recent years: the Mahsuds, the Waziris, who gave their name to Waziristan, out of which they have been practically driven by the Mahsuds, and the Afridis. These three tribal groups are split up into different clans whose hostility to each other is latent or active at various times. They have a primitive democratic family system of government. Their chief instrument for conference and for settlement of tribal disputes is known as the Jirga, and it has been adopted by the British administrators as a useful means of obtaining the tribal view and of conducting negotiations through the political officers. Historically they are all connected with Afghanistan, and although they perhaps despise the Afghan as a fighter, they have a great reverence for the Amir or King of Afghanistan, a reverence which does not make them necessarily very docile all the time. In the settled districts the more peaceful Pathan has close kinship with these tribes, and although he may appreciate the advantages of being in less turbulent country, there are times when even in the settled districts the tribes can count on adherence, as was recently shown during the outbreak near Peshawar in 1930. It should be remarked, in parenthesis, here, that further north are very mountainous tracts, ruled over by independent chieftains, of whom the most important are the Mehtar of Chitral, the Nawab of Dir, and the Mian Gul of Swat. These chiefs fight among themselves, but are consistently at peace with India, and their country gives very little cause for anxiety owing to the fact that they have very tight control over their subjects. It is south of their country, where the Afridis and also the Mohmands and the Oraksais, as well as the Mahsuds and Wazirs, have close connections with the people of the Frontier Provinces, that is, the Administered Districts, that anxiety and trouble occur. The number of expeditions conducted by the Government of India against the tribes has been on an average of one a year for the last seventy or

a hundred years. Since 1852, seventeen operations have been led against the Mahsuds in Waziristan, and no less than four since 1911, the last in 1920 being the most serious and costly, the amount being said to have reached something like £20,000,000.

In the old days of Anglo-Indian history the frontier problem gave rise to controversies which produced two definite schools of thought, and advocacy of these two different opinions led to most acrimonious discussion among the British political officers and the British soldiers. A soldier or political officer who believed in the Close Border Policy, for example, did not merely disagree with a man who was in favour of the so-called Forward Policy, but simply attributed to that man all the vices with which the human race can be afflicted. So violently was this controversy apt to develop at times that it may be doubted whether in the Close Border camp the man who was rash enough to advocate the Forward Policy would be credited with being even a good father to his own children. To define the two policies, it may be stated that the Forward Policy was that which demanded an advance up to the Durand Line along its whole length, the disarmament of all the tribes in the territory thus covered, and the administration of the area on the lines of that existing in purely British India. An illustration of the successful application of the Forward Policy is to be found in Baluchistan, where Bruce and Sandeman managed to advance up to the Durand Line and pacify the country, to which a loose form of administration was applied with success.

The Close Border School maintains that it is impracticable to assume responsibility for the rugged and barren country in which these tribes live without indulging in expense beyond the dreams of the ordinary finance members of the Government of India, and they would leave the tribesmen to stew in their own juice and content themselves with keeping them out when they raid on the fertile tracts of administered territory. After the Waziristan campaign of 1920 it became apparent that the Close Border Policy led to as large expenditure on expeditions as any member of the Forward School could well expect to demand. Moreover, it certainly did not have the effect of keeping the administered districts free from the unwelcome attentions of the raiders, for the history of the districts of Dera Ismail Khan, Khohat, and Banu during 1920 and 1921 was crammed with stories of raids

and lootings which grievously disturbed the peace of the Frontier Provinces. So, in 1921, Lord Rawlinson being then Commander-in-Chief, the whole question of frontier policy was reviewed, and, broadened in vision perhaps by the experience of the Great War, it was felt that the time had come to put an end to the interminable quarrels of the two conflicting schools of thought. Sir Archibald Montgomery-Massingberd, the present Adjutant-General in Whitehall, was then Deputy-Chief of the General Staff to Lord Rawlinson, and he produced a most able review of frontier history. This review stigmatized as extravagant and ineffective the burn and scuttle policy which the Close Border school had been able to enforce. It was pointed out that although an expedition might for the time being give the tribesmen quietus, it left behind it memories which inevitably bore bitter fruit after the tribe had recovered from the physical effects of the punishment. It was admitted that financial considerations, which then were particularly pressing on the shoulders of the Government of India, precluded the idea of an extensive expedition involving, perhaps, as many as twelve divisions, to carry out the methodical disarmament of the tribes. The gist of the new plan was the adoption of the Forward Policy as an ideal and its piecemeal application where conditions rendered it desirable. As the campaign then proceeding in Waziristan was coming to a successful termination, it was obvious that the first application of this new Half-Forward Policy could be usefully made in that country. Moreover, Waziristan presented a special problem of its own. The Mahsuds and the Waziris, unlike the Afridis, had no territorial connections with the settled districts. The Afridis, so the argument went, had land in Peshawar area or Khohat. There was, therefore, some kind of a hold over them, and it was assumed that the necessity for applying the Forward Policy to Afridi territory would not immediately arise. The Mahsud and Wazir presented quite a different difficulty. In the summer, when temperatures rise, the Mahsud found the time between the sowing of his crops and the gathering of them most convenient for increasing his slender resources by the process of battenning on the well-fed people of the plains. He made his raids and then retired into the mountain fastnesses to profit by the proceeds. In the winter he made his way, singly as it were, through British India right down to Calcutta and it would be quite possible in December in Calcutta to meet

in Dharumtollah Bazaar an apparently peaceful trader who would sell merchandise, but in the summer he would be back in his own country, armed to the teeth and harrying the countryside.

Now the conduct of the operations in 1921-3 led to the construction of what became a circular road which penetrated into the heart of Mashud country, and enabled the military authorities to establish at Razmak, at a height of 7,000 feet above sea level, a cantonment camp where British and Indian troops could be healthily located, and once along the circular road, speedy action could be taken by armed forces to put down any tribal disturbances. It may be surmised that the framers of this policy built better than they knew. They were inclined to lay more stress on the coercive capacity of a road than on its persuasive qualities. In point of fact, the history of recent years shows that the road has exercised a great civilizing influence, and so successful has this policy been that although the Mahsuds last year undoubtedly were up in arms when the frontier was ablaze—it would have been strange if they had not been—they were speedily induced to revert to their new-won placidity of conduct, and it is now probable that the construction of an outer circular road will be shortly made, and thus bring the No Man's Land of Waziristan still more certainly under the control of the soldier and political officer.

The immediate problem, however, is not Waziristan, but Afridi country. The Afridi has been the spoilt child of the frontier. As already stated, it was thought that he had too much of a stake in administered territory to be unduly hostile. Still, even as far back as 1924 he was not altogether satisfactory, and one of the indications of this came from the protection given by Afridi tribesmen to the kidnappers of Miss Ellis and the murderers of her mother. The construction of the Khyber Railway through the Khyber Pass kept the Afridi quiet up to a point, because it gave him plenty of employment, and it may be remarked that one of the features of the road-making policy has been to employ local labour as far as possible. In point of practice, this really resolves itself into paying blackmail, because from my personal observation of the road-building in Waziristan, the Mahsud contractor did as little as he possibly could, and it was the regular Pioneer Battalions who really put their backs into it along the road. Nevertheless, the Afridis did very well out of the Khyber Railway, which, incidentally, cost an

enormous sum of money, owing partly to human frailty in the matter of estimating, but it was a very fine piece of work, and when it was built it speedily became clear that the railway would destroy the monopoly which had hitherto been enjoyed by the camel caravans. Merchandise coming over through the Khyber Pass from Central Asia could be more effectively and rapidly brought into India by the railway, and this naturally led to a good deal of heart-burning among the Afridis, while the strategists among them realised that the existence of the railway was a menace to their military security. This made for dissatisfaction, and in spite of severe warnings, the Afridis were ready to listen to the ill-judged counsels of emissaries sent up into Afridi country by the India National Congress. There must have been some serious miscalculation in the frontier government over this. The Hindu domination of the Congress and the well-known hostility of the predominantly Islamic north to Hindu counsels produced a false sense of security, and, helped in some degree by Bolshevik agitation, the Afridis had the idea that some form of revolution was afoot in British India and that this provided honest tribesmen with a legitimate opportunity for making hay. When the trouble was over, the Government of India decided that the medicine that had been applied so successfully to Waziristan might well be applied to the Afridis. It should be observed that the ostensible cause of the Afridi truculence was due to an internal Mohammedan dispute among the Oraksais, and also to the misrepresentation by agitators of the Early Marriage Act in India. Owing to the hot weather all that the Government could do at the time was to establish a blockade; but in the Autumn it was decided that to insure against future incursions an extension would be made of the road from Peshawar to Bara Fort for ten or twelve miles to the edge of the Afridi hills. This road is now being constructed, and it should have the salutary effect of curbing the Afridis. The operations have involved a certain amount of fighting, as the telegrams have shown, but nothing as serious as occurred in Waziristan ten years ago.

This brief discussion of the actual facts of the situation does not perhaps explain the fundamentals of this frontier problem. It should be remembered that until the British came to India, the pathway of the invader into India has invariably lain through the North-West Frontier. Three times in the history of India the fate of

India was decided at Panipat, a little village 50 miles north of Delhi, and on each of those occasions the invader won. Alexander the Great invaded India over the mountain passes of the North-West Frontier, and it will be realised that the existence of this belt of mountainous territory, inhabited by hardy tribesmen, well armed and well accustomed to fighting, constitutes a serious menace to any force which attempts to keep out the invader. If there is no control over the tribesmen, an invading army from Afghanistan would obtain from the tribes assistance which would be exceedingly serious to India itself. I do not wish to touch on the Power beyond Afghanistan. We all know how the Russian menace has loomed large in past Indian history. Perhaps to-day it would be unwise to attach much military importance to it. Nevertheless, the fact remains that in the north of Afghanistan, Soviet Russia has by infiltration established herself fairly securely, and there are air concentrations in Russian territory that could bomb Peshawar from the air within a few hours. The disarming of the tribes would not necessarily mean a relaxation of the vigilance of the frontier wardens, for on the other side of the Durand Line are tribes over whom even the King of Afghanistan himself exercises but the loosest control. And the resident in the frontier districts must always be prepared for the type of action which takes no account of the look of things and is only concerned with the primitive law which impels a man to fight for his existence. And it is a fight in tribal territory, for the country produces faster than it feeds, and the hardy Mahsud, accustomed as he is to having his little precariously perched *kach*, green with corn, swept away in a few moments by the sudden spate of those unruly rivers, is not disposed to be squeamish about the way in which he keeps himself and his family going.

The policy of the Government of India in constructing roads has been supplemented by a decision to bring into Waziristan some method of irrigation in order to make the cultivation of the crops less uncertain. It has been suggested, too, that there must be oil there, but there has been no geological survey to confirm that suspicion. It may be doubted whether any such effort will be made in the immediate future, for although the road policy has been adopted, the Government seriously hold to the view that the tribesman should be allowed, as far as possible, to lead his own life. It is a very simple one. The old

frontier law is that a man is not a man until he has bred his man and shot his man. They guard their women jealously. You can go through Waziristan and never see a woman. And the only Jirga I attended was one in which the discussion raged round the diversion of the road from the bed of the river to a safer but more precipitous spot, and the tribal objection to this change was that it would result in the passers-by on the road overlooking their family life. Still, the road here has brought civilization, although the conservatively minded may doubt the benefits of that change. The Ford used by the troops for bringing up supplies eventually found its way into the possession of the tribal chieftain. He first conceived the brilliant idea of using it as a kind of armoured car against his particular enemies. Then he found that it was most useful in carrying him down the road to the big city, as he thought, in British territory. There he managed to go into the Bazaar to purchase a velvet waistcoat, at times to attend the local cinema and generally to have a very good time. This experience changed his outlook on life. But the Mahsud lady here came into the picture. She did not see why she should not have the trip in the Ford car. It certainly meant that the money which her husband spent would not be diverted entirely from her use, and the latest account that I have had from Kohat is that the old Mahsud chieftain was bitterly complaining of the extravagant tastes that his wife had after she had sampled the delights of the very modest shops in Kohat Bazaar. If this kind of notion spreads, the development of Waziristan is likely to proceed at a pace which would astonish the old-time frontier officer. And I think I am right in saying that one of Lady Irwin's achievements was that of flying to Razmak where she and her husband attended, of all things in the world, a garden party at which Mahsud ladies and gentlemen were present. In 1923 I dined with General Borrett at Razmak in a dug-out in the middle of the perimeter camp, and the game of hockey which I watched on that occasion was temporarily disturbed, not by the referee's whistle, but by a bullet which a casual Mahsud had sent flying into the midst of the game at a distance of 800 yards, and it was certainly not permitted to go outside the camp after dark. Incidentally, my dinner jacket, worn though it was, was the first ever seen in Razmak, as General Borrett told me on that occasion. And I think that the wireless message which I sent to the *Times* was the first press message ever sent from that part of the

world. This merely shows what can happen in seven years, because to-day Razmak has, I understand, proper barracks and there is a cinema there which the Mahsud is permitted to attend. This all goes to show that the Half-Forward Policy is proceeding on right lines, and that the present operations, if one may call them so, in Afridi territory should be successful.

To come to a discussion of the country, the illustrations will indicate characteristics of the country round the Khyber Pass. In the course of this short lecture any description must be plainly impressionist in character. But impressionism is no bad guide to realism, and as I look back I cannot help ruminating on the realities of the country I have left behind. I have endeavoured to crowd as much into a short lecture as memory, observation and time permitted. Yet there is still much that could be said to assist in focussing the picture. The skill and devotion of the engineers on the road, the unflinching endurance by the troops of the acute discomforts of an active campaign, without any solace in the shape of the glory of a full-sized war, the persistence of the spirit of intrigue, the predatory habits of the tribes have been noted. It remains to record a few final impressions jotted down in 1923 after a visit to the road and the country it was destined to dominate:—

Of the central figure in Waziristan—the Mahsud—it is sufficient to say that he has three virtues: he is brave, he is thrifty, and his lack of cleanliness is personal rather than moral. Indeed, compared with tribesmen living farther north, the Mahsuds are a clean-living set of men. On the other side of the shield there are all the quick, unbalanced temper of the savage, matching fully the destructive whims of the Tak-i-Zam treachery combined with a primitive adherence to certain arbitrary laws of good faith, laziness, and “slimness.” Blood feuds in Waziristan are less common than on other parts of the Frontier; possibly the Mahsud goes out of his way to avoid them, yet it is computed that 80 per cent. of the male population die a violent death. There are ways, too, of escaping from the blood feud. If the murderer or one of his family can jump into the grave of his victim or of his victim’s relation, or in some way get to the corpse without being shot, he can claim immunity either for ever or for a term of years. The story is told of how a Mahsud girl, the daughter of a murderer, was captured by her father’s enemies. As luck would have it, while she was

standing with her captors, she saw the funeral procession of one of their family. Swiftly she rushed to the bier and seized the feet of the corpse, claiming the right to demand what she would. It was given her and the brave girl, caring not for her own safety, asked for immunity for her father. It was reluctantly given, but it is sad to relate that the heroine was treated badly by her captors in consequence. Chivalry wins little respect on the Frontier.

Again a murderer who flees from his village can become one of another tribe who will take his blood feud on their shoulders if on arrival at the place of refuge he cuts the throat of a sheep and thus puts himself under the "shadow" of the tribal chief. With people of this type intrigue is a flourishing occupation, and the difficulties experienced by the engineers in getting the local labour to do an honest day's work are the constant preoccupation of the Political Officer. The plain, straightforward explanation of any incident on the Frontier is rarely the correct one, and the "Political's" task is to get to within as easy reach of the truth as he possibly can. This tends to give much power for mischief to men whose very indolence teaches them to delight in scheming, but the Political Officer, as a rule, uses his own personality to prevent misunderstanding coming between him and the tribes through the malice or stupidity of third parties.

And what of the road when it is "through"? As you recall the yellow line gradually becoming more marked against the stern rocks in the heart of Mahsud country you feel that you have seen there a portent. Sniping and "shooting up" will not necessarily cease because of the road, any more than pocket-picking has been abolished from the streets of London. But the road must stand as the first sign of civilization, and, if there are any possibilities of developing the country so as to give its inhabitants more than the present inadequate means of supporting life, it must be by the road that they will be brought to light. A geological survey of Waziristan would be interesting. Rock formations in many places seem to be of the igneous type, and oil appears to be there, too, although in what quantity no one at present will hazard a guess. Improved methods of protecting the kachas against the river floods might also benefit the Mahsud agriculturist. These are, perhaps, dreams rather than prophetic visions, but the road is no dream, and where it runs it must bring with it understanding.

The process may be said to have begun; the return of the bones of the Mullah Powindah to their old resting-place at Marobi betokens confidence in the meaning of the road. As the white flag flies over the shrine at the top of the green hill it signals that the spirit of Waziristan is watching the road on the other side of the river. Fancies like these crowd the mind as we look back on that wonderful beauty spot in the heart of the country. Gazing from the Indus at the fierce barrenness of the outer walls of Waziristan, it is difficult to believe that behind them are grassy hills, plentiful—sometimes too plentiful—streams and brave attempts at cultivation guarded by precipitous and rocky cliffs.

Having penetrated the walls and explored the mysteries they hold, you feel that you have been to one of those wonder-countries of which the old-time travel books tell. Evil sprites there must be in such a tale, but the good genii cannot be left out. When the history of Waziristan comes one day to be written, the engineer and the soldier will, perhaps, figure as the good genii of the plot. And, as every reader of fairy tales knows, the good genii conquer the evil sprites in the end. At present these good genii hardly recognise themselves in that guise. Theirs is a hard, practical, everyday life. Thrusting the road along, guarding it and its workers against the dangers of the country, they have little time to think of the meaning of it all. They may vaguely wonder whether their work will stand, whether it will accord with the spirit of the country; but their wonder will not deter them from their task. And at the end the road will emerge complete. What history will be written on its winding miles only the future can tell.

THE CHINESE NATION AND THE DOCTRINE OF THE GOLDEN MEAN

By TSAI YUEN-PEI

The world we are living in is a relative one with opposing tendencies, and in order to make proper adjustments to it in this life, we usually seek a centre of equilibrium as our resting point. This may be illustrated from many examples. For instance, in human and animal physiology, there are the arteries and the veins opposed to one another, and the heart acts as the centre of the circulation system; the assimilative system again, which has the double and opposite functions of assimilation and excretion, has the stomach and the intestines as its centre. In our general concepts also, similar relative differences exist in both time and space. We have the inevitable opposition between the right and the left, the front and the rear, and the above and the below in space, of which we ourselves serve as the centre. The stream of time is divided by us into the past and the future, with the ever shifting present as the centre or medium. These are all natural facts of human thinking, not subject to our alteration. Now the same principle of balance should obtain in human conduct also. Among the western philosophers, this principle has been recognized by Aristotle in his Doctrine of the Golden Mean, in which he upholds courage as the ideal mean between cowardice and recklessness, and temperance as the golden mean between parsimony and extravagance. Apart from this notable exception, however, there is a common tendency to fall into opposite idealistic extremes, either the extreme theory of non-resistance of Tolstoi, or the extreme theory of will to power of Nietzsche; or again, either the extreme theory of *laissez-faire* advocated by

Jean Jacques Rousseau or the opposite extreme of strong government control preached by Hobbes. The reason for this probably lies in the fact that all the other nations except Greece somehow do not possess the temperament required by the Doctrine of the Golden Mean, which therefore does not fit in with their conception of life. In China, however, the story is quite otherwise; whereas the extreme theorists have repeatedly met with failure, once their theory is put on trial, the Doctrine of the Golden Mean has always met with the approval of the majority, and has always had the best chance of standing the test of time. This may be proved from the experience of two of the most highly respected theories in China: first, that of Confucianism, which has held uninterrupted sway for two thousand years, and second, the Sanmin Doctrine of Dr. Sun Yat-sen.

The personages which have been upheld by the Confucianists as the ideals of manhood are the Emperors Yao, Shun and Yu who lived about four thousand years ago, Emperor Tang who lived about three thousand five hundred years ago, and finally the founders of the Chou Dynasty, Wen Wang and Wu Wang, who lived approximately three thousand years ago. Now the *Confucian Analects* says that when Emperor Yao turned over the government to his successor Shun, he commanded the latter "to hold on firmly to the mean." Now how did Emperor Shun "hold on to the mean"? The Chapter Chung-yung in *Li-Ki* says that "Shun was fond of asking for the opinions of those near him, and then, weighing between the two extremes, he would strike the balance and apply it to the people." The Book of History, *Shang-Shu*, says that Emperor Shun made his minister of music and ceremony take charge of the education of the people, and commanded him to teach the young to "be straightforward and yet gentle, lenient yet firm, to be determined without being harsh, and simple without being proud." Now although straightforwardness, leniency, determination and simplicity were all good virtues in themselves, yet it was possible to have too much of these good things. Too much straightforwardness does not go with gentility, and too much leniency is not compatible with firmness; a man of over-powering determination would be inclined to be harsh, and dogged simplicity may verge on nonchalance and disrespect. Hence, according to the

Doctrine of the Golden Mean, these should be tempered with the opposite virtues of gentility, firmness, benevolence and humility.

When Emperor Shun turned over the government to his successor Yu, again his parting injunction was the same as what he had received from his predecessor, namely, to hold on to the Golden Mean. How did Emperor Yu carry out this injunction in his conduct? Confucius says, "Emperor Yu was satisfied with simple meals for himself, but was careful about the official sacrifices; he hated beautiful clothing for personal decoration, yet was mindful of the beauty of the official gowns; he neglected his private dwellings that he might give his all to the public works." One might easily carry the idea of personal economy too far and apply it also to the sacrificial offerings, the official gowns and the public utilities which would then be too simple and slipshod. On the other hand, one might fall into the other extreme: because it would be desirable to have dignity and form in official ceremonies and thoroughness and order in the public works, one might become extravagant also in his personal habits. By striking the medium between the two, Yu carried out the Doctrine of the Golden Mean.

We know less of the personal habits of the next great Emperor Tang, but Mencius says also that "Tang held on to the (Golden) Mean," apparently following the examples of Yao, Shun and Yu. Although the founders of the Chou Dynasty, Wen Wang and Wu Wang, were not exactly models in this respect, yet Confucius said of them: "To push on without relaxation: that Wen Wang and Wu Wang could not do. To relax without pushing on; that Wen Wang and Wu Wang would not do. To push on and then relax alternately: that was the way of Wen Wang and Wu Wang." Wen Wang and Wu Wang fell into neither of the errors of insistent expansion or indolent relaxation, but steered safely between the two, by alternately playing fast and loose, as it were, which was their version of the Golden Mean Doctrine.

When we come to Confucius, the founder of Confucianism, we have very explicit statements which clearly show his *Chung-yung* temperament and his love for moderation. Confucius says: "When the Truth does not prevail, it is because the clever ones overshoot their mark, and the stupid ones fall short of it. When the Truth is

not clearly understood, it is because the wise ones know too much and the simple ones know too little." He seems to have summed up the philosophy of moderation in the one short remark: "To overshoot the mark is the same as to fall short of it." Commenting on the harmony of culture in a gentleman, he says: "To have more substance than form would be vulgar; to have more form than substance would be only worthy of a government clerk; to have the harmony of both form and substance—there's your gentleman." Again he says: "A gentleman in this world does not insist on doing anything or abstaining from anything; he stops at what is right and proper." And of himself, he says, "I never insist on anything (literally I do not distinguish between what one can do and what one cannot do)." The Doctrine of the Golden Mean is here seen to apply to a man's culture and to his personal conduct and decisions. Here is another picture of the gentleman from Confucius: he says, "The gentleman gives to others without incurring much expense; he works people hard without causing discontent; he takes from others without being greedy; he is dignified without seeming proud and awe-inspiring without seeming physically terrible." His disciples say of him that he was "gentle and yet firm, awe-inspiring and yet not rough, polite and at the same time well-poised." These, we may note, are all virtues of moderation. We may suppose therefore that when Ts-ssu, the grandson of Confucius, wrote that chapter on *Chung Yung*, or Moderation, he was strictly carrying on the tradition of Confucius.

Side by side with Confucianism in its earliest period, there were other extreme schools of philosophy. There was the extreme right legalist school, based on the theory of the wickedness of human nature, and, believing absolutely in government control and interference; on the other hand, there was the extreme left school of the Taoists, believing in nature and in absolute *laissez-faire*. The theory of the legalist school, however, was tried by Tsin-shih-hwang, whose imperial rule met with almost immediate collapse. The Taoist philosophy prevailed during the Tsin Dynasty, but that did not save the Dynasty from perishing. In the beginning of the Han Dynasty, we see three successive changes during three reigns. Wen-ti was a believer in Taoism, his son and

successor, Ching-ti, swung over to Legalism, and then the next ruler, Wu-ti, adopted Confucianism and gave it almost the status of a state religion, banning all the other schools of thought. Since that time, Confucianism has kept its position until the very end of the Manchu days. This seems to show that both extreme right and extreme left tendencies are not so compatible with the temperament of the Chinese race as Confucianism, which is neither right nor left, but stands in the middle, and which has succeeded in holding sway for two thousand years.

With the contact of western civilization and modern science, there has grown in China a new school of thought, which is the well-known Sanmin Doctrine of Dr. Sun Yat-sen. Now, although the Sanmin Doctrine includes many things which were never thought of by the Confucianists, it is nevertheless based on the Doctrine of the Golden Mean preached by Confucianism. We can give many instances to show its love of moderation which is so characteristic of the Chinese people. For instance, we have the two extremes between Nationalism, which is opposed to the idea of a world state, and Internationalism, which often takes no cognizance of necessary or unavoidable national barriers and distinctions. The Sanmin Doctrine of Dr. Sun stands in the middle between these two extremes; it stands for the national independence of China, and at the same time for the ultimate equality of all nations. Again, champions of the people's rights are usually opposed to a strong autocratic government, while an autocratic government generally also tramples upon the people's rights. The People's Rights principle of Dr. Sun's doctrine provides for both. It recognizes and stands for the four rights of the people, which are called their "political rights," chiefly concerned with the powers of legislation and control of government personnel. At the same time, it gives the five rights of administration, legislation, maintaining justice, control and examination to the government, which are called "government rights." It aims therefore at a happy medium, wherein both the people's rights and those of the government are properly regulated, toward the end that we may have a strong, efficient and at the same time democratic government. Again, with regard to the struggle between capitalism and labour, there is often the danger of either class oppressing the other. In the Sanmin Doctrine, the

attitude taken is that capitalism should be restricted by equalization of the rights of land-ownership, and at the same time socialist measures should be adopted for the protection of the interests of the labouring class. Here we have the Doctrine of the Golden Mean or moderation applied to the modern economic situation to bring about an adjustment between capital and labour. In the sphere of thought, there are conservatives who do not wish to see China westernized, and there are the radicals who are not all enthusiastic about the preservation of the national culture. Dr. Sun believed that we should bring about a revival of old ethical standards and cultural attainments, and at the same time that we should learn what the West has to teach us. Here we have the Doctrine of the Golden Mean applied to the question of general culture. In the system of government, there are the extreme theories of centralization and decentralization. Dr. Sun believes in a wise and equitable division of power between the central and the local governments. The main policies that affect the nation as a whole will be delegated to the central government, while those affecting local interests will be placed within the jurisdiction of the local government.

From all this, we can see that the Sanmin Doctrine of Dr. Sun Yat-sen is strictly in the true Chinese tradition, being in keeping with the spirit of moderation inculcated by Confucianism two thousand years ago, and therefore seems best fitted for the temperament of the Chinese people. In this respect, it decidedly differs from the right nationalists of the fascist type and the left communists.

THE WESTERN TRANSCRIPTION OF CHINESE

By CHARLES S. GARDNER

The adoption of a single unified system of English transcription of Chinese sounds for use by all writers save professional phoneticians offers such manifold and obvious advantages as scarcely to justify re-statement. The principles upon which the necessary agreement among sinologists might be obtained do, however, require careful consideration.

Is agreement upon the Wade system as it stands an attainable objective? It embodies brief clear forms of international character, more wisely and consistently combined than in any other of the numerous and often rather grotesque efforts of the period of early experiment. It has received widespread recognition for its genuine merits, and has accordingly been more often employed than any other in books of reference.

Notable as were the advantages of "Wade" its defects are no less serious. From the standpoint of most Chinese speakers it is incomplete at one important point: by representing as *ch- ch'-*, and *hs-* (before *-i* and *-ü*) three mongrel initials of recent local Pekingese dialect, it makes impossible differentiation of their proper components (*j- vs. dz-*, *ch- vs. ts-*, *hs- vs. s-*) of which the identity has been preserved distinct in most of the vast area where some "Mandarin" dialect is spoken, and even in Peking before *-a*, *-e*, *-o*, and *-u*. Again, while the Wade system enables the student initiated into its mysteries to read with assurance the other sounds transcribed, its assumed pronunciations are so arbitrary as to render well-nigh hopeless any attempt to read it without special instruction. More than this, the frequent use of the apostrophe—to say nothing of a peculiar diacritical

mark found only in special fonts of type—invites confusion of the skilled proof-reader and of the sinologist.

Finally, despite the wide vogue of the Wade system, it has so far failed of obtaining universal acceptance that many of the most careful and conscientious scholars in all countries resolutely avoid it. It seems no exaggeration to say that the Wade system has been tried for seventy years and has been found wanting. Let us then forthright recognize that in continuing the old propaganda for "Wade" we are struggling for an object impossible of realization; and let us instead commence an organized search for the bases of desirable modification.

It has been suggested that a system adapted to every use other than phonetic dissertation is desirable. It may assist in the solution of very real difficulties to divide them, and to consider first what may be the essential requirements of the professed sinologist. These may be truthfully compressed into a brief and simple formula: consistency in completeness.

The need for completeness requires no argument. It is obvious that no important element in the standard Chinese "Mandarin" syllabary—whatever phonetic variations local pronunciation may give it—can properly be ignored. The Wade system is complete for Pekingese, but for Pekingese only; and therefore requires supplement of the three forms dz-, ts-, and s- before -i and -ü, as already suggested, to be fit for general use. On the other hand, there is no reason for multiplying transcriptions of a single standard syllable to meet local variations in pronunciation. For example, if in some parts of the lower Long River valley and of Sz Chuan an initial nasal is prefixed to certain words, such variation is regular and requires no written expression; just as, were it instead represented by ng-, the symbol could as regularly be ignored as superfluous by the Pekingese.

Consistency clearly demands that aspiration be uniformly represented, whether by insertion of an apostrophe, a diacritical mark, or supplementary letter (h); or by variation of initial consonants. Only confusion can result from failure to apply some one of these methods consistently. Each letter employed should, moreover, have a single constant value in a given position, whether initial or final, although that value may properly change with change of position. Thus initial h- cannot advantageously be employed to represent

simultaneously a guttural fricative before -a, -e, -o, -ü; and also a sibilant before -i and -ü. Nor can initial g- well fluctuate from "hard" to "soft" before these same vowels.

The professed sinologist, who knows the pronunciation of the whole Chinese syllabary independently of all transcription, can use upon necessity any system which embodies this minimum formula, consistency in completeness, however bizarre may be the particular symbols selected: most scholars of the present day are familiar with at least three systems. This does not, however, by any means imply that all are equally convenient. Convenience for the scholar as for others depends in large measure upon intelligent application of two further principles: simplicity, and avoidance of forms liable to confusion.

The serious student of Chinese, as of any other language, can never hope to acquire correct pronunciation by reading: oral instruction is for him evidently essential. But the public is not open to instruction of any kind, and it becomes accordingly desirable to represent the Chinese sounds by letters which as nearly as possible suggest them directly. Employment of elaborate combinations of vowels or consonants, of strange or inverted letters, of diacritical marks wholly unknown or but partly understood, only serves to repel the general reader and to exaggerate the already too prevalent misapprehension that Chinese is difficult to pronounce. Strange letters and diacritical signs are moreover absolutely ruled out by their absence from most fonts of type in Britain, America, and the Far East.

Use of the apostrophe as a sign of aspiration leads to constant confusion through its mistaken elision and insertion, and through failure to recognize as inaspirate words which do not contain it. Wherever it is encountered, or wherever it is absent but *might be* intended, doubt lingers as to the correctness of the actual reading. This is in fact one of the most serious objections to the existing Wade system. Another is its use of final -ih as a symbol for the supradental vowel which in Peking has the value of an abbreviated vocalic -r. In some parts of the country this becomes a short -i (as in ship), justifying phonetically the symbol adopted by Wade; but this symbol has the enormous practical

disadvantage that most readers outside China are *entirely unable* to distinguish it in pronunciation from plain -i. The *i* which has frequently been advanced as an alternative is open to precisely the same objection, plus the equally serious ones that it is even more liable to mistake than the apostrophe, and that it does not exist in most Anglo-American and Sino-Japanese fonts of type. Other solutions of these problems are urgently needed.

It has been often stated that any acceptable system must be "international" in character. This proposition demands careful analysis. Is our aim to be a sort of Chinese Esperanto which can really satisfy no one? Must we discard all letters of the alphabet which are differently pronounced by different nations? Obviously this is impossible, unless we be prepared to create a wholly new alphabet.

There are in the world to-day seven conspicuously important groups of sinologists: the French, Russians, Germans, Britons, Americans, Japanese, and Chinese (other important but smaller groups—Swedes, Dutch, etc.—are linguistically versatile).¹ The French have consistently employed for the past three decades a national system of their own; and if they in time adopt any other, it will be because they recognize the advantages of international coöperation (as now with Japanese and Sanskrit), not because an international system is more convenient for French speakers. To the Russians it is matter of little consequence what symbols the other western nations agree to adopt; for the benefit of Russian readers they employ different ones in any event. The interests of the Germans are closely identified with our own, and those of the British and Americans are identical. The great majority of Japanese and Chinese who employ the western alphabet owe their principal acquaintance with it to the English language: their interests too are identical with ours.

Thus, to re-capitulate briefly: four of the seven present groups of sinologists are English-speaking groups; the fifth, the German, has few divergent

¹ The Dutch, moreover, have recently perfected a national system of their own for local use.

interests; while of the remaining two, one is indifferent² and the other to be cajoled only by union of the rest. Recent awakening of interest in China among American universities,³ and large endowments for its study render inevitable future increase of importance of the English-speaking group. Let us not then hastily attach too much significance to such sonorous phrases as: "Such a form would be excellent for English speakers but for an international public quite unacceptable." In fact, our "international public" is mainly an English-speaking public.

As guiding principles for modification of the Wade system we have then only four: completeness, consistency, simplicity, and avoidance of confusion. In seeking to apply them it is important to remember that numerous reference works (however few in proportion to those of future generations) have employed that system, and that their use should not be hampered more than necessary by any radical changes.

It has already been suggested that the use of the apostrophe or of a diacritical sign of any sort to mark aspiration, while acceptable upon phonetic grounds, is not satisfactory for typographical reasons. Insertion of an *h*, the recognized sign of aspiration in transcription of Sanskrit, is another phonetically satisfactory solution which is practically disadvantageous: *chhi*, *chha*, and *chhu* are clumsy forms; and if *tchi*, *tcha*, and *tchu* be substituted, their inaspirate counter-parts *tci*, *tca*, and *tcu* appear still more barbarous.

In many ways the most satisfactory method of separating inaspirates from aspirate is the simple and direct one of using distinctive initial consonants: inaspirate *b*-, *d*-, *g*-, *j*-, and *dz*- conveniently balance aspirate *p*-, *t*-, *k*-, *ch*-, and *ts*-. Complete elimination of uncertainty which these alternates afford is of equal advantage to layman and to scholar. To the *layman*, also, the forms suggested approach more closely to actual pronunciation than do those of the Wade system.

² Prof. Alexéiev of the Academy of Sciences, Leningrad, is personally a keen authority on Chinese phonetics, but he recognizes that neither in phonetic studies nor in publications for Russian readers can either "Wade" or any "modified Wade" be employed. Like virtually all European sinologists, he speaks perfect English.

³ In 1928, 111 institutions reported 281 courses dealing with the Far East to the Institute of Pacific Relations.

Those phoneticians who complain that b-, d-, g-, j-, and dz- are usually voiced or sonant whereas the Chinese are voiceless or surd, prefer not to dwell upon the fact that in English simple p-, t-, k-, ch-, and ts- are usually aspirate. To *students* it is surely as easy to teach that the former Chinese sounds should be pronounced without "voice" as that Wade's series of aspirates are presumed to be without aspiration. For the professional *phonetician* likewise, details of any system for general use are relatively inconsequential: for his own research and publication he must use another in any event. If any modifications are to be adopted, let them give help where help is most greatly needed.

Wade adopted initial j- as a symbol for what, to the English ear, is rather an initial r-. In so doing, he adopted the French approach to one of the few difficult sounds of the language, hoping thus to win over the French to his system of romanization—without, however, any success whatever, since the French are the one people who have not made any use of it. Under the circumstances, and in view of the obvious fact that we cannot label the j- as "French" for the benefit of general readers, it seems sensible to avail ourselves of the nearest equivalent possible and to reinstate r- in its natural place. It should be noted that by so doing a fruitful source of confusion is eliminated, since failure to recognize Wade's j- as something other than it seems results in pronunciation of a common, but totally different series of words. Those formed from initial r-, on the other hand, are not liable to any confusion whatever.

Completion of the standard Chinese syllabary requires, as already stated, recognition of the various sounds j- and dz-, ch- and ts-, hs- and s- before -i and -ü, in consistency with the first two pairs recognized by Wade (in conformity to present Peking dialect) before the other vowels. Because dictionaries based on the Wade system do not indicate these proper distinctions before -i and -ü, students whose training is confined to Peking and who rely solely on English dictionaries will at the outset find it difficult to maintain them. It should not, however, be very difficult to re-arrange any standard dictionary to represent them. Meanwhile no serious confusion results from continuing to reflect their Pekingese fusion as j-, ch-, and hs-

(Wade's ch-, ch'- and hs-), desirable as it is to add dz-, ts-, and s-.

There are in Chinese eight rather widely different vowel sounds which require clear-cut differentiation. For a, e, i, o, u we must, with Wade, adopt the Italian values for the simple reason that in English each one varies widely. The French u, again with him, we can conveniently represent in its German guise as ü, a symbol which is widely recognized, and which fortunately exists in many fonts of type. Substitution of w or v results in uncouth forms which would require explanation, and which must cause particular and needless difficulties for German readers.

It has been suggested that neither Wade's -ih nor -i is a satisfactory transcription for the supradental vowel which in Peking has the value of ir in English "shirt." The former is distinctive in print, but suggests to the tongue no sound other than simple -i. It seems that the best and simplest solution is to substitute Pekingese -ir for -ih: the former may be as grossly mispronounced as the latter, but unlike it, can lead to no confusion whatever, a consideration of utmost importance even for those areas in China where -ir is less suggestive of local dialect than -ih. Unlike -ih moreover, it does not appear an insuperable obstacle to the uninitiated: the veriest tyro can be sure of being understood by other westerners at least, a consideration of manifest importance to the Chinese government since it favours public discussion and formation of intelligent western opinion upon Chinese affairs.

The last of the Chinese vowels, and the only one which offers serious difficulty to us foreigners, is pronounced with the tongue in almost the same position as the foregoing one. The sound produced is merely a sonant -z, a sort of buzz terminating in the closing of the throat with a faint vocalic sound not identified with any one of our recognized "five vowels," but rather a cross between a and u. Various have been the attempts to circumvent this nuisance, to represent the final vocalic resonance with an i, or with a u doctored with cryptic signs or with extra consonants: but none has been satisfactory. Not even consistency has been maintained in representing within a single system the three forms in which this Jonah among sounds appears. Dr. Y. R. Jao while teaching Chinese at Harvard University from

1922 to 1924, used probably the most satisfactory symbol for this sound which, has thus far been proposed: simple -z, unadulterated with any one of our usual vowels. The resulting combined forms: sz, dz, and tz are less formidable than any of the many others which have been proposed, and they do lead to pronunciation at least suggestively correct.⁴

Serious discrepancy in actual pronunciation between the three great branches of the "Mandarin" dialect exists at only a single point. The initial unvoiced palatal j- (e.g., Jiang, river) of Peking is in Nanking a guttural g- (giang) only before -i and -ü. Conversely, the guttural g- of Nanking is in Peking an unvoiced palatal j- only before these same vowels. No matter whether j- or g- be employed, distinction must be made one place or the other between palatal and guttural position. Inasmuch as the Wade system has made forms based on the Peking dialect familiar, it seems on the whole the part of prudence to proceed conservatively, and to defer abandonment of j- for g- until such time as there may be further proof that that dialect is no longer standard.

It would manifestly be ridiculous to suggest that because the great seal characters marked a striking advance over any medium of communication the Chinese had hitherto known, they ought never to have proceeded to evolve their modern script. Is it less ridiculous to suggest that because the Wade system and Giles' modifications of it marked a great advance over earlier methods of alphabetic transcription, we should be content to receive it, and recognizing its imperfections to pass it on without attempt at improvement to the numberless generations to come? Shall we permit a system which has received but grudging adherence over a paltry seventy years to cast a permanent shadow over the limitless future? Or if we find the road to a partial improvement, shall we hesitate and invite others to precede us, lest agreement and perfection be not instantly attained?

Note on place-names.

It seems fairly evident that no solid advantage can be derived by tampering with individualized place-names

⁴ Sz is parallel to sa, se, si, so, su; dz to dza, dze, dzi, dzo, dzu; tz to tsa, tse, tsi, tso, tsu; all of which exist.

which already serve admirably the essential purpose of sure identification: Peking, Canton, and the like. No one outside Italy makes himself ridiculous by speaking of Firenze for Florence, Venezia for Venice.⁵ On the other hand, many less individualized place-names do demand modification to avoid possibility of confusion. We are free to say Florence for Firenze only because there is no European city whose *real* name is Florence. Again, there seems no sound reason for writing Peiping, Hopei—confusing aspirates and inaspirates—when it is as easy to write Beiping, Hobei. In general, it seems desirable that all place-names which have not become widely known in established forms should be transcribed as exactly as a system adapted to general use permits.⁶

⁵ Place-names of this character were employed as illustrations in a pamphlet on this subject circulated a year ago by the writer only because the use of characters was impossible and these names could most easily be recognized.

⁶ In the earlier pamphlet already referred to, it was suggested that the symbol *ö*, employed for thirty years by the French School at Hanoi, might be utilized to harmonize differences in pronunciation between Peking and the area to the south of it, Pekingese writing *Hö* (in place of e.g. Goodrich's *Hê*), others plain *Ho*, both appearing in ordinary print as *Ho*. This suggestion has been so widely misunderstood that it seems wiser to drop it completely, and to cleave only to *Ho*, leaving this adequate symbol to be differently pronounced in the different localities.

DICTIONARY ARRANGEMENT OF THE REVISED SYLLABARY⁷

A	阿	Chuo	獨	Dzun	遵	Hsin	忻	Jüan	卷
Ai	愛	Chü	曲	Dzung	宗	Hsing	行	Jüeh	決
An	安	Chüan	大	Dzü	案	Hsiu	休	Jün	君
Ang	昂	Chüeh	缺	Dzüeh	絕	Hsiung	休	Kai	開
Ao	敖	Chün	軍	Dzün	後	Hsü	許	Kan	刊
Ba	巴	Da	大	En	恩	Hsüan	學	Kang	考
Bai	敗	Dai	代	Er	耳	Hsüeh	訓	Ken	肯
Ban	半	Dan	丹	Fa	法	Hsün	湖	Keng	坑
Bang	邦	Dang	當	Fan	方	Hu	化	Ko	可
Bao	保	De	刀	Fang	非	Hua	淮	Kou	口
Bei	北	Dei	德	Fei	分	Huai	患	Ku	苦
Ben	本	Deng	得	Fen	風	Huan	皇	Kua	誇
Beng	崩	Di	等	Feng	佛	Huang	同	Kuai	塊
Bi	必	Diao	地	Fo	否	Hui	渾	Kuan	寬
Biao	表	Dieh	雕	Fou	父	Hun	洪	Kuang	况
Bieh	別	Dien	迭	Fu	改	Hung	火	Kuei	愧
Bien	便	Ding	店	Gai	甘	Huo	易	Kun	坤
Bin	賓	Diu	丟	Gan	鋼	I	札	Kung	括
Bing	兵	Do	多	Gang	高	Ja	齊	Kuo	拉
Bo	博	Dou	斗	Gao	給	Jai	占	La	來
Bu	卜	Du	都	Gei	根	Jan	張	Lai	覽
Cha	茶	Duan	短	Gen	更	Jang	詔	Lan	郎
Chai	柴	Dui	堆	Geng	各	Je	者	Lang	老
Chan	產	Dun	頓	Go	購	Jen	真	Lao	樂
Chang	常	Dung	東	Gou	古	Jeng	正	Le	累
Chao	鈔	Dz	子	Gu	瓜	Ji	計	Lei	冷
Che	車	Dza	雜	Guai	怪	Jia	加	Leng	立
Chen	臣	Dzai	再	Guan	官	Jiang	江	Li	兩
Cheng	成	Dzan	贊	Guang	光	Jiao	交	Liang	料
Chi	乞	Dzang	葬	Guei	鬼	Jieh	結	Liao	列
Chia	恰	Dzao	早	Gun	棍	Jien	見	Lieh	連
Chiang	強	Dze	則	Gung	工	Jin	金	Lien	林
Chiao	橋	Dzei	賊	Guo	國	Jing	京	Lin	另
Chien	欠	Dzen	怎	Ha	哈	(Jio)	角	Ling	流
Chin	欽	Dzeng	增	Hai	海	Jir	九	Liu	羅
Ching	頃	Dzi	集	Han	漢	Jiu	局	Lou	路
(Chio)	確	Dziang	將	Hang	杭	Jiung	州	Lu	龍
Chir	持	Dziao	集	Hao	好	Jo	竹	Luan	律
Chiu	求	Dzieh	借	Hei	黑	Jou	抓	Lun	略
Chiung	窮	Dzien	漸	Hen	很	Ju	拽	Lung	馬
Cho	黜	Dzin	進	Heng	橫	Jua	專	Lü	買
Chou	仇	Dzing	井	Ho	河	(Juai)	壯	Lüan	忙
Chu	出	(Dzio)	爵	Hou	后	Juan	追	Ma	毛
(Chua)	欽	Dziu	就	Hsi	喜	Juang	准	Mai	
Chuai	揣	Dzou	走	Hsia	下	Jui	中	Man	
Chuan	川	Dzu	祖	Hsiang	項	Jun	棹	Mang	
Chuang	創	Dzuan	纂	Hsiao	孝	Jung	局	Mao	
Chui	吹	Dzui	跟	Hsieh	現	Juo			
Chun	春			Hsien		Jü			
Chung	充								

⁷ Optional variants are placed between brackets.

Mei	美	Ou	偶	Sen	森	Sün	巡	Tsun	寸
Men	門	Pa	怕	Seng	僧	Sz	寺	Tsung	從
Meng	孟	Pai	排	Sha	沙	Ta	塔	Tsü	取
Mi	妙	Pan	判	Shai	曬	Tai	太	Tsüan	全
Miao	滅	Pang	旁	Shan	山	Tan	談	Tu	闕
Mieh	面	Pao	砲	Shang	上	Tang	堂	Tuan	退
Mien	民	Pei	陪	Shao	少	Tao	討	Tui	屯
Min	明	Pen	盆	She	設	Te	特	Tun	同
Ming	謬	Peng	朋	Shen	身	Teng	騰	Tung	瓦
Miu	未	Pi	皮	Sheng	生	Ti	題	Tz	外
Mo	謀	Piao	票	Shir	石	Tiao	條	Wa	完
Mou	木	Pieh	撤	Shou	守	Tieh	帖	Wai	王
Mu	納	Pien	片	Shu	書	Tien	天	Wan	位
Nai	乃	Pin	品	Shua	刷	Ting	廷	Wang	文
Nan	南	Ping	平	Shuai	帥	To	拖	Wei	翁
Nang	南	Po	破	Shuan	雙	Tou	頭	Wen	我
Nao	鬧	Pou	剖	Shuang	水	Tsa	擦	Weng	吳
Nei	內	Pu	普	Shui	順	Tsai	才	Wo	牙
(Nen)	嫩	Ran	然	Shun	朔	Tsan	贊	Wu	隘
Neng	能	Rang	讓	Shuo	西	Tsang	倉	Ya	羊
Ni	你	Rao	擾	Si	相	Tsao	卓	Yai	要
Niang	娘	Re	熱	Siang	小	Tse	冊	Yang	言
Niao	鳥	Ren	人	Siao	寫	Tsen	岑	Yao	因
Nieh	捏	Reng	仍	Sieh	先	Tseng	厝	Yeh	英
Nien	年	Rir	日	Sien	心	Tsi	齊	Yen	尤
Nin	您	Ro	若	Sin	星	Tsiang	搶	Yin	永
Ning	寧	Rou	柔	Sing	修	Tsiao	樵	Ying	玉
Niu	牛	Ru	如	Siu	所	Tsieh	且	Yu	元
No	諾	Ruan	輓	So	搜	Tsien	千	Yung	月
Nou	繹	Rui	瑞	Sou	速	Tsin	秦	Yü	云
Nu	婢	Run	閨	Su	算	Tsing	清	Yüan	
Nuan	媛	Rung	榮	Suan	隨	(Tsio)	鵠	Yüeh	
Nun	嫩	Sa	薩	Sui	孫	Tsiu	秋	Yün	
Nung	農	Sai	塞	Sun	須	Tso	作		
Nü	女	San	桑	Sung	宣	Tsou	湊		
Nüeh	虞	Sang	桑	Sü	雪	Tsu	粗		
O	訛	Sao	掃	Süan		Tsuan	寬		
		Se	色	Süeh		Tsui	粹		

CONFUCIANISM, DEMOCRACY AND NATIONALISM

By YEN-YING LU, M.A.

In these days of changes in China the teachings of Confucius may well appear to be relics of the conservative past. Time was when those teachings held a supreme sway in controlling Chinese thought, but China has since progressed a far cry towards modernization. New things have come to stay. The "Three Principles" of Dr Sun Yat-sen are in the ascendant. His memory commands the weekly memorial service, whereas that of Confucius seems to have been relegated to limbo.

It is, indeed, the belief of many that Confucianism has been an embodiment of reactionary tendencies. With its indorsement of antiquity, ritual and ancestor worship, it has not only identified itself with a stationary society, but helped to reinforce an omnipotent autocracy.

But, after all, time has dissolved the Confucian tradition. From those outworn beliefs and practices all that is best in Confucianism has been freed at last. It may be advanced that its sane and wholesome teachings in their purity may yet deserve a place of useful service. Already we can discover therefrom kernels of vital truth and wisdom, and we would be all the richer for their possession. Highly significant of this is the exhortation of Dr. Sun Yat-sen, urging the Chinese people to continue the cultivation of their old virtues, such as loyalty, filial piety, truthfulness, righteousness, benevolence, fraternity and pacifism. Needless to say, all these are attributable to Confucianism.

And more than that. Some of the Confucian teachings present strikingly modern features. Setting aside Confucius' pragmatic attitude in regard to truth, his belief in progress and adaptability to circumstances, it is

the purpose of this essay to concentrate attention upon two aspects of his teachings: Democracy and Nationalism.

I.

An attempt to reconstruct the ethical and socio-political ideas of Confucius may bring out their democratic tendencies. Taking as their basis his noble, whole-hearted humanity and devotion to mankind, those tendencies are cosmopolitan. For we learn from his "Analects" that he loved and honoured all men, and that he valued human life above all things.

Besides, Confucius recognized in the individual an unsubduable will and volition to control his own destiny. Yet man has his duties as well as his freedom. Individual freedom of action is in good order only in so far as it is compatible with the general good and what Confucius called the "harmony" of society.

The estimating of the worth of man should be independent of his outward circumstances. His social status or material wealth should neither reflect upon his character, nor be a bar to his aspirations. For poverty cannot debase, nor can riches elevate, a person; riches and honours as acquired by unrighteous means are indefensible and untenable. A man of virtue should help the distressed, but should not increase the wealth of the rich. There is no question that Confucius believed in the securing of equal opportunities and rights for all. His teaching career was marked by his earnest plea for education without class distinction.

As regards the political ideas of Confucius, they are at once moral and democratic. First of all, government is to be instituted on a moral basis. True, Confucius envisaged in his political outlook a kind of patriarchal monarchy, but that was incident to his own time and should not discredit his system in general. Moreover, such government is to be limited not only by moral principles but by considerations for the welfare of the people. The latter should be the ultimate test of a government. In the last analysis, its existence depends upon the confidence of the people.

A good government ought to be primarily concerned with the morals of the people rather than with their subsistence. Next to this in importance comes the promoting of their welfare rather than the maintenance of armaments. The national happiness, as well as strength,

lies in making the people contented with ample and permanent means of livelihood. The best way to realize this is an equitable distribution, rather than an accumulation, of wealth among the people. Yet the duty of government should be just to carry out certain fundamental principles for the maintenance of order and the correction of morals, without interfering with what concerns the people themselves.

The selection of persons for government services should be impartial, yet judicious. It is to be made only by the test of virtue and talent. Persons of action, with independent yet broad views, are preferable to talkers and zealots. Yet in his political vision Confucius cherished the cultivation of a fellowship and association of like minds among the good and virtuous for the furtherance of their principles. He thus intimated centuries ago what a political party ought to be.

As to participation in government by the people, Confucius was cautious and reticent. Under the circumstances of his own time, he naturally had misgivings about their ability and judgment to govern themselves. For he was well aware of what they can, and what they cannot, attain to. His well-considered view was that the general public can be made to follow a course of action, but hardly to understand it. Therefore, unless their characteristics were thoroughly known, their "likes and dislikes" should be admitted with all reserve, for these can furnish no unerring criterion for the choice of officials or the advocacy of a governmental policy. But Confucius had an insight of the value of educating the people, and he considered this, even in his own time, the most important thing. He predicted, for example, the possibility of preventing litigations and abolishing capital punishment, when the people are well educated.

It is superfluous to attempt here an appraisal of these Confucian teachings as set forth in the foregoing. There is no question that they have been for centuries important factors in infusing the democratic spirit into a paternal monarchy. Owing to their influence, absolutism has been tempered with justice and checked by the code of "government for the people." Indeed, they have contributed to make Chinese social democracy what it has been. Even nowadays, if we view these teachings in the light of the political trends in different countries, they may yet serve to exert their salutary influence in the development of democracy.

II.

As to whether Confucius was a nationalist or an internationalist, there seems to be a difference of opinions. But a balanced view of this may be attempted, if Confucius's own environment and life experience are taken into account.

Throughout his life, Confucius saw China divided into diverse kingdoms and the people were attached to a narrow provincialism. What he strove after was to make China unified into one nation in which one ideal government and culture were to be in force. For we find him constantly speaking of his own aim as being to "govern a state well first and then to order and pacify the universe next." Now what is the universe in his mind? Owing to the limited and imperfect geographical knowledge of his time, we may naturally venture the opinion that he actually referred to the whole, or even just a part, of China as the universe then. For China was about all the world then known to him, and we learn that his outlook and interests were confined therein. Other countries were beyond his mental horizon, except some barbarian tribes on the borders of China, towards which he sometimes even expressed contempt. Under those conditions, therefore, what Confucius aimed at may well appear to us at the present time to be nationalism, in contradistinction to the localism that was current in his time.

But the Confucian nationalism would be neither chauvinistic nor imperialistic, and, viewed from another angle, it presents an international aspect. If we remember that the warring kingdoms of Confucius's time were actually as separate countries, we may be warranted to interpret some of his concepts as having been intended to apply internationally. For example, Confucius advocated indulgent treatment of "foreigners." He also enjoined liberal and righteous dealings of states with one another. States in need or distress are to be assisted, extinguished nationalities revived. Barbarians should be civilized by the influence of virtue, but not by force. Now, if Confucius predicated these principles about the relations of those states in his own times, then by analogy they may be applied with equal cogency to international relations of the present day. For in themselves they are truths of no particular period and transcend national boundaries the world over.

152 CONFUCIANISM, DEMOCRACY AND NATIONALISM

Thus nationalism and internationalism are two aspects of Confucianism at its best. They are not mutually exclusive, and the one is the mainstay and the preparatory stage of the other. The two together mark the course of progress which a sound nation is to follow. Firstly, we have a nation strong in peace and sane in ideals, and then it must develop its international outlook and interests by promoting universal peace and the "brotherhood of man."

THE COSMIC SPIRIT

Its nature, operations and influence

By Dr. EVAN MORGAN

Milton pictures the delights of reading the philosophy of the ancients in these words:—

“Or let my lamp at midnight hour
Be seen in some high lonely tower
Where I may oft out-watch the Bear,
With thrice great Hermes, or unspear
The spirit of Plato to unfold
What Worlds, or what vast Regions hold
The immortal mind that hath forsook
Her mansions in this fleshy nook:
And of those Daemons that are found
In fire, air, flood, or under ground,
Whose power hath a true consent
With planet or with element.”

I hope that a short stay with some old philosophers of China will afford some delight as we consider their view of the Universe and what they found in it. It has not been very easy to find out what they really did think of it all.

I shall quote largely from the first essay of Huai Nan-tzu and also refer to the *Tao Tê Ching* of Lao Tzû. Their great theme is the TAO. What did they mean by it?

How much background they had to work on in their interpretation of nature and life it is not easy to say. It can only be affirmed that they had infinitely less than we have to look to. They had the intuition of their minds, beside outward phenomena and some history to guide them. They had also much folklore and some general ideas of cosmogony. There were the great rituals, especially the worship of Heaven in the Suburb and the cult of the worship of ancestors. They were not altogether without landmarks. Nevertheless the void was still great. What conceptions they had of the universe were meagre and could not have satisfied the enquiring mind.

The universe will not permit man to be indifferent to its mysteries. It compels men to become philosophers and scientists; the common person looks up and down and within and is forced to ask what it all means. "There is in the human mind an instinct that drives for personality and for righteousness as the necessary basis and condition of their relations. The vacuum must be filled by the achieved results of thinkers." Every race has made its contribution to the solution. Epicureanism and scepticism had its representatives in Roman Society. The former found an expositor in Lucretius, "a genius such as it had never known elsewhere."

Yet even Lucretius had in him an anti-Lucretius, and in a famous passage he confesses to an instinct of the heart quite contrary to the reason he works out in his head. He says, "When we look up to the great expanse of heaven, the ether set on high above the glittering stars, the thought comes into our minds of the sun and the moon and their goings: then in hearts laden with other woes, that doubt too begins to wake and raise its head—Can it be perchance, after all, that we have to do with some vast power that wheels those bright stars each in its course?" (T. R. Glover). So enquired Lucretius as he contemplated the vast mysteries about him hidden in the depths of heaven and in the visible world around.

Lucretius had his occasional doubts as to the truth of his formulated philosophy. There were others like Socrates and Plato who were more certain of their interpretation of the universe. They were convinced of some supreme reality at the centre of things which was not less real because it was invisible. And the Chinese school of philosophy that we shall consider now has more similarity in its certitude and conceptions to the school of Plato than to the uncertainties of Lucretius. I refer to the Taoist school. Two names will only be briefly considered, Lao Tzū and Huai Nan-tzū.

The problem of the universe pressed on these. Lao Tzū found his solution in the postulate of an Eternally Existing Spirit, the Originator and Sustainer of all created things. He named it Tao.

Lao Tan, however, felt the difficulty of names. No word or words could really express the reality of the universe in all its comprehensiveness. At best words are only indicators. They are mere symbols, something like X to express an unknown quantity. Words are conventional terms to guide the mind to something.

They are signposts to guide the traveller along the way. The word "God" that we use to signify the Supreme Being is no more than a conventional term. We mean very much more by its use than the original word implied.

So the word "*tao*," in the beginning, meant no more than "way," "path," "principle." But the word grew. Lao Tan gave it a new idea, an enlarged connotation. He gave it a spiritual significance and a religious sense: so we have "*tao chiao*," the cult or religion of the "*tao*."

Yet in his first essay of the *Tao Te Ching*, Lao Tan warns the reader that the word "*tao*" cannot convey a full meaning of the reality that he saw behind and in all phenomena. He says, "The '*tao*' that is expressed is not the unchanging '*tao*'." The word is no more than a conventional sign. It is a gate that opens out on the great mystery, the entrance to the most profound.

The translator meets with a fresh difficulty. How shall the word "*tao*" be translated into English. Many names have been tried. No word can be found to correspond exactly. "Way," "Nature," "Principle," "the Absolute" have all been used. Dr. Legge and others use it untranslated, and speak of the Tao. Mr. Chaloner Alabaster, years ago, speaking generally of how to unlock the treasure-room of the Chinese mind, says that an accomplished scholar told him one day, "It is no good trying to get the meaning through a dictionary, you must take each sentence and ponder over it and then, in time, the light will burst upon you and you will apprehend the teaching far more clearly than through any commentary." And so in order to get the ideas that hang round the word "*tao*" we must ponder what the original writers wrote about it as they tried by exposition and illustration to convey their thoughts regarding it. In the meantime I venture to give it a new translation and call the "*tao*" the Cosmic Spirit.

As these early sages pondered on the mystery of the universe they became aware of something which they called the "*tao*," the Cosmic Spirit. They said this something was fountainless, that is to say, it was self-existing and uncreated. It was the author of all change, but itself did not change. All things proceed from it, without any diminution of its own power. It works unobtrusively, but always effectively. It is the cause of all law and order: nothing failed in its operation because everything was sustained by it.

These early philosophers felt there was Something existing before all created things; which was infinitely above all and which will continue after all else passes away—Something uncreated, self-existing, unchanging and eternal. In Nature and man's attributes they saw a manifestation of an Immanent, Indefinable Spirit of the Universe, by virtue of which all things are what they are, by which they exist, and by which they are co-ordinated. All attributes imply an underlying substance. All appearances imply an underlying reality. All that which is to be implies an underlying of "that which is." All passing phenomena imply a permanent entity.

The Cosmic Spirit is that which Is: it is the Mother of all things. It is the great Unity, the harmonizer of spirits and men and things. It is the great Mystery enfolding everything: the great Illuminator enlightening all: the great Truth from which all virtues and perfect Wisdom springs.

It may be asked if they regarded this as personal. If by "personal" is meant a conditioned being under limits of time and space, then it is not personal. Yet there cannot be found any grounds for saying it is impersonal. Chuang Tzu says, "The Tao cannot be a real Being."

A passage from Huai Nan Tzū, which will be read later on, says "fathers do not grieve for the untimely deaths of their children, because of the care and protection of the Tao." It would not be justifiable perhaps to draw any conclusions from this as to the providential forethought of the Tao. Nevertheless it should be stated that the general impression left on the mind after reading the descriptions of the Tao and its operations, is that the Cosmic Spirit is not heartless.

In approaching the problem of cosmology these ancient philosophers postulated the existence of a Cosmic Spirit. It made the Universe a living whole. Unity is one of their fundamental ideas. To get this unity they regarded it as necessary to assume this cosmic spirit. In this they are similar to Newton. He did not hesitate to introduce God into his system of nature. To understand nature it required the "concourse of God," so he postulated it. For him the world is not intelligible without God. His words are not unlike the words of Huai Nan. He says: "He is omnipresent, not virtually only, but also substantially; for virtue cannot subsist without substance. In him are all things contained and moved: yet neither affects the other: God suffers

nothing from the motion of bodies: bodies find no resistance from the omnipresence of God. It is allowed by all that the Supreme God exists necessarily: and by the same necessity he exists always and everywhere. But He acts in a manner not at all human, not at all corporeal, in a manner utterly unknown to us" (Quoted from Professor Boodin). If "tao" be used instead of "God," the paragraph would well represent the thinkers we are discussing.

It is true of the theory of Huai Nan, as it is of Newton, that it did not regard human beings as "mere sightless lumps, blindly colliding and aggregating or separating in space, but that the world is permeated by a Creative Spirit and owes its existence and maintenance to this fact. This makes the world intelligible, beautiful and beneficent." (Boodin).

There is only one way, then, in which we can conceive the cosmos as a going concern and that is by conceiving it as, in some sense, dominated by life and mind. Modern astronomers put it this way: "the universe is full of thought" (Jeans).

Sir James Jeans says:—"To-day there is a wide measure of agreement, which on the physical side of science approaches almost to unanimity, that the stream of knowledge is heading towards a non-mechanical reality: the universe begins to look more like a great thought than like a great machine. Mind no longer appears as an accidental intruder into the realm of matter: we are beginning to suspect that we ought rather to hail it as the creator and the governor of the realm of matter, not of course our individual minds, but the mind in which the atoms out of which our individual minds have grown, exist as thoughts." (*The Mysterious Universe*, p. 148).

Han Fei-Tzu stated the doctrine thus: "All centres in the Cosmic Spirit." Creation, life, beauty, law, order, continuity, permanence emanate, in the first place, from it. Because it is *hsu wu*, impalpable, and immaterial it can do such mighty work as it does.

It should be said that in lecturing on this subject Dr. Hu Shih is rather scornful of the whole idea. He says the Tao as an entity is an unwarrantable assumption and unworthy of serious consideration. It may be questioned whether he was quite just in his criticism of the view of the ancient philosophers. He is hostile to any spiritual view of the universe. He fears that the

postulation of any such idea as the Cosmic Spirit smells too much of superstition.

He deplores that people should be entangled in such notions as Cosmic Spirit, God, Shang Ti, *shen*, spirit. In his view such ideas clog the freedom of the human spirit and retard the advance of human progress. The world should be emancipated from such bonds of slavish servitude and should follow only the discoveries of science. It can only be said that such a view of science is getting antiquated. It is a climate of opinion that only existed before 1927, a date when Dr. Rutherford discovered the new properties of the atom, a discovery that has revolutionised the ideas of physical science.

Let us now turn to hear what the old writer Huai Nan says of the properties of this Cosmic Spirit.

"The Cosmic Spirit embraces Heaven and supports Earth. It stretched the four quarters of the universe and generated the eight points of the firmament. There is no limit to its height, and its depth is unfathomable. It constituted heaven and earth and endowed them with the primary elements, when as yet they were without form. Flowing like a fountain, bubbling like a spring, impalpable, its energies bubbled forth in the void and filled space. Continuing to effervesce, it transformed the murky air of chaos into crystal clearness. Hence it filled heaven and earth and stretched the uttermost parts of the sea. Distributing itself without any exhaustion, there was no morning or evening, nor rise and decay.

"Expanding, the Cosmic Spirit overspread every part of the firmament, earth, time and space. Rolled together, it was not a fistful: compressed it can expand: abstruse, it can yet be clear: yielding, yet strong: soft, yet firm. It is a macrocosmos as well as a microcosmos. It holds, as in a net, the four poles and comprehends the active and passive forces of creation. It links the universe together, and makes the sky luminous. It is most substantial and full of sap: most tenuous and fine: so delicate is it, that it penetrates every pore and crevice. It gives height to the mountain and depth to the abyss. It fashioned beasts to walk and birds to fly. Sun and moon are luminous by its power, and the planets revolve in their courses because of it: the Chin lo comes forth through its energy, and the phoenix wheels in the empyrean through its might.

"In the beginning, the two forces *Yin* and *Yang*, having obtained the essence of the Cosmic Spirit, became the central organizing powers. Their divinity and influence determined the transformations of the Heavens and the stability of the Earth. The revolutions of the Universe were unfailing. It was through the Cosmic Spirit that the heavens first revolved and the Earth was made fast: the successive revolutions failed not. The waters eternally flowed without any ceasing and were conterminous with creation. The winds blew, the clouds steamed. There was nothing which should not be. Everything was as it should be. The thunder pealed, rains fell, each and all responding to the movement of the Cosmic Spirit, without cessation. Mysterious in its operations like the emergence of spirit, or the arrival of the phoenix, or the transformations of the dragon, its vestiges may be traced. As the potter moves the wheel, the hub turns, one complete turn following on the other. In the universal flux, organisms, when finished and polished, dissolve again into crude elements and constituent parts.

"Without apparent doing, things came into existence under the inspiration of the Cosmic Spirit. There was no sound or speech to indicate that there was action: the successive evolutions proceeded with energies permeating all. Without love or hate, impartially, and in no boastful spirit the perfect harmony was attained. The myriad varieties were organised each with its own nature. The energy of the Cosmic Spirit is imparted to the minutest thing: and yet, it is great, composing the mighty universe. Its virtue gave flexibility to nature and harmonized into unity the operations of *Yin* and *Yang*. It divided the four seasons and co-ordinated the five elements. Its beneficent spirit breathed on all, fructifying creation and the world of life. It sent forth its fattening dews on grass and tree: it bathed metal and stone with lustre: it made bird and beast strong: it gave sheen to scale and feather; and strength to wing: and begot the horns of cattle. Through its powers the embryo of beasts do not miscarry, nor the eggs of birds addle.

"It is due to the Cosmic Spirit when fathers have not occasion to mourn over the untimely death of their children, nor elder brothers weep over the untimely death of a younger member; when children are not made

orphans nor wives widows. That the ill-starred rainbow¹ does not appear, nor unlucky comets career in the sky, is due to the harmonious control of the Cosmic Spirit.

"The supreme Tao begets all creation, but keeps itself as though it did not exist, i.e., makes no boast of it. It produces all phenomena, yet without appearing as the controller: creatures that walk and breathe, that fly to and fro, and all creeping things depend on it for life, yet are unconscious of the merits of the Cosmic Spirit in their wellbeing. They await its behests for death without bearing any grudge at the change. The benefits of the Cosmic Spirit in life are not extolled: the decay of death, through wear and tear, is not blamed. Accumulations of goods and stores must not be counted or boasted of as wealth, nor is their distribution and donation to be looked upon as any impoverishment. Its fluxes are incomprehensible, its delicate operations are interminable. Bind it up, and you cannot give it any more height or glory. Detract from it, and you cannot rob it of any virtue. Multiply it, and it is the same number: detract from it, and it is no fewer; hack it, and it is no thinner: slay it, yet it is not destroyed: dig into it, and it is without depth: fill it in and it will be no shallower.

Oh! how swift: how sudden: no form does it take: how exhaustless. Profound Oh! obscure Oh! responsive Oh! answer there is Oh! effective Oh! never does it move in vain Oh! conterminous with heaven and earth in its expansion and contraction Oh! ascending and descending with *Yin* and *Yang* Oh!"

Thus, then, in the view of this ancient writer the present order of the Universe was formed and established by the Cosmic Spirit. Matter and phenomena were produced by the Positive and Negative forces which were the agents of the Cosmic Spirit. All things were unified and harmonised by the all penetrating influence of the Spirit. It was the Transcendental and Immanent power that created all things and was the guarantee of all order. In all the innumerable fluxes and motions, there was no failure and no disorder. The constellations kept to their orbits and the seasons revolved with perfect regularity. Men and animals received their endowments, each for each, and all things had their appointments.

¹ The rainbow is a bad omen in China. No one will dare point the finger at it.

But what of exceptional talents, the brilliant endowments that occasionally appeared in men and seemed to be above the order of nature? How account for men of genius and the genii? These gifted and extraordinary beings, too, were the product of the Cosmic Spirit. These special endowments were the gift of the Spirit. The writer proceeds to give some examples. I can only give a summary of this part of the essay.

In ancient times there were two great charioteers, Pang I and Ta Ping. They rode on the clouds and flew through the lambent air. They raced into the infinite distance and to great heights. Earth was the chariot: the four seasons the steeds and *Yin* and *Yang* the drivers. They brought all under the sway of the Master Spirit. Their exceptional powers came from the resident spirit. There is much of this magniloquent language reminding one of the descriptions of Apollo driving the chariot of the sun. I cannot help thinking it was a mistake for these writers to introduce such magical powers in the description of the Tao. This justified other writers in adversely criticising the idea of the Tao, a criticism quoted by Dr. Hu Shih, who agreed that the Taoist conception of the Tao was not rational. Instead of giving an enhanced value to it, as they intended, it robbed it of all worth.

Fortunately, however, Huai Nan soon leaves the mythical and returns to speak of the operations of the Cosmic Spirit in a rational way. They say that great rulers of men who are under the sway of the Cosmic Spirit carry on their work perfectly. If the heart is free from human accretions, then it is possible to have the impress of the spirit and all their actions will be without effort. In their work the Cosmic Spirit will be mirrored as truly as the image in the water. But they have to be careful. The impact of matter and the seductions of the senses easily contaminate the heart. The incipient rise of love and hate easily beguile men and then their actions lose the impress of the Spirit and the sense of absolute right is destroyed. Then arises human wisdom and the art of policy and schemes. Therefore it is essential to keep the pristine purity of the spirit. "Walk after the spirit and not after the flesh," to use the words of the apostle Paul.

But if the country gets a ruler under the sway of the Tao then the people love him, obey him and admire him. These evidently are the rulers of a democracy.

Again it is the statesman working in line with the Cosmic Spirit that can do great things. Politicians with their little schemes and opinions and plans can do little. They are like fishers with rod and line. On the contrary the great man controlled by the Tao is like a net: his catch is great. He can accomplish much with little effort. He works in the way of the spirit and can stem wickedness by his nobility of character. The opportunist, armed only with his plan, tries to do so in vain.

An example is given of this theory. Emperor Kun was an opportunist and to be safe he built a great wall and filled his treasury with money. The people rebelled. But Yü came: he had the spirit of the Tao. His counsels prevailed. He obliterated all military signs and distributed money. Harmony and peace were established.

Here, perhaps, is the proper place to say that the Cosmic Spirit is against all militarism. Militarism begets militarism. A fortified wall implies war chariots: a coat of mail by one party leads to the sharpening of swords by the other. To pour boiling water on boiling water makes the whole more violent. "To be prepared for war" is not the best guarantee of peace.

Further, the use of severe punishment in government is hostile to the true idea of rule. To whip a restive horse is the very way to make it vicious. There is an art in dealing with all things. Be in harmony with the Cosmic Spirit, and you will not fail in the true art of government. This harmony will put one in touch with the nature of things. Naturalness is the key-note of success. Nothing should be done through the agitation of the senses. Heaven is never agitated. The men who are in alliance with the Cosmic Spirit follow its methods. That method is absolutely reposeful and unostentatious.

An example of such a man who acted in unison with the Cosmic Spirit is found in Shun, the farmer, who became an illustrious emperor. In ancient time, Shun for a whole year tilled the Land at Li Shan, and as a result of his example, the tillers of the soil struggled for every crooked and awkward corner, each anxious to concede the fertile plot to his neighbour. He also fished for a whole year on the river's bank, and as a result the fishermen strove together for the currents and rapids, each keen to concede the deep pools and quiet corners to the other. During these times, Shun gave no lectures on morality or on conduct but, maintaining the great way in his heart, his influence sped as though it were

divine. Suppose now that Shun were without this uprightness of character, he would never have converted a single individual, though he were to preach to the public and to go talking from house to house.

Thus we see that the silent Cosmic Spirit has a mighty power. It is able to control the San Miao (aborigines) and induce the Yü people to offer their tributes. It can transform the "Unclad Nation" and get revenues from Su Ch'en (a distant tribe of the north) without the issue of a summons, or the heralding of edicts. The Tao can resolve customs and change habits with nothing more than the influence of the mind or spiritual influence. How could laws or punishments ever achieve so much! For this reason the sage pays every attention to the foundation culture of the mind rather than to the accretion of accidental means. He guards the spirit and keeps the intellect in abeyance. Insouciantly he acts in the method of Wu Wei, nevertheless, there is nothing left undone. Nonchalantly he acts as though no authority was exercised, yet there is nothing which is uncontrolled.

What is meant by "*Wu Wei*" is that there is no going in advance of things. What is meant by "*Wu pu wei*" is "there is nothing undone," that in following the course of nature everything is done. What is meant by "*wu chih cho*," "not governing," means that there is no interference with the natural order. And the phrase "there is nothing which is not governed" means that the end is attained in correspondence with the mutual fitness of things.

"*Wu Wei*" has a fundamental place in the theory and requires some further explanation. Taken in its literal sense of "not-doing" it does appear to be somewhat absurd. There is no place in life for people who "do nothing." For the perfect man to be a man of inaction is a bad example for others. To explain it in this way gives ground for the criticism of Dr. Hu Shih, who points out the futility of such a doctrine in society. May it therefore not be possible that there is an explanation of the term other than "non-action"? The general impression left on the mind from the descriptions given of those who act after the Wu Wei method is that they had great energy and accomplished great things! In their outward demeanour they seemed to be indifferent to the affairs of life, but in reality that appearance belied their powers.

If "*Wu Wei*" is interpreted in the sense the old writers intended, there may be a very reasonable and potent meaning in it. "*Wu*" is the negative "not." But negative in the sense that the heart is free from all contamination of the senses. There is no lust, no desire. Action, to be correct, must be free from these sources of bias. The heart is free from impurity and all that springs from the earthly clod. Such freedom implies a readiness and a capacity to receive the impress of the Cosmic Spirit and to act in line with it and to move in all actions under its direction. "*Wu Wei*" then is nonaction as regards the impulse of the senses and human cleverness, but in the positive sense it is action controlled by the Spirit. In this way the term may be translated "spirit-action."

In further explanation of this somewhat difficult and perhaps misunderstood term of "*Wu Wei*" it may be said to describe the *method* of action rather than inaction. It may well be asked how they arrived at this significant term. Possibly from observation of the motions of nature. They saw energy everywhere, but energy that worked without apparent effort, silent but irresistible. "There is no sound; their voice is not heard." The great examples were air and water. These are the most yielding and penetrating things. Yet they are firm and accomplish prodigious works. They give an indication of how man should carry on his life. "Yieldingness, tenderness, softness as of the downy feather." These qualities are not much esteemed by the world: but they are the triumphant qualities. "The meek shall inherit the earth." These qualities are the endowments of the Cosmic Spirit.

If these old writers had lived in modern times, the discoveries of science would have afforded them even greater examples of "*Wu-Wei*," than was possible for them then. They would be, overwhelmed by the example of *Wu Wei*, in the sense of a silent operation carried on, afforded by the loss of weight in the sun. It is calculated that the sun loses 360 thousand million tons of weight every day by radiation, and this radiation, so far as direct observation goes, is destined to journey on through space until the end of time. "What is the cause of the varied animation that we see around us in the world? The answer is, in every case, energy. Light and heat are forms of energy, and a million ergs of light-energy can be transformed into a million ergs of heat with the utmost ease." This in their view would be "*Wu Wei*."

The point is that they derived their idea of "*Wu-Wei*" from such knowledge as they had, similar in idea to the scientific examples just given.

The man who is under the guidance of the Cosmic Spirit and who follows the *Wu Wei* method of action, is a strong man and can do great things.

His nerves will be firm and strong. The sapient ear and eye will have a comprehensive penetration and not err. Being resolute and firm he will never break down. He does not overshoot the mark nor does he come short of it in his actions. He will not be unhappy in a lowly position: great duties he will not avoid. His soul is not impetuous, his spirit is not unstable, neither is it perturbed. Profound and undefiled, serene and reposeful, he is the autocrat of the universe.

The Great Way is broad and level, and not far away. The seeker finds it is in himself: going outside for it he must return within. He responds to the pressure of the Cosmic Spirit: he answers its promptings: profoundly recondite as it is: its changes are unspeakably fine. The varying duties of life are discharged, everything is done with deliberation and serenity: to every matter a suitable solution is found, as fittingly as an echo answers the sound, or as an image reflects the object. Whether in a high or inferior position, the Tao-man never loses his grasp of it: treading the way of danger, or walking in the paths of peril, there is no forgetting of the Tao. He who abides in this frame, is ensured against loss of energy and virtue: he disposes successfully of the myriad affairs of every description that crowd before him. In attending to the affairs of empire, he is expeditious, like (a boat) sailing with the wind. He is rapid and easy in the discharge of business. This is the meaning of Supreme Ability and with this supreme ability comes supreme joy.

There were men of old who lived in hermit caves without losing their high spirit. Men (Kings) in later times, exercising great power, had daily anxieties and sorrows. We may gather from this that perfection does not lie in ruling, so much as in getting the Tao: Joy does not lie in riches and honours, but consists in the possession of virtue and harmony. Knowing the greatness of the higher self, paying little value to possession of empire is indeed to be near the Way.

To get what is called joy, can it be necessary to have palaces and towers, to serenade on lakes and in gardens, to hear the *Chiu Shao* and *Liu Ying* orchestras, to dine on flavoured meats or gallop in broad avenues, or shoot the turquoise kingfisher? Can these be said to compose joy? What I mean by joy is the possession of the true self. The possessor of this true life will not regard ostentatious expenditure as joy: nor will the simple life be looked on with regret. He will accept a lot lowly or bright—just as the flower shuts and opens in response to the season. Wen Tzū expands the idea in these words: —“He cherishes the truth of Heaven, he embraces the heart of heaven: he breathes in the spirit of *Yin* and *Yang*: he blows out the old and breaths in the new: he closes with the *Yin* and opens with the *Yang*; he contracts with the firm and expands with the tender: with the *Yin* and *Yang* he looks up and down: he is of one mind with heaven and of one body with the Tao: there are no joys and no sorrows: there are no pleasures and no angers.” Thus Tsū Hsia was thin as long as his mind was at war with itself, i.e., when governed by desire; but became fat on getting the Tao.

“The wise man will not allow his person to be the instrument of matter: nor permit his peace to be disturbed by desire. Thus when he rejoices it is not with hilarity. When he sorrows, he will not suffer his nature to be wounded. Circumstances ever change and vary, there is nothing stable about life's conditions. The Tao-man alone lives triumphantly and cherishes the magnanimous spirit, abandoning worthless things, following the Spirit wherever it leads. Therefore he has the wherewithal to find his true nature: whether his pilgrimage be under a lofty tree, or his dwelling be in a secluded cave, he finds enough for joy and to satisfy his nature. But the man who has not found his true self, though he possess the empire for home, and the myriad people for ministers and has concubines in his home will not, on that account, find the satisfaction of life. On the contrary, he who reaches a state of spiritual joy will find nothing, but will minister joy to his person. And he who enjoys this joy has tasted the supremest joy.

“If the reasons be examined how it is the seekers for pleasures failed to get the substance of joy and thus continued to injure their lives daily, the cause is found in this that they lost that, the doing of which would give the possession of virtue to the mind. Hence lacking this

power within, they decorate themselves with those things which come from without. These are artificial and do not enter into the marrow and bone of life: they do not abide in the will nor remain in one's being. Therefore those things that enter from without finding no host within stay not: those things that issue from within not being responsive to the outward, fail to operate. Hence even an uninstructed person may be pleased on hearing good words for guidance: likewise a worthless character may esteem an account of noble deeds and perfect conduct. Many approve, but few are those who carry these good things out: the many approve, but few there are who act. The reason for this is, that they are unable to recover the lost mind: they fail to revert to the real nature. The inner and real nature fails to open out: what is learnt is by way of compulsion: when this is the case, what is heard by the ear is not impressed on the mind. The position is not unlike to the deaf singing and not hearing his own sounds. It is made for (the gratification of) others, without any personal share in the enjoyment. The sound issues from his mouth and passes away without his hearing it.

"Now since the heart is the governor of life (the five viscera), it therefore controls all the members and the circulation of the fluids of sensation, referring everything, forthwith, to the moral realm of conscience: conscience, in turn, enters the avenues of every action. Therefore when the mind lacks the inner control, any pride of authority in the art of governing men, may be compared to a person who is deaf trying to ring the bell and beat the drum; or to a blind person trying to find pleasure in works of art. It is plain they are perfectly incompetent to do so. So it is clear that the king's instruments of government must not be artificial, such as policy, schemes, opportunism. An artificial creation would ruin the country, and he who grasps power would lose it. In elucidation, the case of Hsü Yu might be given who thought little of the pomp of empire, and would not change places with Yao" (the Emperor).

The writer now continues a description of two kinds of people who seek pleasure. One kind seeks it from without: the other from within himself. The one finds pleasure in the world: the other in the cosmic spirit resident in himself. The one finds a pleasure which soon passes: the other has secured a permanent joy.

I am going to take the liberty of substituting for the old terms modern ones in the description. I am not altering the sense, only the words. Now the person of wealth and leisure seeks his pleasure in promenading on the boulevard and the Bund: he attends the races at the race-course or rides the hunters at Chiangwan: he races in his limousine along the Rubicon and the highways of Shanghai: he seeks the pleasures of the sea breezes in Peitaiho or goes to cool himself in the palatial residences of Kuling: he finds certain pleasure in attending concerts and orchestras and listening to the performances of popular and classical music and to the strains of Wagner and Elgar: he even attends the cabarets where beautiful women are provided to join in the jazz music and the goose-step dances. When opportunity offers, he goes to the distant hills of Soochow to hunt the deer and shoot the bird on the wing. These are the pleasures which intoxicate the multitude.

The wise man placed amongst these, does not find that they are any enticements to his spiritual life, or are allurements to seduce his will and purpose, moving his heart by sudden passion and leading him to lose his true nature. Rather he would prefer to live in a secluded and poor village: or crouch within the recess of some dark gully; or in the retirement of some jungle: cribbed within a small hut, which has fresh grass for thatch, a grass-made postern, and an old crock for window; and the hinges of the gate formed of wisps of the mulberry: the hut may leak above and be dank below: the north-facing booth may be filled with dampness. After snow and sleet have made slush of the ground, he plants his own melons and *chiang* (grain only eaten by the poorest): he takes his walks abroad through the wide morass and tramps back and forth in the gorge of the mountain. Were the generality of people faced with this sort of life, they would wrinkle the face, blink the eyes and be full of distress at the disagreeable prospect. He, placed in such a situation, would not feel sad, downcast, envious or misanthropic (at his unenviable situation) nor would he for the world lose the grounds of his own inward joy.

And the reason? Because the secret of his inward joy issues from the spiritual realm: he does not lose his will to virtue because of a high or lowly station: of wealth or poverty: of peace or labour of body: just even as the crow's "ya ya," and the magpies "Tsie tsieh"—these sounds do not change with every changed condition of

the weather. The man who has the Tao is already fixed, nor does he depend on compulsion of circumstances in the flux of things: his mind does not await any single chance of fortune to determine the ground of his self-possession (*tzü tē*). So what I mean by possession is that the nature of his life is established in that which gives true peace. Now the soul and body issue from the central source. When the body functions perfectly (moral) the nature and life is completed; when these are completed, then the affections, as love and hatred, are begotten (a point of danger). Thus scholars have fixed principle of morality in intercourse: and women an unchanging rule of action as to marrying again. These can never be changed. The eternity of Heaven is not changed by one ascending a high hill or descending into a depth. Men are so insignificant. Therefore the man who has the Tao is not perturbed by poverty nor exhilarated by success. Placed on a giddy height gives him no feeling of danger: though holding a full cup it will not be spilt: i.e. he will not be extravagant. He is not polished at one time and rough at another time: he does not change colour with time: he is not burnished when new and tarnished when old. He can undergo trials (go through fire and water) without wear and tear. He does not depend on power to be esteemed, nor on riches to be honoured, nor on force to be strong. Agreeably he moves forward in harmony with the fluctuating movements of nature. Thus he is naturally like the metal hidden in the hills or the pearl in the deep. He does not look on affluence as the source of joy nor considers penury a matter for grief. He does not look on honours as ease of mind, nor on ingloriousness as a thing to be dreaded. His person and soul, spirit and purpose are all in the right place, following the appointments of the Cosmic Spirit.

"Now the body is life's tenement; the breath (passion nature) is life's fulness: the soul is life's regulator. The three suffer by the aberration of any one from its function. It is on these grounds that the wise directs all in the proper function of each, without interference of one with the other. Therefore to place the body in that which does not bring contentment, is to waste energies: to exercise the breath in a sphere which is not suitable to it, is to scatter power: to employ the soul in operations that are unfitting, is to becloud clarity. It is essential that strict attention be paid to the proper

exercise of each of these three factors:—body, breath, soul.

“Now let us consider such insignificant creatures as creeping worms and zoophytes in their wriggling movements, or crawling actions; they have their likes and dislikes; they know what is helpful or harmful by reason of the instincts they possess; these they follow. Should they suddenly lose these, flesh and bones would be of no value to them.

“What is that power in man which enables him to gaze clearly and hear distinctly; enables the body to stand erect and the limbs to bend and stretch at will; what are those faculties that help him to distinguish white from black, to appreciate the ugly and beautiful: what is that knowledge by which he differentiates similarities and dissimilarities and which enlighten him in right and wrong? It is fulness of spirit (*ch'i*) the passion-nature that supplies the person with capacity and the soul gives it direction.

“When the soul is all-pervading, then it is omnipresent. Therefore the Tao-man prizes the pure spirit uncontaminated by desire, and, his thoughts dwell in the spiritual. Now consider an imbecile. He does not know how to avoid the hazards of fire or water; he goes all unheeding into deep waters that are dangerous. It is not that he, too, has not got a body, soul, spirit, will, but that he uses these differently from other men. He has lost the proper use of these faculties and fails in the correct exercise of them. For this reason his actions are erratic, his movements not being under control. He acts through life like a tottering person; staggering in passing through an even gate; falling into miry drains or into the midst of pits and holes. Though endowed as others with the motors of life he cannot help being an object of merriment to men. And the reason? Body and spirit do not act in mutual harmony. Thus, we may deduce that where the soul is the dominant force, the body follows purpose. But where the soul follows the motions of the body, disaster ensues.

“Men of a covetous and ambitious nature, and of many passions, are allured insatiably by power and ensnared by the lust of position. They aspire to stand in the high places of the world by reason of superior abilities which implies a daily expenditure of their spirit. The longer this goes on, the farther is the distance between spirit and body: steeped in these excesses, return

to normality is less likely. The body being closed up by these desires, the heart opposes the entrance of higher influences. Thus the pure spirit of the natural endowment, has no freedom of action. Thus it constantly happens in the world that disasters befall men who fail to see the right and who act contrary to justice and who have the lost mind. Such people are of the "tallow candle" class. This means that fire that burns quickly will die out all the sooner.

"The soul and spirit that are in repose, are daily at the full and make for strength. The impetuous spirit wears itself out early, leading to senility. Therefore the wise man nourishes his soul and moulds his spirit in yieldingness and keeps the body in repose (equanimity) : up and down in the height and in the depth, he oscillates with the Cosmic Spirit. Serenely he yields to it: compelled to take office, he makes use of it. He yields to it as he would unrobe himself: he uses it as it were a swift arrow. Thus in all the fluxes of nature there is nothing he fails to respond to: in the changing affairs of life, there is nothing he does not answer.

These ideas of the nature and influence of the Cosmic Spirit find an echo in a modern poet.

"To every form-of being is assigned
An active principle:—howe'er removed
From sense and observation, it subsists
In all things, in all natures: in the stars
Of azure heaven, the unenduring clouds,
In flower and tree, in every pebbly stone
That paves the brooks, the stationary rocks,
The moving waters, and the invisible air.
Whate'er exists hath properties that spread
Beyond itself, communicating good,
A simple blessing, or with evil mixed:
Spirit that knows no insulated spot,
No chasm, no solitude; from link to link
It circulates, the soul of all the worlds."

WORDSWORTH, *Excursion*, Book VI, 1-13.

THE ASIATIC ORIGIN OF SOUTH AMERICAN MAN

By J. J. GAPANOVICH

The aboriginal population of America is generally considered as native to this continent, disconnected from the European or Asiatic peoples; that is a commonplace assertion, being found in many text-books and sometimes corroborated scientifically. Thus, they speak of the American race or "Red race" having peculiar characteristics unlike other races (in fact it is not red but dark or light yellow) and even now, when we have learnt that "pure" races do not exist at all, while existing races are more numerous than we are accustomed to think, even now they represent the American race as an exception, because it is supposed to be homogeneous all over the continent; on the other hand, "red skin" peoples are frequently represented by the public as having striking characteristics, which are well set forth in the heroes of J. Fenimore Cooper or Jack London (romantic figures so unlike the modern Europeans or Asiatics).

Indeed, such are ordinary opinions on the subject; but the same assertion is made by some scientists, who corroborate the notion of the American race from anthropological, linguistic and ethnological points of view.

As to the American race, taken in anthropological aspect, J. Deniker held not long ago: "The existence of an American race, or rather a group of American races, is generally conceded—a group to which all the native populations of the New World belong."¹ It is true, according to somatic characters, he differentiates the Eskimo, North, Central and South Americans, and Patagonians, but it seems much more a geographic distribution than an anthropological classification, neverthe-

¹ J. DENIKER: *The Races of Man*, London, 1900, p. 508 (English translation).

less, Deniker concluded: "By the yellow colour of the skin, as well as the straight hair common to most, but not all Americans, they have affinities with the Ugrian and Mongol races, but other characteristics (such as the prominent, frequently convex nose and the straight eyes), separate them widely from these races."² One must not forget that Deniker handles the notion of a race in a very particular sense and admits about twenty races of mankind.

In connection with recent investigations of the blood agglutination, an attempt was made to corroborate the idea of an isolation of the American race. According to a more or less degree of the agglutination of different bloods, there are distinguished four groups: I, agglutinating all bloods; IV, not agglutinating at all; II and III, agglutinating mutually, the former more, the latter less. As some American investigations of the northern Indians show, they belong 78% to the Group I, 20%—II and 2%—III; Reuben Ottenberg, basing his classification of mankind on the iso-agglutination, stated that an Oceanic-American race exists which has 67% belonging to the Group I, 29%—II, 4%—III, the third thus being inconsiderable, while the fourth is not represented at all. This may be on account of a very early separation of the American race, which happened before the bio-chemical differentiation of mankind.

From the linguistic point of view, the American languages are characterized by the so-called polysynthetic structure, which means that they prefer to indicate a connection of ideas by using connecting syllables instead of inflexion and suffixion; they like to vary the meaning of words by using numerous prefixes and frequent repetitions of syllables; to connect an object with a verb belonging to it, they use incorporation. They mix a pronoun with a verb and still keep the dual and triple number. These methods: polysynthetism, prefixion and incorporation are so essential to the American languages that comparative philology separates them as a special stock of languages unlike the principal linguistic branches. This, however, does not by any means solve the problem of their origin and formation, one can only state that these languages stand alone.

From the ethnological point of view, we cannot speak of the homogeneity of the American race in the definite way that we have spoken concerning linguistics. Visible

² J. DENIKER: *Op. cit.*, p. 517.

differences for instance, exist between the fishing and hunting tribes of the North American Indians and between the primitive Botokudo of Brazil and the nomadic Araucanians of Chile. It is not difficult on the other hand, to find a counterpart of the material culture of the American Indians in customs of some primitive tribes in Northern Asia or in forests of Australia, the more so that all these peoples have now degenerated, owing to identical causes (pressure of the Europeans), and with the same consequences: they are more or less like each other at present.

One could speculate only on Indian mentality (which is characterized by such elements as the belief in a Great Ghost), or on rigorous morality (which is—or recently was—peculiar to the Indians, especially to those of North America, to a very unusual degree). But this is not yet convincing.

More suggestive may be reference to those unique civilizations which flourished in Mexico, Yucatan, Peru, and which are so peculiar that nothing in the Old World corresponds to them. Yet the Spanish conquistadores looked with wonder at the richness of these states, their admirable technique, and last, the cult of the Sun with its splendid rites as well as horrible blood sacrifices. The Aztecs, Maya, Kechua were in a period of metals, when gold was extensively used; but this Metal Age seemed to have surpassed the European culture, as the poor Spanish invaders thought. At present we have learnt what the Metal Age in ancient Europe meant, especially since the Minoan culture, with all its richness and beauty (3000-1400 B.C.) was recently discovered in the eastern portion of the Mediterranean. So our attitude toward the ancient American civilization must be other than that of the Spanish.

However, for us, too, the state of society existing in these realms has nothing to compare with the oldest civilizations known to us, and perhaps, only remainders of such a system could be observed in the history of Sumeria and Egypt (6000-4000 B.C.).

If that which may be called "culture" in America originated in so isolated a way and had no connection with the Old World, is it not an extra evidence in favour of the independent beginnings of the American race? It goes farther than the facts allow: all the above mentioned considerations are not decisive as referring to a not very remote history; only prehistoric archaeology can solve this

problem, and it seems to have helped to elucidate the origin of the American race.

The South American palaeontologist, Ameghino, held that not only part of mankind, but all mankind originated in America, basing this hypothesis on the fragments of a skull found by him in Argentina; he supposed these remains of "Protohomo," as he called that human ancestor, belonged to the early Pleistocene period, thus representing the oldest traces of human beings in the New World. He even traced the whole genealogy of Protohomo, but it was a mere fancy. Ameghino's hypothesis was severely criticized by European anthropologists, while his findings were attributed to a far more modern man.

Dr. Hrdlicka, who had studied these remains very carefully, concluded they were quite recent bones. The same conclusion was made with regard to the North American findings; Hrdlicka himself, who was first inclined to consider some of them as suggesting early Palaeolithic man, changed his opinion and finally stated "that no specimen had come to light in the Northern continent, which, from the standpoint of physical anthropology, represented other than a relatively modern man."³

Thus the finding of human skeletons in both continents and the allegation that they belonged to the Pleistocene period being inconclusive, there are yet negative considerations against the possibility of the New World having been the cradle of mankind. Affinities of the monkeys, apes and man as Tarsioids and Lemuroids occur here in the earliest deposits of the Tertiary Age; as to fossil monkeys found in the Oligocene deposits, there are two forms of them—Catarrhines, which are nearer to man intellectually, and Platyrrhines, which could never enlarge their mental development; but the former are absent in the Oligocene deposits of America.

Finally, the remains of anthropoid apes also were not discovered in America, except two teeth recently found in Nebraska and identified by Prof. Osborn and Dr. Gregory with a new variety of ape called "Hesperopithecus"; this supposition was not, however, accepted by European scientists.⁴

³ A. HRDLICKA: "Early Man in South America," *Bur. of Amer. Ethn. Bull.*, LII, 1912, Preface.

⁴ E. O. JAMES: *The Beginnings of Man*, London, 1928, p. 85.

We conclude that the American mankind originated in another soil and arrived here only at the close of the Pleistocene, *i.e.*, at the end of the Palaeolithic period.

Thus the attempts to find evidences of man's early existence in America have as yet failed, and now the inclination is to deny such a possibility at all, which, perhaps, is an exaggerated view.

It is not our task to enter into a discussion as to which are the original homes of the human ancestors, according to modern hypotheses on this subject. Here it is enough to state some inferences. All suppositions are based on finding the remains of any human primates, such as the Rhodesian skull found in Africa (perhaps, belonging to *Homo Neanderthalensis*), or the earlier specimen of *Homo Heidelbergensis* in Europe, or the earliest one of *Eoanthropus* represented by a Piltdown skull in England (which, however, cannot be dated accurately), or *Pithecanthropus erectus* in Java, who may have been our most remote ancestor. Remains of *Sinanthropus* found near Peiping are more complete and may be dated better than the previous ones. On the other hand, continents revealing human affinities like Tarsius, or fossil monkeys, or ancestors of anthropoids may more or less claim to be the cradle of mankind as, for instance, the case of America.

This line of human ancestry is accepted by such prominent scientists as Prof. G. Elliot Smith and Prof. F. Wood Jones. According to them, our original common ancestor, who lived in trees and was like a gibbon, but yet with human characteristics, started his career in the Pliocene. As to places of his origin, they are reduced to Asia and Africa, to say nothing about Europe where there are very early traces of human occupation; so, if the man did not originate in Europe, he arrived here very early, perhaps, from North Africa.⁵ As man was living in Europe during the whole Glacial period for which are required 200,000 (Keith)—400,000 years (Sollas), it may be maintained that he occupied Europe as long as that.

So far as America is concerned we are neither dealing with the Eolithic man going back into the Tertiary Age (such a date, however, is not supported by many archaeo-

⁵ E. O. JAMES: *Op. cit.*, p. 89.

logists) nor with the lower Palaeolithic man living in the Pleistocene (from 150,000 B.C.—the date of *Eoanthropus*) till the last or Würm glaciation which occurred 20,000 years ago. We need not such astronomical terms to date man's emergence into the New World. Here one must remember the division of the upper Palaeolithic, usually accepted in archeology: the arrival in Europe of a new race, that of Cro-Magnon, which brought with the Aurignacian culture the replacing of the Neanderthal man, after the Würm glaciation (20,000 B.C.)—the transformation of that culture, in connection with a new advance of ice (the Buhl glaciation which occurred 10,000 B.C.), marked a new phase—that of the Magdalenian culture—the close of the Palaeolithic, which followed the final retreat of ice (6500 B.C.). There was yet a transitional or Epipalaeolithic phase between the Old and New Stone Age characterized by the coming of new races; forerunners of the historical inhabitants of Europe,—races which opened our civilization by discovering agriculture (between 10,000 and 7000 B.C.). Such must be starting points for prehistoric chronology of the American mankind, if the possibilities of its appearance in the New World are reduced to the end of the Palaeolithic or even to the Neolithic.

Northern Migrations to America from Asia.

If man did not originate in America but came here very late, a question arises—in which way did he choose to arrive? It means we must learn which continents were still connected with America, in the Pleistocene, or, at any rate, could have communication with it after that time; since archaeological evidences are lacking as to traces of such a migration, one must look for ethnological counterparts of the American aborigines somewhere else, so far as one can speak of the present primitive tribes, as revealing some analogies, if not affinities, to the civilized peoples of ancient America and of the Old World as well. Finally, some particulars should be given concerning the migrations, mainly with regard to their possible time, which, indeed, may be stated only proximately.

But first of all, it will be interesting to note some parallels existing between the Old and New World in another field—in the distribution of some zoological species: according to some zoologists, the wild sheep came

to America from Asia before the last glaciation, migrated southward with the advance of ice and finally returned under more favourable climatic conditions; thus the present Siberian sheep are a non-Asiatic stock. That parallel is very suggestive for our problem, revealing how and whence man could have passed over to America.

Europe and Asia must be taken into consideration as continents having had a connection with America at geological periods nearing man's appearance in this portion of the world. But the western connection, the so-called Icelandic bridge, did exist in the Miocene and not in the Pliocene age, while it is very probable that man had not yet emerged, having appeared only about the close of the Tertiary Age. As to the eastern connection, or the Behring bridge, it existed yet in the Quarternary Age, during the Pleistocene, when the mammoth, reindeer, elk, musk-ox and bison passed over from Asia to America, while man may have followed them. Such a hypothesis, not to say statement of fact, is maintained by all American and Russian geologists who have studied the rock structure on the Chukotka and Alaska coast of the Behring Strait.

Whether that connection ceased at a recent time or earlier, is not essential for our inquiry, as favourable conditions produced by this geological fact lasted longer, one may say till to-day.

If at sometime the human migration from Asia to America really took place, there must be or have been traces of such a wandering somewhere in the possible connection of two continents. The results of the Jesup North Pacific Expedition (which was organized at the beginning of our century and which carefully studied the north-western Indians of America in connection with the so-called Palaeasiatics of Siberia) gave the desired evidence.

The Palaeasiatics, alleged to be remains of the earliest inhabitants of North Asia, mostly live on the North Pacific, consisting of the Chukchee, Koriaks, Kamchadals perhaps, Ghiliaks and some other tribes; they were described in detail by Bogoras and Sternberg, Russian members of the above mentioned expedition, and especially Jochelson inquired into the ethnological problems connected with them. They held that the Palaeasiatic culture was a complex of Asiatic, Eskimo and

Indian elements, the latter being especially observed in religious beliefs.⁶

The tribes on both sides of the Behring Sea worship a tribal ancestor whom they represent as a humorous and obscene personage; he is described as a reformer of the world, if not its creator, which rôle is attributed by the Palaeasiatics to a Supreme Being like the Great Ghost of the Indians. The parallels in the folklore on both sides are abundant in striking correspondences in the material culture and social organization; they are revealed, for instance, in fishing methods and in the style of boats of the Kamchadals (being of hollowed out trees) or in a rudimentary clan organization of the Yukaghirs, both reminding one of Indian life and customs.

These ethnological analogies are not, however, decisive; a common culture complex suggests, indeed, a mutual intercourse having existed between two tribal stocks; however, it is not convincing as to the Asiatic origin of the American Indians. But this is not all: there are resemblances which go deeper and far back. All these peoples are very similar in physical traits, both in Asia and America, and just in this respect there is a difference between the long-headed Palaeasiatics and their Asiatic neighbours, who are broad-headed. The linguistic resemblance is an additional consideration: the features of the American languages, which we mentioned above, completely correspond to those of the Palaeasiatic languages.

Some anthropologists lay too much stress upon dolichocephalism of the peoples of North-Eastern Asia in contradistinction to brachycephalism of the Mongoloid peoples; this assertion needs some correction as cephalic indices of the Koriaks, Kamchadals and Yukaghirs are 78, 79, 80 respectively, there being mesocephalic ones. As to their nearest American neighbours, they have indices of 79 (the Eskimo) or 82 (the Teingits); thus the Palaeasiatics and western Indians have similar indices. On the other hand, mesocephalism may be considered as a general characteristic of the Indians of North America,

⁶ Waldemar Jochelson is the author of three extensive monographs concerning the Yukaghirs, Koriaks and Aleuts respectively. He has also discussed general questions concerning the Palaeasiatics in his articles as well as in monographs, such as *Archeological Investigations in the Aleutian Islands*, Washington, 1925, and *Investigations in the Aleut Islands*, Washington, 1925, and *Peoples of Asiatic Russia*, New York, 1928. Below we shall follow his argumentation so far as it concerns the Palaeasiatics.

thus the Palaeasiatics may have affinities with the former. As to growth, the analogy is rather questionable as the Indians are tall, and the Palaeasiatics are of low stature; however, exceptions are observed on both sides. At least, they have striking resemblances in their hair and eyes.

Linguistic parallels between these two stocks of peoples are yet more suggestive as was shown in a convincing way by the Russian ethnologists Bogoras, Jochelson and Sternberg, who respectively studied the Chukchee language, the Yukaghir grammar and the Ghiliak morphology. As compared with the inferences given by such authoritative linguists as Brinton and Boas, who investigated the Indian languages, the Palaeasiatic ones imply all characters revealed here, especially polysynthetism and particularly prefixion, reduplication, incorporation, and dual number. However, they are marked with other influences too; for instance, with harmony of vowels or suffixion to some extent, which is peculiar to languages conventionally called Uralo-Altaic ones. Such an admixture of the Asiatic features is quite natural in the case of the Palaeasiatic languages.

Finally, it may be stated, as says Prof. Boas (the leader of the Jesup expedition): "The so-called Palaeasiatic tribes of Siberia must be considered as an offshoot of the American race, which may have migrated back after the retreat of the Arctic glaciers."⁷

This theory implies that the ancestors of the American mankind migrated from Asia to America in one of the interglacial periods, probably before the last glaciation, and then other southern and northern movements followed connected with the advance and retreat of ice.

Such a theory has allowed Jochelson to style the north-eastern Siberians as the Americanoid tribes, while it is supposed this influence reaches as far as the shores of the Enissey, which, perhaps, is an exaggeration. As a matter of fact, the Palaeasiatic culture is deeply permeated with elements which were not adopted by these tribes but originated in the Asiatic soil, as, for instance, dog driving, family organization, religious dualism. One would explain such characters by the hypothesis of a separation, which took place between the northern Asiatic and American tribes after the Eskimo arrived in their present area, thus making a "wedge" between these two affined groups.

⁷ FRANZ BOAS: "Ethnological Problems in Canada," *Jour. of Royal Anthr. Inst.*, London, 1910, XL, p. 534.

Such may be the origin of the northern Indians. But what can be said concerning the civilized peoples of Central and South America? The theory in question suggests that mankind migrated here on a level with the Neolithic; then it spread southward, the geographical conditions being very favourable for such a movement, and it elaborated its culture independently here: cultivation, weaving, ceramics, metallurgy are original inventions of America. By no means is this a solution of the problem. The supposed Asiatic origin of the American race is based on ethnological (and partly anthropological and linguistic) evidences; why should the analogy not be continued farther though in another direction if there are considerations in its favour?

At present one may reasonably suppose that the Mexican, Yucatan, Peruvian cultures were not so isolated—that is to say from Asia. Let us briefly summarize essentials of these cultures. The American civilizations, which arose around about 1000 B.C., were familiar with pottery, weaving, dyeing; their community was based on a temple, having abundant blood sacrifices; and an intensely astronomical priesthood, their rulers being under a rigorous law of omen; they (the Maya) invented writing used mainly for keeping the calendars in order, while the Peruvians adopted a method of knotting cords used mostly for financial purposes. And what was especially remarkable was this obsession of shedding human blood, which was like a general mental aberration.

These striking features are not, however, unknown in instances of some ancient civilizations, so far as we are familiar with them by recent discoveries.

The civilizations existing in the Nile Valley and Mesopotamia flourished around 6000-3000 B.C., before great Semitic invasions, and they were the most ancient in the world. Their level was not unlike that of the American civilizations which emerged 4000-3000 years after. The people were busy with irrigation and cultivation, having no money and no interior commerce; they were familiar with bronze, copper, silver, gold, but not with iron, metals being used by the rulers mostly for ornamentation purposes and incidentally for trade. The temple dominated the life, being a high tower in Sumeria and a massive pyramid in Egypt; the ruler was the greatest priest in one country and the incarnation of a god in another. Both peoples invented writing which, cuneiform as well as hieroglyphic, was adapted to their languages made up

of accumulated syllables; and as a further resemblance to the American Indians, they were brownish brunette men.

These resemblances have attracted attention, and there have been attempts made, quite unscientifically, to connect the American civilizations direct with the Nile or Mesopotamia. Recently a new idea was proclaimed by Professors Elliot Smith and Rivers, who determined these and similar cultures as Heliolithic ones; they held that a primordial culture based on stone-working and adoration of the sun originated somewhere in the Mediterranean or West Asia and spread eastward across Asia and through islands across the Pacific where it met with the Mongoloid peoples coming down from the North. They may have been the same tribes of which we spoke above in discussing the Palaeasiatic migrations. Thus, the American race is made up of an intermixture. The Heliolithic culture formed a belt along the temperate and sub-tropical regions of the world from Spain to Peru, including, indeed, some varieties: Iberians, Aegean peoples, Hamitic ones, Sumerians, Dravidians perhaps, Chinese, Indonesians, Polynesians, finally Peruvians, the latter being no more isolated than the others. This is a very attractive hypothesis, though it does not reveal how this culture diffusion was practically going on and how it crossed the immense ocean.

We shall discuss it later; as yet, considering the hypothesis of a primordial migration from Asia to America as a granted one, let us frame it in terms of time. First of all, one must not imagine that a period during which it proceeded could be a brief one. The coasts of the Behring Sea were as sparsely populated as now and they were not more occupied long ago; there are found several layers of settlement in Alaska, discovered by excavations recently made, though on a small scale. Nevertheless, they show that the immigrants arrived in small groups, which easily spread southward. On the other hand, there is not much need of building hypothetic bridges between Asia and America with such easy communication by way of the Behring Strait. As it is now, so was it before, at least, in the recent geological period.⁸

⁸ The author, when visiting the Behring Strait, was surprised to see how accessible America was here, and how easily local people travelled from one coast to the other. Here one can get some idea of how old migrations took place.

There may have been some correlation between this migration and the movement of glaciers: man is supposed to have arrived in America in one of the interglacial periods, but in which? As to America, one cannot rely on data given concerning the European glaciers as there was no correspondence between America and Europe in this respect. It is possible only to state cultural parallels between the Old and New World; and attempt has been made by Prof. Sollas to connect the American aborigines with the Magdalenians who after the expiration of the Palaeolithic age retired from Europe by North Asia to America where the Esquimo and some Indians originated from this stock. But such a hypothesis is arbitrary as no archeological traces have as yet been found as to this migration elsewhere than in Europe. Nevertheless, some migrations early enough are known which came from Asia: so a new race, that of the Solutreans, following the wild horse and some cattle, had wandered from here to Europe about 10,000 B.C., before the Magdalenian culture evolved; why may not a parallel migration have taken place in the eastern direction, to North Asia and then to America? Before the Bühl advance of ice, milder climatic conditions existed here, and some species of cattle as the musk-ox, bison and mountain sheep appeared in America.

At any rate, parallels among the Indians may be found to the Solutreans as well (for instance, in hunting methods) as to the Magdalenians (carving and engraving). Under given circumstances, one must suppose that man came into being in America not earlier than 10,000-7,000 B.C., more remote data being excepted.

Probably first waves of the immigrants penetrated here at this time and may have been responsible for some features of a later population which survived them. But the main stock arrived only in the Neolithic, which is well represented in shell-heaps found in Patagonia, Chile, Brazil, Florida, Louisiana, i.e., beyond the limits of the Maya and Kechua civilization. These coastal accumulations belong to the population which occupied these regions as the earliest settlers. Such kitchen-middens are attributed in Europe to 7,000 B.C. or thereabouts, but in America they seem to have been formed later as animal remains found here belong to now existing species. Besides, the kitchen-middens themselves may be connected sometimes with an earlier population as "sambaquis" in Brazil and sometimes with recent inhabitants as "para-

deros" in Argentina; this being so, it is not an evidence in favour of man's antiquity in America.

Other findings alleged to belong to early mankind, really belong to a later period, being connected, though indirectly, with a population existing at present; of such are remains attributed to the "mound builders" of North-eastern America, who were tillers of the soil driven by wanderings of ancestors of the modern Indians who were hunting people; afterwards they were mixed with the invaders and left tilling. The so-called "cliff-dwellers" of Arizona and New Mexico were more advanced people, being familiar with cultivation and living in large communities in peculiar buildings called "adobe." But they were quite recent inhabitants, now represented by the Zuñi. In conclusion, one may refer to the American archeologist Holmes, whose authoritative opinion is against the antiquity of man in America. He has maintained that the last glaciers in America (near the Hudson Bay) disappeared 6000 B.C.

It would be interesting to trace the latest migrations which took place in an area which is nearer to Asia, especially in the North Pacific, but no such data is given by the archeologists as Dr. Dall and Jochelson, who investigated the ancient Aleuts' culture: the former concluded that human remains found in the Aleutian islands belonged to a time 3,000 years ago, while the latter held that his excavations, though very deep, did not corroborate this supposition, dating his findings to 1,000 years⁹ ago.

If we even agree with Dall, such a culture as existed in the Aleutian Islands was very backward in comparison not only with civilizations existing in West Asia, but with East Asia which already practised agriculture extensively at this time; as to the Aleuts, they were practically on the Neolithic level using stone and bone implements as well as the labrets, and painting the faces like the Indians.

It is possible to assume that evolution of a culture which had appeared in a West Asiatic centre was retarded, so far as it radiated westward and eastward; the American civilizations, being its most remote repercussions, were especially delayed. Such was the situation with regard to the invention of cultivation and the domestication of animals.

⁹ WALDEMAR JOCHELSON: *Op. cit.*, Chapter VII. Dall's works are quoted and discussed here.

The North American Indians were not familiar with cultivation except in a rudimentary form, and they have remained bad agriculturists to this day, except the Pueblos near Mexico; so only the southern civilizations are responsible for it; they flourished, it is understood, about 1000 B.C., while their origins may be dated as 3000 B.C. when, probably, cultivation was invented and animals (the llama) domesticated—much later than in Europe, but a little later than in China and Indonesia. Then the American civilization came into being.

These parallels, perhaps, suggest the time of a new migration to America which, bringing the Heliolithic culture, met with the Neolithic of the earlier inhabitants.

South Pacific Migrations to America.

The previous survey of hypotheses on the peopling of America allows for the following statements: (1) Man did not originate in this continent; (2) he migrated here, undoubtedly, from Asia, having crossed the Behring Strait; (3) he appeared here relatively late, probably, being on a level of the Neolithic. The admixture of Asiatic elements being beyond doubt, there are in the American aborigines other constituent characteristics which cannot be reduced to the same source; such are the features of the civilized and semicivilized peoples of ancient America, and particularly is this the case with regard to South America; there are considerable differences between North and South America in all aspects previously discussed, and one may reasonably suppose that the migration was going here from another direction.

First of all, in contradistinction to a geographical connection which exists between North America and North Asia, the two American continents are completely separated in spite of the Isthmus of Panama, or rather on account of this Isthmus. It is formed by inaccessible mountains together with swamps abounding with mosquitoes, being one of the most insalubrious areas in the world. The civilized peoples living southward and northward from it never crossed it and were entirely unaware of each other before the Spanish conquest. Even the animals could not migrate by this way; thus fauna was quite different in North and South America; the reindeer, caribou, bison, bear are typical of the former, and the llama, guanaco, parrot, monkey of the latter. This statement may be corroborated palaeontologically as specimens

like *Typotherium* or *Toxodon* were found only in South America. "As," says Colonel Langlois (the author of a comprehensive work on Pre-Columbian America), "there are between two continents essential differences so considerable that they make an absolute barrier between them."¹⁰

On the other hand, mankind, has been influenced by different climatic conditions in both continents as North America is (with the exception of the Pacific coast), cold, and South America is, generally speaking, warm; so it must have been more suitable for the immigrants coming from warmer countries, unlike the North of Asia. Such a difference exists not only at present, but must have existed very early, because the glaciers disappeared in South America sooner than in North America and, undoubtedly before the coming of man, who consequently needed no caves for dwellings, like the Magdalenians.

Let us now go the same way which we followed when discussing the origin of American mankind in general; let us review peculiarities of the South American aborigines from the anthropological, linguistic and ethnological points of view—peculiarities which could suggest some idea as to their migrations.

Contrary to North America (which is homogeneous enough in the physical types of the population), South America represents several varieties of the human type having other affinities than the northern Indians. Yet Deniker differentiates between the Central Americans, the South Americans and the Patagonians, classifying them as distinct races of the southern continent, characterized respectively as "brachycephalic" and short people; "meso- or dolichocephalic" and short ones; "brachycephalic" and tall ones. He supposed that the dolichocephalic short Americans are the most representative of South America, being the descendants of the earliest inhabitants; he held that remnants of these Palaeamericans still survive somewhere amidst this South American race.

Without speaking of the races of South America, as Deniker does, one must, however, state the racial varieties really existing here. Brachycephalism being more or less common in South America, there are peoples resembling the Melanesians in other aspects, especially in the east; one may suppose that the earliest population belonged to

¹⁰ COLONEL LANGLOIS: *L'Amérique pre-colombienne et l'invasion Européenne*, Paris, 1928, p. 26.

this variety, and some remnants of such primeval immigrants called the "Lagoa Santa" race still exist, dotted in many places over the central part of the continent; the Botokudo belong to this primitive race, not only anthropologically, but ethnologically, representing its cultural level till now. The Patagonians, who are another racial variety of South America, have anthropological affinities with the Australians; the Maya of Central America (as, however, one could expect) are entirely distinct from the main stock of the South American population; they have a peculiar shape of the skull, like a sugar loaf; this cranial characteristic is not yet explained satisfactorily, though it may be connected with customs of mutilation practised here.

So anything but racial homogeneity is observed in South America, and there are alien elements which, of course, did not originate in this soil, while parallels, on the contrary, exist between the South Americans and the South Pacific islanders.

Let us pass to linguistic considerations: There are numerous dialects in America, and there are even many linguistic families; the case is the same in both continents, however, with a little distinction in respect to South America where large linguistic stocks are met with only on the Atlantic slope, while on the Pacific slope (in a little space between the Ocean and the Andes), the languages are abundant, each being spoken by some little tribe only. We have learnt, however, that such regions usually are areas of intense migration; wandering of peoples is reflected in diversity of languages. In the case given, there is a suggestion of the direction of migration: it could go from the Pacific, spreading farther northward and southward and passing by the Andes where Kechua was a prevalent language.

The expansion of this language somewhat complicates the problem: the fact that a multitude spoke it did not of necessity indicate that it was the native tongue; this was some official language imposed by the conquerors upon the vanquished peoples. So the American languages may have been yet more numerous than they are now.

In spite of their abundance and diversity, Brinton could summarize their character as was mentioned above, especially laying stress upon their polysynthetism. He was dealing with their morphology, paying no attention to the lexicon; however they are lexically distinguished to

such a degree, that they are not to be considered as simple dialects and therefore the famous linguist Fr. Müller denied their homogeneity. In addition to it, Boas stated that polysynthetism itself was not applicable to all languages of America.

Whatever may be the situation, there are in South America at least six great linguistic families clearly discernible. Chibcha, Kechua, Aymara and Araucan in the west, Arawak, Carib, Tupi-Guarani and Tchon in the east. It is interesting to point out that the Chibcha language connected with that of the Pueblos reveals a maritime migration northward via the Pacific, while the Guarani suggests a similar migration along the Atlantic coast; so far as it is shown by the Carribean language, these people may have been moving from the same direction and may have tried the maritime way also.

Apparently, there was evolving in South America a process like that which is geologically called "charriage," meaning in the case given a succession of the ethnical strata which was reflected in the distribution of the languages. Being older or younger, all American languages reveal a primeval structure peculiar to undeveloped mentality, such as the dual triple and quadruple number or incorporation of the object in the verb with changing the verbal stem; it means a mind which cannot yet generalize. There are even indications by Nordenskiöld of some American tribes using the language of signs.

However, the antiquity of the American languages must not be exaggerated. We are familiar with such a linguistic fact as polysynthetism in the case of the Sumerians, who elaborated a similar language about 5000 B.C. On the other side of Asia a great linguistic family is supposed to have existed styled "Tibet-Chinese," one from which the Proto-Chinese separated about 3000 B.C.; such is the opinion of Karlgren, the prominent sinologist who supposes that Chinese was not monosyllabic at first. According to him, tonality in Chinese replaced former prefixes, and there was inflection of pronouns in ancient Chinese.

On this occasion, one must mention an investigation by Prof. Shirokogoroff of the Lolo dialect belonging to the Tibeto-Burman group; it possesses polysyllabic words together with a well developed system of suffixes and prefixes and uses incorporation in polysyllabic words or in the word order in sentences. This investigation shows that even at present some characteristics alleged to be

American though in a limited way are found on Asiatic soil.

Shirokogoroff's observations on the consonant L in the Lolo dialect as compared with other languages are of special interest. This consonant has some variations in its articulation and production which have parallels in Indian languages of the Columbia valley and the California coast (voiced L and emphatic L), as well as in Palaeasiatic languages: in Chukchee ("double" L), in Koriak L alternated with tl, in Kamchadal (L alternated with tl and tc). These parallels may be yet larger: tl is frequently met with in ancient Mexican, like the languages mentioned, and Prof. Lin Yu-Tang found unusual combinations bl, kl, tl in ancient Chinese. The resemblance is too close to be accidental.

The anthropological resemblances, to say nothing of the linguistic ones, between the South Americans and the Pacific islanders are too vague, however, to make conclusive statements concerning their affinities. The case is otherwise with ethnological parallels existing among these two stocks of mankind. As Colonel Langlois says: "It is, at least, curious to find parallel objects in Indochina, Melanesia, Polynesia and America, not rare ones but commonly used in such a way that their affinity is undoubted."¹¹ As it was pointed out by Paul Rivet, there are met with everywhere in this large area such things as tarry war clubs, a signal drum, a flute of Pan, bridges of liana, the weaving trade. The case of a "sarbacan" (American) or "sumpitan" (Malayan) is especially interesting; it is a thin double pipe through which a dart with a poisoned tip is blown by force of the lungs—a very dangerous weapon used for war or the hunt. Evidently, this instrument is very peculiar. However, it was used by the Malay people, Oceanians and Americans equally, coinciding with the above mentioned belt of the Heliolithic culture. Magellan perished by it in the Philippines, Cortez met with it in Mexico.

There are other customs common to the South Americans and the Pacific islanders, but not so widespread as the previous ones in this area. Curious mutilations practised in America are familiar to the Oceanians also: such are setting stones into the teeth, amputation of the fingers of the hand, deformation of the skull. Essential characteristics of the Peruvian civilization are to be

¹¹ COLONEL LANGLOIS: *Op. cit.*, p. 34.

observed in some places in the South Pacific, such as cultivation in terraces (which is practised in a very developed way by some semicivilized tribes of Luzon in the Philippines), or counting by knots (quipu) which has its counterpart in a calculating machine of some Polynesians.¹²

The cultivation in terraces is especially curious: such a system of agriculture is characteristic of some great civilizations, being familiar to the Chinese even at the dawn of their history. These parallels must not be under-estimated: Peru is far distant from the typical Heliolithic civilizations in Western Asia, but has a striking resemblance to them; there, in Eastern Asia, may be a deficient link of this cultural chain. Recent archaeological discoveries in China support that supposition: Fathers Licent and Teilhard de Chardin have found a Palaeolithic in Ordos, J. G. Andersson has met with a Neolithic relic in South Manchuria, Honan and Kansu, *i.e.*, in the centre of ancient China (Honan). Andersson maintains that the prehistoric dwellers of these provinces belonged to the same races as the present population; there is evidence that they domesticated the pig, a typical ancient of the Chinese peasants. He has found stone and metal implements together, but belonging to different periods; as the Metal Age may be dated in China as 3000 B.C., the stone implements must be of a much earlier date.

According to Andersson, the Kansu people were not autochthonous here; perhaps they went from the west as there are parallel findings in Turkestan. On the other hand, the implements of Manchuria are similar to those of the Chukchee or Eskimo; let us remember on this occasion what was said above about connections between the Palaeasiatics and Indians. Thus, Eastern Asia may have been a centre of irradiation of a primordial culture northward and southward, and, in particular, of the Heliolithic culture across the South Pacific.¹³

¹² The author must refer to his personal experience in the Philippines: it has been strange to see these elaborated terraces so disconnected through the present decline of local savages.

¹³ The traditional history of China under the Hsia, Shang and Chou dynasties is rejected by modern sinologists, for instance, by the latest work of Marcel Granet, *La civilisation chinoise, la vie publique et la vie privée*, Paris, 1929. However we admit that such kingdoms really existed and perished with barbaric invasions. The civilization before the Han dynasty which he tries to reconstruct was, perhaps, a reflection of a previous one very similar to the Heliolithic culture.

Other interesting resemblances between Peru and China may be found, such as the idea of a feather serpent in Peru, corresponding to a Chinese dragon, abundantly represented in the myths and art of both countries. The same must be said concerning the Peruvian blood sacrifices having their counterpart (indeed, as a survival) in numerous expiations which were the duty of an ancient king or a feudal seigneur in China. These resemblances, being too vague, do not suggest a genetic connection between two civilizations, but perhaps they hint at a common, but of course very remote, source.

The case of the serpent is of particular interest as myths and art in Oceania are also permeated with this motif. Many Polynesians adore the serpent as a being connected with the creation of the world or as a tribal ancestor, and it is extensively used as an ornamentation motif. Prof. Sternberg has discovered it among the Ainu people too, suggesting that all Ainu art is based on this idea: spiral and zigzag ornamentation may be visibly reduced to this image. A question arises whether characters peculiar to Mexican writing and Peruvian art may be explained in the same way, i.e., as serpent-like in form.

Ways of Southern Migrations to America.

As may be seen, there are considerable points of distinction between the North and South American aborigines; South American mankind is heterogeneous in many respects, undoubtedly indicating Australian, Malayo-Polynesian and, possibly, East Asiatic elements.

This being the case, the migration of mankind to South America must have proceeded in ways otherwise than to North America; peoples starting from Australasia crossed the South Pacific.

It is, however, easier to say than to do: there is no "bridge" between Australasia and South America like that between North Asia and North America; while Asiatic aborigines could quite naturally have crossed the Behring Strait, peoples who attempted to cross the South Pacific would have been hindered by the immense distances between the continents. How was the migration to South America, if any, made possible?

First of all, one must pay attention to the fact that South America was insufficiently peopled even at the time of the Spanish conquest. According to some estimates, 10-12,000,000 were living on the Andean table-land,

2,000,000 or more in the east, 2,000,000 in Central America; practically, only the area of the Peruvian influence had a dense population, which, however, was inconsiderable in comparison with other ancient agricultural countries, (for instance, China, which had 10,000,000 inhabitants while yet under the Han dynasty).

On the other hand, the American continent shows how a population increases, under favourable conditions, in a little time: the present white population of South America (calculated as about 100,000,000) grew during four centuries only, having started from some thousands of people, by means of hybridisation and colonization.

Aboriginal groups of people, from which South American mankind originated, could reach this continent by water as well as by land. There are resemblances between America and Australia in vegetation and animal species, which presumes the existence of a connection by land between them, and an Austral continent is supposed by geologists to have been situated between America and Australia, beginning with the Jurassic period; Suess maintains that it disappeared only in the Miocene. We have nothing, however, to do with this hypothetic continent existing, as it must have, long before the emergence of man in the New World. But there was another possibility of going from Australia to America which remained much later.

Mendez Correa, the South American scientist, has held that there was a way by the Antarctic continent which was accessible to man in recent time, as it was warmer about 4000 B.C.; such a supposition is admitted by Wegener, and it is supported by the discovery in the latest expeditions of fossil trees and coal in the Antarctic. Thus, the Australian elements in South America are explained satisfactorily, and one may comprehend why they are concentrated in Patagonia, which is the nearest place to the Antarctic.

The question of the Malayo-Polynesian migrations is more complicated; indeed, they were maritime migrations leaving no visible traces behind them, but it is not improbable that they also took place. Colonel Langlois discussed their possibility in a very particular way and found many considerations in favour of it.¹⁴ There exist hydrographical and climatic conditions in the South Pacific,

¹⁴ COLONEL LANGLOIS: *Op. cit.*, paragraph: "Routes de la mer."

facilitating crossing the ocean in spite of the primitive means of transportation. The seamen could use sea currents and counter-currents here as, for instance, the equatorial counter-current going from Australia to America and in the reverse direction; there are other more northern currents going from America to Indonesia direct. Winds blowing in the northern part of this water area are opposite to the Asiatic migrations, but in the southern part summer winds are quite favourable for such an enterprise.

On the other hand, the Malayo-Polynesians are very skillful seamen, being not afraid of big distances like 1000-2000 miles. They must have become familiar with sea currents long ago, and they could use them for their sailings; besides, they knew also how to handle the sail long ago. Of course, it was a bold enterprise to make a voyage across an unknown ocean in a primitive boat; without a compass or map; however, it was not much bolder than Columbus' voyage across another ocean, not to speak of the sailings of Norman Vikings who discovered America even before Columbus (in the 10th century). Perhaps, such a sailing was even easier for the Malayo-Polynesians as they could guess the direction of a land they needed by means of observation and instinct which are inherent in them to the present time. However that may be, the most remote islands in the South Pacific are peopled (for instance, the Easter island, as distant from the nearest land in the west as 1,200 miles and in the east as 2,000 miles.¹⁵

It is interesting to follow these sea and land migrations in the American continent itself as far as it is possible. As parallel archaeological findings are made on the whole Pacific coast from Mexico to Ecuador, the communication between North and South America via the Panama Isthmus being difficult if not impossible, this is an indication of maritime migrations from the south to the north, from the Chibcha people to Mexico. Then, Venezuela may have been an area of expansion which reached the Carribean islands; they played the same rôle

¹⁵ A mythical tradition of some American peoples may be the last consideration in favour of the maritime migration: it is the belief in a mythical hero, Quetzalcoatl in Mexico or Kukulkan in Yucatan, who emerged from the sea and instructed the people in arts and crafts; this is not, however, very convincing, similar traditions being peculiar to many peoples everywhere.

concerning North and South America as the Behring Strait concerning America and Asia.¹⁶ These secondary migrations explain the penetration of the Malayo-Polynesian elements to North America where they are revealed from Florida to the Rio Grande, having their reflection in the culture of the Pueblo people.

Such were maritime migrations; but there are known migrations by land from the eastern direction, via the La Plata and along the Atlantic, which brought the Calchaquis and Araucanians to the Andes and the Guaranis to Brazil. These secondary migrations were a continuation of the Australian one. Both currents of the migrations (Polynesian and Australian) followed their customary ways, till they met with each other on the Andean table-land, which appeared to be the area of an intense intermixture.

The civilization which arose in this area later (that of the Kechua people) was not autochthonous here; the same is to be said of the pre-Kechua culture. Such is also the case of the Maya civilization in Central America, though it is the most ancient of these three: the Yucatan, Peruvian and Mexican civilizations. All these civilizations were preceded by an archaic one which is revealed by recent archaeological findings as well as by legendary traditions of these peoples.

There are evidences of a people later called Otomis having lived on the Pacific coast from Mexico to Ecuador; many Neolithic findings have been made here, as, for instance, stone implements, clay figurines, especially that of the women; according to a tradition, these people were not yet familiar with bread and maize, and subsisted on hunting and fishing; they had no houses or clothes but lived in caves and wore skins; they were organized into clans and adored the sun. H. J. Spinden has maintained that this coastal area was occupied by the identical population supposed to have gone from South America. If so, it was the earliest wave of the Malayo-Polynesian migration nearing the level of first immigrants to North America and, perhaps, not very distant from it in time.

¹⁶ The question of the Caribs is somewhat complicated as their wanderings in the continent may be traced from the Western direction to the Atlantic and in the reverse direction to the Andes; the same is the case in the Caribbean Islands. This, however, is natural here as well as in the Behring Strait: the Caribs, like the Palaeasiatics, could migrate from one continent to another and then backward.

More complicated is the succession of cultures in Peru. Traces of an archaic population are also found here; this people, later called "Uros," perhaps came from Brazil, as it had some affinity with the Arawak; it had some resemblances to the Araucanians and also the Patagonians, and such an origin of this people is more probable; so it must have belonged to the Australian stock. Later this population was absorbed by an invasion of the Caribs who brought the use of metals here and the Kechua people who founded the agricultural civilization. The Kechua belonged to the Malayo-Polynesian stock, and they were preceded by other waves of the same origin.

The coming of these peoples to the Andean table-land is well marked; as says Rivet: "Between roughly polished implements and beautiful Neolithic instruments a hiatus exists; that is an evidence that the civilization which appeared here after the primitive Uros fishermen has nothing common with them."¹⁷ This new culture was brought by the Malayo-Polynesians and, it is to be seen, not very early.

The age of the most ancient monuments of the Pre-Kechua culture found at Tiahuanaco are considered by Max Uhle (who thoroughly investigated the Peruvian antiquities) to be not earlier than 1500 B.C. One may suppose that the Indonesians arrived in South America about 3000 B.C. Such a date is very probable as just then great migrations took place in the Pacific. About that time the Chinese invaded an area between the Yellow River and the Yangtze; it was occupied, as Prof. Shirokogoroff stated, by the Proto-Tungus, who moved northward and southward, subsequently driving out the Indonesians; in connection with this the Malayo-Polynesian migration in the South Pacific grew stronger, and a vehement expansion of these peoples started here. Indeed, an Indonesian admixture is considerable amidst the Malay population in the Philippines, and it implies Mongoloid elements as well as other ones very similar to the Proto-Tungus. On the other hand, Prof. Sternberg has recently proved in a convincing way that the Ainu of Japan had a Polynesian origin; so one can see how far this Oceanian migration reached.

¹⁷ PAUL RIVET: *Les elements constitutifs des civilisations du Nord-Ouest et Ouest de l'Amérique du Sud*, XXI Congr. des Amer. 1927.

Becoming familiar with some particulars of the Malayo-Polynesian migration to South America, one may be surprised that it is to be dated so late. On many occasions we emphasized above that the antiquity of mankind in America is not very great. Let us repeat again with reference to Steinmann concerning South America: "It is possible to say to-day there is no evidence of man having lived in America before the last glacial period, and the man who inhabited it at the most remote time belongs to the same stock as the American Indians at present."¹⁸ And yet more: discussing the beginnings of the American civilization, Vignaud has even maintained there are no traces of migrations here much before 1 B.C., which, perhaps, is an exaggeration. Our opinion so far as it concerns the Malayo-Polynesian migration is between these two limits. We admit that the sea (the more so the ocean) is no obstacle to a primitive man, but only after he became familiar with the first ships (not dug-out boats), which happened even in advanced West Asia about 7000 B.C.

Previous discussion of the problem of the origin of the South Americans shows how our knowledge concerning it is still inconclusive; there are many controversies in trying to solve this problem, and what is admitted by a majority of investigators is more a probable hypothesis than a firm statement. All inferences are based more on ethnological considerations and less on anthropological and linguistic ones; we have learnt, however, how subject ethnic phenomena are to variations; what is especially needed, is an archaeological corroboration in all these fields, and these evidences are especially lacking as archaeology is a young science and particularly in America.

So, for instance, existence of the Palaeolithic is denied in America as there are not corresponding finds. Does it mean that such finds will never be made? Then, the movement of the glaciers is not sufficiently investigated in North America, and so chronological data for man's migrations are absent. Undoubtedly, man passed from Asia to America via the North Pacific, but were these people necessarily the Palaeasiatics? There are evidences that the Palaeasiatic migrations began in Asia late enough. Lastly, as there are naturally no visible traces of travel-

¹⁸ G. STEINMANN: *Zur Urbesiedelung Americas*, XXI Kongr. der Amer., 1924.

lings across the South Pacific to South America, a question arises whether there was a succession of cultures connected each with the other or simply a diffusion of cultures which developed under identical physical conditions along similar lines; it is so in the case of the Heliolithic culture.

Such reservations must be made as to the solution of this problem as have been previously made.

BIBLIOGRAPHY.

- AMEGHINO, F.: "Le Diprhomom platensis, un précurseur de l'homme du pliocène inférieur de Buenos Ayres," *Ann. Mus. Nac.*, XIX, 1909.
- ANDERSSON, J. G.: *Preliminary Report on Archaeological Research in Kansu, Peking*, 1925.
- BOAS, FRANZ: "Ethnological Problems in Canada," *Journ. Royal Anthr. Inst.*, XI, London, 1910.
- Handbook of American Languages*, Washington, 1929.
- BOGORAS, W.: "The Chukchee Language," *Handbook of American Languages* (see above).
- CORREA, MENDEZ: *Communication to the 22nd Congress of Americanists*, 1926.
- DENIKER, J.: *The Races of Man*, London, 1900.
- GRANET, MARCEL: *La civilisation chinoise, la vie publique et la vie privée*, Paris, 1929.
- HOLMES, W. H.: *Handbook of Aboriginal American Antiquities*, Washington, 1917.
- HRDLICKA, A.: "Early Man in South America," *Bur. Am. Ethn. Bull.*, LII, 1912.
- JOCHELSON, WALDEMAR: "Essay on the Grammar of the Yukaghir Language," *Ann. New York Acad. Science*, XVI, 1905.
- Archaeological Investigations in the Aleut Islands*, Washington, 1925.
- JAMES, E. O.: *The Beginnings of Man*, London, 1928.
- JONES, F. WOOD: *The Ancestry of Man*, Brisbane, 1923.
- KARLGREN, B.: "Le proto-chinois, langue flexionnelle," *Journ. Asiat.*, Paris, 1920.
- LANGLOIS, COLONEL: *L'Amérique pre-colombienne et l'invasion européenne*, Paris, 1928.
- OTTENBERG, REUBEN: "The Relationship of Races as shown by Blood Characteristics," *Nat. Hist.*, XXVI, 1926.
- RIVET, PAUL: *Les éléments constitutifs des civilisations de Nord-Ouest et Ouest de l'Amérique du Sud*, XXI, C.A.
- "Les Malayo-Polynésien en Amérique," *Journ. Amer. Paris*, XVIII, 1926.
- SHIROKOGOROFF, S. M.: *Social Organization of the Northern Tungus*, Shanghai, 1929.
- "Phonetic Notes on a Lolo Dialect and Consonant L," *Acad. Sin.*, Peiping, 1930.
- SMITH, G. ELLIOT: *The Evolution of Man*, Oxford, 1928.
- SOLLAS, W. J.: *Ancient Hunters*, London, 1925.
- SPINDEN, HERBERT J.: *New World Correlations*, XXI C.A., 1924.
- STEINMANN, G.: *Zur Urbesiedelung Americas*, XXI C.A., 1924.

198 THE ASIATIC ORIGIN OF SOUTH AMERICAN MAN

STERNBERG, J.: *Bemerkungen über Beziehungen zwischen der Morphologie der Giliakischen und Amerikanischen Sprachen*, XIV C.A., 1904.

"The Ainu Problem," *Publ. Mus. Anthr. and Ethn.*, Lenin-grad, 1929 (English Summary).

UNLE MAX.: *Ordre des civilisations au Perou*, XVI C.A., 1908.

VIGNEAUD: "Le problème du peuplement initial de l'Amérique," *Journ. Am. Paris*, XIV.

NOTE.—C.A. = Congress of Americanists.

PASSING OF THE R.A.S. OLD PREMISES AT SHANGHAI

By ISAAC MASON

On Thursday, March 26th, 1931, the Council of the Society met for the last time in the old Library, and transacted business surrounded by empty shelves and piles of boxes full of books ready for removal to temporary premises. The Building Committee made the pleasing announcement that about Tls. 100,000 had been contributed towards the new building, and operations would commence as soon as possible.

On adjournment being made to the Lecture Hall, the last lecture of the Society to be delivered in our historic building was given by Dr. Coching Chu, on "Climatic Changes during Historic Times in China." There was, unfortunately, only a small attendance, the subject possibly being too technical for some, while others trusted to reading the Paper at their leisure when it appears in the Journal. It is interesting to note that the very first Paper read before the Society, in 1857, was on a kindred subject, being "On Cyclones, or The Law of Storms."

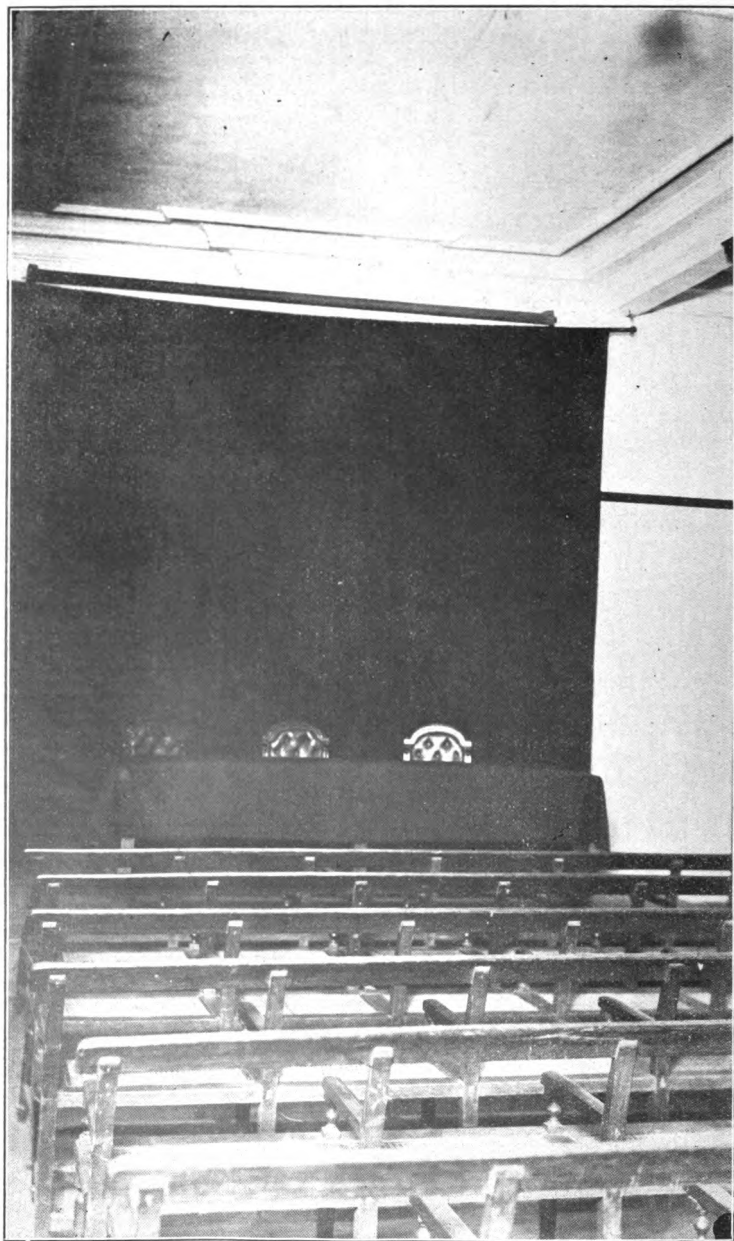
One could hardly sit through this last lecture in the old hall without some thought of the past, and imagination conjured up some of the scenes of long ago, and the stalwarts who have kept the Society going since the days when the hall was first built, sixty years ago. There was probably as much rejoicing in 1871, when "the required Tls. 2,700 for this building were subscribed, as there will be in 1932, when our new building, costing over fifty times as much, is erected and paid for!

We would like at this time to recall the names of some who have sat in these ample seats, or have given lectures, or shared in discussions within the hall which is now passing, after sixty years of honourable service.

Any attempt to describe those mentioned below, or even give full titles, would expand this Note far beyond what is intended; but the mere mention of the names will be refreshing, will stimulate memories in our older members, and help all present members of the Society to realize what a fine heritage we have. The list is by no means exhaustive, but outstanding names include those of Alexander Wylie, Joseph Edkins, Thos. W. Kingsmill, S. Wells Williams, Alexander Williamson, D. J. Macgowan, W. A. P. Martin, Wm. Muirhead, Ernst Faber, Emil V. Bretschneider, Henri Cordier, P. G. von Mollendorff, G. Carter Stent, Robert Hart, Friedrich Hirth, A. J. Little, Robert Little, Thomas Hanbury, Byron Brenan, Pelham L. Warren, H. E. Hobson, John Fryer, H. A. Giles, E. H. Parker, H. B. Morse, E. T. Williams, Timothy Richard, A. P. Parker, Alexander Hosie, F. S. A. Bourne, E. D. H. Fraser, Samuel Couling, Arthur Stanley, Sidney Barton, J. C. Ferguson, Mrs. F. Ayscough, and Mrs. S. Couling. To these and many others the Society owes much, and we trust the new building will see a worthy succession to carry on the noble traditions of the North China Branch of the Royal Asiatic Society.



ENTRANCE OF OLD R.A.S. BUILDING, SHANGHAI



INTERIOR OF LECTURE HALL, OLD R.A.S. BUILDING, SHANGHAI

REVIEWS OF RECENT BOOKS

Report of the Hon. Mr. Justice Feetham, C.M.G. to the Shanghai Municipal Council. Vol. I, Parts I, II and III and Vol. II, Parts IV and V.

The Hon. Richard Feetham, C.M.G., Judge of the Supreme Court of the Union of South Africa, was invited in 1929 by the Shanghai Municipal Council to come to Shanghai to advise the Council "with a view to assisting them in formulating some constructive plan or scheme which, while giving full consideration to the aspirations of the Chinese people, will afford reasonably adequate protection to the great commercial and business interests which have developed in Shanghai."

The two volumes before us comprise the main portion of his report and are the subject of this review.

It is the result of a year's study and investigation of a very complex situation, and is of great value not only to those who are interested in the future of the Foreign Settlement of Shanghai, but to all students of relationships between East and West.

It is a remarkable piece of work, displaying breadth of view, thoroughness, and a judicious statement of both sides of a difficult problem, and will have a determining influence on future policy in matters relating to China.

The report is divided into seven parts as follows:—

Part I. Introductory. Part II. The Foreign Settlement and its Government: Historical and Descriptive. Part III. Business in Shanghai. Part IV. Statements received on Political and Administrative Questions, and comments thereon. Part V. Main questions affecting the future of the Settlement. Part VI. External Roads Areas. Part VII. Supplementary.

The two volumes under review contain the first five parts. The space at our command precludes the attempt to give a complete resumé of each part, but we will endeavour to give a statement of some of the important deductions that stand out as a result of Judge Feetham's study.

A. In the first place we are led to the conclusion that *the force of circumstances made the development of the municipal form of government inevitable, and that only in this way could the Settlement have survived.*

This development was caused by the failure of the Chinese Authorities to afford protection to the Settlement against the dangers resulting from rebellion and civil war, especially during the time of the Taiping Rebellion. It was only as a self-governing municipality that the Settlement could appeal for protection to foreign powers. It was also due to the influx of Chinese refugees into the Settlement, during periods of disturbance, which changed the whole character of the Settlement and its original purpose. This accounts for the changes in the Land Regulations in 1854 and 1866, which had as their object the increase in the powers delegated to the Municipality, so that law and order could be maintained, necessary for the security of life and property.

B. In the second place we find that *as a result of this development a unique constitution came into being.*

"While this municipal constitution contained in the Land Regulations bears a general resemblance to other municipal constitutions of the British or American types, there are certain features which give it a special character, and differentiate the system of Municipal Government which has been gradually developed under its provisions from any system of municipal government of the familiar type which is fitted into the frame work of a wider national system of which it is an important though subordinate part. These special features may perhaps be summarised by saying that the system of municipal government established under the Land Regulations is of an international rather than a national character, and that the governing body for which the Regulations provide, is not subject to the control of any individual national government." (Vol. I, p. 86).

No change can take place in the constitution of the Municipality (the Land Regulations) without the approval of the Consular Body in Shanghai and the Diplomatic Body in Peking. The citizens of each country enjoying the privileges of Extraterritoriality are subject not to a court established by the Municipality, but to the courts established by their respective countries.

Founded on the two principles of self-government and rule of law, the government of the Municipality was entirely different from that of the country in which it was located.

This of course was a position hard to maintain, and presented many problems, among which were the following:—

(a) The status of the Chinese residents. Living in the Settlement, they were required to pay the rates, but had no voice in the Administration. As far back as 1866 the anomaly of this situation was perceived, and at that time it was proposed "that there should be a Chinese element in the Municipal system, to whom reference shall be made and assent obtained to any measure

affecting the Chinese residents." This proposal was, however, side tracked, and lay in abeyance for forty years.

(b) The taxation of the Chinese by their own Government. It was impossible to allow the Chinese Government unlimited powers of taxation of the Chinese residents in the Settlement, as this would have introduced a dual system of control. The Municipality strenuously resisted the attempts of the Chinese Government to collect any taxes other than the national Land Tax from the Chinese residents.

(c) The administration of justice in regard to the Chinese residents. It was found inconvenient to send the Chinese residents to courts in the native city for trial, in cases where criminal, civil or municipal law had been violated. To furnish a more convenient method of administering justice, the Mixed Court was established in the Settlement, presided over by a delegate of the Chinese Government, with foreign assessors sitting with the judge to safeguard the interests of the municipality and to act in an advisory capacity.

In speaking of the way in which the problems were solved Justice Feetham makes the following statement: "In essence the difficulties which they were seeking to solve were due to a conflict not merely between two government authorities, but between two opposing principles of government—a conflict in which the principle of limited authority exercisable under the control of courts of law, as represented by the Settlement régime, was bound to go under, unless within the Settlement definite restrictions were imposed on the unlimited and arbitrary authority normally enjoyed by the Chinese officials." (Vol. I, p. iii).

C. In the third place the conclusion is reached that *in order to meet new conditions changes in the constitution of the Settlement have become increasingly urgent.*

Here we may quote a paragraph appearing in the earlier part of the report. (Vol. I, p. 621).

"The Settlement is therefore governed to-day under a constitution, which dates in effect from 1866, when the Settlement was less than one-third of its present area, and the foreign population numbered about 2,200 and the Chinese population 90,000, as compared with to-day's figures of 26,965 foreigners and 971,397 Chinese. Even the Bye-laws have undergone very few changes since 1866. As already mentioned, two amendments were made in 1898, and there have been five or six other amendments since, but the cumbrous nature of the machinery which has to be set in motion for the purpose of making a new bye-law and the number of governments concerned, has, as will be pointed out later, made the process of securing amendments to the Bye-laws very difficult and uncertain. It is not surprising if the present constitution and

Bye-laws have proved inadequate for the purpose of enabling the Council and the ratepayers to deal with the new conditions created by the great developments of the last sixty years: but it is remarkable that so much should have been successfully accomplished under a constitution which was originally formed to meet the requirements of a community as different in size and character to that which has come into existence in the course of that period."

The foreign residents of Shanghai were slow to realize the necessity of a change in the constitution in the way of providing for representation of Chinese in the administration of the Settlement. There has been what Mr. Justice Feetham calls the conflict between the historic and civic sense. Relying on the strict interpretation of treaties, many have held that from a legal point of view the Chinese are not entitled to any civic rights. Others have come to see that it is impossible to develop the municipality and to maintain its existence unless the Chinese are taken into partnership. *Pari passu* with the growth of a national consciousness in China, there has been a growing resentment against the present régime, especially as 85% of the ratepayers are Chinese who until recently had no voice whatsoever in regard to determining the amount of taxes imposed upon them, and who were deprived of many privileges enjoyed by the foreign tax-payers.

As to the need of change in the constitution, Mr. S. Fessenden, the Chairman of the Council, in introducing the resolution for the addition of three Chinese members to the Municipal Council in April 14th, 1926, made the following statement:—

"As you are fully aware, the Chinese pay a large proportion of the taxes in Shanghai, yet have no voice in the Municipal Government. The Chinese have contributed in a great degree to the prosperity and wealth of the Settlement. The future prosperity and development of this, the greatest commercial and industrial city in all China, depends entirely and absolutely upon the existence and maintenance of mutual goodwill and co-operation between the Chinese and foreign communities. The problem of municipal finance becomes increasingly difficult each year. In the near future other sources of income must be found if Municipal improvements and services are to keep pace with the normal growth and expansion of the Settlement. The goodwill and co-operation of the Chinese are indispensable to the solution of this problem alone, to say nothing of the many other difficult and intricate problems with which we are confronted.

It seems to me that not only the natural and logical way, but, in fact the only way by which we can hope to secure the good will and co-operation of the Chinese is by recognizing the justice of their desire to have a voice in Municipal affairs." (Vol. I, p. 129).

D. *There is abundant evidence that the existence of the*

Municipal régime has been of very great value both to the foreign and Chinese communities, and that the benefits far out-weigh the disadvantages.

Among the benefits Mr. Justice Feetham lists the following:—the marvellous growth of trade and industry, the security of land tenure, individual liberty, and freedom of speech and press; and in regard to such matters draws a striking contrast between the Settlements and the outlying districts. He proves that all these benefits are due largely to the principles of self-government and the rule of law guaranteed by the constitution of the Municipality.

Interesting statements from the various Chambers of Commerce are given in support of this conclusion. He summarises the answers given to the questionnaire sent to the important commercial and industrial bodies in the following statement. "The effect of the different opinions expressed seems to be that, while the advantages of Shanghai's geographical situation have undoubtedly been an essential condition without which its development as a great trading centre could not have taken place, other ports enjoy similar, and possibly equal or even superior, advantages as regards situation, and that Shanghai's superiority over any place which might be regarded as a possible competitor, and its progress and prosperity as a trading and industrial centre, have been mainly due to the special character of the administrative régime in the Settlement and French Concession, which has afforded a higher degree of security for life and property, and more effective protection from excessive taxation or illegal exactions, than was available in areas under Chinese control." (Vol. I, p. 294).

E. In regard to the future of Settlement he arrives at the conclusion that *immediate rendition would be disastrous.*

China has not yet developed a constitutional form of government. It is still in the stage of transition, and at the present time is under the dictatorship of one political party, the Kuomintang. If the Settlement were handed back immediately to the present government there is no certainty that its rights as a municipality would be preserved. It might become the apple of discord among warring factions, and the benefits it has enjoyed as a neutral territory, outside of national politics, would instantly disappear.

Mr. Justice Feetham is of the opinion that the most influential members of the Chinese community, although theoretically in favour of rendition, yet in reality would be opposed to any drastic change taking place in the present régime in the near future. Rendition may be a goal to be arrived at when there is assurance that it will not result in what would be disastrous to Chinese and foreign interests alike.

F. In discussing the proposed solution of the granting of a Charter by the National Government to the Municipality, after

rendition, so that it would become a special Municipality, Mr. Justice Feetham advances many reasons to show that *Municipal Government under Charter granted by the National Government would not meet the situation*. He asks the following questions (Vol. II, p. 124): (a) Could a government established under the terms of such a Charter be endowed with the powers necessary to provide for the continuance of those conditions of security which are essential to the maintenance of Shanghai's position as a business centre, and what prospect would there be of such a government using its powers successfully for the purpose of ensuring the continuance of such conditions? (b) Would there be any effective guarantee as to the permanence of such a Charter, and as to the inviolability of the right of self-government which it might confer? (c) Would any system of local self-government under such a Charter and controlled by Chinese votes, be genuine, in the sense of enabling the Settlement Community to exercise effectively the power of independent management of its own affairs: and how far would such a system be likely to prove successful in preserving the out-standing features of the Settlement regime?

To all these questions, he gives a negative answer. Furthermore there is the serious consideration that under a Charter government, the Municipality would no longer be entitled, in time of revolution or civil war, to appeal for protection to Western governments. Its position as an island of refuge in a sea of discord would be permanently lost. As long as the National Government is dominated by one political party, the Kuomintang, there is nothing to prevent the alteration of the Charter according to the will of the party, until its original character is changed beyond recognition.

In rejecting rendition as a practical policy for immediate adoption and the proposal that the settlements be governed by a Charter granted by the National Government, Mr. Justice Feetham admits that Rendition is the ultimate goal and the only one that will satisfy the national aspirations of the Chinese people. He believes however, that a long transition period should intervene. "During the transition period the present Settlement régime, as established under the Land Regulations should be maintained on the basis of increasing co-operation between the Foreign and Chinese communities, and such constitutional changes should be introduced as are necessary for the purpose of enabling the Chinese to participate effectively in the work of local self-government under some modification of the present system, and of thus paving the way to the eventual establishment of a new system based on a Charter granted by the National Government." (Vol. II, p. 140).

G. In completing his survey Mr. Justice Feetham comes to

another conclusion, which is that *the maintenance of Extraterritorial rights and the Settlement régime are intimately related*. In opposition to the view that the rights of the Municipal Council might be preserved, even after Extraterritoriality has been abolished, Mr. Feetham holds that "the whole logical basis of the provisions in the Land Regulations, conferring special powers and responsibilities on the Consuls and Ministers of Treaty Powers in relation to the affairs of the Council, would in fact disappear once the special rights secured to foreigners under Treaties had been relinquished." (Vol. II, p. 147).

With accumulative evidence drawn from many sources, Mr. Feetham has proved his points in a masterly manner. To appreciate fully the presentation of the case, one must read the report and its appendices, and feel the effect of the gradual building up of the evidence.

We come finally to a brief discussion of the plan proposed by Mr. Justice Feetham as one that might be adopted during the present transition period. It is contained in Vol. II, Chapter VI under the title "Proposals as to Reforms needed in the Constitution of the Settlement."

This of course was the most difficult part of Mr. Justice Feetham's task, and this is the part which will have to stand the fire of criticism. Briefly summarised his proposals are:—

(a) A large increase in the number of Councillors, Chinese representation being increased proportionately, and to be larger than that of any other one nationality.

(b) The Council to become a legislative body, with power to pass bye-laws.

(c) Councillors to hold office for two years.

(d) A certain number of Councillors to be elected by Commercial and Industrial bodies, so that these bodies shall have direct representation.

(e) Elections to take place *after* instead of *before* the Ratepayers' meetings.

(f) Suffrage to be extended to foreigners residing on roads out of the Settlement, unless already entitled to votes for property in the Settlement.

(g) Ratepayers meetings to become advisory instead of legislative bodies.

(h) Two Ratepayers meetings to be held, one for foreign ratepayers, and one for Chinese ratepayers. Representatives of the Council to appear before both assemblies to report on the year's proceedings, and propose programme for the future. The budget of the year to be presented at both meetings. Recommendations from the Ratepayers Meeting to be considered by the Council but not necessarily adopted.

(i) A new authority to be constituted, consisting (1) of representatives of the group of foreign Consuls in Shanghai, and (2) of persons nominated by the Chinese Government, for the purpose of exercising the power of approving of Bye-laws at present vested in the Consuls and Ministers of Foreign Powers having Treaties, such Body to consist of six or nine members, of whom not less than one-third should be Chinese representatives and to act by the majority, the sanction given by this Body to be final.

The proposed scheme in many respects is admirable, but on certain points it is open to criticism.

It recognises that Shanghai has become too large to be governed by township meetings. Whereas this was practicable in early days, it has ceased to be so now.

Our principal criticism is that the solution offered appears to combine legislative and executive functions in one body, the Municipal Council, and we question whether this is wise.

It would seem better to adopt the alternative proposal of Mr. Justice Feetham, although it presents many difficulties, and to aim at making the Ratepayers' Meeting a representative body of both foreign and Chinese ratepayers. At a time like this it would be a mistake to emphasise racial discrimination and to have two Ratepayers meetings—one for foreign ratepayers and one for Chinese. Close co-operation cannot be developed in this way. When on important matters, the recommendations of the Chinese Ratepayers meetings were disregarded, an awkward situation might be brought about, productive of discord rather than harmony.

The Council should remain an executive body as it is at present, but should have the right to initiate legislation. Whatever plan is ultimately adopted, the whole foreign community is deeply indebted to Mr. Justice Feetham for the way he has performed his task.

If foreigners and Chinese alike will listen to the dictates of reason and will refuse to be swayed by passion and prejudice, they will choose the path of international co-operation so forcibly advocated in this Report.

F.L.H.P.

The International Aspect of the Missionary Movement in China.—By Chao-Kwang Wu, PH.D. Baltimore: The John Hopkins Press. London: Humphrey Milford, Oxford University Press. Pp. viii, 285. Price 11/6.

This is one of the volumes of the John Hopkins University Studies in Historical and Political Science.

This book is well written, well arranged and well published.

But still it bears evidence of our corrupt human nature in that it is not quite impartial. The book gives the impression that the writer had in mind all the time certain ends to be attained and a certain cause to plead. The end in view being that the Chinese government would be justified in any measures it took in dealing with the status of missionaries for the sovereignty of the state is imprescriptible; the cause is that of Chinese nationality and sovereignty.

When all things are considered the missionary's rights are a bit thin. He has the usual minimum of rights that aliens enjoy: he is entitled to equal protection with the nationals of the territorial power.

Missionaries also have some special rights arising out of the toleration clauses, and the most-favoured-nation treatment. By the latter any toleration granted to one power may be claimed by any other treaty power. Yet the Japanese government failed in their attempt, twice advanced, that the Japanese Buddhists should enjoy the same rights as Christian missionaries. Subjects of foreign states who have no treaties with China have no legal right to propagate any religious faith in China. The question arises what is the position of Canadian, Australian, and Irish missionaries in China. They are sovereign states but have no treaties, therefore missionaries from these countries have no legal rights to preach, teach or to educate.

The author says, "Strictly speaking, if the Christians in China are persecuted without official connivance, the Chinese government cannot be charged with violation of the toleration article."

The position suggested is that without specific instruction in treaties there are no rights to propagate doctrines of religion or carry on education.

To a certain extent rights were conceded to propagate the faith. Were these withdrawn by the cancellation of past treaties by agreement, or unilaterally, the position of the missionary as a propagator would be precarious unless it were stipulated by definite clauses in any new treaties that might be made.

Certain American missionaries were very denunciatory of the unequal treaties a few years ago. I wonder if they realised that the only right they had for being here to preach the gospel came from these very treaties that they denounced. What special rights the missionaries have must be looked for in the express words of the toleration clauses.

It is well also for Mission Boards to consider whether their representatives have any legal right to remain in the interior districts permanently and how far they are entitled to hold property, if at all. If extraterritoriality is abolished it will be curious

to find the new relations that will ensue on these matters. "What is not expressly conceded by China remains part of her unyielded sovereignty."

As to the rights of mission education the author is fairly clear in his statement that there are none. "It is clear that schools cannot be established in those places where missionaries are permitted to reside." "The Chinese government has the sovereign right to regulate them," even if it be granted that missionaries can establish schools. "By control of private education the government employs the right means for producing the required type of citizens." "Missionary schools will eventually go out of existence because they will not enjoy the privileges of government schools."

The author questions whether the right to build schools was ever given by the Sino-French treaty of 1844 and the Burlingame treaty of 1866. In the former it was provided that the French should have the right to rent land for building schools, etc. "It is reasonably clear that the purpose of the provision was to grant to aliens the opportunity to establish schools for the education of their own children in China." Does not the writer lack the historical imagination by writing such a sentence? The commercial people had no idea of families on a large scale in 1844. It is not likely that was in the minds of the Catholic fathers either: and it is reasonable to conclude that they had a hand in the insertion of the clause regarding the schools.

The same may be said of the Burlingame treaty. "The citizens of the U. S. may freely establish schools within the empire of China, etc." Did the few Americans who were here in 1866 think so much of a possible large progeny that they should provide extensive schools for them?—"freely establish schools within the empire of China" are the words. I think the author is totally wrong in his inferences. The French people—and they were only a few—were not thinking of their own children nor were the Catholic fathers solicitous personally in the matter, but they were considering the blessings that they could impart to the numerous children of the Chinese empire when the clause was inserted. So with regard to the Americans. The question of the foreign community children is a recent one. There was no such problem or even the possibility of it in the year 1866. The broadminded and democratic people of the U. S. were thinking in their large and philanthropic way of the millions of the children of China.

Further, had not the Catholic church its schools as early as in the time of Kang Hsi, if not earlier?

Other pertinent questions are touched upon, such as the control and protection of missionaries: the international complications that they occasion.

In many respects the book is useful and we recommend it as a contribution towards one of the leading questions of the day. But each reader must be prepared to weigh for himself the validity of many of the inferences drawn by the author.

E. M.

Facets of the Chinese Question.—By E. Manico Gull. London: Ernest Benn, Ltd. Pp. xvii, 198. Price 12/6.

The author says, "In this book I have sought to link some of the experiences of many years' residence in China with the knowledge and reflections which they produced, and to present them so linked in a series of studies relevant to the affairs of China at the present moment."

This book, then, in the first place, is a book of experiences, stretching over a period of some years. And these experiences came through not only residence in different parts of China, Canton, Peking and Shanghai, but also wide travel in the centre of China, Mongolia and Shantung. There is also the acquaintance with the language: the occupation of a post in the Customs Service: familiarity with journalism, on the staff of the leading daily in Shanghai; first hand knowledge of the commercial world of China gained as the Secretary of the British Chamber of Commerce: all these have fitted the author to write with some authority on the things of China. His book shows that he has been a careful observer of the passing phases of Chinese culture and politics and as he brings these experiences to bear on the matters that are treated in the book we have as a result a work of exceptional value.

Mr. Gull introduces in an unexpected way many new ideas into old and well worn things, and in this way the writing is very attractive. For example he raises the question whether the written character has been a bar to progress and hindered the practical side of life. In a sense the script is an indication of the spiritual side of the nature of the people. This, allied to the larger and broader question of the effect of art and aesthetics on the character of the people, is an important matter which is well discussed by Mr. Gull. It is quite true, as Mr. Gull says, that the things of the spirit have played a great part in the conceptions of the people and the author is correct in emphasising this facet of the question. But the question remains whether this phase has tended to contract their practicality. It is a problem not easy of solution but this much may be said that it has made them great imitators. For centuries the effort of calligraphists and writers was concentrated on imitating the ancient styles. They became great copyists.

But apart from this there is a phase of character also mentioned by Mr. Gull which, whilst it may not have restrained their practical nature, certainly prevented that practical faculty from reaching perfection and efficiency: and this defect is well expressed by the common phrase *ch'a pu to*, which may be expressed by "can do," "almost right." The tailor may imitate a London-made suit but there will be something in it that will not be quite the same. But it is *ch'a pu to*. Their practical ingenuity has been restrained from perfection by some inherent shortcoming.

There is another point bearing on this that Mr. Gull introduces and that is the Taoist theory of *Wu-wei*, "non-action." Dr. Hu Shih has very adversely criticised this theory which has rendered, he says, its followers incompetent to deal with constructive and practical matters. And Mr. Gull is inclined to agree with him. But may it not be that justice has not been done to these ancient idealists by the interpretation given to the word? I suggest another and more reasonable explanation. *Wu-wei* does not mean "non-action" but rather "spirit action." It is pointed out by this school that the followers of *Wu-wei* were most strenuous people. They left nothing undone. The reasonable explanation of the term then is that *Wu* is the negative, implying freedom from bias and the accretion of human cleverness and ambition. These men acted only under the guidance of the *Tao*, the Cosmic Spirit. They acted but acted not under human wisdom but under the spirit. Therefore the atrophy of the practical side should not be charged to them.

This is an admirable book dealing with past, present and future problems of the Chinese people. It is not possible in this review to deal more fully with it. But it is well worth pondering over. The sinister side of things: the future position of China, Japan and Russia in the north-east corner is full of menace. Will it be possible to have a stable resultant triangle of forces there? This is a serious problem. I should also like to say that on the whole foreigners have not looked down on the Chinese as a race. But in comparison of cultures it is inevitable that the Chinese should be sufferers.

E. M.

Code Pénal de la République de Chine, par Jean Escarra. Published by Marcel Giard, Paris.

This volume is one of the "Criminology and Comparative Penal Law Series" issued by the Bibliothèque de l'Institut de Droit Comparé of Lyons.

It contains French translations not only of the Chinese Criminal Code now in force, but also of a number of related

documents such as the "Police Regulations," the "Provisional Law for the repression of counter revolutionary activities," the "Banditry Regulations" of 1927, and the "Opium Prohibition Law" of 1929. There are also a number of annexes, consisting of reports and notes prepared by various committees and individuals concerned with the drawing up of the Penal Code, dealing with various points which came up for discussion while the Code was being prepared. These, though no doubt of importance to comparative criminologists, have little interest for the layman. For the latter the chief interest lies in the Introduction by Professor Escarra in which he briefly reviews the history of penal law in China and indicates how in certain points the latest Criminal Code has adhered to age-old tradition while in others it has broken away from tradition to adapt itself to the social system of the San Min Chu I.

It is probably not generally realised to what extent the Chinese had, in the course of their long history, worked out quite independently most of the conceptions on which the penal legislation of the Western nations is based, and how accordingly the modernisation of China's penal system has consisted not so much in borrowing new concepts from the West as in reconciling modern notions with Chinese traditions. Perhaps this comes out most clearly in connection with the subject of family relations. Under the new Criminal Code an offence is still regarded as more or less heinous as it is committed against, or in favour of, a near relative, but for the elaborate "tables of mourning" have now been substituted simple and clear-cut tables of kinship, which, however, it would appear from Professor Escarra's introduction, were only agreed upon as a compromise after many a battle royal round the committee table. An innovation which is a concession to the Kuomintang principle of the equality of the sexes is the bringing of the relatives (to the second degree) of the legitimate wife within the degrees of kinship.

Another noticeable result of the impact of modern social ideas is the suppression in the new Code of the Article of the former Provisional Code which provided severe penalties for workmen going on strike.

With regard to the translation of the Chinese texts, it is only necessary to say that Professor Escarra is a master of his subject and that his version can be accepted with the utmost confidence.

B.

- (1) **The Civil Code of the Republic of China, Books I, II, and III.** English translation by Ching-Lin Hsia, James L. E. Chow and Yukon Chang. Published by Kelly and Walsh, Ltd., 1930.

- (2) **The Civil Code of the Republic of China, Book III.** English translation by S. Francis Liu, Boyer P. H. Chu and Lin-Chong Chen.

The translation by Dr. Hsia and his collaborators is by far the better production of the two volumes under review. That is not to say that the English is not sometimes stilted or even on occasion downright inaccurate. In Article 776, for instance, the characters 排水 surely mean "to drain off water" or to "dispel" it and not to "draw" it. In Article 784 it is suggested that 下游 is "downstream" rather than "at the lower mouth" and that "provided he shall leave the natural watercourse downstream" is a more correct rendering than that offered. In Article 786 "instal" is the verb which is required, and not "construct."

On the whole, however, the translation is careful and adequate, and the proportion of flaws to the size of the work is small. We admit that we have found a number of the Articles in the translation completely incomprehensible, but on turning up the Chinese text we have found the latter equally incomprehensible. In these cases it is clearly not fair to blame the translators. The fault lies partly with the codifiers who have baldly lifted paragraphs from the Japanese laws and borrowed the phraseology which the Japanese invented when they in their turn were building up their codes on German foundations, and partly to the fact that frequently there is no technical term in English law exactly corresponding to the German-Japanese concept so rendered into Chinese.

A final word of congratulation is due to Messrs. Kelly and Walsh for the excellent printing and turn out of this volume.

The general standard of Dr. Hsia's work is immeasurably higher than that of Mr. Liu and his collaborators, who at times give the impression of translating the Chinese text into English through the medium of a third language. "Real rights" (物權) for instance conveys no meaning to an English mind, and the expression "real rights relating to immovables" (Article 758) only deepens the obscurity. In translating the texts of laws it is vitally necessary to adhere as closely as possible to the original and this the translators have not done. Let me quote. In Article 759 the characters 於登記前 are not translated at all. In Article 765 the characters 於法令限制之範圍內 are translated "Apart from the restrictions imposed by law and ordinances" whereas their meaning is just the opposite, namely, "within the limits of the law and ordinances." In Articles 768, 770 and 771 the characters 以所有之意思占有 are translated "one who has possessed . . . with the intention of possessing" whereas there is a strong contrast between "possession" and "ownership" which can be well brought out by translating "one who has possessed

. . . with the intention of making a thing his own." The whole turn of these articles is clumsy and misleading. Article 782 is a very good example of sloppy translation. 水源地 means "spring-bearing land" and not "a spring"; 請求 means "apply for" or "claim" and not "demand" (which is 要求); 工事 is "works" and not "industrial enterprises"; "impurifies" is not English—"pollutes" is the word required. In Article 783 the characters 支付償金 are not translated, although "on payment of compensation" makes a great difference to the sense of the passage.

The notes on "Dien" at the end of the volume are almost unreadable owing to a combination of poor English, bad printing and typographical errors.

B.

The Triple Demism of Sun Yat Sen. By Paschal M. D'Elia, S.J.
The Franciscan Press, Wuchang.

A review of the original (French) edition of this work appeared in last year's issue of the R. A. S. Journal, but the appearance of the English translation deserves special attention for it will greatly extend the influence of this valuable book.

A sufficient account of its scope and purpose was given last year but it may here be reiterated that it consists of a full and accurate translation of Dr. Sun Yat Sen's lectures on the "Three Principles," the book which, beyond all question, is most popular and influential in modern China. The translation is supplemented with a biographical sketch of Dr. Sun which supplies the historical background for the lectures: also, a critical analysis which clarifies the very complex elements and seemingly contradictory trends in Dr. Sun's famous lectures.

It is interesting and important to note that the English edition has been published at the request of the Chinese authorities in Nanking. Not only did the Publicity Department of the Central Executive Committee order 5,000 copies of the French edition, but the Ministry of Education and the Ministry of Justice made a joint request to the author that he would write an English edition of his very excellent book, "a timely and interesting study of Dr. Sun's Lectures, in order to give it a broader reading." The Franciscan Press took up the work of translation from the French, but the author himself has carefully compared the English translation of the "San Min Chu I" with the original Chinese text and, whereas the clarity of the English diction is all that could be desired by the English reader, exactness of translation rather than elegance of style has been the aim.

The English edition will rank as even more valuable than the French edition for the author has given renewed and deeper

study to his subject. The biography of Dr. Sun has been more fully developed. A new chapter, headed "The Neologism," discusses with lucidity the Chinese title "San Min Chu I" and the reason for coining as the English equivalent "Triple Demism." The "Appreciation," which in the French edition preceded the lectures, is now put after them (its logical place) and has been considerably amplified. The "Complete Summary" of the Lectures follows the Appreciation and is particularly valuable for purposes of reference. Finally a new Appendix has been added describing Dr. Sun's attitude toward Christianity.

It must be remembered that the purpose of this work is to relate the gospel of young China to the teachings of the Catholic Church, but the tone in which it is written reveals such manifest regard for truth, and respect for Chinese national aspirations, that the welcome it has received from official quarters is easily intelligible. The defects and errors contained in the "San Min Chu I" are not hidden, but they are interpreted with such fairness that no offence is created.

We predict for this book a wide circulation among English-speaking people, Chinese as well as non-Chinese, and an important influence in bringing about a just estimate of the work of China's great Patriot.

G. W. S.

Geschichte Des Chinesischen Reichs; Eine Darstellung seiner Entstehung, seines Wesens und seiner Entwicklung bis zur neuesten zeit. O. Franke. Vol. I. Das Alterthum und das Werden des Konfuzianischen Staates. 431 pages, large octavo. 28 Reichsmarks. Walter de Gruyter & Co., Berlin & Leipzig. 1930.

This is the first of three volumes of a work which aims to portray the origin, nature and development up to date of the Chinese Commonwealth, and deals with the ancient period up to the Han dynasty. The subject is treated particularly from an evolutionary point of view, culminating in this volume in a very clear presentation of the theoretical Confucian idea of the State. Commencing with the basic facts of geography and anthropology, the author in the first part of the book arrives at the conception of the State which was held in the highest antiquity of China, quoting copiously from Chinese sources and working-in the latest ethnological data. He then proceeds to develop the Chinese concept of an Universalist State and describes the rise and fall of the Chou dynasty. Next follows a study of the Unit states, of which Ts'in was the type, and the origin of the Han dynasty. A study of the reactions with "foreign" peoples (Huns, etc.) of

that day follows, parallel to the "Confucianization" of the State, and ending with the dissolution of the Han dynasty.

The work is a masterly one, which will be much appreciated by German reading students of Chinese matters, and the subsequent volumes will be awaited with much interest.

H. C.

Chinese Farm Economy.—By John Lossing Buck. The Commercial Press, Ltd., Shanghai, 1930.

This is a most valuable book for the politician and student of Chinese affairs and is a very worthy successor to King's *Farmers of Forty Centuries* (1911). The latter was, apart from a few absurd inaccuracies as to opium and other matters, the most informative work that has ever appeared in English on Chinese agriculture. The present volume is a statistical study of the operations of nearly 3,000 farms in seven different provinces of China. While it does not claim to be exhaustive, it is probably very fairly representative and throws a flood of light on the root problems of Chinese stability. It becomes very clear that the great question for China is the utilization of its spare labour. Farming is, at the best, a seasonal occupation which cannot utilize its labour and appliances continuously and when, as in China, the agricultural population has grown practically to the extreme limits of production, it is obvious that, in order to avoid extreme distress in times of climatic severity or political disturbance, means must be devised to add to production by using the large reserve of labour which is available during the intermissions in agricultural activity. Multiple cropping, home industries, road making, etc., are all means to this end but improved transportation and organization offer great possibilities for amelioration.

As to the use of machinery in agriculture it is clear that threshing and pumping can benefit by the introduction of appliances but for ploughing, reaping, etc. it is very doubtful if there is any real economy in them at the present time. Owing to the low wages, interest and depreciation on the cost of machinery wipe out the financial benefit and until there is adequate use and reward for the labour liberated no advantage arises. The extraordinary difficulty of arranging for communal use of agricultural machinery and the poor facilities for transporting it are also serious handicaps.

The book is published for the University of Nanking and the China Council of the Institute of Pacific Relations and should be extremely useful. It is decidedly technical in form and abounds with tables of data and diagrams based on the rules of statistical mathematics.

It would perhaps be still more useful if the very interesting general conclusions had been expanded and placed at the beginning of the book but the author probably felt that the main results are better expressed in the actual facts rather than in generalizations which must necessarily be somewhat tentative. It is one of the disadvantages of the scientific method that final results are but slowly reached, whereas for the practical man general rules, *even if not wholly true*, are essential for constructive work.

May it be hoped that Professor Buck will later produce a short clear work embodying his final conclusions!

H. C.

The Mischief-Working Metric System. By E. T. C. Werner. (Shanghai Times).

The title of this Pamphlet is an unfortunate one. It appears to indicate a decided prejudice on the part of the Author, and it at once prompts the reader to question its correctness. Mr. Werner is entitled to his opinions, and he certainly makes out a good case in defence of them. But there can be no denying that the Metric system has served, and still serves, a very useful purpose, and there is no need to call it "mischief-working." Elsewhere Mr. Werner calls it "a relatively imperfect system," which will secure more assent.

This pamphlet gives "Some Facts, a Controversy, and a Conclusion." The author gives some very good reasons why the duodecimal system should be retained; indeed, at first one gains the impression that he would like it to prevail. The position is made clear, however, when Mr. Werner says:

"Let me repeat that there is no question of substituting the duodecimal system, but merely of refraining from compulsorily imposing the use of the latter, and of allowing the best, or a combination of the best in both, to prove its true worth in practice as time goes on."

Seeing there are, unquestionably, good points in both systems, and advantages in practical working are found in a combination of both, there is much to be said for permitting both to be used, and this pamphlet gives the arguments in concise form.

I. M.

The Economic Aspects of the History of the Civilization of Japan. By Yosaburao Takegoshi: London, George Allen & Unwin, Ltd., Museum Street. Price 3 gns. net for set of three volumes.

The history of Japan dates back more than 2,000 years. But

until rather recently it has failed to receive the scientific treatment that it deserves. Although many books on Japan, and China for that matter, have appeared in English of late, very rarely are they the products of expert knowledge and labour. Even to-day an average treatise on the history of the world makes only a few running remarks on the affairs of the Far East. To such a world *The Economic Aspects of the History of the Civilization of Japan*, by the Honorable Yosaburao Takegoshi, recognized historian and member of the House of Peers, is of inestimable value.

The work in three volumes is well edited in English and its authentic facts are carefully marshalled, though somewhat voluminously. The author has not only the rich background of Japanese training but, because of his studies abroad, he arrays these facts understandingly to unfamiliar readers. If there is any criticism, it might lie in the fact that some of the proper names appear in Japanese pronunciation, for instance: Makkatsu, Bokkai, Zui, Shin, To, etc., (instead of Moko, Bohai, Sui, Chin, Tang, etc.) which mean little to a Chinese and nothing to an American or European reader.

Although the author modestly hopes that another more capable may undertake to write more exhaustive history, the reviewer is of the opinion that an abridged edition of well selected materials would be of even greater use if the latter were so arranged as to fill up the general frame-work of evolution which is universal. It must be here added, however, that the author admirably has achieved what he hoped for when he started in the compilation. It is published by George Allen & Unwin, Ltd., and is an excellent book for reference rather than a text book for the class-room.

K. S. Inui.

A Commercial Geography of China for Middle Schools. By A. B. Coole, M.A. Chihli Press, Tientsin, 1931. No price indicated.

This is an excellent summary of the general commercial conditions in China and includes many important details, such as the history and structure of the Maritime Customs, which are not usually found in works of this class.

The illustrations are numerous but poorly produced and in some cases the subjects would be quite unrecognizable without the titles.

As far as the reviewer can judge the matter is as up to date as it can be and the statistical records are good.

The Reaumur thermometric table on p. 97 seems rather superfluous.

For Chinese middle schools this should prove an admirable text book.

H. C.

PRESENTATIONS AND ADDITIONS TO THE LIBRARY

July 1930 to June 1931.

	FROM: Publisher
List of Chinese Government Publications, 1930.	
La Langue Mandings et Ses Dialectes (Malinke, Bambara Dioula) Vol. I, 1929, M. Delafosse.	"
Proceedings of the Natual History Society of Fukien Christian University, Vol. I, 1928 and Vol. II, 1929 and Vol. III, 1930.	"
The Science Society of China, Its History, Organization, and Activities, 1931	"
The National Geological Survey of China, a Summary of its work during the first Fifteen Years of its Establishment, 1916-1931.	"
Latvijas Biologijas Biedribas Raksti, Sejums I, Tome I, 1929.	"
Bulletin of the Department of Biology of Yenching University, Vol. I—No. I, 1930.	"
Sur Yeh-T'iao, Szu-T'iao et Szu-he-T'iao, Li-Hsuan et Ta-ch'in par Toyohachi Fujita, 1929.	"
Journal of the West China Border Research Society, 1922-1929.	"
Preliminary Report on the Geology and Mineral Resources of Kiangsue, by C. C. Liu and J. C. Chao, with Maps, 1924.	"
Code Social, 1930.	"
Chinese Farm Economy, a Study of 2,866 Farms in 17 Localities and 7 Provinces in China, by J. L. Buck, 1930.	"
Annual Report of the Fan Memorial Institute of Biology, 1928-30.	"
Bulletin of the Fan Memorial Institute of Biology, Vol. I, Nos. 1-14, 1929-30.	"
The Library of Congress Division of Chinese Literature, 1928-29.	"
The Tinguian, Social Religions, and Economic Life of a Philippine Tribe, by Fay-Cooper Cole, 1922.	"
Short Summary of Volume I of Report of Mr. Justice Feetham to Shanghai Municipal Council, 1931.	"
Report of the Hon. Mr. Justice Feetham, C.M.G., to the Shanghai Municipal Council, Vol. I—Pts. I-III, Vol. II—Pts. IV-V, Vol. III—Pt. VI, 1931.	"
Bibliographie Bouddique, I. Janvier 1928—Mai 1929, par G. L. M. Clauson and others, 1930.	"

Expedicion Italiana al Karakoran 1929, 1930.	FROM:
Indochine Francaise, Section des Arts, L'Ecole d'Extreme-Orient (Exposition Coloniale Internationale Paris, 1931). 1930.	Publisher.
Rapport a la Societe des Nations sur la Situation de la Syrie et du Liban, Annee 1929.	"
American Council of Learned Societies, Promotion of Chinese Studies, 1929.	"
The Rockefeller Foundation, 1929.	"
Second Annual Report Academia Sinica, 1929-30.	"
Forty-sixth Annual Report of the Bureau of American Ethnology 1928-29.	"
Proceedings of the Forty-fifth Annual Meeting, Indiana Academy of Science, 1929.	"
Annual Report of the Board of Regents of the Smithsonian Institution, 1929.	"
Archaeological Survey of India, Annual Report, 1926-27.	"
In Commemoration of Tsing Hua 20th Anniversary, 1931.	"
The Triple Demism of Sun Yat-sen, by M. D'Elia, s.j., 1931.	"
Notice of the Recovery of a Second Adult Sinanthropus Skull Specimen, by D. Black, 1930.	Author
Geophagy, by B. Laufer, 1930.	"
Silver and the Business Depression, by D. H. Leavens, 1931.	"
The New Map of China, by G. B. Cressey, 1930.	"
Chinese Historical Studies during the Past Nine Years, by K. S. Latourette, 1930.	"
Bibliography of Currency and Finance of China, by N. G. Treehikoff, 1930, (in Russian).	"
Chinese Medicinal Plants, Ephedra, Part II—The Botany of Mahuang, by B. E. Read, 1930.	"
A New Species of the Swallow Ray (Pteroplatea) from China, by Yangting T. Chu, 1930.	"
Further Assays of Chinese Ephedras, by C. T. Feng and B. E. Read, 1928.	"
Notes upon Indian Ephedras, by B. E. Read and C. T. Feng, 1928.	"
Chinese Pharmacopoeia, I, 1930, by B. E. Read, 1930.	"
The Chinese Pharmacopoeia, by B. E. Read, 1930.	"
The Mischief-working Metric System, by E. T. C. Werner, 1930.	"
Registration of Land in Shanghai, by H. M. Cumine, 1931.	"
The Beginnings of Journalism in China, by H. J. Timperley, 1930.	"
Capitalism, Marxism, and the Japanese National Thoughts, by Chikao Fujisawa, 1928.	"
Atlantes and Caryatides in Chinese Architecture, by Gustav Eecke, 1930.	"
Tobacco and Its Use in Africa, by B. Laufer, W. D. Hambly, and R. Linton, 1930.	"

222 PRESENTATIONS AND ADDITIONS TO THE LIBRARY

	FROM:
Melanesian Shell Money in Field Museum Collections, by A. B. Lewis and B. Laufer, 1929.	<i>Author.</i>
Geschichte des Chinesischen Reiches, by O. Franke, 1930.	"
Buddhism in India, Ceylon, China and Japan, a Reading Guide, by C. H. Hamilton, 1931.	"
History of Mongols, by J. de Plano Karfrini, 1911 (in Russian).	<i>Mr. S. Black</i>
Amur Province (Siberia), Historical Notes and Statistics, 1909 (in Russian).	<i>Mr. S. Black</i>
Kashgaria, Chinese Turkestan, Historical and Geographical Notes, by General A. N. Kuropatkin, 1879 (in Russian).	<i>Mr. S. Black</i>
Gujarati Painting in the Fifteenth Century, by N. C. Mehta, 1931.	<i>Subscription</i>
Portrait Sculpture in South India, by T. G. Aravamithan, 1931.	"
The China Mission Year Book, 1911.	<i>Bought</i>
The Real Chinese Question, by C. Holcombe.	"
The Milinda-Question, an Inquiry into its Place in the History of Buddhism with a Theory as to its Author, by Mrs. R. Davids.	"
The Anti-foreign Riots in China in 1891.	"
Records of the West China Missionary Conference at Chungking, January, 1899.	"
The Provinces of China.	"

NORTH-CHINA BRANCH OF THE ROYAL ASIATIC SOCIETY

LIST OF MEMBERS, 1931.

Members changing address are earnestly requested to
inform the Secretary at once.

Name	Address	Year of Election
------	---------	---------------------

HONORARY MEMBERS

Ayscough, Mrs. F., D.LITT.	St. Andrews, New Brunswick, Canada	1906
Barton, Sir Sidney, K.B.E., C.M.G. . .	British Legation, Addis Ababa, Abyssinia	1906
Ferguson, Dr. John C.	3 Hsi Ch'iao Hutung, Peiping . . .	1896
Forke, Dr. A.	The University, Hamburg	1894
Giles, Prof. Herbert Allen	Selwyn Gardens, Cambridge . . .	1880
Lanman, Prof. Charles B.	Harvard University, Cambridge, Mas- sachusetts	1908
Lockhart, Sir J. H. Stewart, K.C.M.G.	6 Cresswell Gardens, South Kensington, London, S.W. 5, England	1885
Morse, H. B., LL.D.	Arden, Camberley, England . . .	1888
Pelliot, Prof. Paul	38 Rue de Varenne, Paris VII. . .	1901
Pott, Dr. F. L. Hawks	St. John's University, Shanghai . .	1913
Putman, Herbert	Library of Congress, Washington .	1908
Sampatrao, H. H. the Prince	Gaekwar of Baroda, India	1898

Name	Address	Year of Election
------	---------	------------------

CORRESPONDING MEMBER

Williams, E. T. Washington 1889

MEMBERS

(The asterisk denotes Life Membership).

Abbott, W. E.	c/o Chief Sanitation Chemist, Shanghai	1926
*Abraham, R. D.	23 Peking Road, Shanghai	1914
Adams, Rev. A. S.	c/o Associated Mission Treasurers, Shanghai.	1923
Adlam, Miss Edith M.	Ellis Kadoorie School, Shanghai	1920
Ambrose, F. W.	S.M.C. Health Dept., Shanghai	1925
Ancell, Rev. B. L., D.D.	24 Minghong Road, Shanghai	1911
Andersson, Dr. J. G.	c/o Statens Histouska Museum, Stock- holm, Sweden.	1919
Archer, Allan	British Legation, Peiping	1915
Argelander, F.	M. E. Mission, Kiukiang.	1930
Arlington, L. C.	Chinese Post Office, Peiping	1917
Arnold, Julean H.	Room 502 Dollar Bldg., 8 Canton Road, Shanghai	1904
Bahnson, J. J.	G. N. Telegraph Co., Shanghai	1909
Bahr, A. W.	41 West 49th Street, New York City..	1909
Bailey, R. M.		1925
Baker, D. C...	582 Sanhuix Road, Berkeley, Cal., U.S.A.	1923
Barchet, Miss H.	Ningpo	1931
Barnett, Eugene E.	20 Museum Road, Shanghai	1926
Barrie, Dr. Howard	15 Peking Road, Shanghai	1920
*Bayne, Parker M.	Acadia University, Wolfville, Nova Scotia, Canada	1911
Beaman, W. F.	338 Avenue Joffre, Shanghai (cor. Rue Chapsal)	1921
*Beauvais, J.	Consul-General, Maison Duffan, Place Antoine de Moelhon, Ville franche de Rovergue, Aveyron, France	1900
Beltchenko, A. T.	Portuguese Consulate, Hankow	1918
Bennett, N. R.	Shanghai Licensed Pilots' Assn., S'hai.	1923
*Bessell, F. L.	c/o Dr. Alderson, 34 Knight's Park, Kingston-on-Thames, England	1905
Beytagh, L. M.		1910
Biallas, Dr. F. X.	709 Rue Ratard, Shanghai	1927

Name	Address	Year of Election
Biehl, Lieut. F. W.	U.S. Marines, 452 Harding Avenue, Galion, Ohio, U.S.A.	1929
*Bigel, Emile	Messageries Maritimes, 9/10 French Bund, Shanghai	1925
*Black, S.	Kastaniealle, Dragoer, Denmark	1910
Blackburn, A. D.	H. B. M. Consulate General, Shanghai	1917
Boey, P. L. Mingcheng	May Hall, Hongkong University, Hongkong	1929
Boesi, Dr. Guido	Miniere di Montevocchio, Via Francesco Carrara 27, Rome (10) Italy	1920
Bonin, Dr. G. von	Dept. of Anatomy, Peking Union Medical College, Peiping	1928
Boode, E. P.	25 Bazarstraat, The Hague, Holland . .	1920
Borst-Smith, Rev. E. F.		1928
Bos, W.	Vlentin (v.) Holland	1928
Bosworth, Miss S. M.		1919
Bowden, V. G.	A. Cameron & Co. (China), Ltd., 21 Jinkee Road, Shanghai	1928
Bowen, Mrs. A. J.	University of Nanking, Nanking. . . .	1929
Bowra, C. A. V.	The Bower House, Ightham, Kent, England	1897
*Box, Rev. Ernest		1897
*Brace, Capt. A. J.	Chengtu, Szechuen	1921
Bremer, Miss M. A.	Am. Church Mission, Yangchow	1929
Brenan, J. F., C.M.G.	British Consulate-General, Shanghai . .	1930
Brenneman, Mrs. J. J.	Liddell Bros. & Co., Ltd., Shanghai . .	1922
Brisker, M. G.	c/o The Thatched House Club, 86 St. James' Street, London, W.	1921
Bristow, H. H.	British Consulate, Newchwang	1909
*Britton, R. S.	430 W118th St., New York City, U.S.A.	1931
Britland, Rev. A. J. D.	Church of England Mission, Peiping . .	1924
Brockman, W. W.	South Garden, Soochow	1927
Brooke, J. T. W.	Davies & Brooke, Shanghai	1916
Browett, Harold	8 Museum Road, Shanghai	1891
Brown, I. S.	11812 Winner Road, Independence, Missouri, U.S.A.	1927
Brown, Miss M.	C.L.S., 6 Quinsan Gardens, Shanghai..	1931
Brown, N. S.	Butterfield & Swire, Shanghai	1930
*Brown, Thomas	La Roque, Sutton, Surrey	1885
*Bruce, Edward B.		1918
Bruce, Rev. J. Perry, D.LITT.	"Teesdale" 31 Egmont Road, Sutton, Surrey, England	1916
Buchler, W.	261 Goldhurst Terrace, London, N. 6. England	1930
*Buckens, Dr. F.		1915
Bugge, Rev. Sten	Lutheran Theol. Seminary, Hankow . .	1924
*Buma, C. W. A.	Marssum, Friesland, Holland.	1921
Burdick, Miss S. M.	Baptist Mission, West Gate, Shanghai	1909
Burkill, A. W.	2 Canton Road, Shanghai	1912
Burnie, C. M. G.	Union Ins. Soc. of China, Ltd., London	1923
Burt, Rev. E. W., M.A.	Tsingchowfu, Shantung	1928

LIST OF MEMBERS

Name	Address	Year of Election
Butland, C. A.	Asiatic Petroleum Co., Chinkiang . . .	1920
Byerly, Miss A. E.	74 Ta Tsao Kai, Wuchang, Hupeh . . .	1928
Caldwell, Master J. C.	The American School, 10 Route Petain, Shanghai	1930
Caldwell, Rev. H. R.	M. E. Mission, Foochow, Fu	1920
Carey, H. Foote	Woosung-Hankow Pilots, Shanghai . .	1928
Carl, Francis A.	Peiping	1906
Carlsen, N. P. V.	G. N. Telegraph Co. of Denmark, Tientsin	1928
*Carpenter, G. B.		1920
Carr, Paul R.	2923 Packard Street, Long Island City, N.Y., U.S.A.	1928
Cassels, W. C.	British Legation, Peiping	1921
Caudron, R. M.	Post Office, Yunnanfu	1920
Chadsey, Mrs. Roy	Apt. 48 Capital Building, Shanghai . .	1930
Chambers, Rev. R. E., D.D.	Room 502, Mission Bldg., Shanghai . .	1928
Chang, F.	American Asiatic Underwriters, 17 The Bund, Shanghai	1924
Chang Hsin-hai, PH.D.	Ministry of Foreign Affairs, Nanking . .	1928
Chatley, Herbert, D.S.C.	Whangpoo Conservancy Board, Shanghai	1916
*Chen, W. Hanming	c/o North China Daily News, Shanghai	1928
Chieri V., Cav. Uff. Dott	The Italian Manufacturers Agency, 320 Kiangse Road, Shanghai	1923
Chiu Pei-hao	The Bureau of Social Affairs, Municipality of Greater Shanghai. Nantao, Shanghai	1929
Claiborne, Miss Elizabeth	65 Nge Kai Aung, Soochow	1908
Clarke, Miss M. H.	McTyeire School, Shanghai	1928
*Clementi, His Excellency Sir C.	Government House, Singapore	1905
Clifton, Baroness		1921
*Cole, Rev. R. B.	Sien Yu, Fukien	1917
Cook, Capt. A.	81 Brennan Road, Shanghai	1929
Coole, A. B.	Tientsin Hui Wen Academy, M. E. Church, South Suburb, Tientsin	1926
Cooper, Miss G. L.	St. John's University, Shanghai	1928
Commijs, A. J.	Custom House, Shanghai	1919
Corrie, R. G.	Messrs. Butterfield & Swire, Shanghai	1930
Costenoble, H.	Messrs. Medicon, Ltd., Kiangse Road, Shanghai	1928
Couling, Mrs. C. E.	40 Birchington Road, Crouch End, London, N. 8	1916
Coushnir, I. S.	84 Yuyuen Road, Shanghai	1931
Crampton, C. L.	21 Yuenmingyuen Road, Shanghai . .	1930
Cressey, G. B.	The School of Geography, Clark University, Worcester, Mass. U.S.A. . .	1925
Cressy, Rev. Earl H.	Amer. Bap. Mission, Shanghai	1928
Crow, C.	16 Jinkee Road, Shanghai	1913
Cumine, H. M.	48 Szechuen Road, Shanghai	1929
Cunningham, E. S.	American Consulate-General, Shanghai	1922

LIST OF MEMBERS

227

Name	Address	Year of Election
Currelly, C. T.	Royal Ontario Museum of Archaeology, Toronto, Canada	1923
D'Alton, V. L.	Chinese Post Office, Lungchingsun, Kirin, Manchuria	1924
D'Alton, Mrs. F.	C.P.O., Lungchingsun, Kirin	1930
Danton, G. H.	184 Woodland Ave., Oberlin, Ohio, U.S.A.	1918
*Darch, O. W.	The British Imp. Oil Co., Ltd., Mel- bourne, Australia	1922
Darroch, Rev. J., D.LITT.		1928
Davey, W. J.	101 Hart Road, Shanghai	1920
Davidson, R.	c/o Mrs. Frew, 66 Leamington Terrace, Edinburgh, Scotland	1914
Davis, John K.	American Consulate-General, Seoul, Chosen	1927
Davis, Dr. C. Noel		1910
Davis, R. W.	North-China Daily News, Shanghai	1924
D'Elia, Rev. Father P. M., S.J.	Bureau Sinologique, Siccawei	1928
De Korne, Rev. John C.	Jukao, Kiangsu	1927
*Deas, Stuart	Butterfield & Swire, Wuhu	1919
Diehr, C. O. M.	c/o American Club, Shanghai	1929
Dingle, Edwin J.	5455 Buena Vista Avenue, Rockbridge, Oakland, California, U.S.A.	1917
Donald, William H.	8, Sweichingli, Sanchinglu, Mukden	1911
Donnelly, Ivon A.	Mackenzie & Co., Tientsin	1923
Drake, Rev. F. S., B.A., B.D.	5 Devonport Road, Shepherd's Bush, London, W. 12, England	
*Drake, Noah F.	Fayetteville, Arkansas, U.S.A.	1928
*Drew, E. B.	Cambridge, Massachusetts, U.S.A.	1882
Du Monceau, Comte L.	Villers-la-Ville, (Belgium)	1909
Duncan, A. McL.	C. M. Customs, Shanghai	1922
Duyvendak, Dr. J. J. L.	Sinologisch Instituut Leiden, Rapenburg 71, Holland	1915
Edmondston, David C.	Hongkong and Shanghai Bank, 9 Gracechurch St., London, E.C.	1917
Ely, John A.	St. John's University, Shanghai	1917
Ely, Mrs. J. A.	St. John's University, Shanghai	1917
Enders, Mrs. Gordon B.	Darling and Daley, 42 Broadway, New York, U.S.A.	1922
Engel, Max. M.	89 Kuan Yin Sze Hutung, Peiping	1911
Englaender, Dr. A. L.	23 Peking Road, Shanghai	1928
*Eriksen, A. H.	Carolinevej 11, Hellerup, Denmark	1915
Eskelund, A. H.	Wayfoong House, Szechuen Road, Shanghai	1931
Essex Institute, Librarian	Salem, Massachusetts	1906
Evans, Joseph J.	Evans & Sons, Shanghai	1916

LIST OF MEMBERS

Name	Address	Year of Election
*Farley, Prof. M. F.	Fukien Christian University, Foochow	1924
Feetham, Hon. Mr. Justice, C.M.G.	c/o S.M.C., Shanghai	1930
*Fearn, Mrs. J. B.	c/o Calder Marshall, Esq., 1558 Avenue Joffre, Shanghai	1911
Ferguson, Dr. J. W. H.	c/o T. T. H. Ferguson, Esq., Bosch en Duin, Dan Dolder Post Office, Utrecht, Holland	1910
Ferrajolo, Capt. R.	Italian Consulate, Mukden	1920
Finch, A. B.	North China Daily News, Shanghai . .	1922
Firth, B.	Messrs. Wheelock & Co., Shanghai . .	1926
Fischer, Emil S.	Tientsin	1894
Fitch, Rev. George A.	Y.M.C.A., 38 Bubbling Well Road, S'hai	1921
Flemons, Sidney	S. M. Telephone Co., Shanghai	1917
Flint, Hugh	Jardine, Matheson & Co., Shanghai..	1924
Fong, F. Sec.	84 Scott Road, Shanghai	1930
Fox, Harry H., C.M.G.	British Legation, Peiping	1907
Franck, G. M., F.R.G.S.	British & Foreign Bible Society, Chengtu	1922
Fraser, D.	c/o Shanghai Club, Shanghai	1931
Fraser, M. F. A.	"Beaufort," Knapp Hill, Surrey . . .	1924
Fredet, J.	Chambre de Commerce Française de Changhai, Shanghai	1923
Freeman, M.	Asia Life Insurance Co., 17 The Bund, Shanghai	1925
Fryer, George B.	4 Edinburgh Road, Shanghai	1901
Gabbott, F. R.	Messrs. Gabbott & Co., 32 Avenue Edward VII, Shanghai	1929
Gage, Rev. Brownell	Changsha	1915
Gale, Eason M.	Dept. of Oriental Languages, University of California, Berkeley, Cal., U.S.A.	1911
Galt, Rev. E. W.	Fenchow, Shansi	1924
*Gamble, Sidney D.	347 Madison Avenue, New York, U.S.A.	1922
Gardner, H. G.	c/o Hongkong & Shanghai Bank, 9 Gracechurch St., London, E.C.	1906
*Garritt, Rev. J. C.		1907
Garrod, S. H.	Canadian Pacific Railway Co., Shanghai	1931
Gates, Miss J.	430 W119th High Street, N.Y. City, U.S.A.	1931
Gaunt, Percy	S.M.C., Chief Sanitation Chemist, S'hai	1921
Gaunt, Rev. T., M.A.	Theological School, Wumiao, Nanking	1921
Gerhaz, J. F.	Lights Office, Marine Dept., Chinese Maritime Customs, Shanghai	1929
*Gerken, Chas.		1922
Gibson, H. E.	c/o Robt. Dollar Co., Shanghai	1915
Gilliam, J.	c/o British Cigarette Co., Tientsin . .	1915
Gillis, Captain J. H.	American Legation, Peiping	1911
Goddard, W. G.	Box 1954, G.P.O., Melbourne, Australia	1929

LIST OF MEMBERS

229

Name	Address	Year of Election
Gordon, A. Howard	89 Peking Road, Shanghai	1924
Gould, Rev. E. J.	British and Foreign Bible Society, Hankow	1931
Goullart, P.	c/o Post Box No. 1145, Shanghai ..	1930
Graham, Rev. David C.	79 Roselawn Avenue, Fairport, New York, U.S.A.	1924
Gran, E. M.	Messrs. Palmer & Turner, Shanghai ..	1930
Graves, Bp. F. R., D.D.	St. John's University, Shanghai	1918
Graves, Miss Lucy J.	St. Mary's Hall, Shanghai.	1929
Grierson, R. C.	C. M. Customs, Tientsin	1918
Grimmo, A. E. P.	Public Health Dept., S.M.C., Shanghai	1924
*Grodtmann, Johans	China Export-Import & Banking Co., A.G., Hamburg, 15, Clockengiesser- wall	1898
*Groenman, F. E. H.	Netherland Consulate-General, Shang- hai	1929
Grosbois, Ch., M.A.	Ecole Municipale Française, Shanghai	1922
Grosse, V.	401 Rue Cardinal Mercier, Shanghai..	1912
Gull, E. Manico	China Association, London	1916
*Gunzburg, Baron G. de	9 Rue Pommera (XVI), Paris	1908
Gutt, C. J.	Pharma, 29 Szechuan Road, Shanghai..	1928
Gwynne, T. H.	c/o Postal Commissioner's Office, Hang- chow	1913
Gyles, H. A., Commr. Capt.	Orchards, Whimble, Devon	1919
*Hackmann, H.	Hoofdweg 34, Amsterdam, Holland ..	1903
Hail, Rev. W. J., P.H.D.	The College of Wooster, 614 E. Univer- sity St., Wooster, Ohio, U.S.A. ..	1922
Hamilton, Dr. A. Isabel	37 Tung Yan Sin St., Tung Chuen Road, Canton	1930
Hammond, Miss Louise S.	A.C.M. Hsiakuan, Nanking	1930
Handell, T.	Haiho Conservancy, Tientsin	1930
Handley-Derry, H. F.	British Consulate-General, Chungking, Szechuan	1903
*Hangchow Christian College, Pre- sident	Zak-kow, Hangchow	1924
*Harding, H. I.	British Consulate, Changsha	1914
Hardy, Dr. W. M.	618 N. Broadway, Lexington, Ky., U.S.A.	1912
Harpur, C.	Municipal Offices, Shanghai	1901
Hart, Herny H., A.B., J.D.	Oriental Arts, 328 Post Street, San Francisco, Cal., U.S.A.	1924
Hartman, E. A.	Export Sales Co., Shanghai	1931
Hartopp, E. L.	15 Peking Road, Shanghai	1931
Harvey, Rev. E. D.	Yale-in-China Office, Yale Station, New Haven, Conn., U.S.A.	1924
Hasbund, A. H.	Hotel Moderne, Harbin	1927
Hayes, L. Newton	68 Recreation Road, Tientsin	1924
*Hayim, A. J.	7 Peking Road, Shanghai	1928
Hayim, Ellis	7 Peking Road, Shanghai	1930

Name	Address	Year of Election
Heacock, Mrs. H. E.	c/o Messrs. Heacock & Cheek, S'hai	1921
Healey, Leonard C.	Shanghai Municipal Council, Shanghai	1913
Heaton-Smith, E. B.	Gibb, Livingston & Co., Shanghai	1922
Heeren, Rev. J. J., F.H.D.	Shantung Christian University, Tsinan	1915
Heidenstam, H. von		1916
Heine, Miss A. de J.	1065 Lexington Ave., N.Y. City, U.S.A.	1931
Hemingway, B.	Asiatic Petroleum Co., Newchwang	1922
Henchman, A. S.	Hongkong & Shanghai Bank, Shanghai	1929
Henke, Frederick G., F.H.D.	643 William Street, Meadville, Pennsylvania, U.S.A.	1912
Henry, J. M.	Lingnan University, Canton	1922
Hers, Joseph	187 Route Magniny, Shanghai	1907
Hinckling, N. W.		1922
*Hilderbrandt, Adolf	8a Albrechstr., Lichterfeld-Berlin, Germany	1907
Hinder, Miss E. M.	8 Young Allen Court, Shanghai	1930
Hind, H. M.	c/o Phoenix Insurance Co., Shanghai	1923
*Hippisley, A. E.	Hongkong and Shanghai Bank, London	1876
Hiron, C. J.	Sun Insurance Office, Ltd., 1 The Bund, Shanghai	1930
*Hodous, Rev. L.	Kennedy School of Missions, 155 Broad Street, Hartford, Conn., U.S.A.	1913
Hommel, R. P.	16 Ting Jen Hutung, Peiping	1927
Howells, R. M.	S.M.C. Health Dept., Shanghai	1923
Hsia, Dr. C. L.	181 Connaught Road, Shanghai	1925
Hu Shih, S.A., F.H.D.	4 Mi Liang Ku, Peiping	1923
Hubbard, Rev. H. W.	National Christian Council, Missions Bldg., Shanghai	1924
Hudson, Mrs. Alfred	Ningpo	1909
Hughes, A. J.	China United Assurance Society, S'hai	1909
Hughes, Rev. E. R.	c/o Y.M.C.A., Shanghai	1929
Hughes, W. E.	A.P.C., Soochow	1921
Hume, E. H., M.D.	c/o Post Graduate Medical School, New York City, U.S.A.	1922
*Hummel, A. W.	c/o Library of Congress, Washington, D.C., U.S.A.	1919
Hutchinson, W., B.Sc. (Leeds)	International Export Co., Hankow	1931
Hutchison, D. C.	c/o J. D. Hutchison & Co., 1 Canton Road, Shanghai	1926
Hylbert, Mrs. L. C.	175 Route Dufour, Shanghai	1923
Hynd, R. R.	Hongkong & Shanghai Bank, Bombay	1913
Institute of Chinese Cultural Studies	University of Nanking, Tao Yuen Compound, Kan Ho Yen, Nanking	1931
Irvine, Miss Elisabeth	89 Arsenal Road, St. Catherine's Bridge, Shanghai	1910
Irvine, D. A.	Asiatic Petroleum Co., Shanghai	1913
Jacobs, J. E.	Bureau of Far Eastern Affairs, Dept. of State, Washington, D.C.	1922

Name	Address	Year of Election
Jenks, Prof. J. W.	13 Astor Place, New York	1908
Johnson, N. T.	American Legation, Peiping	1912
Johnson, O. S., PH.D.	c/o Wabash College, Crawfordsville, Indiana, U.S.A.	1927
Johnson, B. C. M.	Hongkong & Shanghai Bank, Manila . .	1926
Johnson, Sir R. F., K.C.M.G., C.B.E. . .	Thatched House Club, St. James' Street, London	1907
Joly, P. B.	c/o Mrs. H. B. Joly, Legation Street, Seoul	1918
Jones, H. J. S.		1923
Jones, J. R., M.A.	The Secretariat, S.M.C., Shanghai . .	1924
Jong, Th. de J.	Netherlands Legation, Peiping	1914
Jordan, Dr. J. H., M.A.	Health Office, Shanghai	1922
Jorgensen, O.	G. N. Telegraph Co., Copenhagen, Denmark	1913
*Joseph, S. M.	c/o Cathy Hotel, Shanghai	1920
*Jost, A.	Charles Rudolf & Co., Zurich, Switzerland	1912
Justesen, M. L.	c/o 8 French Bund, Shanghai	1913
Kann, E.	687 Avenue Foch, Shanghai	1929
Karlbeck, O.		1914
Karlgren, Dr. B.	University of Gothenburg, Sweden . .	1922
Keeton, G. W., B.A., LL.B.	Victor University, Manchester	1926
Kellogg, C. R.	Fukien Christian University, Foochow . .	1919
Kennedy, George	211 Route Gustave de Boissezon, Shanghai	1929
Kennett, W. B.	Ellerman House, 19-21 Moorgate, London, E.C. 2	1913
Kent, A. S.	c/o B.A.T., Shanghai	1913
*Kern, D. S.	Robin, Manitoba, Canada	1912
Kilner, E.	Municipal Offices, Shanghai	1909
King, Mrs. D. K.	284 Rue Dupleix, Shanghai	1930
King, Prof. Harrison	St. John's University, Jessfield	1927
*King, Louis M.	3 Purley Avenue, London, N.W. 2 . .	1911
*King, Sohtsu G.	11 Kaka Hutung, Peiping	1924
*Klautke, Paul	Alte Roonstrasse 3A, Stettin, Germany .	1924
*Kliene, Charles	41 Pingliang Road, Shanghai	1916
Klubien, J.	Ch. M. Customs, Swatow	1913
Kotenev, A. M.	135 Weihaiwei Road, Shanghai	1924
*Krebs, E.		1895
Krisel, A.	21 Museum Road, Shanghai	1914
Krueger, Pastor E.	1 Great Western Road, Shanghai	1930
Kuck, Fritz W.	c/o Kaiser Wilhelm Schule, 1 Great Western Road, Shanghai	1930
*Kunisawa Shimbei	270 Hyakunin-cho, Ohkubo, Tokyo . .	1917
Lachlan, Miss A.	c/o Westminster Bank, Old Street Branch, City Road, London	1923

Name	Address	Year of Election
Lamson, H. D.	Dept. of Sociology, Shanghai College, Shanghai	1929
Lang, Robert	1427 Avenue Joffre, Shanghai	1924
Lanning, V. H.	c/o S'hai Exchange Brokers' Ass'n., Shanghai	1916
*Latourette, K. S.	2126 Yale Station, New Haven, Conn., U.S.A.	1912
*Laufer, Dr. Berthold	Field Museum of Natural History, Chicago	1901
*Laver, Capt. H. E.	Head Street, Colchester, Essex	1912
Leavens, D. H.	Harvard Business School, Soldiers Field Station, Boston, Mass. U.S.A.	1917
*Leavenworth, Chas. S.	79 Howe St., New Haven, Conn. U.S.A.	1901
Lechler, J. H., M.D.	C.M.S., Mienchuhsien, Sze.	1923
Leete, Rev. Wm.	The American Board of Commissioners for Foreign Missions, 14 Beacon Street, Boston Mass., U.S.A.	1918
Lefever, R. H.	Seneca Castle, N.Y., U.S.A.	1924
Lenhart, Miss L. E.	St. Luke's Hospital, Shanghai	1928
*Leslie, T.	Elmers Glen, Salfords, Horley, Surrey, England	1914
Lester, Miss E. S.	McTyeire School, 11 Edinburgh Road, Shanghai	1919
Lewis, Mrs. D. J.	1349 Av. Joffre, Shanghai	1930
Lim Boon Kong, Dr.	University of Amoy, Amoy	1930
Linde, Mrs. A. M. de	c/o Frithjof Hoehuke, 17 Museum Road, Shanghai	1922
*Lindsay, Dr. A. W.	1911 Côte St. Antoine Road, Montreal, Canada	1916
Little, L. K.	Customs Service, Shanghai	1931
Lloyd, Mrs. Magdalen	597 Avenue Joffre, Shanghai	1930
Lockwood, W. W.	c/o Y.M.C.A., 20 Museum Road, Shanghai	1913
Logan, Col. M. H., M.C., O.S.E.	Messrs. Palmer & Taruer, Shanghai	1931
Lord, Rev. R. D.	c/o S.P.G., 15 Tufton Street, Westminster, S.W., England	1918
Lucas, S. E.	Chartered Bank, 38 Bishopsgate, London, E.C.	1906
*Luthy, Charles	C. Luthy & Co., 22 Kiangse Road, Shanghai	1916
*Luthy, Emil	77 Hart Road, Shanghai	1917
*Lyall, Leonard A.	Manor Farm, Piddington, Thame, Oxon, England	1892
Lyon, Rev. D. Willard, D.D.	1611 South Norton Avenue, Los Angeles Cal., U.S.A.	1927
*Little, Edward S.	Keri Keri, New Zealand	1910
Mabee, Fred C.		1912
Macbeth, Miss A.	c/o Chartered Bank of India, Australia and China, London	1915
MacDonald, R. G.	203 to 206 Missions Bldg., Shanghai..	1930

LIST OF MEMBERS

233

Name	Address	Year of Election
*MacNair, H. F., M.A.	The University of Chicago, Dept. of History, Chicago, U.S.A.	1920
Macoun, J. H.		1894
Maher, Joseph	296 Bubbling Well Road, Shanghai	1930
Main, Dr. Duncan	2 West Coates, Edinburgh	1900
Maitland, H.	Room 139, Hongkong & Shanghai Bank Building, Shanghai	1929
*Mamet, O.	10 Avenue Elisabeth, Tervuren, Belgium	1922
March, B. F., Jr.	The Detroit Institute of Arts, Detroit, Michigan, U.S.A.	1924
Margoliouth, Miss E. R.	Anglican Mission, Pingyin, Sung	1924
*Marsh, Dr. E. L.	Hongkong & Shanghai Bank Bdg., Shanghai	1908
Marshall, R. Calder	2 Peking Road, Shanghai	1908
Martilliere, Dr.	Sassoon Building, Shanghai	1930
Martin, Miss J. M.	Municipal Health Dept., Shanghai	1924
Martin, Mrs. W. A.	Bridge House, Nanking	1916
Martinella, A.	8 Italian Bund, Tientsin	1921
*Mason, Isaac, F.R.G.S.	54 West End Gardens, Shanghai	1916
Mather, Wm. A.	American Presby. Mission, Paotingfu	1923
Mathieson, Rev. J. C.	Canalian Mission, Kwai King, Ho	1929
Maxwell, Dr. J. Preston	P.U.M.C., Peiping, Chi.	1917
Mayers, Sidney F.	The British and Chinese Corporation, Ltd., Peiping.	1907
McCabe, P. J.	P.O. Box No. 1, Nankang, Harbin	1922
McDaniel, C. Yates	The Shanghai Times, Shanghai	1930
McEuen, K. J.	Hongkong and Shanghai Bank, Nagasaki, Japan	1908
McIntosh, Miss E. W.		1923
McLean, W. A.	The Auburn National Bank, Auburn, Wash., U.S.A.	1925
McLaughlin, W. H.	Lutheran Bookstore, Hankow	1931
*McMillen, O. W.	Pui Ying Middle School, Canton	1923
McNeely, Miss M. V.	Kwang Hsueh Publishing House, 44 Peking Road, Shanghai	1928
McNulty, Rev. Henry A.	A. C. Mission, Soochow	1918
McRae, J. D.		1910
Mead, E. W.		1916
Meinhardt, Mrs. C. D.	U.S. Consulate-Gen., Tsinanfu, Shantung	1928
*Meister, O., C.E., M.E.	c/o Sulzer Bros., 4 Avenue Edward VII, Shanghai	1922
*Melnikoff, D. M.	18 Panoff Flats, Hankow	1919
Mencarini, J.	c/o P.O. Box 795, Manila, P.I.	1894
Meng, C. Y. W.	Labour, Nanking	
Mennie, D.	A. S. Watson & Co., Shanghai	1925
Menzies, Rev. J. M.	Changte, Ho.	1916
*Merian, J.	15 Friedensgasse, Basil, Switzerland	1914
Mesny, H. P.	59 Wing On Terrace, YC 32 Darroch Ministry of Industry, Commerce and Road, Shanghai	1921
Meyer, H. Fuge	Whangpoo Conservancy, Shanghai	1911
Middleton, W. B. O.	Middleton & Co., Shanghai	1920
		1930

Name	Address	Year of Election
Mironoff, Prof. N. D.	17 Yurimachi, Hoshigaura, Dairen . .	1924
Miskin, Stanley C.	Asiatic Petroleum Co., Hankow . . .	1913
Mitchell, T. E.	General Accident, Fire & Life Assurance Corp., 5 Hongkong Road, Shanghai . .	1926
Mohrbacher, Father, C. M. . . .	Steyl Mission, 709 Rue Ratard, Shanghai	1930
Molines, Edouard	Crédit Foncier d'Extrême-Orient, H'kow	1920
Moncrieff, J. E.	West China Union University, Chengtu, Szechuen	1930
Moninger, Miss M. M.	Hoichow, Tung	1927
*Moore, Dr. A.	1916	1913
Morris, Dr. H. H.	St. Luke's Hospital, Shanghai . . .	1909
*Morse, C. J.	1825 Asbury Avenue, Evanston, Illinois	1919
Morse W. R., M.D., F.R.G.S. . . .	West China Union University, Chengtu, Szechuen	1930
*Morgan, Rev. Evan, D.D.	6-7 Quinsan Gardens, Shanghai . . .	1901
Mortensen, Rev. Ralph	23 Liang Yi Street, Hankow	1920
Moses, Mrs. A. E.	81 Nanyang Road, Shanghai	1931
Mossop, A. G.	2 Peking Road, Shanghai	1925
Moule, Rev. A. C., M.A.	Trumpington Vicarage, Cambridge, England	1902
Munro-Faure, P. H.	c/o A. P. C., Kiukiang	1921
Münter, L. S.	c/o "Rödbjerghavn" per HUMBLE, Langeland, Denmark	1910
*Munthe, Mrs.	43 Hsiao Tien Shui Ching Hutung, Peking	1921
Murray, C. P.	American Consulate-General, Shanghai	1930
Musso, G. D.	German Bank Bldg., 71 Szechuen Road, Shanghai	1924
Nakayama, M.	Ichimachi, Tauba Nara Prefect, Japan	1931
Nance, Prof. W. B.	Soochow University, Soochow	1922
Nash, E. T.	The Secretariat, S.M.C., Shanghai . .	1929
Neild, Dr. F. M.	3 Peking Road, Shanghai	1916
Newman, Kenneth	15 Peking Road, Shanghai	1921
*Nielsen, Albert	c/o De-No-Fa, Oslo, Norway	1894
Norman, H. C.	c/o Miss Norman, 28 Queen's Road, Tunbridge Wells, Kent, England . .	1912
Norton, J. R.	St. John's University, Shanghai . . .	1923
Nystrom, E. T.	Shansi University, Taiyuanfu	1920
*Oakes, W. L.	c/o W. M. M. S. 24 Bishopsgate, London, E.C. 2	1919
*O'Brien-Butler, P. E.	c/o "Bansha," Plat Douet Road, Jersey, C.I.	1886
Odaki, F.	Tung Wen College, Shanghai	1930
Oliver, A. W. L.	c/o Custom House, Shanghai	1924
*Oriental Study Expedition	Pomona College, 120 Sumner Hall, Claremont, Cal., U.S.A.	1930
*Othmer, Prof. Dr. W.	Tung Chi University, Woosung	1924
Ouskouli, M. H. A.	60 Kiangse Road, Shanghai	1927

LIST OF MEMBERS

235

Name	Address	Year of Election
Owens, A. C.	Wen Hwei Boys School, Am. Presby. Mission, Tengchow, Sung	1929
*Paddcock, Rev. B. H.	28 Cernelia Ave., Mill Valley, Cal., U.S.A.	1916
Pade, K. F.	G. N. Telegraph Co., Shanghai	1920
Pagh, E. K.	G. N. Telegraph Co., Shanghai	1908
*Palmer, W. M.	c/o Mr. F. H. Palmer, Plattsburg, New York, U.S.A.	1914
Papp, E.	Intelligence Office, Police Headquarters, S.M.C., Shanghai	1929
Parsons, E. E.	28 Kiangse Road, Shanghai	1916
*Paterson, J. J.	Jardine, Matheson & Co., Hongkong . .	1922
Patrick, Dr. H. C.	22 Whangpoo Road, Shanghai	1912
*Patton, Rev. C. E., M.A.	Room 519, 23 Yuen Ming Yuen Road, Shanghai	1924
Pearson, C. Dearne	484 Kiangse Road, Shanghai	1908
Peffer, Nathaniel	228 39th Avenue, New York City, U.S.A.	1918
*Peiyang University Librarian	Tientsin	1911
Penfold, F. G.	2 Peking Road, Shanghai	1916
Perkins, M. F.	c/o Dept. of State, Consular Bureau, Washington D.C.	1914
Petermann, Dr. B.	Tungchi University, Woosung	1928
Petersen, I. C. V.	2 Hsi Tang Tse Hu Tung, Peiping . .	1906
*Peterson, R. A., M.A.	1914 Commerce Avenue, Indianapolis, Ind., U.S.A.	1924
*Pettus, W. B.	North China Union Language School, Peiping	1915
*Phelps, D. L.	1800 Thousand Oaks Boulevard, Berkeley, California, U.S.A.	1929
Phillips, H., O.B.E.	British Consulate, Harbin	1912
Plews, Mrs. J. C.	c/o B.D.A., 56 Szechuen Road, Shanghai .	1929
Poate, F. W.	Mackenzie & Co., Shanghai	1928
Polevoy, S. A.	4A Hsi Ch'iao Hutung, Peiping	1917
Pollard, Robert T., M.A.	801 E. River Road, Minneapolis Minn., U.S.A.	1924
Porter, Harold	Peiping Syndicate, Ltd., Hongkong & Shanghai Bank Building, Shanghai . .	1980
Porterfield, W. M.	St. John's University, Shanghai	1920
Pousty, F. E.	Ningpo	1915
Powell, J. B.	The China Weekly Review, 38 Avenue Edward VII, Shanghai	1918
Pratt, J. T., C.M.G.	Foreign Office, London	1909
Price, Dr. M. T.	Sociology Dept., University of Washington, Seattle, Wash., U.S.A.	1925
Price, W. D. M.	6 Soochow Road, Shanghai	1931
Prideaux-Brune, H. I.	British Legation, Peiping	1914
Prip-Möller, J.	50 Ku Lou Hsi, Peiping.	1929
Public Library of Newark, The	New Jersey, U.S.A.	1924

Name	Address	Year of Election
Raeburn, P. D.	118 Boone Road, Shanghai	1916
Ramondino, F.	Italian Consulate, Shanghai	1922
Rea, Geo. Bronson	The Far Eastern Review, Shanghai	1931
Reis, E. O.	38 Bishopsgate London, E.C. 2, England	1926
Reiss, Dr. F.	21 Museum Road, Shanghai	1923
Ritchie, W. W.	Postal Commissioner Hankow	1907
Robert, A.	Lunghai & Pienlo Railways, Shanghai	1930
*Roberts, D.	St. John's University, Shanghai	1916
Rogers, J. M.	506 E. Lafayette St. Dothan, Ala. U.S.A.	1924
Roots, Rt. Rev. L. H.	American Church Mission, Hankow	1916
Ros, G.	Italian Consulate, Shanghai	1931
Roulston, Rev. W. A.	Siu Wu, Honan	1931
Rowe, E. S. B.	c/o Lady Barrow, The Grove, West Molesay, London	1907
Ruffé, M. D'Auxion de	8 French Bund, Shanghai	1930
*Sahara, T.	The "Sheng Ching Shipao," Mukden	1908
Sakamoto, Prof. Y.	Tung Wen College, Shanghai	1927
Sandor, H.	Asia Realty Co., Shanghai	1922
*Sarkar, Prof. B. K.	c/o Bangiya Sahitya Parishat, 2431, Upper Circular Road, Calcutta.	1915
Sawdon, E. W.	Kingsmead, Selly Oak, Birmingham	1916
Sawyer, J. B.	U. S. Consulate-General, Shanghai	1920
Schneider, Mrs.	123 Avenue Road, Shanghai	1930
*Schoch, E.	Messrs. A. Boer & Co., 17 Yuen Ming Yuen Road, Shanghai	1924
Schuurman, T. E.	Netherlands Consulate-General, Shang- hai	1930
Schwarzl, M. G.	50 Yulin Road, Shanghai	1929
*Scott, W.	Pomona College, 120 Sumner Hall, Claremont, Cal., U.S.A.	1930
*Secker, F.	c/o Deutsche Stickstoff-Handelsgesells- chaft, 2 Peking Road, Glen Line Bldg., Shanghai	1930
Senger, Miss Nettie M.	Chinchow Shansi	1923
Service, R. Roy	20 Museum Road, Shanghai	1924
Shahmoon, Ezra	2A Kiukiang Road, Shanghai	1931
Shanghai American School, Prin- cipal	10 Avenue Petain, Shanghai.	1929
Shantung Christian University	Tsinan, Shantung	1922
*Shaw, Norman	c/o Inspectorate General of Customs, Peiping	1912
Shen, Wesley	National Council, Y.M.C.A., Shanghai	1930
Sheppard, Rev. G. W.	British & Foreign Bible Society, S'hai	1925
Shioya, T.	Bank of Chosen, 3 Kiukiang Road,	1922
Shirokogoroff, S. M.	Tsing Hua College, Peiping.	1923
Shu, Dr. H. J.	20 Rue de Paris, Hankow	1921
Silsby, Rev. J. A.		1911

Name	Address	Year of Election
*Sirén, Prof. O.	National Museum, Stockholm, Sweden	1922
Six, Rev. Ray L.	318 Rich St., Mornan, Oklahoma, U.S.A.	1924
Skinner, Dr. A. H.	Hankow	1919
Skvortzow, B. W.	67 Poshtovaya Street, Harbin	1918
Smith, J. Langford		1908
Spiker, Clarence J.	American Legation, Peiping	1918
Soothill, Prof.	4 Bradmore Road, Oxford, England . .	1927
Souter, Wm. E.	Chinese-Foreign Famine Relief Committee, 12 Jinkee Road, Shanghai . .	1925
Southcott, Mrs. V. C.	Brookside Apts., 333 Avenue Haig, Shanghai	1919
Sokolsky, Geo. E.	24 The Bund, Suite 21, Shanghai . . .	1924
Sorge, Dr. Richard	Post Box 1062, Shanghai	1930
Sowerby, Arthur de C., F.Z.S.	8 Museum Road, Shanghai	1923
Stanford University Library	Stanford University, California, U.S.A.	1922
*Stedeford, Dr. E. T. A.	Wenchow, China	1919
*Stewart, Rev. J. L.	St. Andrew's College, University of Saskatchewan, Saskatoon, Sask., Canada	1916
Stockton, G. C.	600 Rue Frelupt, Shanghai	1914
Stone, Mrs. E. S.	c/o Lt. Comde. Stone, Bureau of Navigation, Navy Dept., Washington, D.C., U.S.A.	1928
Strehlneek, E. A.	Strehlneek's Gallery of Chinese Arts, 26 Kiangse Road, Shanghai	1909
Struthers, John	China United Apts., Shanghai	1930
Stursberg, W. A.		1919
*South Manchuria Railway Co., Library	Dairen	1910
*Suga, Capt. T.	N. K. K. Tokyo, Japan	1919
Sun, Mrs. J. H.	House No. 1., 333 Yu Yuen Road, Shanghai	1930
Swan, Mrs. A. H.	Chiyu Bldg., 246 Victoria Road, Tientsin	1928
Swann, R. N.	17 The Bund, Shanghai	1926
*Swenson, Rev. H.	Salem Evangelical Free Church, Ku Yuen Kansu	1931
Tachibana, M.		1881
Tarby, H.	Butterfield & Swire, Pootung	1931
Tarby, Mrs. H.	Butterfield & Swire, Pootung	1931
Talbot, R. M.	De Kalb, Illinois, U.S.A.	1915
Taylor, A. L.	2A Brookside Apts., 333 Avenue Haig, Shanghai	1927
*Taylor, C. H. Brewitt	Cathay, Earlsferry, Scotland	1885
Taylor, W. H.	St. John's University, Shanghai	1922
Teesdale, J. H.	c/o Thatched House Club, London . . .	1916
Temasi, Dr. G. de		1929
Thomas, Ivor	882 Dunsmuir Road, Victoria, B.C., Canada	1924
Thomas, J. A.	North Street, White Plains N. Y., U.S.A.	1930

Name	Address	Year of Election
Thomas, J. A. T.	c/o Mustard & Co., Shanghai	1890
Thompson, A. B.	c/o J. D. Hutchison & Co., Shanghai . .	1928
Throop, M. H.	St. John's University, Jessfield, S'hai.	1912
Timpeley, H. J.	32 Ch'un Shu Hutung, Peiping	1931
Ting I-hsien	L. 580 Canton Road, Shanghai	1902
Toller, W. Stark	c/o Foreign Office, London, S. W., England	1907
*Tochtermann, Karl	Schulstrasse 5, Bad Harzburg Bund- heim, Germany	1900
*Torrance, Rev. Thos.	American Bible Society, Chengtu, Sze.	1922
*Trollope, Rt. Rev. Bishop, M.N.	Seoul, Korea	1911
Truebner, Joerg, PH.D.	Matthaikeichstr, Berlin, W. 40	1930
Tucker, G. E.	Hongkong	1915
Tucker, Mrs. G. E.	Hongkong	1915
Ungern-Sternberg, Baroness L. von	c/o Siemens (China) Co., Shanghai . .	1924
Unwin, F. S.	The Angela, Victoria B. C., Canada . .	1914
Van Corback, T. B.	51 Kiangse Road, Shanghai	1913
Vanderburgh, R. M.	Room No. 1, 49 Nanking Road, Shanghai	1927
Vandervort, Charles T.	Menlo Junior College, Menlo Park, California, U.S.A.	1930
Veryard, Robert K.	Y.M.C.A., Changsha	1917
*Vizenzinovitch, Mrs. V.	73 Yu Yuen Road, Shanghai	1914
*Vogel, Dr. Jur. Werner	24 The Bund, 1 Fl., Room No. 9A, Shanghai	1930
*Volpicelli, Comdr. Z.		1886
Wade, R. H. R.		1918
Wagstaff, W. W.	118 Great Western Road, Shanghai . .	1922
Walker, Mrs. M. P.	St. John's University, Shanghai	1931
Walker, Miss R.	St. Mary's Hall, Shanghai	1929
Walker, W. J. D.	Physics. Dept., Washington University, Saint Louis, Mass., U.S.A.	1930
Waller, A. J.	Kelly & Walsh, Ltd., Shanghai	1916
Wang, Chung-Yu	63 Szeming St., S.D.A., Hankow	1924
Wang, Kochai C., B.A.	Chinese Dept. Kailan Mining Adminis- tration, Meadows Road, Tientsin	1929
Ward, H. Lipson	Platt & Co., 23 Peking Road, Shanghai	1928
*Warner, Mrs. G. B.	Oregon Museum of Fine Arts, Univer- sity of Oregon, Eugene, Oregon, U.S.A.	1925
Washbrook, H. G.	14 Princes Park Avenue, Golders Green, London, N.W. 11	1908
*Watson, P. T.		1920
Watson, R. A. C.	B.D.A., 56 Szechuen Road, Shanghai..	1930
Way, W. H.	Jardine Engineering Corp., Shanghai..	1931
Way, Mrs. W. H.	Jardine Engineering Corp., Shanghai..	1931

Name	Address	Year of Election
Webb, Dr. H. W.	Health Dept., S.M.C., Shanghai	1928
Webster, Rev. James	Mayfield House, Melbourne, Derby, England	1911
Wei, Lott H. T.	The Central Mint, Gordon Road (North End) Shanghai	1931
Wernay, Mrs. Lucia	P.O. Box No. 1759, Shanghai	1929
Werner, E. T. C.	3 Yang-I-Pa Hutung, An-ting Mên Ta Chieh, Peiping	1915
Westbrook, Dr. C. H., M.A., Ph.D.	Shanghai College, Shanghai	1930
White, Dr. Hugh H.	Yencheng, Ku.	1923
White, Miss Laura M.	Christian Literature Society, Shanghai	1916
White, Rt. Rev. Wm. C.	Bishop of Honan, Kaifengfu	1913
Whittemore, N. C.	Ren Chi Do., Seoul, Korea	1930
Whyte, Sir Frederick, K.C.S.I.	c/o Shanghai Club, Shanghai	1930
Whyte, Lady	c/o Shanghai Club, Shanghai	1930
Wickes, Dr. Dean R.	American Board Mission, Lintsing, Sung	1924
Wilder, Emile	c/o P.O. Box No. 1168, Shanghai	1923
Wilbur, Mrs. H. A.	3 Route Dupleix, Shanghai	1920
Wilden, H. A.	French Legation, Peiping	1917
Wilder, Dr. Geo. D.	American Board Mission, Tehchow, Shantung	1924
*Wilhelm, P.	House No. 4, Lane 70, Hart Road, Shanghai	1924
Wilkinson, E. S.	2 Canton Road, Shanghai	1911
Wilkinson, H. P., K.C., B.C.L.	Tobermore Co., Derry, Northern Ireland	1909
*Williams, C. A. S.	C. M. Customs, Peiping	1919
Williams, Dr. J. T.	Room 501, Missions Bldg., Shanghai	1925
Willis, Miss L.	Y.W.C.A., 23 Yuen Ming Yuen Road, Shanghai	1930
Wilson, G. L., F.S.I.	Palmer & Turner, Shanghai	1921
Winter, F. B.	Hongkong & Shanghai Bank, Shanghai	1931
Winter, R. S.	6 Hongkong Road, Shanghai	1930
Wong, Y. W.,	Commercial Press, Ltd., 501 Paoshan Road, Shanghai	1927
Wood, A. G.	Gibb, Livingston & Co., Shanghai	1919
Wood, Mrs. Edwin	25 Kiaochow Road, Shanghai	1921
*Woodward, A. M. Tracey, F.R.G.S., F.R.N.S., F.R.P.S.L.	Chateau Millefleurs, Cadanjac, Gironde, France	1921
*Wright, S. F.	Inspectorate-General of Customs, 21 Hart Road, Shanghai	1921
Wu, John C.	c/o The Comparative Law School of China, 11A Quinsan Road, Shanghai	1930
*Wu Lien-teh, Dr.	National Quarantine Service, Shanghai	1916
*Yetts, W. Perceval, O.B.E.	4 Aubrey Road, Campden Hill, London, W. 8	1909
Young, R. C.	Municipal Offices, Shanghai	1912
Young, S. C.	Police Station, Gordon Road, Shanghai	1928

LIST OF MEMBERS

Name	Address	Year of Election
Zau, F. D.	International Dispensary, Shanghai . .	1928
Zia, Rev. Z. K.	Christian Literature Society, Shanghai	1931
Zwemer, Rev. Samuel M., D.D.	The Theological Seminary, 48 Mercer Street, Princeton, New Jersey, U.S.A.	1917

TOTALS:

CLASSIFIED AS:—

Honorary Members	12	Residing in Shanghai	261
Corresponding Member	1	Residing elsewhere in China	138
Life Members	118	Residing in other countries	174
Ordinary Members	471	Address unknown	24

Total .. 597

Total .. 597

List 1930	548	Resignations	8
New Members	58	Deaths	9
Re-elected	8		

Total .. 614

Total .. 17

614

17

Present Membership 597

DATE DUE

JUL 30 1980		
MAY 20 1983		
FEB 1 1984		
INTERLIBRARY LOANS		
1 month use		
MAR 16 1984		
UCR OCT 05 1984		
UCR OCT 08 1999		
GAYLORD		PRINTED IN U.S.A.

AS444

A78

V. 61-62
(1930-31)



3 1210 00448 1691

