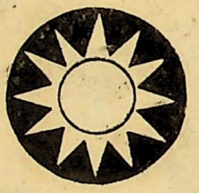
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ROYAL ASIATIC SOCIETY CHINA
SHANGHAI
上海

# JOURNAL

OF THE

# NORTH-CHINA BRANCH

OF THE

# ROYAL ASIATIC SOCIETY.

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1877.



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# REPORT

OF THE

# COUNCIL OF THE NORTH-CHINA BRANCH

OF THE

# Royal Asiatic Society,

## For the Year 1876.

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The following gentlemen were elected Office Bearers for the year 1876, at the Annual Meeting held in March:—

W. H. Medhurst, Esq., *President.*
A. Wylie, Esq.,
T. W. Kingsmill, Esq., } *Vice-Presidents.*
T. G. Smith, Esq., *Secretary.*
J. Haas, Esq., *Librarian and Treasurer.*
J. P. Martin, Esq., *Curator.*
Rev. James Thomas,
D. J. Macgowan, Esq., M.D.,
J. E. Reding, Esq.,
A. J. Little, Esq.,
H. G. Hollingworth, Esq.,
G. C. Stent, Esq., } *Councillors.*

During the year five Meetings have been held; these—it is to be regretted—have been very thinly attended. To prove, however, that interest in the success of the Society is by means lacking, ten new members have been elected, and no less than twenty-six candidates are awaiting election.

A List of the Members is herewith appended.

The following papers have been read:—

"The History of the Emperor Shun,"—by T. W. Kingsmill, Esq.
"Notes on the Lolos of Szechuen,"—by
"Fort Zelandia and the Dutch Occupation of Formosa,"—by H. E. Hobson, Esq.
"The probable Correlation of Recent Geographical Changes in Central and Western Asia, with Tribal Migrations of Antiquity,"—by T. W. Kingsmill, Esq.
"On the Style of Chinese Epistolary Composition,"—by the Rev. A. P. Martin, D. D.
"On the Boat Architecture of the Chinese and their use of the Mariner's Compass,"—by the Rev. J. Edkins, D. D.

Unfortunately the funds of the Society do not at present admit of any sums of money being devoted to additions to the Library; but it is hoped that private subscriptions and contributions will be forthcoming to increase the usefulness of that department.

Subjoined are the Treasurer's, the Librarian's and the Curator's Reports.

## LIBRARIAN'S REPORT.

The classification and numbering of the books of the Library has been undertaken and carried through by me, not without difficulties, considering that since the issue of the Catalogue of the Library 140 new works have been added to the Library. Besides there were also the financial troubles which rendered me unable to introduce those improvements which are essential to a first class Library. Notwithstanding all the books have been bound, a measure urgently necessary with periodical publications and transactions of Learned Societies, and the book shelves have been labelled.

A great many books are missing; a circumstance which has been duly recorded by the Council, and against the occurrence of which such measures have been taken as will prevent in future any further similar losses.

The late additions of the Library are solely generous donations by Learned Societies, or by authors or by members having left Shanghai. The Society is unfortunately not in the position to acquire *by purchase* any books; at least not so for the next two years. In the interests however of this institution, which is the first in China, an appeal should be made to any one who can spare a book necessary for a Library to make a donation of it to our Library, which attracts by its rich collection attention even in Europe and America.

To this Report are appended: 1st A List of Works presented to the Library: 2nd A List of Works belonging to the Library *missing*.

JOSEPH HAAS,

*Hon. Librarian N.-C. B. R. A. S.*

Shanghai, 1st January, 1877.

# LIST OF WORKS PRESENTED TO THE LIBRARY OF THE NORTH-CHINA BRANCH OF THE ROYAL ASIATIC SOCIETY DURING THE YEAR 1877.

C. SCIENCE AND ARTS.

II. *Philosophical and Moral Sciences.*

20) Lau-tzŭ, a study in Chinese philosophy by T. Watters, M.A., London, Williams & Norgate, 1870. From the Author.

21) Confucian Cosmogeny, a translation of the section forty-nine of the "Complete Works" of the Philosopher Choo-foo-tze, with explanatory notes, by the Rev. Thos. McClatchie, M.A., Shanghai, 1874, 8vo. From the Author.

III. *Political and Economical Sciences.*

18) Le Congrès des Orientalistes. Ce qu'il est aujourd'hui, le role important qu'il peut être appelé avec les Peuples de l'Orient; par Chles. le Mansois du Prey. Saint-Etienne, 1875, br. in 8vo. From the Author.

20) Reports and Official Letters to the Kaitakushi; by Horace Capron, Commissioner and Adviser, and his foreign Assistants. Tokei, 1875. From the Kaitakushi.

E. HISTORY.

II. *Travels.*

*a) Introduction, Collection, Travels round the World.*

16) Les Voyages d'Etudes autour du Monde, Institution approuvée par les Sociétés de Geographie de France et d'Angleterre, la Société Météorologique de France, la Société d'encouragement pour l'industrie nationale et la Société d'acclimation,—accompagnés d'une carte de l'intinéraire. Extrait de la Revue Britannique, mai, 1876. Paris, 1876, 8vo.

*d)* TRAVELS IN ASIA.

3, *Travels in China and Japan.*

65) The Eastern Seas, being a narrative of the voyage of H. M. S. "Dwarf" in China, Japan and Formosa, with a description of the coast o' Russian Tartary, and Eastern Siberia from Corea to the River Amur; by Captain R. W. Bax, R.N., with map and illustrations. London, John Murray, 1875. From E. H. Hollingworth, Esq.

VI. *Modern History.*

*b.* ASIA.

3, *Cisgangetic and Transgangetic India, etc.*

11) Central Asia and the Anglo-Russian Frontier Question: a series o. political papers by Arminius Vambéry, translated by F. E. Bunnett London, Smith, Elder & Co., 1874. E. H. Hollingworth, Esq.

12) An Account of the Primitive Tribes and Monuments of the Nilagiris by the late James Wilkinson Breeks, of the Madras Civil Service, Commissioner of the Nilagiris, edited by his widow. London, India Museum, 1873, 4to. From the India Museum.

4. China and Chinese Possession.

*a) History, Customs, etc.*

142) Chinese Sketches by Herbert A. Giles. London, Trübner & Co., 1876. From E. H. Hollingworth, Esq.

145) Notes on the Malay Archipelago and Malacca, compiled from Chinese sources by W. P. Groeneveldt. Published in the Verhandelingen van het Bataviaasch Genootshap van Kunsten en Wetenschappen. Batavia, W. Bruining, 1876. From the Author.

5. Japan.

12) Tales of Old Japan by A. B. Mitford, with Illustrations. Second Edition. London, Macmillan & Co., 1874. From E. H. Hollingworth, Esq.

13) Japan as it was and is, by Richard Hildreth. Boston, Philipps, Sampson & Co., 1855. From E. H. Hollingworth, Esq.

14) Koempfer's Account of Japan. London and Glasgow, Richard Griffin & Co. From E. H. Hollingworth, Esq.

VIII. *Literary History and Bibliography.*

23) Manual of Chinese Bibliography, being a list of works and essays relating to China. By T. G. and O. F. von Möllendorff, Shanghai, 1876, 8vo. From the Authors.

F. Transactions of Learned Societies and Periodical Publications.

I. *Transactions and Proceedings of Learned Societies and Periodical Publications of Europe.*

*a*—Great Britain.

1) Royal Society of Great Britain and Ireland. Proceedings—Vol. XXII (1873-74) 151/155; Vol. XXIII (1874-75) 157/163. From the Society.

2) Geological Society of London. The Quarterly Journal—Vol. XXXI (1875) No. 123/126; Vol. XXXII (1876) No. 127. From the Society.

5) Statistical Society of London. Journal—Vol. XXXVIII (1875) Parts 2/4; Vol. XXXIX (1876) Parts 1/2. From the Society.

6) Royal Geographical Society of London—Vol. XLIV (1874); Vol. XLV (1875). From the Society.

Catalogue of the Library of the Royal Geographical Society to May 1865. From E. H. Hollingworth, Esq.

Classified Catalogue of the Library of the Royal Geographical Society to December 1870. From E. H. Hollingworth, Esq.

Supplement to the Alphabetical Catalogue of the Library of the Royal Geographical Society, containing the additions from 1865 to December 1870. From E. H. Hollingworth, Esq.

7) Royal Society of Edinburgh. Proceedings—Session 1874-75 (2 copies). From the Society.

10) Ocean Highways: the Geographical Review. Edited by Clements R. Markham, C.B., F.R.S. New Series—Vol. I. Illustrated. London, Trübner & Co., 1874. From E. H. Hollingworth, Esq.

11) The Geographical Magazine. Edited by Clements R. Markham, C.B., F.R.S.—Vol. I, 1874 (19 maps); Vol. II, 1875 (21 maps). London, Trübner & Co. From E. H. Hollingworth, Esq.

*b*—France.

1) Société d'acclimation fondée le 10 Février 1854. Bulletin mensuel—3e. Série—Tome II (1875) Novembre. From the Society.
2) Société de Geographie. Bulletin—1876, Janvier to Juin (Juillet wanting), Août, Septembre. From the Society.
6) L'Explorateur géographique et commercial, sous le patronage de la Commission de géographie commerciale, déléguée par la Société de géographie et les Chambres Syndicales des Paris. 2e. Année, 3e. Volume No. 63-73 (20 Avril 1876; 29 Juin 1876). 4e. Volume No. 74-81. From the Society.

*c*—Austria, Germany, Italy, etc.

4) Verein für Erdkunde zu Dresden. 1875, XI u. XII. From the Society.
21) Königl. Physikalisch—oekonomische Gesellschaft zu Königsberg. Schriften 1861-1874 (2 copies). From the Society.
22) Cosmos. Comunicazioni sui progressi più recenti e notevoli della Geografia e Scienze affini di Guido Cora. Torino. Vol. III (1875) I—X. From the Editor.
23) Gesellchaft für Erdkunde zu Berlin. Verhandlungen, 1874, No. 6. From the Society.
24) Königl. Preussische Akademie der Wissenschaften zu Berlin. Monatsberichte: 1875 September—December; 1876 Januar—Juni. From the Academy.
25) Sitzungsberichte der k. bayr. Akademie der Wissenschaften zu München.
*a)* philosophisch-philologische und historische Classe:
1874 No. 3/4, Vol. II No. 1/2; 1875 Vol I No. 1.
*b)* mathematisch-physikalisch Classe:
1874 No. 2 & 3; 1875 No. 1.
*c)* Fest und Denkschriften:
Schelling's Geistesentwicklung in ihrem inneren Zurammenhange von Hubert Beckers, 1875.
Philosophie und Theologie von Averroes, aus dem Arabischen übersetzt von Marcus Joseph Müller, 1875.
Almanach der Kön. Cayr. Akademie der Wissenschaften für das Jahr, 1875.
From the Academy.
27) Oesterreichische Monatschrift für den Orient. No. 1/12 (1875). From the Oriental Museum in Vienna.

III. *Translations of Learned Societies and Periodical Publications of Asia, etc.*

*a*—Translations of Learned Societies, etc.

7) Royal Asiatic Society (North-China Branch) Shanghai. Journal. New Series, X (1875).
11) Translations of the Asiatic Society of Japan. Vol. IV from 20th October 1875 to 12th July 1876. From the Society.

*c*—Periodical Publications of China.

5) Notes and Queries on China and Japan. Vol. I (complete); II (complete); III (complete); IV No. 1/3. From the Vice-President of the Society, Thos. W. Kingsmill, Esq.

Shanghai, *1st January, 1877.*

## LIST OF WORKS BELONGING TO AND MISSING FROM THE LIBRARY OF THE NORTH-CHINA BRANCH OF THE ROYAL ASIATIC SOCIETY.

A. RELIGION.

III. *Buddhism.*

7) Buddhism in Thibet by Emil Schlagintweit, L.L.D. Atlas of objects of Buddhist worship. XX—plates. Leipzig, Brockhaus, 1863, folio.

B. JURISPRUDENCE.

1) Ta Tsing Leu-Lee: being the Fundamental Laws, and a selection from the supplementary statutes, of the Penal Code of China; originally printed and published in Pekin, etc. Translated from the Chinese and accompanied with an appendix by Sir George Thomas Staunton. London, Cadell, 1810, 4to.

C. SCIENCES AND ARTS.

IV. *Natural, Physical and Medical Sciences.*

*2) Mizaldus redivivus; sive Centuriæ XII Memorabilium utilium ac jucundorum in Alphorismos Arcanorum omoris generis locupleres, perpulchre digestæ; partim ab Antonio Mizaldo Monluciano Medico; partim ex aliis fide dignis probatisque auctoribus excerptæ. Editio nov. Norimb. Johannis Zigeri, 1681, 12mo.

D. BELLES LETTRES.

I. *Linguistics.*

c Asiatic Languages.
2 Tartar Languages.
*a.* MANCHU-MONGOL, ETC.

*4) Translation of the T'sing Wan k'e mung, a Chinese Grammar of the Manchu-Tartar Language; with introductory notes on Manchu Literature. Shanghai. London Mission Press, 1855, 8vo.

6 Transgangetic Languages.
b Chinese Language.
Lex. Lexicography.

** HANDBOOKS OF CONVERSATION, ETC.

*5) A Catalogue of Phrases in the Shanghai Dialect systematically arranged by Rev. John Macgowan.... Shanghai, Presb. Mission Press, 1862.

*7) Chinese Dialogues. Questions and Familiar Sentences, literally rendered into English, with a view to promote commercial intercourse, and to assist beginners in the Language; by the late Rev. Dr. Medhurst, revised by his Son. Shanghai. London Mission Press, 1863, 8vo.

8) The Tourist's Guide and Merchant's Manual; being an English-Chinese Vocabulary of Articles of Commerce and of domestic use, etc. Hongkong. Daily Press, 1864.

CHIN. CHRESTOMATHIES—HANDBOOKS, ETC.

*5) The Analytical Reader. A short method for learning to read and write Chinese by the Rev. W. A. P. Martin. D.D. Shanghai. Presb. Mission Press, 1863, 8vo.

D. Belles Lettres.

II. *Composition.*

*b.*—Poetry.

9) Beitrag zur Kenntniss der ältesten japanischen Poesie von Dr. August Pfizmaier. Wien, 1852, ppt.

*c.*—Theatre.

4) Pharaoh's Daughter an "(anthropological)" Drama, on the Plan of the Mystery and Parable Play, developped from Herodotus's Narrative of the spoliation of the Treasury of Rhampsinitus, the Monuments of Thothmes III, "the Song of Songs," &c. London. Williams & Norgate, 1868, sm. 8vo.

E. History.

II. *Travels.*

*c*—Travels in Europe.

2) Review of the Principal Geographical researches in Russia for 1867 and 1868 (in russian) St. Petersburg, 1870, sm. 8vo.

*d*—Travels in Asia.

2. *Travels in Cisgangetic and Transgangetic India and in Central Asia, &c.*

*3) Nouvelle Relation d'un voyage fait aux Indes Orientales....par Mr. Dellon. Amsterdam, François Marrest, 1699, 12vo.

II. *Modern History.*

*b.*—Asia.

4. China and Chinese Possessions.

*a.*—History, Customs, etc.

22) Nouvel Atlas de la Chine, de la Tartarie Chinoise et du Thibet par Mr. d'Anville. La Hage, Schember, 1737, folio.

25) Designs of Chinese Buildings, Furniture, Dresses, Machines, and Utensils....engraved by Mr. Chambers, Architect. London, 1757, folio.

*41) The Mulfazät Timüry, or autobiographical Memoirs of the Moghul Emperor Timür, written in the Jagtay Türky language, turned into Persian by Abu Talib Hussyny, and translated into English by Major Charles Stewart. London, Or. Transl. Fund, 1830, 4to.

*65) Sketches of China and the Chinese by Auguste Borget. London, Filt & Bogue, 1842, folio.

129) The History of Genghizcan the Great, first Emperor of the Antient Moguls and Tartars; in four Books, by the late M. Petis de la Croix, Senior, and now faithfully translated into English. London, 1722, 8vo.

*131) Geschichte des östlichen Asiens von Dr. Soh. Heinr. Ploth—Erster Theil—Die Mandschurey. Göttingen, 1830, 8vo.

*b*—Blue Books on China.

15) Papers relating to the Affairs in China (in continuation of Papers presented to Parliament in March, 1863), 1864.

*d*—America.

5) Monthly Reports of the Deputy Special Commissioner of the Revenue in charge of the Bureau of Statistics, Treasury department, July 31, 1869—August 31, 1869—September 30, 1869; 3 prts., 4to.

Shanghai, *1st January, 1877.*

## CURATOR'S REPORT.

MAMMALS—

In the department Mammalia 49 forms were sent to the Museum by various contributors; some of which only could be mounted and utilised, the others were skinned and put by for exchange, etc. Some arrived in a high state of decomposition, and had to be thrown away. The new forms are a Mungoose (Herpestes griseus, Geoffry) by Mr. J. J. Tucker, and a Porcupine (Hystrix subcristata, Swinhoe) by Mr. A. Broom.

BIRDS—

Of Birds 287 specimens were presented; not only from Shanghai, but also from the ports Chinkiang, Kiukiang, Hankow, and also from Foochow, Swatow, Amoy, etc. Of these the better portion was mounted, while others were skinned, and the skins retained. Others arrived too far gone, by decay, to permit of being used. Some fine specimens of Raptorial birds were sent down with great care and trouble, from Kalgan, by Messrs. Sphingaerd and Graesel (Gypaetus barbatus Cuv., Vultur monachus L., and Aquila amurensis, Swinhoe); and form valuable contributions to the cases of Vultures, etc., while Mr. Daniels of the Shantung Lighthouse, sent a handsome live eagle (? Aquila Chrysaetos L.)

SNAKES—

A great many non-venomenous colubrines were sent to the Museum. Two venomenous sea-snakes were presented by Captain J. P. Roberts, taken at sea off Swatow (Pelamis bicolor Sch. and Hydrophis cœrulescens, Shaw). A Cobra (Naja tripudians Meer.) also was presented by Mr. H. B. Meyer of Ningpo. The total number of snakes sent was 22.

The Taxidermist was despatched to Ningpo during last summer, and some valuable additions were made to the Insect cases which, previous to this, were nearly empty.

Mr. John Wilson contributed largely in making a conchological collection,

An attempt has been made to establish an Herbarium, but it appears to me that this department will require possibly more room than can easily be spared to it, unless some novel idea be worked out of lining the backs of the cases with the plants found around Shanghai and the Feng-wan hills.

Thanks are due to Mr. N. B. Dennys of the City Hall Museum, Hongkong, for additions of birds belonging to the Tropics, and for some fine shells; while Dr. O. von Mollendorff of the German Consulate, Tientsin, has largely contributed both birds and mammals, special to North-China. Col. Mesny, commander of the Chinese forces in Kwei-Yang-Foo, also contributed very largely during the year in Butterflies and Beetles, peculiar to his district.

A subscription list was circulated amongst the community, which being fairly responded to, supplied the Treasurer with funds to enable four cases to be made for containing Mammals, and a small sum to be laid by for the Taxidermist's salary.

A few more of the finer cases were altered to hold Insects generally.

A large box containing many skins of Mammals, and of Birds, etc. was kindly forwarded last summer by Messrs. Jardine, Matheson & Co. free of freight to Mr. W. B. Pryer, in London:—the object being to obtain Mr. Swinhoe's aid in looking over the skins, and saying whether they were labelled correctly, while some undetermined forms could be labelled. I regret to say up to this moment I have heard nothing of the box, but hope it cannot be long before a reply is received.

During the year the Council of the Society made over to the Museum the books relating to Natural History in the Society's Library, for convenience of easier reference.

In conclusion, it remains for me to thank the Rev. Pere Heude, S. J. for the kind and valuable assistance afforded; both by aiding in determining some rare forms, and lending valuable books from the Museum at Zi-ka-wei.

J. P. MARTIN,
*Hon. Curator.*

N.-C. B. R. A. S.'s Museum, 27th Jan., 1877.

not exceed $50, as you will see by the Honorary Librarian's Report.

The Treasurer begs to lay before you an approximation of the following probable Receipts and Expenses during 1877.

| RECEIPTS. | | EXPENDITURES. | |
|---|---|---|---|
| Balance of 1876 ..... | $22.11 | Debt to *Celestial Empire* Office | $58.25 |
| Subscriptions ..... | 800.00 | Debt to Shanghai Museum.... | 420.00 |
| Sale of Journal ..... | 177.89 | Current Expenses..... | 150.00 |
| | | For the Library..... | 50.00 |
| | | Advertisements and Sundry .. | 75.00 |
| Total.. | $1,000.00 | Total.. | $753.25 |

so that there will remain at the end of 1877 a balance of about $250.00, provided no extraordinary expenses will occur, of which, however, there is not the slightest apprehension.

Your Treasurer begs also to append to this Report a list of the actual members of the Society, and the Balance Sheet of the Museum Fund.

I have the honour to remain,

Gentlemen,

Your obedient servant,

JOSEPH HAAS,

*Honorary Treasurer.*

Shanghai, 1st January, 1877.

# TREASURER'S REPORT.

*To the Committee of the*

NORTH-CHINA BRANCH OF THE ROYAL ASIATIC SOCIETY,

Shanghai.

GENTLEMEN,

In laying the Accounts of the North-China Branch of the Royal Asiatic Society before you, your Treasurer regrets to say that the balance shows in comparison to the one of last year such a great difficiency, viz: $22.11 against $268.12 on the 31st December, 1875.

This, however, is not so discouraging as one would be inclined to think, looking at it superficially.

Taking the items into explanation we see that in the receipts a profit is shown in item 1 of $10 by the high rate of exchange of which your Treasurer took always advantage.

The subscriptions show an increase of $210.78 over those of last year. Although a considerable falling off of members is to be recorded during the year, a more regular method of collection was introduced by which the subscriptions were brought in, although in some instances rather *late*. By this method and by the late considerable increase of members, your Treasurer hopes that the subscriptions in 1877 may reach the amount of $800.

By the sale of our Journal during 1876 the considerable amount of $143.29 was realised, and there is good hope that the like amount will be reached at the end of 1877.

By the promptitude of the Rev. Jesuit Fathers in Shanghai and Dr. E. Bretschneider in Peking, your Treasurer has been enabled to pay off a considerable portion of the Society's debts for printing the last Journal.

The last item of receipts represents a loan from the Shanghai Museum—being a sum of Tls. 318.14:—a sum which was borrowed for paying off the debt the Society incurred by the printing of the last journal, and which amounted to $1,198.00, —of this sum $1,139.75 have been already paid, and $58.25 have yet to be paid to the office of the *Celestial Empire*.

Among the expenditures you will find the item of $137.16 which represents the usual amount of the current expenses.

The expenses of the Library, however, have increased considerably, owing to exceptional causes; the expenses defrayed, however, were unavoidable and necessary, and will during 1877

# BALANCE SHEET OF THE

# North-China Branch of the Royal Asiatic Society.

## FOR THE YEAR 1876.

*Dr.* *Cr.*

| 1876 | | | $ | cts. | 1876 | | | $ | cts. |
|---|---|---|---|---|---|---|---|---|---|
| Feb. | 11 | To Received from the former Honorary Treasurer J. E. Reding, Esq., the Balance of 1875, viz: | | | | Paid House expenses, viz: Insurance, Gas, Coolie wages, etc. | | 137 | 16 |
| | | one cheque for Tls. 167.97 } Tls. 208.97 | 278 | 63 | | ,, Expenses for Library, viz: purchases of Books, Bookbinding, Carpenter's work, Labels, etc. | | 301 | 13 |
| | | ,, ,, ,, ,, 41.00 } ex. 75.0 | | | | | | 1,139 | 75 |
| *Dec.* | *31* | ,, Subscriptions collected in 1876 | 630 | 00 | | ,, Printing Journal for 1875 | | 2 | 98 |
| ,, | ,, | ,, Proceeds from sale of Journal | 143 | 29 | | ,, Gazette | | 44 | 36 |
| ,, | ,, | ,, Contributions towards printing the last Journal | 159 | 11 | | ,, Advertisements and other occasional printing expenses | | 6 | 50 |
| ,, | ,, | ,, Received in cash from the Hon. Secry. | 58 | 37 | | ,, Shroff collecting bills | | 47 | 36 |
| ,, | ,, | ,, ,, ,, ,, A. Wylie, Esq. | 21 | 00 | | ,, to the Carpenter for alterations made to the building, Tls. 36 ex. 76.0 | | 22 | 11 |
| ,, | ,, | ,, Loan from S'hai Museum, Tls. 318.41 | 410 | 95 | | Balance | | | |
| | | Total....$ | 1,701 | 35 | | Total....$ | | 1,701 | 35 |

*E. & O. E.*

SHANGHAI, 1st *January, 1877.*

JOSEPH HAAS,
*Hon. Treasurer.*

# BALANCE SHEET OF THE

# Museum Fund of the N.-C. Branch of the Royal Asiatic Society.

*Dr.* **FOR THE YEAR 1876.** *Cr.*

| 1876 | | | Tls. | cts. |
|---|---|---|---|---|
| Feb. | 11 | To Received from the former Honorary Treasurer J. E. Reding, Esq. .... | 91 | 56 |
| May | 12 | ,, by sale of Birds ..... | 13 | 38 |
| Aug. | 9 | ,, Subscription of E. H. Hollingworth, Esq., $25 ex. 77.7 ..... | 19 | 42 |
| ,, | 14 | ,, by Subscriptions..... | 549 | 65 |
| Nov. | 18 | ,, from the Curator, J. P. Martin, Esq. $47.81 ex. 78.3 ..... | 37 | 44 |
| Dec. | 2 | ,, from the same, by Subscriptions .... | 75 | 92 |
| | | Total....Tls. | 787 | 37 |

| 1876 | | | Tls. | cts. |
|---|---|---|---|---|
| Mar. | 20 | Paid Carpentering to the Museum ..... | 23 | 89 |
| Apr. | 7 | ,, Fire Insurance..... | 10 | 00 |
| Sep. | 11 | ,, to the Shanghai Library ..... | 175 | 00 |
| ,, | 25 | ,, to the Carpenter for alterations to the building..... | 20 | 00 |
| Dec. | 11 | ,, Loan to the North-China Branch of the Royal Asiatic Society ..... | 318 | 41 |
| ,, | 31 | ,, Internal expenses of the Museum: Texidermist's wages, skins, birds, gun, boat-hire, bottles, cases, etc. | 238 | 17 |
| | | Balance..... | 1 | 90 |
| | | Total....Tls. | 787 | 37 |

*E. & O. E.*

SHANGHAI, *1st January, 1877.*

JOSEPH HAAS,
*Hon. Treasurer.*

# LIST OF MEMBERS.

## HONORARY.

Sir Rutherford Alcock, K.C.B.
Sir Brooke Robertson, C.B.
Vice-Admiral Sir Charles Shadwell, K.C.B.
Sir T. F. Wade, K.C.B.
W. H. Medhurst.
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# INAUGURAL ADDRESS

BY THE

## PRESIDENT.

DELIVERED ON THE 20TH OF FEBRUARY, 1877.

## THE

## BORDER LANDS OF GEOLOGY AND HISTORY.

THE last ten years have been marked by a very considerable extension of our knowledge of China and the immediately adjoining countries: and I propose on the present occasion to pass in review some additional sources of information, more especially those which seem to throw light on the past history of the earth; and to affect more or less intimately certain theories on the later stages of geological time which have found favour in Europe and elsewhere.

In Europe the period has been one of decided change in men's ideas. Ten years ago the contest with regard to development was still at its height. It may now be considered as closed so far as the acceptance of gradual development as a necessity of living organisms is concerned, though it still rages on details and immediate causes, where much debateable land still remains for future conquest.

On other subjects opinions are, however, more than ever upset, and on no subject more than on the history of our globe in the ages immediately antecedent to the advent of the present races of men; accompanied as the monuments of that period are in Europe and America, at least, by traces of a climate many degrees colder than that at present prevailing in the same latitudes.

Two causes have recently concurred in causing more than usual attention to be devoted to such subjects; and have tended to a considerable degree to shake confidence in theories which a few years ago bid fair to meet with general acceptance.

One of these disturbing causes has been the voyage of the *Challenger* and the elaborate series of observations made on the circulation and temperature of the ocean; and the other is to be found in the recent discoveries made in arctic regions by the later expeditions to high latitutes, which seem to disclose in late tertiary times a state of affairs near the north pole not easily reconciled with established opinions.

Within the last few years many works have been written on these and kindred topics, amongst the principal of which I may mention Mr. James Geikie's book "The Great Ice Age," Mr. Croll's "Climate and Time," and lastly Mr. A. R. Wallace's great work "The Geographical Distribution of Animals." Mr. Geikie has almost exhaustively worked out the geological record of the glacial epoch in Great Britain; and has added to our proofs of at least one interglacial age, during which the great ice sheet, which during glacial times covered the land, shrank back into the hills to reappear during the second access of an arctic climate.

Mr. Croll, following closely in the steps of Mr. Geikie, has accepted as proved the occurrence of one or more interglacial epochs in Europe; and has elaborated to account for the observed phenomena an astronomical theory founded on the varying eccentricity of the earth's orbit, combined with the effects of the precession of the equinoxes. Roughly stated, at intervals of some 12,500 years the northern or southern hemisphere respectively is in aphelion in winter, and such a time will be marked by an accession of cold. Should this phenomenon occur at a period when the orbit has assumed an excessive prolongation, the increased cold will be so great that in whatever hemisphere the winter occurs in aphelion there will be experienced a glacial epoch, while in the other a correspondingly mild climate will prevail. A period of excessive prolongation may include several such changes of each of the hemispheres from aphelion to perihelion; and hence glacial and interglacial periods will succeed one another, frequently many times before the extreme ellipticity of the orbit undergoes a change.

The theory is clearly put, and within certain limits is incontrovertible. Such causes must modify to a considerable extent the amount of heat received by, or what is of more importance radiated from the polar regions of the northern and southern hemispheres respectively; and so far Mr. Croll's theories will meet with ready acceptance. I do not however conceive that they will be found sufficient to account for the glacial phenomena actually observed in Europe and America; while they seemingly contravene all that is known of the later geology of northern and Central Asia.

Brought up myself in a region which has undoubtedly undergone glaciation, and accustomed from my earliest introduction to the science of geology to the phenomena thereby produced, it is only since my observations have extended into a fresh field that I have had forced upon me the inadequacy or incompatibility with facts of the various means proposed.

Foremost amongst glacialists for many years was the late professor Agassiz, and it is instructive to mark the development of his views. A Swiss, and accustomed to the glacial phenomena of the high Alps, he was struck on taking up his abode in America with the undeniable resemblances exhibited by the remains of past ages in his adopted country. To him, if I mistake not is to be attributed the first propounding of the celebrated ice-cap theory.

So wedded did Agassiz become to these ideas that he found little difficulty in attributing to ice-action certain phenomena which he observed in his visit to Brazil in the year 1865-66; and his views on the subject are contained in the account of his travels published by Madame Agassiz under the title of "A Journey in Brazil." Fortunately the phenomena referred to are easily accounted for without calling in the aid of any such extraneous action. The fact seems to be that the professor had to deal with the not uncommon case of igneous rocks, which, more or less prismatic in structure, disintegrate in part, leaving undecayed in the soft-mass vast nodules of harder material which have resisted the wear of climatic influences. When partially rearranged under the influence of aqueous causes such a formation puts on to a great extent the semblance of a boulder clay. No one acustomed to the geology of south China, and in a less degree of southern Japan will find any difficulty in attributing such effects to their true cause. The granitic ruins in the neighbourhood of Macao, or the partially rearranged formations of similar origin at Swatow or Amoy are marked instances of how such causes may produce the verisimilitude of a glacial boulder clay.

Mr. Belt, a far more practical geologist than professor Agassiz, in his work "The Naturalist in Nicaragua" describes phenomena in Central America which he attributes to glacial action; and as his authority in such matters stands deservedly high, and he seems to have made out a fair case, his observations must meanwhile be accepted as facts. He likewise brought forward (Quarterly Journal of Science, October 1874) a theory to account for a glacial epoch by the varying obliquity of the ecliptic; conceiving that when the polar axis was at right angles with the ecliptic a state of perpetual spring would prevail over

the earth's surface. It needs little proof to show that this proposition is untenable; as so far from the polar regions in such a case receiving more heat than at present from the sun, the lands within the arctic regions would really receive less. Indeed at the pole itself actually no heat would be received from the sun, while a perpetual and unbalanced radiation would take place into space.

Mr. Belt has published other theories, more especially affecting the geology of northern Asia, which I shall discuss further on.

Mr. Mallet's physico-chemical theory, though not immediately bearing on the glacial epoch, may at this stage be briefly mentioned. According to him the earth has well nigh cooled down from a period of original igneous fusion, and is now a ball entirely, or in the main solid, but of high temperature. A secular cooling still takes place, the mass shrinks, but the surface having reached a state of equilibrium of temperature, when the radiation from its surface is balanced by heat received from the sun, does not yield to the contraction within. A series of shrinkings and irregular corrugations is the result, and the heat developed by these motions in the superficial crust is sufficient to melt portions of the mass, and thereby produce all the phenomena of earthquakes and volcanoes.

Amongst astronomers the strife as to the antecedent condition of the earth has likewise been carried on, but on different grounds. The varying obliquity of the ecliptic, the eccentricity of the orbit, the permanence or otherwise of the axis of rotation have all been passed in review; as likewise the question intimately correlated with the others of the presence of a solid or fluid nucleus. For a time it seemed as if all had been set at rest, and Mr. Mallet's beautiful and ingenious theory, which accounted for the phenomena connected with earthquakes and volcanic eruptions, as well as for the apparent rise of continents and mountains, without presupposing a fluid nucleus, fitted in admirably with astronomical calculations. Lately however modifications of these views have been forced on the minds of our ablest mathematicians, and we find Sir William Thomson at the last meeting of the British Association advocating the possibility of considerable movements within the interior of the earth. He on physical grounds rejects as impossible the existence of a fluid nucleus of high temperature; and proves clearly that the theory of a rigid crust filled with liquid must be erroneous. But although he rejects a fluid nucleus, he acknowledges that the absence from the sea of long period tides "is not easily explained without admitting a considerable degree of yielding."

農林部藏書

The argument is too abstruse and of too great length to follow out here. It may however be summarised in popular language. If the interior of the earth were liquid and its crust composed of so rigid a material as steel, and 300 miles thick, it would yield to the deforming influences of centrifugal force and the attraction of the sun and moon as if it were indiarubber. Under such circumstances, as the whole mass of the earth would be free to move, there could be no flow of tides, sea and land yielding equally to external influences. But besides diurnal tides there are movements due to nutation, notably the lunar fortnightly nutation whose period is 306 days. The earth seems to be too rigid to yield to this, and the tides are supposed to show its influence. Another long period tide should occur once in 18.6 years, presupposing the earth to be perfectly rigid. It has, however, never been observed, and the inference is that the interior mass of the earth is sufficiently yielding to give way.

This inference, if proved correct, will materially aid us in comprehending the next step of the argument. If the earth were perfectly rigid its protuberance at the equator would tend always to keep the axis of revolution uniform; but, allowing the possibility of alteration in the shape of the mass, we see at once that a shifting of the axis of revolution must ensue. A sudden upheaval of all the earth's surface in north latitude and east longitude, and in south latitude and west longitude would produce such an effect, and would immediately cause a separation of the axis of instantaneous from that of mean revolution; and this in turn would cause tides with a period of 306 days. If the upheaval amounted to 1,100 feet the tides corresponding would be 1,300 feet in height; which would certainly produce a cataclasm. A gradual elevation would, however, never produce any great divergence between the mean and instantaneous axes; and considering the great inequalities in the earth's surface, the presence of the Andes and Himalayas and the depth of the Atlantic and Pacific, no external cause or sudden convulsion is needed to account for a shifting of the axis of rotation. To quote Sir William Thomson's conclusions, "We may not merely admit but assert as highly probable, that the axis of maximum moment of inertia and axis of rotation, always very near one another, may have been in ancient times very far from their present geographical positions, and may have gradually shifted through 10, 20, 30, 40 or more degrees without at any time any perceptible disturbance of either land or water."

While such is the present state of the argument amongst ma-

thematicians, the geologists proper have scarcely been so ready to change their established lines of thought, or rather have seemed disposed to confine their ideas within narrower limits than formerly. The belief which has prevailed for many years in the occurrence of the so-called Glacial Epoch has had much to say to this; and several specific theories have been put forward to account for phenomena which could not be ignored, and which having been observed in localities so far removed as Europe and North America were taken to be of universal occurrence. At some of these I have already glanced.

Perhaps more noteworthy, because altogether opposed to what we know of present conditions, are the speculations put forward in connection with the so-called "ice-caps" in the polar regions. It is a favourite theory that during the "Glacial Epoch" the entire of the northern circumpolar region was one, or more times, covered with a vast sheet of ice, the thickness of which is variously estimated up to, say, 6,000 feet. Assuming this latter thickness it has been calculated that the centre of gravity of the earth was so far displaced that in the opposite hemisphere a lowering of the sea level to an extent of 1,000 feet would have taken place. As these ice-caps are presumed, in accordance with the theories I have explained above, to have been formed alternately in the northern and southern circumpolar regions, alternate risings and depressions of the sea must have occurred, and hence the marks of marine action on high mountains. With regard to such extreme theories I cannot do better than quote the remarks of Mr. John Evans, President of the Geological Society of London in his annual address on the 18th February, 1876:—

"The moral which I wish to draw from all that I have just said is this:—That so long as there is a possibility, not to say probability, of the geographical position of the Poles having changed, it is premature to invoke intense glacial periods to account for all the glacial phenomena which have been observed . . . There are many who cannot but feel that the ice-caps invoked almost transcend our powers of belief, and who will be grateful to any astronomer or mathematician who will bring the pole round which they were generated nearer our door."

To my mind these theories of ice-caps have always seemed little better than childish. We know too little of the land surfaces near the poles to be able to speak positively as to their condition, but no such enormous mass of ice is known at present to exist: and furthermore we can scarcely, for the reasons I have just now given, believe in the possibility of the supposed shifting of the centre of gravity without corresponding changes

in the figure of the earth. If therefore I were to accept the "ice-cap" theory I should be compelled to look for its effects rather in a further prominence of the equatorial regions, in order to restore the spheroidal shape of the earth rendered necessary by its revolution on its axis, than in a temporary lowering of the sea level in the opposite hemisphere.

But these "ice-cap" theories have led to still more extraordinary speculations; the most peculiar of which, perhaps, are those connected with glacier lakes. Now glacier lakes do undoubtedly exist in a few instances, noteably in the Alps and Himayalas. These lakes are, however, small, and in all cases strictly limited by the presence of conditions of rare occurrence. We need first a large névé of sufficient elevation to be able to force its glacier of discharge to a considerable distance below the line of perpetual congelation; and we next need a lower rain catchment area opening into the valley of discharge of the névé at a sharp angle. These conditions can scarcely be conterminous on a large scale; certainly not on a continental one. It was, if I remember aright, in connexion with the Loess of the Rhine that these theories first met with acceptance. The Baltic was supposed to have been filled with an immense glacier which dammed up the waters of the Rhine and other rivers of Europe flowing north, and formed of the back waters a fresh water lake, in which the debris of the rivers was thrown down in the shape of loess. So apparently simple a theory could scarcely be left out in the cold; so it was taken up and generalised. Mr. Belt, in a paper read* June 24th, 1874 before the Geological Society of London, has applied it to the whole of Siberia. He accounts for the origin of the Siberian steppe by supposing that the northern ice-cap extended all along its margin, and that behind this ice-cap extended a shallow fresh water sea banked up by the ice, in which were deposited the sands and loams of the steppe. Though covering extensive areas these beds are apparently of slight thickness, and in no place seem to exhibit the ordinary marks of glacial action. In the north they are composed of fine sediment without a trace of pebbles; going south the pebbles increase in size and numbers; and along the southern boundary of the deposit abutting on the mountain chains they contain angular blocks of stone, growing larger as the foot of the ranges is approached. These certainly are not marks of glacial deposit. Mr. Belt argues that the beds cannot be marine because they contain no marine molluscs; we shall see further on that this negative evidence

* Quarterly Journal of Geological Society, 1874, pp. 490 *et seq.*

is apt to be misleading. On the whole, while from Mr. Belt's scanty description I am scarcely prepared to form an opinion as to what the beds really are, I see no one proof that they have any connexion with glacial conditions. Mr. Belt's observations were made between Ekaterinburg and the head waters of the Irtish, north latitude 51°-55° and E. longitude 60°-76°, and therefore in a situation which, according to usually received glacial theories, should have been extensively glaciated. The rocks lying immediately south of this supposed glacial sea, Mr. Belt acknowledges, show no signs of glacial action; and this he somewhat inconsistently (forgetting his fresh water lake theory) accounts for by the desiccation of the winds passing the Himayalas and the high mountains in the south of Asia. Mr. A. R. Wallace adopts in his most recent work, "The Geographical distribution of Animals," Mr. Belt's theories in order to account for the occurrence of seals in lake Baikal; a hypothesis which however by no means solves the supposed difficulty; in fact on physiological grounds increases it, for by such a theory we are forced to believe that the seals left their native element, the sea, and ascended a fresh water stream to a height of 1,400 feet,—and all this for no apparent object, and contrary to the instincts of the tribe in every other portion of the world.

This is the more remarkable that Mr. Wallace in his description of other localities evinces a sound judgment; and I am forced to accept as an explanation that in those places Mr. Wallace has observed with his own eyes; while in this case, and one or two besides, he has seen through the eyes of other observers, and has too readily permitted himself to be bound with the shackles of the glacialists.

Unfortunately our geological knowledge of eastern Asia is still rudimentary, and mostly derived from the statements of travellers who were no geologists. One exception is however to be made in the person of the Baron F. von Richthofen, who travelled through the greater portion of northern and western China under the auspices of the Shanghai Chamber of Commerce. Baron von Richthofen's letters to the Chamber are, on many districts our only authority. It is much to be regretted that the Baron, inverting the usual course of practical men, seems to be keeping back the publication of his researches into the geology of China until the completion of a number of studies historical and otherwise on which he is at present engaged. Dr. Stoliczka, an accomplished naturalist and geologist who accompanied Sir Douglas Forsyth's recent mission to Kashgar died on the road, and though it is understood that his notes will

eventually be published, geological science has much cause to lament his untimely end. Colonel Prejevalsky, whose travels in Kokonor opened up to natural science a new region, is unfortunately not a geologist; and the same may be said of the Abbé Armand David who traversed the western provinces of China almost conterminous with Prejevalsky. Both authors are however careful observers and their remarks on the physical structure of the countries traversed will have a lasting value. Mr. Pumpelly's notes on the geology of China and Mongolia published by the Smithsonian Institute are altogether unworthy of the auspices under which they were presented to the world.

Thibet unfortunately is as yet untraversed by a geologist. Geographically it has been explored by the native pundits in the Indian service; but it is only when we come to the Himalayas that we find any portion of the district under review which has been scientifically investigated. The geological survey of India has rendered familiar many of the facts connected with the geology of these mountains, and to these sources of information I must add Mr. Drew's "Jummoo and Kashmir." Further west Russian geologists have explored more or less imperfectly the plains of Central Asia; and, as a valuable addition to our knowledge of the great basin of western Tartary, I am happy to be able to mention Major Herbert Wood's recent work the "Shores of Lake Aral."

The natural history of eastern Asia is however better known. The Abbé David and Mr. Swinhoe, and later Col. Prejevalsky have examined it with a thoroughness which leaves few additional discoveries to be made. The fauna of the Himalayas and Thibet is now well known, and that of eastern Turkestan has been carefully studied during the recent missions to Kashgar. More recently, at our last meeting, Dr. O. von Mollendorff presented this Society with a most valuable record in the shape of on exhaustive catalogue, so far as is known, of the Vertebrata of an important district of China;—the province of Pehchihli, which throws much additional light on the geographical distribution of that class in the extreme East.

If in the rudimentary state of our geological knowledge of China I shall have in my remarks of this evening to rely much on my own observations, the reason will readily be understood, —that in the absence of trustworthy authorities I have been compelled to make use of what alone was available, my own researches.

As might be anticipated from what I have already mentioned, we meet with but few remains of glacial phenomena in the far East. It is, however, certain that at no distant period the

glaciers of the Himalayas descended to lower levels; and in the Naga hills in the extreme east of the chain on the borders of Burma glacier markings are said to have been found as low as 4,000 feet above the level of the sea. Two explanations have been afforded for these phenomena. One, the former elevation of the entire chain to a height several thousand feet greater than at present. The other the access of the "Glacial Epoch." Against the former it has been well argued that an increase in the height of the mountains would raise their summits into regions of the atmosphere where no considerable masses of snow could be produced; while the desiccation of the air below would be still greater than at present. Further on I shall show how causes which I am compelled to call in for other reasons will account for the former lower levels of the Himalayan glaciers. The evidence as to the Naga hills is not so clear, but a rise of a few thousand feet would undoubtedly give rise under present conditions to glaciers such as described.

In no other portion of eastern Asia do we hear of phenomena indicating a glacial period. The Siueh shan between Szechuen and Thibet apparently at present supports a system of glaciers. The same is certainly the case in the T'ien shan and the Altais; but their occurrence is local, and in our present state of ignorance of their details throws no light on our subject.

One very remarkable formation of late tertiary age does, however, predominate in eastern Asia, and is of so peculiar a character, and covers so enormous an area that it may be called the main characteristic of its surface geology. I refer to the Loess.

Baron von Richthofen was the first to point out its enormous extent, and its identity in composition with the Loess of the Rhine. As Sir C. Lyell had already applied the term to deposits of similar composition in the valley of the Mississippi and elsewhere, we may accept the term as generic.

The southern margin of the Loess of east Asia is formed by the hilly country bounding the Yangtsze valley on the right as far as Szechuen, which province however the deposit does not enter. It then turns northerly along the valley of the Han, its southern limit ceasing with the watershed of that river. West of this its southern extension has not been traced. To the east it extends as far as the ancient coast line of Kiangsu (about E. long. 120°), from which it has been traced uninterruptedly into the province of Kansuh (about E. long. 105°). Northerly it enters and extends for some distance into the Mongolian plateau. The districts between Kansuh and Kashgar have not been traversed by any competent geologist; but as Loess reappears

flanking the slopes of Pamîr in eastern Turkestan it is most likely that it forms the bed of the great basin of lake Lob and the desert of Makan.

The first observers of this great formation, unaware of its vast extent, attributed its formation to a series of fresh water lakes, subsequently drained by the escape of their waters through the gorges of the Yellow river. Richthofen, who first pointed out its wide extent, rejected this theory as untenable but proposed one equally difficult of acceptance. According to him the Loess is of sub-aerial growth, and owes its origin to the decay of thousands of generations of plants which at one time or other flourished on its surface. The Abbé David who has had more intimate acquaintance with this formation than any other man of science, does not hesitate to express his opinion as entirely opposed to this strange theory "Mais cette théorie ne me paraît pas suffire pour nous rendue compte des faits les plus importants de ce *diluvium*, à sa présence dans certains parages et à son absence ailleurs, a sa composition identique partout et indépendant de celle des roches sur lesquelles il est assis &c. Un terrain semblable ou analogue devrait se recontrer dans toute contrée qui n'a pas été dénudée depuis longtemps: or, nous ne voyons qu'il en soit ainsi."*

In a paper read before the Geological Society of London in 1871† I combatted these views of Baron von Richthofen, since which with the exception of Abbé David's notes the subject seems to have been permitted by European geologists to remain at rest. The principal objections I offered to the Baron's views were the inadequacy of the means proposed to the end. Silicate of alumina and earthy carbonates were the main constituents of the Loess, and these could not be produced by plants, nor, owing to the structure of the Loess could they be supplied by springs from below. The natural vegetation on the surface of the Loess is poor in the extreme; and so far from showing signs of accretion, as it ought to do in accordance with the subaerial theory of formation it is rapidly undergoing denudation. I suggested that the formation was marine, acknowledging the difficulties which appeared to stand in the way; on the one side in the absence of marine fossils; and on the other in the presence of remains of land-shells, and in some localities of land animals. The latter peculiarity of the Loess I believe to be accidental. Generally speaking land-shells and other terrestrial remains occur in it where it has been subjected to rearrangement. As

* Journal de mon troiseme voyage d'éxploration dans l'Empire Chinois par Abbé A. David, tom. Ire., p. 94.

† Quarterly Journal of Geological Society, 1871, page 376 *et seq.*

a general rule they occur in so fresh a state that no ancient date can be demanded for their introduction; and even when they are found low down the extremely mobile nature of the deposit, its peculiarity of cleaving in vertical planes, and the readiness with which it is penetrated and rearranged by water afford a ready solution of their presence.

Since the paper was written the voyage of the *Challenger* has disclosed at great depths in the Ocean a series of formations which appear to throw light on this difficult subject.

The most remarkable of these formations are those which have been denominated B. C. and D. B. is known besides as the Globigerina ooze, and consists of little more than the shells of globigerina and other low organisms, the spines and tests of radiolarians, and fragments of the spicules of sponges. At times there is an admixture of fine granular matter filling the shells and the interstices between them. This deposit is rarely found at a depth exceeding 2,250 fathoms. It is of a white colour. At a greater depth it was generally found that the calcareous bottom passed into and was replaced by red clay D., which over large areas occupies all the depths below 2,500 fathoms, and consists almost entirely of alumina and a silicate of the red oxide of iron. Intermediate between the two is C., a grey ooze where the shells gradually lose their distinctness, and assume a rotten look and a brownish colour. They also become more and more mixed with a fine amorphous reddish brown powder, which increases steadily till the lime has gradually disappeared. This occurred at an average depth of 2,400 fathoms, but extended occasionally to considerably greater depths. The actual dependence, however, on the depth of these three formations has been called in question, but that of relative depth remains untouched.

Now I am disposed to refer the Loess to a deposit formed under somewhat similar circumstances to the *Challenger's* C. ooze:—that is to say a globigerina ooze which has under the solvent power of carbonic acid at considerable depths lost much, but not all, of its earthy carbonates; and this I am the more disposed to do that in certain localities it occurs seemingly in connexion with a red clay or laterite, which in part fringes it on the south, and which is here and there interstratified with beds of gravel; in which latter near Kiukiang I have detected fragments of marine shells in the last stage of decay.

This explanation seems sufficient to explain the very remarkable absence from the formation of marine shells. There do however occur in the Loess certain minute greenish siliceous spicules which do not seem under the microscope to present

organic markings. It is, however, not improbable that future investigations would show that these really were the spicules of sponges. In any case the Loess demands a more minute microscopical examination than it has hitherto undergone.

It will be seen that the acceptance of the marine theory demands an enormous rise of extensive tracts of land in eastern Asia since mid tertiary times. According to Richthofen, the Loess in Shansi rises in places to an altitude of 6,000 feet over the level of the sea. Assuming it to have been deposited in a sea 2,000 fathoms deep,* we have to account for an elevation of no less than 18,000 feet. Such figures seem staggering to those of the modern school of geologists who hold that the main features of the earth's surface, its continents and oceans are of vast geologic age. I must confess that personally I have little sympathy with this school. To me it seems more consonant with the known facts of geology to assume the modern origin of lofty mountains and profound seas. The average denudation of the earth's surface under atmospheric influences has been estimated at 1 foot in depth in from 1,000 to 6,000 years. We must assume that this rate is many times exceeded on the summits of lofty mountains, and here alone, independenty of effects of gravity and centrifugal force, we have a limit to their age which forbids an assumption of high geologic antiquity. As a matter of fact all our loftiest mountains show proofs of recent elevation. The Himalayas, the Andes, the Alps, the Pyrenees, the Caucasus, bear testimony in extensive beds of tertiary age, either fringing their feet, or, as in the Alps, entering into their intimate composition, to the late period at which they arrived at their present condition. The tertiary beds along the Himalayas rise to a height of 8,000, if not as certain deposits in Thibet seem to prove, 16,000 feet, pointing to an elevation within the period under discussion of at least that amount.

What is true of mountains we may hold to be conversely true of seas. The researches of Darwin proved conclusively that vast areas had sunk within recent geologic times, and these proofs have curiously been supplemented by the needs of geographical zoology. The experiences of the *Challenger* expedition show us that marine deposits are not confined to the neighbourhood of shores, but that the most important take place in mid-ocean and at profound depths.

The vast elevation I have mentioned as called for by the Loess of eastern Asia needs, as a matter of course, to be ba-

* But ooze similar to C. seems to have been found by the *Challenger* at a depth of 1,000 fathoms in the Pacific.

lanced by depression elsewhere. Darwin long ago pointed out the Indian Ocean as an area undergoing subsidence: and all naturalists who have studied the subject of the geographical distribution of life on the globe have found it necessary, in order to account for many of the peculiarities of present habitat, to demand a continent in the Indian Ocean during even late tertiary times.

In accepting the recent elevation of Central Asia we shall find a means of accounting for many of the peculiarities of the geographical distribution of animals and plants in China and Asia generally; and will perceive that the boundary between the Oriental and Palæartic regions of Wallace, in reality a natural one, has its origin in the former distribution of land and sea.

Geologically it accounts for many observed facts not otherwise explicable. More especially it is easily reconcileable with the former greater extension of glaciers in the Himayalas which I have just mentioned. So great is the present desiccation of the plains of eastern Turkestan that Prejevalsky found that the Burkhan Buddha mountains in north latitude 36°, though rising to a height of upwards of 16,000 feet, did not reach the limit of perpetual snow. Very different must have been their aspect when an Asiatic Mediterranean stretched from the Yellow Sea to the highlands of Pamir; or even in comparatively recent times, when there is reason to believe that much of the vast plain of eastern Turkestan was occupied by an inland sea, —the Yok shui or Dead Sea of ancient Chinese legend, now shrunk within the narrow limits of two or three salt lakes. The inner Himayalas and the mountains of Thibet would then have had deposited on their slopes in the form of snow the moisture evaporated from the surface of this inland sea, and as a consequence their glaciers would have descended further into the valleys than is now possible with their attenuated névés. The need here is not of a lower temperature, nor even of higher summits, but of a water surface whence to draw the supplies necessary for the production of snow-fields.

Leaving Eastern Asia for a while, I will ask you to accompany me to the deserts of the west, in the lowest depressions of which occur the Caspian and Aral seas. The geology of these regions is apparently more obscure than of those in the far east, but we can learn much from the distribution of the animals inhabiting their large lakes. The fauna of both the Caspian and the Aral is essentially marine: and this is the more remarkable that the water of both, and more especially the latter, is many degrees less salt than that of the ocean. The fauna, as is also

to a less extent that of the Black Sea, is likewise more allied to that of the Arctic seas than to Mediterranean forms. Such anomalies demand some explanation, and Major Herbert Wood in his recent work "The Shores of Lake Aral" has afforded the simplest, which moreover tallies with what I have suggested with regard to Eastern Turkestan and China. He supposes that the Black Sea, the Aral and the Caspian at one time formed a vast inland sea discharging into the Arctic along the valley of the Obi and Irtish. The breaking through of the Bosphorus drained into the Mediterranean the Black Sea, and reduced the levels of the other two. Still the waters of Central Asia flowed into the Aral, and from thence to the Caspian, and finally disembogued into the Black Sea. The continual desiccation of the plains, and perhaps the diversion of the stream of the Don and Volga to the sea of Azoff reduced the level of the Caspian below that of the outer sea; and the process of drying up eventually resulted in rendering the streams of the Jaxartes and Oxus too weak to reach even the Caspian; so that finally the greater portion of the bed of the once large inland sea became converted into a trackless desert with a continual tendency to increase by promoting the still further desiccation of the plains around. Major Wood does not however account for the original formation of the great salt inland sea at an elevation of several hundred feet above the level of the ocean, nor does he explain how the marine animals of the northern ocean came to rise along the valley of the Obi to their elevated habitat.

The closing of the narrow passage of the Bosphorus, and a depression of 500 feet extending from Kertch to the valley of the Obi would however restore a like condition of affairs to what we must suppose to have originally existed, and at no distant geological time. The Black Sea, Caspian and Aral would then form one inland basin communicating by a broad strait occupying the site of the present Turgai plateau with the northern ocean, at that time, there is reason to believe by no means arctic. The fauna of this inland sea would thus have been received from the northern ocean to the inhabitants of which at that time its present occupants bear a great resemblance. If subsequently the land were elevated 300 feet, we should have exactly the conditions demanded by Major Wood,—a vast inland sea of salt water receiving the drainage of the river systems from the Danube to the Oxus, and discharging northwards by the valley of the Obi. So soon as the waters of what was now a great salt lake rose over those of the northern ocean, the great body of fresh water which found its way into the new lake would begin to reduce its salinity; yet not so rapidly but that time was afforded for its

marine inhabitants to become gradually accustomed to the new conditions. By and by the great inland sea gradually with the rise of its bed became converted into a chain of lakes, of which the furthest from the discharge,—the Black Sea, soonest lost its saline ingredients; and even possibly reached the stage conjectured by Major Wood when the dwellers on its shores drove their cattle to water along its banks. Gradually as the elevation of its bed went on it forced its way through the Bosphorus, and the channel of discharge for Central Asian drainage moved from north to south. The great body of water carried down to the Black Sea continued to find its exit through the Bosphorus; but the Oxus and Jaxartes did not suffice to supply the water lost by evaporation from the other two lakes. Probably the Volga for a time flowed into the sea of Azoff, and thus it happened that eventually the Caspian became isolated from the Black Sea. Still the drainage of Central Asia flowed into it, after a portion at least had passed through the Aral; and hence the latter lost nearly all its salt, which was transferred to the larger body. From that time to the present various minor changes have taken place detailed in Major Wood's interesting book, but as they are mainly of local interest I shall not now occupy your time with their discussion.

Such with a slight alteration is the theory put forward by Major Wood to account for the present condition of the Aralo-Caspian region. It will be readily seen that it tallies with what I have remarked of eastern Asia.

As I stated before entering on this apparent digression, eastern Asia must have been elevated many thousand feet to account for the present position of the Loess of north China, while in western Asia the rise was of comparatively small amount. Intermediate between the two is the valley of lake Baikal, a sheet of water raised some 1,400 feet above the sea level. Like the Caspian, and till lately the Aral, Baikal has its seals, an animal elsewhere exclusively marine. To account for this curious phenomena Wallace is ready to accept the theory of the vast fresh water glacial lake to which I have previously alluded. A simpler explanation is that when the Caspian formed part of the northern ocean, Baikal was likewise joined to that sea. As the land rose it was raised with it and discharged its superfluous waters by the Angara into the valley of the Yenesei. Like the Aralo-Caspian lake it gradually became less salt, and like it not so rapidly but that the habits of its seals had time to become modified. The drainage poured into it by the Selenga and other rivers was however sufficient to keep open its mouth of discharge; so that finally, unlike the

others, its waters became quite fresh, and its seals have in consequence undergone the extreme of modification in their habits to suit their altered conditions.

Up to this point it will be seen that no room exists for the invocation of glacial phenomena. No one who has seen the Loess of China has suggested for it a glacial origin; and both Richthofen and myself while differing in other respects, are at one in this;—that no traces of such action are to be met with in China, apart from the mountain ranges of the south-west known to reach at present the limit of perpetual snow. Indeed the Loess itself rebuts the suspicion even of glacial action, perfectly homogeneous as it is over the entire area occupied; and containing nowhere a boulder, or pebble even, for the transport of which floating ice might be essential. Yet the Loess reaches as far north at least as 42°; while Mr. Belt, glacialist as he is, found no traces of glacial action as far as 51°. Indeed the plain stretching thence northward as far as Omsk, 55° N. latitude, gave proofs in its entire freedom from boulders, and its regularly stratified beds of loam and fine sand, that the district of glacial action was still far to reach.

North of Mr. Belt's observations we have few trustworthy geological data, but what there are do not point to glacial action. Mr. James Geikie, probably our best authority on the glacial deposits of Great Britain, sums up the evidence in a few words.* "It is remarkable that nowhere in the great plains of Siberia do any traces of glacial action appear to have been observed. If cones and mounds of gravel and great erratics like those that sprinkle so wide an area in northern America and northern Europe had occurred, they would hardly have failed to arrest the attention of explorers. Middendorff does indeed mention the occurrence of trains of large erratics which he observed along the banks of some of the rivers, but these, he has no doubt, were carried down by river ice. The general character of the tundras is that of wide flat plains, covered for the most part with a grassy and mossy vegetation but here and there bare and sandy."

In the absence of positive proof from its contents; for the land shells and mammalian remains found in it are, there is as I have shewn reason to believe, of subsequent origin, we can only assign an approximate date to the deposit of the Loess. The proofs from position point however to a late period, probably pliocene if not pleistocene. In the neighbourhood of Nanking it overlies the comparatively modern lavas of that district,

† "The Great Ice Age," p. 495.

which themselves rest on the Nanking gravels and sandstones apparently of tertiary age. All trace of volcanic action has not yet ceased in this district; warm springs are numerous, and Nanking is still the centre of a small earthquake district extending from Shanghai to Kiukiang, and from the Yellow River to a little south of Ningpo.

The Loess is immediately succeeded by the alluvial plain of the Yangtsze and Yellow River, the fluvial deposits of which are as free from any traces of glacial action as the Loess itself. I have from calculations of the out-flow of the Yangtsze put down 13,500 years as the probable time of accumulation of the delta, the formation of which must have commenced immediately on the first emergence of the Loess above water. If we double the period we still must consider it late in geologic, if not in human time. This would require the surface of the Yangtsze basin to have been denuded at the average rate of about one foot in 2,700 years; by no means an excessive rate when the large portion of its area occupied by light loamy deposits is considered, as well as the great annual floods to which it is subject; the difference between summer and winter level at Hankow amounting to from 40 to 53 feet.

So far I have confined myself to the geological evidence against the occurrence of a glacial epoch in northern Asia, and I have shown that these proofs extended to latitudes far north of those where abundant proofs of former glaciation are forthcoming in Europe and North America. So convincing have those proofs seemed that Mr. Geikie (*l. c.*) cannot help yielding to the evidence that in northern Asia we have to look to a time of increasing cold, rather than to an ameliorated climate. Turning from geology to zoology we shall find what seem convincing proofs of the modern refrigeration of northern Siberia, and eastern Asia generally, in the comparison between its present and its recently extinct fauna; as well as in the geographical distribution of those animals that survive.

It has been an acknowledged difficulty in the present state of our information to account for the disappearance of the rhinoceros and elephant, the remains of which are found in abundance all over northern Siberia. It it probably owing rather to the indirect than the direct effect of changes of climate; yet there are localities in Siberia, as in the upper valley of the Yenesei where such food as the rhinoceros tichorinus is known to have consumed is still abundant. The portion of the earth which at present supports a fauna bearing the greatest resemblance to that which formerly inhabited Siberia is undoubtedly the plains of southern Africa. Here the country is dry and

sterile, almost approaching a desert, thinly covered with grass and low bushes, and apparently providing but little fodder for herbivorous animals. Yet no where else do the larger mammalia abound in such numbers.* The probable reason is the uniformity of the seasons, and the absence of snow and ice in winter, which would demand a specialisation on the part of the mammals such as we find in the reindeer of the arctic regions.

The tichorhine rhinoceros and the mammoth seem, however, to have been more or less adapted to stand the rigours of a cold climate. Their history in Europe is a curious one. They first appear in company with other species, R. hemitœchus and megarhinus and elephas antiquus, apparently inhabitants of the warmer parts of the temperate zone. Along with these are met with types now so widely separated as the musk sheep of the arctic regions and the hippopotamus, the latter only surviving in Africa.

The approach of the glacial period in Europe forced the other elephants and rhinoceroses either to die out or remove to Africa; while the mammoth and tichorhine rhinoceros became more or less modified to suit the colder climate prevailing, the extreme of such modification being seen in the reindeer and the musk sheep. On the return of a warmer climate the depression of the Mediterranean cut off the return of the old forms from Africa, while by the rising of the valley of the Obi and Irtish a road into now congenial climates was afforded to the others, who made their quarters for a time in Siberia. Southern Asia was apparently at this time still cut off from the north of the continent by the Loess sea, which prevented a mixing of northern and southern forms: and the remains of this position of affairs are still seen in the distinction between the Indo-Chinese fauna of south China and the Palæarctic of the districts north of the Yangtsze.

The geological formation in which the remains of these extinct animals are found seems to point to altered conditions of climate. It is composed of thick beds of sand and clay interpersed with layers of fossil wood or lignite, the latter in some cases turned into black coal. These beds usually contain marine fossils, proving that at the time land did not extend so far north as at present. The thickness of the beds probably points to a moister climate on the adjacent land than prevails at present, when floods were more frequent in the rivers; and this was doubtless due to the large Loess sea lying immediately to the south. A moist temperate climate with mild winter and

* See "Voyage of a Naturalist," p. 86 *et seq.*, ed. 1873.

cool summers probably prevailed; willow and pine woods flourished, and the elephant and rhinoceros had abundant food during the whole of the year; and, what was perhaps of greater importance, a sufficiency of water even in mid-winter.

With the elevation of Central Asia and the extinction of the Loess sea the supply of moisture from the south sea was cut off; the elevation of the old coast line, which caused the appearance above water of the barren tundras of the north, aided in the change, and a probable movement of the pole along the meridian of 90° brought at the same time northern Siberia within the arctic regions. Some individuals doubtless lived on in spite of the cold, and their remains curiously preserved in ice add another proof that a diminution of temperature has occurred; and afford us the means of determining with certitude the external appearance of these old giants. The times, however, at last became too hard for elephant and rhinoceros, and they were forced to commence a retreat towards the south.

The rising plateau of Pamîr was perhaps too sterile, but to the east lay the plains of north China and Mongolia recently emerged from the Loess sea, and covered to a greater extent than now with forest, and into these districts the old mammals made their way. The rhinoceros and elephant certainly lived in Honan B.C. 600. The Tso-chuen commenting on the C'hun-t'siu of the 2nd year of the duke Siuen (B.C. 605) describes the former as being in sufficient abundance to supply skins for armour. The want, according to the popular saying, was not of rhinoceroses to supply skins, but of courage to animate the wearers. From the same authority, (duke Hi XIII. B.C. 636) we learn that while T'soo (Hukwang) produced ivory and rhinoceros skins in abundance, Tsin, lying north of the Yellow river on the most elevated part of the Loess, was dependent on the other for its supplies of those commodities. The "Tribute of Yu" tells the same tale. Yangchow and King (Kiangpeh and Hukwang) we are told sent tribute of ivory and rhinoceros hide, while Liang (Shensi) sent the skins of foxes and bears. Going back to mythical times we find Mencius (III. II. 9.) telling how Chow kung expelled from Lu (Shantung) the elephants and rhinoceroses, the tigers and leopards; proving that in more northern regions the tradition of their former existence was handed down to a few centuries before our era. It is of course impossible absolutely to tell to what species the elephant and rhinoceros of the old Chinese writers are to be referred, but the Abbé David describes his finding remains of E. primigenius and R. tichorhinus in superficial deposits in the Loess on the

borders of Mongolia,* associated with several species of deer, with the horse, oxen, &c. Sub fossil teeth of both these species are commonly to be found in the medicine shops, and one of the localities given for their occurrence is north China and Mongolia. Altogether although the superficial deposits of Szechuen supply a rich mammalian fauna in great measure identical with that of the miocene deposits of the Siwalik hills, and amongst which are to be found remains of R. palæindicus, mastodon sivalensis, elephas planifrons? and numerous other palæ-Indian forms, the balance of evidence seems to be in favour of the mammoth and tichorhinus. The occurrence of the older forms in Szechuen, which formed the extreme limit of the old Indo-Chinese continent in miocene times is easily explained, but it seems unlikely that they should have survived to so late a date. It will be more consonant with what we know besides of the movements of animals immediately before the present age, to believe that the descendants of the old miocène animals for the most part travelled south, when the Siberian mammals invaded China on the north. The elephants and rhinoceroses chased from Shantung by Chow kung, and which still, B.C. 600 survived in Honan may well have been the last remains of those which had previously emigrated from Europe to Siberia; and thence on the approach of arctic cold and the general desiccation of northern Asia travelled on to the raised land of north China.

Even here the same causes were probably at work which had rendered Siberia uninhabitable. The raised plains of Shensi and Shansi were too dry, and their winter climate too severe for the old animals; they were besides in early times settled by a race of men peculiarly agricultural. Adjacent lay the moister plains of Honan and Hukwang where food and water could be procured all the year round, and which moreover were later in accepting Chinese civilisation; and here the elephant and rhinoceros survived till exterminated by man within historical times.

This view will account likewise for what we know of the history of another remarkable form, the *cervus* (elaphurus) *davidianus*, or tailed deer of the Abbé David. Of all the cervidæ it approaches nearest the reindeer in the structure of its hoofs, and the large callosities behind, which fit it for a life amidst marshes. It was probably its similar peculiarity, as well as the shape of its horns, which permitted the reindeer to remain an inhabitant of the snowy plains of Europe when invaded by the increasing cold of the coming glacial epoch. Less

* Journal de mon Troisème Voyage, p. 93.

happy the elaphurus was unable to survive the cold and drought which invaded its native haunts when northern Asia entered the arctic regions. In early historical times it was spread over a considerable portion of China. Mencius (about B.C. 319) speaks of it as an inhabitant of Liang (K'ai fung foo) and as occurring in T'si (Shantung). Even in his days it was preserved in the hunting parks of the princes with such care that we are told that he who shot an elaphurus was held guilty of as grave a crime as if he had killed a man. Then as now it loved the reedy margins of ponds or the marshy banks of streams. An older mention of it is in the Ch'un ts'iu (B.C. 676), where we learn that in the winter of that year the elaphurus appeared in such numbers that it was noted in the records of Lu (Shantung), The following autumn we find a similar record of an inroad of *yih* 蜮 (Can. *wak*) an animal regarding which the commentators are sadly at sea, but which we may presume to be the wolf (Sans. *vrika*).* The elaphurus was therefore, apparently, a late arrival in China and its migrations were not completed till the seventh century before Christ. Driven south by the winter of 676 in large numbers, its natural enemy the wolf was not long behind it, and became, according to the Tso chuen, a plague in the following year. At present the elaphurus is to be found in but one spot, where it still survives under artificial protection, in the Imperial hunting park of Nan hai tsze near Peking.† Here it dwells in low marshy grounds, in strange contrast with the desert loving antilopes now characteristic in the fauna of north China.

Not less remarkable in the indications it affords of a change of climate is the present range of the monkeys, macacus and rhinopithecus, in north China. Two, if not three, species of the former are known as inhabitants of the northern provinces, the most remarkable of which is the Macacus Chihliensis still resident, though in sadly diminished numbers in the forests of Tung ling 70 miles east of Peking in N. lat. 40° :—the extreme northern range of the order. A nearly related, if not identical species is known to exist in the T'sing ling range in Shensi , N lat. 34°, which forms the watershed between the valleys ofthe Wei and Han.‡ Here it is possibly accompanied by a rhinopithecus. In Moupin in eastern Thibet the Abbé David found

* It is in favour of this interpretation of 蜮 that the ordinary Chinese word for wolf 狼 lang is not found in the Ch'un ts'iu.

† See on this subject Dr. O. von Mollendorff's paper, the "Vertebrata of Chihli," read before the Society, January 1877.

‡ David's "Troisième Voyage," tom 1*me* p. 221.

in the highest forests monkeys of the two genera exhibiting many resemblances to the forms of north China. All these animals are thickly covered with fur, as was likewise the case with the mammoth and tichorhine rhinoceros; and hence were enabled to survive under conditions which would have proved fatal to their congeners.

As we cannot imagine these monkeys to be immigrants from a warmer climate which have deliberately moved to latitudes so much colder than those to which they have been accustomed, we are forced to believe that they are survivals from a warmer period, which have gradually become acclimatised; accidental circumstances, as in the case of the tichorhine rhinoceros in Europe, permitting their continued existence under changed conditions.

In a less degree many of the other orders exhibit similar eccentricities of distribution which seem to point in the same direction. The range of the tiger attains its northern limit in the east of Asia, being at the present day found in Manchuria as far north as the Amoor. Its range seems however to be becoming gradually constricted, as it is no longer to be found in portions of Siberia where it was of common occurrence in the last century. Amongst birds the distribution of the phasianidæ seems equally anomalous, unless on the supposition of a change of climate sufficiently gradual to permit of changed habits.

In curious agreement with the migrations of the mammoth and tichorhine rhinoceros are the early tribal movements of the human race; and here it seems to me that we are in Asia to seek the dividing lines where geology merges first in myth, and afterwards reappears in the clear current of history. In fact that the true explanation of the tribal migrations of antiquity, whose effects, I may add, have not yet died out, can only be discovered by a close investigation of the geology of central and northern Asia.

Foremost amongst the widely spread legends which have come down to our time are those connected with a great deluge, the birth place of which we can pretty confidently trace to the table lands of Central Asia. Babylonia, India and China have all their several versions, which differing as myths must do in details, bear yet so clearly generic a resemblance that we must attribute them to some common origin. Babylonia and India unite in one characteristic; the flood was sent as a punishment for the grievous sins of the human race, and but a chosen remnant remained to repopulate the earth. Chinese tradition knows of no antecedent period: when the myth opens it represents the world as in a state of emergence from a flood, from which little

by little its demigods succeed in rescuing the half formed earth. Yaou, like Varuna or Ouranos, is essentially connected with the waters of heaven, the Okeanos of the Greeks, sprung from above and towards which streamed the evêr flowing rivers; and which to the end, as with the Greeks, preserved a mythological meaning apart from the Pelagos,—the salt sea on which ships sailed and over whose heaving bosom moved the mighty tempests. And herein the Chinese myth affords a transition to the old Iranian legend of Yima the Shining and the earthly paradise of Airyano Vaêjô.

The Iranians knew of no deluge, not even in the form in which it is represented by the Chinese; but the Vendidad tells us of how Airyano Vaêjô, the first created of lands, was a place of supreme felicity, where was found no cold, no heat; no old age, no death. To ruin this paradise Angro Mainyus, the Death-dealing, invented a mighty serpent and snow the work of the Daevas; ten months of winter were sent while but two of summer remained. All tradition agrees in making the present Pamîr the site of the earthly paradise, and we seem here to have preserved a dim recollection of the course of events which I have sketched out on geological grounds. As the Pamîr rose, what at its first emergence from the sea had been a delicious climate became colder and colder, while south, west and east we have records of the dispersal of the race which formerly inhabited it. The second Fargard of the Vendidad gives the Iranian version of the growing land; of how Yima found his kingdom too small for the wants of his increasing people; how he prayed to heaven, and Ahura Mazda cleft the earth asunder three-thirds greater than it was before "On it strode forward the cattle, the beasts of burden and the men." In my "Notes on the Yûkung" (China Review, vol. IV. p. 17) I have given the tradition at length. From this land poured forth the Aryan migrations, of the western stream of which the first Fargard gives the traditional account. At the first dawn of traditional history allied tribes are found migrating across the snows of the Himayalas towards the Seven Rivers, and ever since India has been called their home. After crossing the narrow passes of the Hindukush or the Himalaya they conquered or drove before them the aboriginal inhabitants of the Trans-Himalayan countries. They took for their guides the principal rivers of northern India, and were led by them to new homes in their fertile valleys.*

Mencius and the Shi-king tell us of the settlement of Kung-

* Max. Müller, Ancient Sanscrit Literature, pp. 13-15.

liu in the land of Pin; whence the emigrants expelled by the restless hordes of the Diks, and driven across the mountains of Liang (the Ts'ung-ling or Pamîr), at last under T'an fû made a temporary halt at K'echow on the southern flanks of the T'ien shan. With the Azhi Dahâka (the Biting Snake) of the Iranians, who conquered and slew Yima the Shining and sadly oppressed his people, we may compare the Diks of the Chinese version. Both have to be identified with the northern invaders who poured down on the original homes of the settlers in Central Asia, and drove them east, west and south. But while tradition grows more precise in both west and east, there is no cessation of the inroads of the northern hordes. Some cause has been at work sufficiently strong to make their pressure perpetual. Defeat after defeat is of no avail; the vanguard driven back or cut to pieces is succeeded by hordes as formidable, and apparently as prodigal of their own lives; and for twenty centuries the history of Central Asia is a record of invasions from the north, and migrations to the east, west and south.

I shall not on this occasion occupy your time with the particulars of these invasions; Gibbon, de Guignes, Klaproth and many other authorities are readily available, while the historical books of China are full of details of the straits to which from time to time the empire was reduced. The Tsochuen tells us of the continual pressure of the Jung and kindred tribes along the northern frontier of China from seven to five centuries before Christ, and the narrative is taken up by the Shi-ki, which identifies these Jung with the people afterwards known as Hiung-nû. From other sources we learn that these Hiung-nû were the ancestors of the Tu-küeh whose connexion with the modern Turks seems established to a certainty. The original homes of these people we find to have been the plains and valleys north of the Altai mountains; a country now sparsely inhabited, but which in these days must have supported a much larger population, the records of which we see in the vast tumuli, which in the now deserted steppes in parts almost cover the soil. It has been described by the old writers as the *officina gentium*, the workshop of nations; and such it may well have seemed to the settled inhabitants of the more civilised nations in the south and west; whose lands were overrun and homes ravaged by wave after wave of these restless and rude invaders, impelled by a strange infatuation, as it seemed, to pour ever onwards in spite of the extinction of one band after another of the pioneers.

Whence then arose this strange migration, which after surging against China set the whole of northern and central

Asia in movement towards the west, and ended in swamping the ancient civilisation of Europe, and introducing for a time the barbarism of the Dark Ages?

To me it seems in wonderful accordance with the movements of the mammalia which I have sketched out this evening; and the causes which led to the one were, I believe, equally effective in the other case. The home of the Turkish tribes was likewise the home, for a time at least, of the mammoth and woolly rhinoceros, and all these have left their traces behind them; the animals in their bones, the men in the tumuli raised over their now long forgotten dead. The migration of the mammals took place mainly before civilised man inhabited north China, but for a time both dwelt together on the vast plains of Loess which form so conspicuous a feature of the country. That the animal migrations had not even then entirely ceased we have the curious record of the Ch'un ts'iu of how, six and a half centuries before our era, North China was invaded by the elaphurus, in whose train came subsequently vast packs of wolves, hovering, as is their wont, on the tracks of the fugitives.

Not far in the rear of the elaphurus the Turks already, nearly a century earlier (B. C. 770), had extinguished the old capital of Chow, and, though driven back for a time, they never afterwards entirely left the soil of China. Century after century they pressed harder on the northern frontier, and in the time of the Shen-yu Maou-tun (B. C. 200) had placed the empire in imminent danger. To this period is to be assigned the movement of the Ephthalitæ and the other tribes who poured down from the north on the Greek kingdom of Bactria, and who finally as Indo-Scyths established their sway over north-western India and the adjacent countries: and this migration may be looked upon as the commencement of the more modern movements which finally destroyed the Roman empire, and reduced Europe to a state of semi-savagery. The Chinese historians give us the clue to this migration. The Shi-ki tells us of how the Turks (Hiung-nû) defeated by the Han troops attacked savagely the Yueh-ti, killed their king, and drove the nation from its seats in Kansuh to seek a refuge in the valley of the Oxus.

In still later times, as we learn from the paper of Dr. von Mollendorff to which I have before alluded, this connexion between the movements of the lower animals of Siberia and the restless attacks of the Turks is apparent. Most residents in China know the sand grouse, *syrrhaptes paradoxus*, which in severe winters appears in multitudes in Chihli and the north

of China generally, and which so lately as 1863 astonished the European ornithologists by appearing in considerable numbers in central and western Europe, in every part of Great Britain, and even in Ireland.* The species has long ago attracted the notice of the Chinese, and is described in their oldest books on natural history. The Pen t'sao, after describing it adds that besides its ordinary name it is likewise known as the Tu küeh tsioh,—Turk's bird, and k'ow chi or Rebel's pheasant; and these names are referred to the superstitious belief that the arrival of great flocks of syrrhaptes from the country of rebellious tribes *par excellence* indicated the approach of Turkish marauders. It quotes a passage from the History of the T'ang dynasty to the effect that when in the reign of Kaou tsung (A. D. 650-684) the Turks invaded the country, vast flocks of the syrraptes had previously crossed the frontier. "The people were frightened and said 'These birds are called Turk's birds and fly towards the south; the Turks will assuredly invade our country.' And so it really happened." The reason for this belief was not far to seek, without the necessity of calling in the aid of superstition. The birds fled before a winter so severe that they could not find their ordinary means of sustenance; and Turks impelled by like necessity followed in their track.

The history of the Turks is repeated in that of the Huns, who originally inhabiting the skirts of the Ural mountains, burst into Europe in the fourth century, and under Attila compelled the Roman emperor to sue for peace almost under the walls of his capital; and in more modern times in that of the Mongols. Suffice it to say that in the plains of Siberia, which must once have supported a numerous population, a few wandering tribes now survive to eke out a precarious existence, while the settlements of more civilised man are in a great measure dependent for existence on external sources.

The modern aspect of Central and Western Asia must be something different from what it presented in the days e'er yet its tribes broke up their settlements to overrun the civilised world. Were every male inhabitant now to take up arms it could scarcely produce a force such as followed Attila to the plains of Italy. The Chinese historians inform us that the Shen-yu Maou-tun in the regions north of Shensi had an armed force of 300,000 men; and though we may believe the number exaggerated, we may still compare it with the forces which in nearly the same district are now engaged in the war on the northwest of China. So the Ephthalitæ, even after their ex-

* Geographical Distribution of Animals, Vol. I, p. 226.

pulsion by the Hiung-nû, and before they had completed the conquest of Bactria were able to muster from 100,000 to 200,000 bowmen. They at the time were residents on the banks of the Surkh-ab, a district whose entire population now only numbers a few thousands. Human influences have been to a large extent effectual in reducing the population. Wars have killed off millions of the inhabitants; and the conquerors have set themselves to cut down the trees and devastate the countries through which they marched. But these causes, potent as they are, are not sufficient to account for the utter depopulation of many districts once fertile. Major Wood describes the gradual desiccation of Western Turkestan; Sir. Douglas Forsyth, in a paper read before the Royal Geographical Society on the 23rd November last gave an account of the similar condition of the country east of the Pamir. The wanderer in the desert still comes across buried cities whose very names are forgotten; and now and then discovers some treasure buried in the sand drift which a sudden gale has for the nonce exposed to the light of heaven.

The change is essentially climatic, and finds its best explanation in the causes suggested:—the drying up of the Loess sea, and the gradual encroachment of the arctic regions.

For but a few minutes I will ask you to look a little further back in geologic time. So far I have treated only of the period immediately antecedent to history, or only contemporary with the earliest tradition. Before that period we have records of the existence of a state of affairs still more irreconcilable with the present aspect of the arctic regions.

Most of the arctic expeditions within the century have lighted on traces of a comparatively luxuriant vegetation in regions now covered with perpetual ice; and from Prince Patrick's island to the east coast of Greenland remains of miocene forests have been met with. The upright position of the trees in many cases proves that the forests grew on the sites where now are found their remains, and that we have here no chance remains of driftwood carried by currents from warmer regions, as was the opinion of the early navigators. The recent expedition of Captain Nares proved that this miocene flora reached to higher latitudes still. Almost at the northern limit of the *Discovery's* investigations in 81° 44′ N. latitude a bed of coal of this age was discovered, agreeing in position with the miocene coal beds of Disco. Amongst other fossils both localities have yielded remains of evergreens. The flora is not tropical but temperate, approaching in character to that of northern Italy.

Remarkable as are these facts in a region so near the present

pole they are not unique. Spitzbergen and the islands of New Siberia in miocene times supported a vegetation pointing to like conditions of climate. Further east the coal fields of Saghalien seem to be likewise of mid tertiary age, and those of Yesso I believe belong to the same epoch. In the island of Kiusiu miocene rocks are developed to an enormous extent; the volcanic conglomerates, shales and sand-stones of Nagasaki seem to exceed 5,000 feet in thickness, and the upper portion of this very important series contained prior to its denudation one of the richest coal fields in the world. In the island of Takosima, where a good section is obtainable, there exist within a thickness of strata of a little more than 300 feet no less than 14 beds of coal varying from 1 to 8 feet thick, and whose united thickness amounts in the aggregate to about 57 feet. Some of these rest on shales containing remains of the old flora, which bears a close resemblance to that of the district at the present day. Unfortunately this rich fossil flora remains as yet undescribed. The fossil flora of Spitzbergen and New Siberia finds its nearest analogue in that of north China and Japan, so that we are compelled to believe in the former extension of a similar flora over the intermediate districts, as well as in the occurrence of very similar conditions of climate. At present Spitzbergen is in 77° N. latitude, and Kiusiu in 32°, or half the distance from the equator to the pole apart. It demands great faith in usually received theories to accept them without misgiving in the face of facts so apparently antagonistic.

One word more.—I trust that none of my hearers will suppose that I have in the preceding remarks called in question the observations of geologists in Europe and America, and the recorded facts of glacial phenomena. These are too well-established to need any re-iteration from me. It has, however, in my judgment not been proved that these glacial phenomena are contemporaneous, and herein lies what I conceive to be the fallacy of the reasoning of the glacialists. Perceiving in many portions of the earth's surface traces of a state of things only to be attributed to an access of intense cold, they have fallen into the error of classing them together, and thereby evoking the so-called Glacial Epoch. Glacial epochs I believe have been numerous;—nay, I will go further and say that since the beginning of geologic time some portion of the earth's surface has ever been undergoing its own glacial stage. Sometimes a greater access of cold occurred than at others, and this period of greatest cold had doubtless a tendency to oscillate from one hemisphere to another, but I think that the evidence afforded by the geology of northern Asia is too strong to permit of the

belief in any universal glacial epoch becoming of universal acceptance.

Traces of a glacial epoch have been clearly proved to exist so far back as the time of the deposit of the Permian rocks. The valley of the Godavery in India seems then to have been within the glaciated area. Nearly, if not quite contemporaneous with this are glacial deposits in Natal in South Africa.* But is this a proof of a general glacial epoch? I trow not. The observed facts are very similar to what I have pointed out as occurring in Europe and northern Asia in late tertiary times. The former was glaciated; the latter enjoyed a milder climate than at present. So while India and southern Africa were having their glacial epoch a diligent search amongst contemporaneous rocks in Australia fails to lend any countenance to the view that it extended to those regions. No theory except that of the secular shifting of the axis of the earth's rotation will, to my mind meet the difficulties of the case.

I have I fear occupied your time too long in this discussion, many of the particulars of which I was forced to carry into details not usually acceptable to a mixed audience. I have done so in order to point out that all the natural sciences are correlated, and that we cannot omit in forming a general opinion the conclusions to be derived from any one. Nay more, such apparently artificial studies as ethnology, archæology, mythology and history may all become more or less instrumental in furthering our knowledge of the past history of the globe. Here in China the boundaries between the two are less marked than in Europe, and nowhere have the tracks of the various human migrations which have passed over the continent left more authentic records. Geology seems to fade in myth, as myth itself verges in tradition, and between the latter and history proper there is a gradual transition.

In China authentic history goes back to about 750 B. C. Tolerably clear tradition carries us some 350 years further to the arrival of the Chows. Prior to that period myth and tradition are so intermixed that there exists a difficulty in separating the two. The traditions of the Chows seem to extend back to their flight across the highlands of Central Asia from districts where they had dwelt in proximity to the Iranic branch of the Aryan family, but many of their old legends are cosmic rather than local. Prior to this lies a period of but thinly disguised myth, for the legends of Yaou, Shun and Yu have essentially

* Mr. Henry F. Blandford in Quarterly Journal Geological Society, 1875, p. 528.

the same character as those of Ouranos or Apollon in Greece, or Xisuthros in Babylonia.

But besides the Chinese themselves, we have in China tribes of whose ethnology and traditions we really know nothing. The Miaoutsze of the south, and the Mantszes of the west are but two of the most conspicuous. Even amongst the Chinese we can mark differences which must have arisen from ethnological causes. The Chinese of Honan differs from the inhabitant of Kiangnan; both are unlike the fair complexioned, and frequently fair haired, inhabitant of Shensi.* Whence these differences? Shensi was the original settlement of the Chows, certainly a fair haired race; Honan was mainly peopled by Turks, who expelled from T'sin were settled by the Tsins in the low plains near the Yellow River. These are only instances of what we can learn from an intelligent study of the old records of China.

In the investigation of the Loess, again, a wide field is open for research, and one in which many members of this society can render a service. We are entirely ignorant of its microscopic composition, yet without a knowledge of this we can do no more than speculate as to the conditions under which it was deposited. What Dr. O. von Mollendorff has done for Chihli is wanted for all the other provinces of China;—a reliable catalogue of the animals resident within their limits. Of the botany of north China we are supremely ignorant, and we have still a very imperfect knowledge of its fishes. The interesting fossil flora of the Kiusiu coal field, to which I have alluded is still untouched, yet it is of special importance in its connexion with the arctic flora of similar age.

I do not presume to draw out a programme for your researches; these are but a few out of the many fields open for your investigation. Let no one fear that whether in the field or closet he will not be able to discover an unworked mine for independent research.

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* Abbé David *o. c.*, tom. 1, p. 248.

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## ARTICLE I.

### FORT ZELANDIA, AND THE DUTCH OCCUPATION OF FORMOSA.*

By H. E. Hobson, Esq.

CONSEQUENT on the Japanese expedition to the island in 1874, the Chinese authorities have thought fit to pull down the old fort Zelandia constructed by the Dutch at Anping during their occupation of Taiwan in 1630, and have replaced it by a more elaborate structure in the shape of a European fort built after plans prepared by a French Engineer. During a recent visit to Taiwanfoo it was found that but little of the old fort remained standing: and as its site will soon know it no more, the thought suggested itself that probably some account —garbled or otherwise—might be obtained from Chinese annals respecting its original constructors and their doings in the neighbourhood, prior to their expulsion by Coxenga or Koxinga (Cheng cheng kung 鄭成功) the celebrated Chinese pirate.

As a result of researches made with this object in view the following translation is submitted; in the hope, that whilst it may not be found uninteresting as a Chinese record,—in fact it is to a remarkable extent truthful in detail and comparatively free from reference to supernatural agency as affecting the events treated of,—it may form a slight tribute to the prowess displayed under most adverse and disheartening circumstances

* Read before the Society on 3rd April, 1876.

by a portion of the earliest pioneers of European exploration in the far East. Attention is drawn in foot notes to such points as are touched on, or receive corroboration in Ogilby's annals of the Dutch East India Company's proceedings.

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The Dutchman Lang-peih-tseih-li-ho (?) after his unsuccessful raid on the coast of Fuhkeen, made sail for Holland; and throwing himself on the mercy of the King, was pardoned.

Kwei yih,[1] a younger brother of the King's, burning with anxiety to avenge the honour of his country, was allowed to organize the next expedition which consisted of veteran troops, and which embarked in fifteen transports. Favoured with southerly breezes the flotilla progressed, until on a certain day high land hove in sight, which caused Prince Kwei to enquire whether the China coast was not being approached. An old soldier, one who had served under Lang-peih-tseih-li-ho, on being appealed to replied, that judging from the colour of the water he surmised that they were on the coast opposite to China; whereupon the Prince ordered the spuadron about so that they might determine their position.

An anchorage having been discerned, the Prince was able to make out through his telescope that there were no towns or cities on shore: therefore the ships were anchored in line, guns were run out for use in case of need, and the Prince's son, Tung-lan? landed to reconnoitre; being accompanied by a guard of one hundred men, each armed with musket, pistol and sword. Nothing but some old ruins being observed at Kwen shen the party returned to their boats and crossed to the other bank of the river, where after traversing a *li* or so a native came in sight who was armed with a bow and arrow, and who was destitute of clothing. His language proved unintelligible, but by signs he led the way to where his tribe were living. It so happened that at the time one Ho pin, a linguist, was lying sick in the encampment of the tribe; and on the approach of the Dutch he came forward and explained that the country they had reached was called Tai wan. He further explained that there were no rulers in the island and that people settled here and there at their pleasure. On learning this the Dutch were delighted beyond measure and took Ho pin on board ship with them to see

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[1] *Kwei yih.* As the record progresses it becomes evident that the Prince referred to was none other than Frederick Cojet, the spirited Commander of Fort Zelandia.

Prince Kwei. After questioning the linguist the Prince was highly pleased with him, engaged his services, and made him his right hand man generally.

In due course he came to enquire as to the distance from Taiwan to China; and on being informed that the Pescadores could be reached in four watches, and Amoy in seven, he replied that he was eminently satisfied, as in the absence of any fixed government in the island he intended to colonize.

From morning till night therefore he proceeded to busy himself with Ho pin in surveying, and in laying out sites for cities; all with a view to permanent occupation.

Substantial city walls were run up at Tseih kwen shen, the bricks being well faced, and cemented together with a compound of ground rice and lime; and outside these again a fort was erected. On the opposite shore at Chih khan a smaller fort was built. The soldiers of the expedition were directed to take women of the Sinkiang aboriginal tribes to wife; whilst three transports were despatched to Holland to convey despatches, and to obtain supplies generally for the new colony.

The land works being completed, attention was next paid to the approaches to the position from the seaward; and as these were found to be comparatively easy, six or seven of the old transports were filled with stones and scuttled in such positions as to render it necessary for a vessel entering port to pass under the guns of the fortifications: otherwise she ran a great risk of striking on the sunken vessels. The above precaution having been taken, the position was deemed to be impregnable.

In the 18th year of Shun chih (A.D. 1667), Ho pin, the linguist, having embezzled several tens of thousands of dollars from Kwei yih's treasury, and fearing lest he be called on to render an account, had recourse to a stratagem. He managed to find out about the intricacies of the river navigation; and, having engaged two vessels to lie in wait for him he prepared for flight. A feast was arranged to which he invited Prince Kwei and his staff; and whilst lamps were blazing on all sides, firecrackers were being let off, puppet shows, dancing, and feasting were in full swing, he waited for the turn of the tide; and then, feigning to be the worse for liquor, and to have a little, let himself out by a back entrance, and reaching his vessels made good his escape to Amoy.[2]

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[2] *Ho pin* was a merchant, the story of whose flight and embezzlements is corroborated by Ogilby. "A great Chinese trader Pin e qua, being not know much in the East Ind a Company's debt, but also several merchants of Tayooan, ran away privately; which was not only prejudicial, but dangerous, because they knew the whole estate and condition of Formosa; so

Arriving there he called on Cheng cheng kung; and whilst unfolding to him all the advantages to be reaped by the possession of Formosa, he drew from his sleeve, and presented him with a plan of the whole Dutch position.

Cheng was highly delighted with all he heard, and after a deep consultation with his several Commanders he put to sea with his whole fleet on the 3rd of the moon, bound for Tai wan. On the morning of the 4th a look out man at the mast head discovered the Pescadores and little after mid-day the expedition reached Neang ma kung in safety. On the 6th oblations were offered to the sea gods, and a thorough reconnaisance of the adjacent islands was made.

On the 8th the fleet weighed anchor; and on Luh urh mun being descried in the distance, Cheng made prayer for a favourable tide to carry his vessels safely into port. Prayer ended he directed leadsmen to take a line of soundings, and these returned with the news that the tide had risen fully ten feet higher than on the previous day.

On receiving this intelligence Cheng fired a gun; and, hoisting signals for a general advance, was followed by his whole fleet. The linguist Ho pin was posted in the prow of the leading vessel to point out the passage as laid down on the chart he had provided: and eventually, after much poling, sounding and manoeuvring, the fleet came to an anchor with great uproar off the city of Chihkhan.

The Commandant of Chih khan, Meaou-nan-ting? no sooner beheld the martial appearance of Cheng's landing party than he despatched Lang ho ke (?) to Kwen shen for reinforcements, and at the same time opened fire on the fleet from all his guns.

On the 10th Cheng having directed each soldier of the force to provide himself with a bundle of straw, laid close siege to Chihkhan, and sent two interpreters to the front to inform the Commandant that unless he capitulated the whole place would be set on fire. This menace had the desired effect; as Nan ting? being terrified to a degree, surrendered, and the position was at once occupied by the assailants.[3]

Here it is necessary to pause for a moment in order to mention that on the occasion of Ho pin's feast Prince Kwei had not the slightest idea but that the Linguist's retirement was consequent on his having imbibed too freely. Nay, not until the second day, when efforts to find him proved fruitless, could he

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that it very much troubled Cojet, who well knew that he would relate the whole condition of the Fort Zelandia to Coxinga."

[3] Evidently the Fort Provincia, reported by Cojet to the authorities at Batavia as "having yielded upon the first assault of the Chinese."

be brought to believe that he had absconded. Even then he continued to attribute his flight to the embezzlement which he had been guilty of, and could not believe that he would so far turn traitor as to guide an expedition whose ambition was to dispossess the Dutch of their settlements.

To resume—On the 18th a heavy gale sprang up, the waves breaking on shore with a roar which was at once deafening and appalling, and this state of affairs continued till midnight.

At daylight the Prince and his officers mounted the city wall to reconnoitre, and on looking seaward they observed a whale swimming to and fro with a human figure seated on his back. The figure was clad in red garments, and its locks were dishevelled.

From Luh urh mun the fish started, and, after indulging in a variety of gambols, finally passed Chih khan city and disappeared. The Prince and his staff stood staring at one another, until, finding their tongues, they concluded that they had either been in a trance or had seen a vision. Their ears were now greeted with the sound of heavy guns from the direction of Luh urh mun, and on mounting a look out they discerned through their glasses a whole fleet of vessels approaching with their ensigns and banners floating in the sun light.

On seeing the vessels the Prince burst out laughing, and remarked, that the Chinese in invading his position in this fashion must have little regard for their lives; and he at once gave orders for the batteries to be in readiness to treat the fleet to a broadside on its nearer approach. Thus he expected to annihilate the invaders at one stroke.

Whilst still chuckling to himself the tactics of the leading vessel, which were being carefully followed by the rest, came under notice. First she tacked to the north, then went about to the eastward, and again altered her course to the north; until finally she and her consorts came to an anchor without passing under the guns of the batteries. The Prince turning to the staff observed that heretofore the channel which the Chinese fleet had come through was thoroughly impracticable and it was strange that they had not shoaled and come to utter grief. Whilst pondering over these matters he still gave the order to open fire; but, owing to the long range, the firing was ineffectual. His next move therefore, was to direct one of his subordinates, Li-ying-san? to thoroughly man the Dutch vessels in port, and to proceed to dispute the advance of the enemy.

By the time the Dutch troops were in order night was drawing on apace; and as the tide was flooding Li-ying-san soon

became aware that a whole fleet was investing Chih khan, and that a landing party had been disposed on shore in fighting array. At this juncture, the Prince Kwei, fearing lest his own position would be assailed, recalled the force he had sent on ship board, and directed Li to advance via Kwen shen to the assistance of the Chih khan garrison. On reaching San kwen shen, Li was met by Lang-ho-ke who stated that the force he was advancing with was too small to be of any material avail; and who proceeded to report to the Prince that the enemy were such a soldier-like lot that before attacking them it would be advisable to call in, and hold in readiness, all auxiliaries.

In reply, the Prince, after enquiring as to where the enemy had come from, called out all his infantry, and made preparation for marching on the morrow. At daylight Cheng became aware from the bugling and drumming which was audible in the direction of An ping that the Dutch were about to advance: so, sending for his several Commanders, he informed them that the Dutch would rely principally on their artillery, and he disposed of his forces as follows:—

500 infantry armed with muskets, and 200 heavy gingals were formed into three divisions under a Commander, who had orders to march on Kwen shen wei and engage the Dutch as they advanced: 500 shield bearers under another Commander were ordered to take up their position to the left of Kwen shen and to attack the enemy's flank when opportunity offered: another body of troops manned some 20 small junks, and were directed on observing the Dutch to have passed Tseih kwen shen, and to be about to open fire, to wave their flags and shout vigorously; at the same time making a feint of attacking the city by heading their boats in its direction. This proceeding it was hoped would be noticed by the Dutch force, and throwing them into a state of perturbation, would cause disorder in the ranks; thus rendering their defeat comparatively easy.

The above disposition of forces having been made, the balance of Cheng's force was drawn up as as a reserve.

In due course the Dutch force arrived at Tseih kwen shen wei, and were about opening fire when they were horrified by noticing a movement amongst the junks, which appeared to betoken an attack on the An ping position from the water. Whilst still in doubt as to what steps to take, the shield bearing force commenced its flank attack, the result being that the Dutch gave way, and with a loss of half their numbers retreated on the strong hold whence they had issued.

To this close siege was now laid; but the defenders worked their guns so well, and by constant sallies inflicted such loss on

the besiegers, that an advance, or an attempt at storming was impossible.[4]

Cheng continued to hold the only road which communicated with the fort, however; and he now, in order to protect his people, commenced the erection of earth works and of a battery.

During the 8th moon the Dutch Prince organized two expeditions; the one being despatched in the direction of Chih khan by water; the other against Kwen shen by land. In opposition to these Cheng commanded afloat in person, whilst the shore forces were handled by one of his generals, Hwang gan.

The battle raged the whole day; until the Dutch having lost one ship and three boats, retreated on the fort, which they continued to defend most stoutly.

In the 11th moon the N.E. monsoon having now set in, Cheng ordered his subordinates Cheng seuen and Cheng chung to load some ten old boats with saltpetre and other inflammables; and to attempt the destruction of the Dutch ships, whilst a general attack from the shore was simultaneously made on the fort.

In this engagement the Dutch lost three more ships and a number of men, which event caused Prince Kwei to be much cast down.

Taking advantage of the victory Cheng sent a linguist named Li chung into the Dutch lines with a message.

It was to the effect, that the position now held by Kwei yih was no Dutch possession; nor, owing to the distance from Holland, could be possibly hope to maintain a lasting occupation of it. The neighbourhood had been originally occupied by an Imperialist garrison, and it was Cheng's firm intention to regain possession, Having some pity for the defenders of the fort who had come from afar, he had no desire to injure them, and in consideration of the surrender of the treasury chest, stores. ammunition, &c., he was willing to afford them a loop hole for escape with their private effects and valuables.[5]

Failing acceptance of the terms now offered, it was his intention to renew the attack on the morrow from all sides. Their vessels would then be burnt, their strong hold reduced, and their personal annihilation must follow.

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[4] See Atlas Japanensis page 59. "Yet Cojet (though much troubled at the loss of so many of his countrymen) stoutly defended the fort against all their forces."

[5] This ultimatum is almost word for word corroborated in Ogilby's work: The articles were these:—That the besieg'd might in safety go aboard their ships: That whatever prisoners were taken since the massacre on both sides, should be exchanged; and the Fort Zelandia, with all the treasure, ammunition, and whatever else belong'd to it, to be deliver'd."

Prince Kwei yih and his staff on receiving the above message were much moved, and offered to surrender if supplied with provisions for the homeward voyage.

The linguist returning to Cheng gave the reply to the ultimatum, and the surrender was at once completed; the victors taking over, as per list, the contents of the government chest, the military stores, &c.

The surviving Dutchmen were then allowed to remove their personal effects on board ship; and on the 3rd of the 1st moon they took their departure for their native land.

## ARTICLE II.

# THE VERTEBRATA OF THE PROVINCE OF CHIHLI WITH NOTES ON CHINESE ZOOLOGICAL NOMENCLATURE.

By O. F. von Möllendorff, ph.d.*

THE last fifteen years have witnessed a great advance in our knowledge of the zoology of China. Many, it is true, of the more characteristic animals had long previously been noticed and described by European naturalists, and the general descriptions of the middle Kingdom like those of Abbé Grosier (1821), Murray (1836), Williams, contained already a considerable stock of general information on the animals of this vast field for zoological research. Although knowledge of this branch had kept pace with the increased intercourse between China and the Western World, nevertheless the want of an exhaustive study of the Fauna Sinensis had always remained unsupplied; and in particular the subject of the zoological correlation between single provinces, which present such widely different features both of climate and geology, had hardly been touched upon. That considerable progress has now been made in this respect, we owe chiefly to the labours of the indefatigable explorers Swinhoe and David. To them it is due that we possess now an almost complete knowledge of *some* classes of the animal Kingdom of China; while of some regions an accurate comprehensive survey of the Fauna has been obtained.

One of the best known provinces, as far as Vertebrata are concerned, is now that of Chihli, which has supplied science with a number of interesting novelties; and which, as it geographical position and the nature of its climate would lead to suppose, presents a peculiar combination of northern and tropical types. The results, however, of the previous labours on this head have not yet, as far as I know, been collated in a connected form; and as I conceive that the performance of this task might prove serviceable as a basis for future investigations, I have endeavoured in the succeeding pages to give a brief sketch of our existing knowledge of the vertebrata of this province.

* Read before the Society, January 20th, 1877.

Within the limits of this paper I have included a list of the Chinese zoological nomenclature, as far as it has been possible to identify—more or less definitively—the Chinese terms with zoologically determinate species. Although much has been already done in this direction, even by the earlier sinologues, nevertheless the difficulties in the way of the student of the native works on natural history are still very great. The earlier Chinese works on the subject show signs of considerable acuteness of observation; and this acuteness is still a characteristic of the people of the present day, who in their colloquial language discriminate even between very closely allied species. On the other hand, the compilers of more modern works give evidence less of practical observation than of an extensive knowledge of ancient literature; and very often give rise to confusion by indiscriminate use of the terms employed by the older books. Thus we find in many instances that an article about an animal consists in a meagre description together with a rough drawing, supplemented by profuse quotations from old authors; the application of which would appear to have been scarcely clearer to the compiler than it is now to the European student. An especial difficulty arises from the fact that the authors quoted wrote in different parts of the empire and very often referred to quite different species under similar terms, which is not taken into account by the later writers. In order to attain the complete identification of the nomenclature in use in Chinese zoology with that of Western science two things are necessary: firstly, an exhaustive knowledge of the Fauna Sinensis with especial reference to the geographical distribution of the animals; secondly, accurate and complete lists of the popular zoological terms in use in the different provinces. To this end a very valuable contribution was supplied by Mr. Swinhoe in a paper on Formosan zoology,[1] and I venture to hope that my present sketch of that of Chihli may prove of some service.

I here insert a catalogue of the extant foreign works on the zoology of Chihli.

*In general.*

David, G. A.—Histoire naturelle de Pékin et ses environs in Nouv. Arch. du Mus. d'Hist. Nat. Bul. III. Paris, 1867.

Quelques renseignements sur l'histoire naturelle de la Chine septentrionale et occidentale. Journ. N. Ch. Br. R. As. Soc. VII. Shanghai, 1873, pp. 205-234.

[1] Birds and Beasts from Formosa, in Journ. N. Ch. Br. R. As. Soc. II. Shanghai, 1866, pp. 39-52.

Many notes on zoology are further contained in the accounts of Père David's voyages, which were printed in French periodicals in Shanghai. A compilation of the same was given by E. Blanchard in the Revue des Deux Mondes for 1871; whilst a very superficial and often erroneous English translation was published in Shanghai in 1873 (Natural history of North China, etc.).

Swinhoe, R.—Zoological notes of a journey from Canton to Peking and Kalgan, in Proc. Zool. Soc. London, 1870, pp. 427-451.

*Mammals.*

Milne Edwards, A.—Note sur le Milou or Sseupusiang, mammifère du nord de la Chine. Ann. d. Scienc. Nat. 5° sér. Zool. V. 1866, pp. 380 pl.

————Etudes pour servir à l'histoire de la Faune mammalogique de la Chine, id. Recherches pour servir à l'histoire naturelle des mammifères. Paris, 1870, fol. plates.

Peters, W.—Uber ein neues Argalischaf, Ovis jubata, von Nordchina. Monatsber. Berlin Acad. March 1876.

Möllendorff, O. von.—Uber die "Gemse" Nordchina's, Antelope caudata. Mitth. Deutsch. Ges. f. Natur-u. Völkerkunde Ostas. July 1876.

*Birds.*

Swinhoe, R.—Birds observed at Tientsin. Proc. Zool. Soc. 1862, p. 315 pls.

————Catalogue of the birds of China. Ibid. 1863, pp. 259-329.

————A revised catalogue of the birds of China. Ibid. 1871.

David, A.—Catalogue des oiseaux de Chine observés dans la partie septentrional de l'empire. Nouv. Arch. du Mus. d'Hist. Nat. VI, 1872.

*Fishes.*

Basilewsky.—Ichthyographia Chinae borealis. Nouv. Mém. de la Soc. d. Natural. de Moscou. X. 1855, pp. 215 ss. 9 pl.

Bleeker.—Mémoire sur les Cyprinoides de la Chine. Amsterdam, 1871, 4° 91 pp. 14 pl.

On fishes from Peking. Nederl. Tijds. vor de Dierkunde 1869.

*Insects.*

Donovan.—Epitome of the insects of China. London, 1798. 2nd edition by Westwood, London, 1842. This excellent work contains a very few notes about Pekin insects.

Faldermann.—Coleopterorum ab illustr. Bungio[2] in China boreali, Mongolia et montibus Altaicis collectorum descriptio. Mem. Acad. Imp. d. Scienc. de St. Pétersb. II. 1835.

Bremer, O.—Beitraege zur Schmetterlings-fauna des noerdlichen China's. St. Petersburg, 1853. 8° plates. (Contributions to the Fauna of Lepidoptera of Northern China).

Lucas, H.—Quelques remarques sur les Lépidoptéres du genre Argynnis qui habitent les environs de Pékin, et description d'une espèce nouvelle, in Ann. de la Soc. Entomol. de France 4° sér. VI. 1866.

Many short zoological notes about North China are contained in scientific serials. Of the *landshells* of Peking I have given lately a short account in a German periodical (Jahrbuecher d. Deutsch. Malacozool. Ges. 1875).[3]

The Chinese names I have gathered, besides those of the colloquial language, the 俗話 *Su-'hua*, from the following works :—

1.—The *Erh-ya* 爾雅. This ancient dictionary is quoted frequently by the later writers; but it is very often necessary to compare the work itself, because the quoted descriptions of the animals are very short and meagre, but the drawings comparatively good,—far better at least than in all the other works I know of.

2.—The *San-ts'ai-t'u-'hui* 三才圖會, a cyclopaedia of arts and sciences of the time of the Ming dynasty : it is of very little value as far as zoology is concerned. Although there are drawings of a greater number of animals than in any other work, still many of them are merely imaginary; none of them exact enough for zoological purposes, and the descriptions consist in extracts not very wisely selected and containing in many instances the most ridiculous fables. In spite of these deficiencies, however, it serves sometimes to elucidate difficult questions in the confused nomenclature of Chinese Natural History.

3.—The *Pén-ts'ao-kang mu* 本草綱目, the well known Materia Medica Sinensis, compiled by Li-shih-chên towards the end of the 16th century, the text book for every student of Chinese natural history. In its zoological part a fair attempt has been made to classify all animals known to the author in a system which is certainly equal, if not superior to, the systems

[2] The well known Russian traveller and naturalist A. Bunge, the author of "Enumeratio plantarum quas in China boreali collegit," 1833.

[3] For a list of the works on the Natural History of the whole of China see the Chinese Bibliography by P. G. von Möllendorff and myself. Shanghai, 1876, 8vo.

of Ante-Linnaean Zoologists in Europe. It comprises six classes, *pu* 部, which are each divided into several orders, *lei* 類.

I. 虫 *ch'ung.* Insects.

1. 卵生 *lan-shêng.* Oviparous insects.
2. 化生 *'hua-shêng.* Insects originating by metamorphosis.
3. 濕生 *shih-shêng.* Water insects.

II. 鱗 *lin.* Scaly animals.

1. 龍 *lung.* Dragons (including all Sauria).
2. 蛇 *shê.* Snakes.
3. 魚 *yü.* Fishes.
4. 無鱗魚 *wu-lin-yü.* Fishes without scales.

III. 介 *chieh.* Shielded animals.

1. 龜鼈 *kuei-pieh.* Shield reptiles.
2. 蚌蛤 *pang-ko.* Shells.

IV. 禽 *ch'in.* Birds.

1. 水禽 *shui-ch'in.* Water birds.
2. 原 ,, *yüan-ch'in.* Field birds.
3. 林 ,, *lin-ch'in.* Forest birds.
4. 山 ,, *shan-ch'in.* Mountain birds.

V. 獸 *shou.* Quadrupeds.

1. 畜 *ch'u.* Domestic animals.
2. 獸 *shou.* Wild animals.
3. 鼠 *shu.* Rats (Rodentia).
4. 禺怪 *yü-kuei.* Quadrumanous animals.

VI. 人 *jen.* Man.

Of each species there is given an explanation of the names, a short description and numerous quotations from other authors; further an exposition of its medical qualities and use, prescriptions, etc. Although the book contains many errors and absurd fables, still there is a great deal of valuable information to be got from it.

4.—The *Shêng-ching-t'ung-chih* 盛京通志, a topographical account of the metropolitan province of Shêng-ching in Manchuria, contains like most of the Chinese geographical descriptions of provinces or districts, a short list of the natural productions

of the country. This list consists chiefly of names, descriptions only occasionally being added; but I found it very useful because in many instances the popular names of the animals are given, which are mostly the same as those used in Peking.

5.—The *Shi-fu-t'ung-chih* 畿輔通志 or description of the district of Peking is likewise furnished with lists of animals; which are however less complete than those of the last mentioned book.

I have not been able to compare the *Chih-li-t'ung-chih*, which undoubtedly contains likewise some zoological information.

Besides these works many other geographical and historical Chinese books have furnished some notes on zoology. I have also consulted the previous works of European sinologues on the Chinese zoological nomenclature: Bridgman's Chrestomathy, the dictionaries of Morrison and Williams, and many short notes in the *Chinese Repository*, *Notes & Queries*, and other serials.

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## I. Mammalia.

### *Primates.*

1. *Macacus tcheliensis*, M. Edw. Études pour servir à l'hist. de la Faune mammal. de la Chine p. 327, pl. 32-33.—A. David, Renseign. in T. N. C. B. R. As. Soc., 1873, p. 230. Journ. de mon 3me. voyage, 1875, I. p. 41.

(猴兒) *'hou* (*-êrh*) P.

Père David has made known the occurrence of a species of monkey in the mountains near Tung-ling, the mausolea of Manchu Dynasty, situated about 70 miles east of Peking. This species, which belongs to the short tailed Macaques, and which was recognised as new to science by Professor Milne-Edwards in Paris, is probably the only one of the Quadrumana fitted to endure a cold winter like that of Northern China; this it is enabled to do from the fact of its being gifted with a peculiarly thick winter fur. It is strange that no trace of the occurrence of monkeys has been found in other parts of North China or the neighbouring countries; and that none of the topographical and historical works of the Chinese contain any mention of them. But the Chinese assert that these monkeys live in a wild state near Tung-ling, whence they are frequently brought to Peking, and exhibited in the streets and fairs together with bears, etc.

*Chiroptera.*

2. *Vespertilio Davidi*, Peters. A large species of bat, discovered by David in the Western Hills.

3. *Vesperugo abramus*, Temminck. (Identified by Professor Peters, Berlin).

4. *Vesperus serotinus*, Schreb.

5. *Nyctinomus Certonii*, Savi. (Professor Peters).

In the Peking vernacular there is but one term for all kinds of bats, namely 蝙蝠兒 *yen-pien-'hu-rh* (the pronounciation of the third character is properly *fu*, but it is now always pronounced *'hu* in Peking). The following names of the bat are given in the Pên-ts'ao-kang-mu: 伏翼 *fu-i i. e.* wing-concealer, so called from its folding up its wings during the day; 蝙蝠 *pien-fu*, 夜燕 *yeh-yen* "night-swallow," 天鼠 *t'ien-shu* "sky-mouse," 飛鼠 *fêi-shu* "flying-mouse," 仙鼠 *hsien-shu* "fairy-mouse," the last term referring to the part the bat plays in Chinese mythology.

*Carnivora.*

6. *Felis tigris*, L.

虎 *'hu* or 老虎 *lao'hu.*

The Tiger, which is still of frequent occurrence in Chinese and Russian Manchuria, has occasionally been met with in Chihli, where it has been, according to the Chinese, not uncommon in former times. In Du Halde's description of China the Laouhou or tiger is mentioned as being common in Mongolia and Manchuria and occurring near Peking. In the records of the Emperor Kanghi's travels given by P. Verbiest and P. Gerbillon mention of the tiger is frequently made. During a chase in the mountains of Liaotung in 1682, sixty tigers were killed in one day; in 1691 a tiger was shot by Kanghi in northern Chihli, etc.[4]

The Chinese say that tigers still occur in the northern parts of the province. Skins of a very large size—8 feet from snout to tail—are often sold in Peking fur shops, and exhibit a much longer and denser covering of hair than those of the tropical race, and a difference is likewise to be observed in point of colouring. But a careful examination of the skulls of the northern and the Bengal tiger, lately made by Mr. Busk[5] has shown

[4] Du Halde Descr. de la Chine, IV. p. 219-224, etc.

[5] Proc. Zool. Soc., 1874, p. 146 ss.

that there is no difference between the two which would justify the establishment of a new species for the "Tiger of the Snows."

7. *Felis Fontanierii*, A. M. Edw. (North China Panther).

豹 *pao*. 豹子 *pao-tszĕ*.—金錢豹 *chin-ch'ien-pao*.

There occurs in Chihli a large species of panther which was first sent to Paris by the late M. Fontanier and named after him by Professor Milne-Edwards. Although the differences between this and the common panther are not very great, they are nevertheless sufficient to authorize the establishment of a new species. It is not rare in the mountains of Chihli, and has been met with even at as small a distance as 20 miles west of Peking. I do not know whether the panther of southern China, which Mr. Swinhoe records in his catalogue of Chinese Mammals, has been sufficiently examined to decide the question whether it is identical with the common Indian panther, *Felis pardus* L. or with the Felis Fontanierii of northern China.

8. *Felis irbis* Ehrenberg—(Siberian Ounce, Irbis)—Chinese names the same as those of the last species. The Irbis, the "Panther of the Snows," which is easily distinguished by its pale colouring and thick fur, and which is common in the greater part of Siberia, Mongolia, Manchuria and the Amoorland, is not rare in the northern mountains of Chihli, especially near Jehol. The Chinese, as I have mentioned above, do not distinguish it from the panther and call it likewise *chin-ch'ien-pao*. Europeans often term it the ounce; and one of its scientific synonyms is Felis uncia (Schreber), but as term "ounce" is more generally applied to the American Juguar (Felis onca L.) and to other feline animals in South America, this name will only lead to confusion; and the Mongolian name "irbis," accepted by scientific nomenclature, is to be preferred.

9. *Felis microtis* A. M. Edw. This is a species of wild cat found by P. David in the hills of Chihli; I have neither seen a specimen of the animal nor been able to compare the description of Milne-Edwards. I have however reason to believe that it is a small species of the tigercat family, and probably the *t'u-pao* of the Chinese.

10. *Felis manul* Pall.

野貍子 *yeh-li-tszĕ* P.—貍 *li*, 野猫 *yeh-mao* P. Ts. (ex parte).

The manul or "cat of the steppes" has only occasionally been observed in the North of China, near Kalgan; it is common in Mongolia and Siberia, and its skin is frequently imported to Peking. It differs from the European wild cat by its larger

size, longer legs and tail, and the colouring of the fur which is yellowish white mixed with brown.

The manul is called 野貍 *yeh-li* or *yeh-li-tszé* in the Pekinese colloquial language, and under this appellation the fur is designated in trade. In the Pên-ts'ao-kang-mu and other works 貍 *li* or 野猫 *yeh-mao* appears to be the general name for smaller species of the Felina, including the civet, wildcat, etc., and it is doubtful whether the authors knew the manul at all. In the south by *yeh-li* is certainly meant the *Felis viverrina* (Bennet), the Asiatic wild cat or tarai.

11. *Canis lupus* L. Wolves are still of frequent occurrence in Chihli, though more in the mountains and the northern plateaus than in the plain. A very large male wolf was shot in 1874 near Nan-k'ou, about 30 miles N.N.W. of Peking. In Chinese 狼 *lang* or 豺狼 *ch'ai-lang*.

12. *Canis rutilus* Pall. Only met with in the northern part of the province, especially near Kalgan and Hsuan-'hua-fu. This eastern representative of the Jackal shows much more resemblance to the wolf, and differs from it only by smaller size and certain red brown tints in parts of the fur.

The Chinese call it 小紅狼 *hsiao-'hung-lang*, "small red wolf," but also 豺狼 *ch'ai-lang*.

In Chinese zoology there are described two species of the wolf family, 豺 *ch'ai* and 狼 *lang*, one of which is certainly the wolf, the other probably the *Canis rutilus* Pall.; but it is not easy to determine the respective application of the two terms. The descriptions as well as the drawings are not sufficient to identify either of them quite distinctly. It seems, however, at variance with the present use of the terms, that *ch'ai* not *lang* should represent the wolf. I here insert the descriptions according to the Pên-ts'ao.

1°—"The *ch'ai* occurs everywhere in the mountains. It is akin to the *lang*, the common name is *ch'ai-kou* 豺狗. Its aspect is like that of a dog, but is has white cheeks. It is low in front, high behind, it has a long tail, a lean but vigorous and strong body. Its hair is of the colour of yellow sackcloth (黃褐色) and very bristly. The teeth are like awls and very sharp. It runs in packs. Even the tiger is afraid of it. It is fond of eating sheep. Its cry resembles that of a dog. Men dread it because they believe that it attracts demons and is therefore of bad omen. Its breath is fetid, and consequently very disagreeable."

2°—"The *lang* is akin to the *ch'ai*, it occurs everywhere; more frequently in the north, and is eaten there. The people of the

south call it *mao-kou* 毛狗. It lives in caves. It is as large as a dog, but has a pointed head and a sharp snout, white cheeks and connected ribs (駢脇). It is high in front, broad behind: the feet are not very high. It can eat chickens, ducks and rats. The colour is a mixture of yellow and black, there occurs also an ashen grey colour. Its cry can be either loud or low; it can weep like a child and deceives people thereby. The inhabitants of lonely villages dread its cry in winter. Its intestines are straight; when it cries, the anus opens. Its dung is used for signal fires, the fire made with it, rises perpendicularly and does not slope. It has the habit of always looking round about; when going to eat, it treads on its food and wallows on it. When old, its dewlap grows as large as a bag; therefore 'he springs forward on his dewlap or trips back on his tail,'[6] meaning that [the old lang] cannot freely move either forwards or backwards. It belongs to the constellation of K'uei-hsing (奎星)."

Incomplete and vague as these descriptions are, they clearly show that the *ch'ai* is the larger species of the two, and is more probably the wolf, than a species of jackal. Also the drawing of the *ch'ai* is not unlike the wolf, while that of the *lang* shows more resemblance to a hyaena or a lynx than to a canine species. This would lead to the supposition that the author had not seen the lang itself but made the drawing from description; which fact would tend to show that the *lang* was the rarer animal of the two, and therefore most improbably the wolf. It is morever a curious fact that the Erhya does not record the *lang* at all, whilst the drawing of the *ch'ai* in that ancient work is a fair representation of the wolf. It would appear therefore that the name of the wolf was *ch'ai* in the older times, and that *lang* meant another species of the same tribe. In later times the terms were confounded; and as in the greater part of China there occurs only one species, the *Canis lupus*, this was designated by the combination of the two names, sometimes only by *lang*. In the north, as I have mentioned above, the term *ch'ai-lang* if used indifferently for both the wolf and the *Canis rutilus*. How vague the use of these terms sometimes is, the following instances of the application of the name *ch'ai-lang* will clearly

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[6] 跋胡壺尾. This is an abbreviated quotation from the 詩經 Shih-king (Pt. I Bk. XV Ode VII, Legge's Chin. Class. Vol. IV pt. I p. 242). The original verses are: 狼跋其胡壺載其尾. "The [old] lang springs forward on his dewlap, or trips back on his tail." Legge translates *lang*, by wolf, but he gives the same signification for *ch'ai* (Class. Vol. IV pt. II, p. 348).

demonstrate. According to Przewalsky (Travels in the Ussuriland 1870, p. 251), *Canis alpinus* Pall. is called *ch'ai-lang-tszé* in Manchuria. The 西域聞見錄 Hsi-yü-wên-chien-lu, description of Turkestan, unmistably describes the common jackal, *Canis aureus*, under the name of *ch'ai-lang*. "The *ch'ai-lang* occurs in the country of the Muhammedans; it lives in the gorges of the mountains and is about one foot high and only three feet long. Its aspect is like that of the wolf. They run about in packs of from ten to hundred, and form a hunting line like men."

13. *Canis vulpes* L. Mr. Swinhoe has pointed out that the fox of southern China differs from the European, and constitutes a new species ("*Canis hoole*" Swinh. Catal. Mammals of China in Proc. Zool. Soc. 1870, p. 631). But the northern Reynard is quite identical with the European, displaying as much variety of colouring as ours. It is very common all over Chihli, and has often been seen even within the walls of the capital itself.

The name of the fox in written language is 狐 'hu, in the colloquial language tha combination 狐狸 'hu-li is in more general use.

The Chinese name of the fox has been applied both by Swinhoe and David to denominate different species, *Canis hoole* Swinh. of southern China, as I mentioned above, and *Canis houly* Dav. a new grey fox of Szech'uan (David, Renseign, in T. N. Ch. Br. R. As. Soc. 1873, p. 231). I venture to say that both of these names should be changed, firstly because they are in fact identical except in the matter of spelling, secondly because the word *'hu-li* is not admissible as the appellation of a particular species of fox. It is an open question whether it is advisable to introduce native names into scientific appellations, which very often, especially in Chinese, can only be imperfectly represented in Latin orthography. But it is indisputably wrong to apply a name which is given by the Chinese to foxes collectively, to designate local varieties or species.

14. *Canis corsac* Pall. (Corsac, Fox of the steppes).

沙狐 *sha-'hu* P. Sh. Ch.

The corsac is very common in Mongolia, but is indigenous also to Chihli, confined, however, to the northern and north-western parts of the province. Its yellowish grey fur is very common in the Peking fur shops, and thousands of them are imported from Russia by Kiachta. The Chinese name, 沙狐 *sha-'hu*, "sand fox," by which it is called in Chihli, is not con-

tained in the zoological literature of the Chinese, but is mentioned is the *Shêng-ching-t'ung-chih* as a species indigenous to Manchuria.

15. *Canis* (*Nyctereutes*) *procyonoides* Gray (Racoon Dog).

貉 *'ho* W. 貉子 *'ho-tszĕ* (or *'hao-tszĕ*) P.

The "Racoondog," which ranges from Canton into Amoorland, and is found in Japan, is also an inhabitant of Chihli, where it is however rather scarce, and as it seems, occurs only in the eastern mountains. The Chinese value the fur very highly and know it under the name 貉子 *'ho-tszè* or *hao-tszè* which is also the book-name of the species. According to Przewalsky and Radde it has the same name *'hao-tszè* on the Ussuri and Amoor. On the Yangtszê however it is called 果子狸 *kuo-tszè-li* "fruit-cat" and in the south 窩狐 *wo-'hu* "cave-fox," which terms are not known in the north.

16. *Ursus tibetanus.*

狗熊 *kou-hsiung.* P.

A small black bear with a white patch on the breast is not rare in the higher mountains of Chihli, especially to the west; it is frequently taken about by showmen and made to dance and to perform tricks at fairs in Peking. It is most probably the Ursus tibetanus which has been observed in Shantung, Szech'uan and Formosa, and in Manchuria.

The Chinese distinguish several kinds of the bear, 熊 *hsiung*, viz. 人熊 *jen-hsiung* "man-bear," 猪熊 *chu-hsiung* "pig-bear," 狗熊 *kou-hsiung* "dog-bear," 猴熊 *'hou-hsiung* "monkey-bear." The species of the Peking mountains is the "dog-bear." What bears are understood by "pig-bear" and "monkey-bear," I do not know. The *jen-hsiung* of the Pekinese is the common brown bear, *Ursus arctos* L. which is of very frequent occurrence in the Amoorland, and has been shot in Chinese Manchuria. The Chinese say that it occurs occasionally within the frontiers of Chihli.

17. *Meles leptorhynchus* A. M. Edw. Etud. p. 190 pl. 25, 26, f. 3, 4, 27, f. 34, 28, f. 3, 4.—Ann. d. Sc. Nat. 5° sér. 1867, t. VIII, p. 374. Swinhoe, Proc. Zool. Soc. 1870, p. 622. David Rens. p. 231.—*Meles chinensis* Gray, Proc. Zool. Soc. 1868, p. 207.

猪獾 *chu-'huan* "pig-badger."

The Chinese badger, which ranges from Manchuria to south China, is not uncommon in Chihli, and is occasionally brought

to the markets of Peking because of the use to which its fat is put in medicine.

18. *Meles* (*Arctonyx*) *leucolaemus* A. M. Edw. Ann. d. Sc. Nat. 5° sér. 1867, t. VIII, p. 374. Etud. Mamm. p. 195 pl. 25, 26, 27, 28.

狗獾 *kou-'huan* "dog-badger."

There lives another species of badger in Chihli, discovered by P. David; which however seems to be very rare, and of which I have not been able to get a specimen.

19.—*Lutra sp.*—Chinese as well as Europeans assert that there are Otters in the Peiho near Tientsin and Taku, and David mentions that a French gentleman shot two otters near Taku in 1865; but no specimen having yet been examined by a zoologist, it is doubtful whether the species is the common otter of Europe, *Lutra vulgaris* L., which has been found in Amoorland, or the *Lutra sinensis* (Gray) of Central and Southern China. The skins that I have seen in Peking fur shops, exhibit no difference from that of the European otter. The Chinese who value the fur very highly, call the otter 水獺 *shui-t'a*.

According to the Chinese the sea-otter would seem to occur on the coasts of Chihli; but as the *Enhydris marina* Schreb. has not been found farther south than the islands of Saghalien and Yesso, it is very doubtful whether it lives in the Gulf of Pechihli. The skins of the 海獺 *'hai-t'a* "sea-otter" or 海龍 *'hai-lung* "sea-dragon," which is the most highly prized fur in Peking, are probably all imported from Russia or Japan.

20. *Martes foina* L. (Beech Marten).

掃雪鼠 *sao-hsüeh-shu* "snow-sweeping rat" P (from its habit of trailing the tail along the ground).

Rare in Chihli.

21. *Putorius Fontanierii* A. M. Edw. Etud. Mamm. p. 205 pl. 61, f. 1, (North China Polecat).

黃鼠狼 *'huang-shu-lang* P. W.—鼬鼠 *yu-shu* P. Ts.—殼鼠 *shêng-shu* ibid.—鼬鼠 *ku-shu* ibid.—地猴 *ti-'hou* "ground-monkey" P. Ts.—Sh. Ch.—Ch. F. These names include the following species.

22. *Putorius sibiricus* Pall. (Siberian Weasel, Chorok).

INSECTIVORA.

23. *Erinaceus dealbatus* Swinhoe. Proc. Zool. Soc. 1870, p. 450 (Chinese Hedgehog).

刺蝟 *ts'zĕ-wei* S.—蝟 or 猬 *wei* W.—猬鼠 *wei-shu*—毛刺 *mao-ts'zĕ* P. Ts.

The Chinese Hedgehog is the nearest ally of the European species; differing from the latter by its much paler colouring, its shorter and thinner spines which all set backwards and are pale brown with whitish bases and tips, by its brownish paws and the proportions of the skull. Although the hedgehog is common in Peking and the environs, it is not quite easy to get specimens, because the Chinese consider it one of the 五大家 *wu-ta-chia*, "the five great families" *i. e.* fairies, and do not therefore like it to be killed. The five are the fox (*'hu-li*), the rat (*hao-tszé*), the polecat (*'huang-shu-lang*) the snake (*ch'ang-ch'ung*) and the hedgehog (*tsz'ĕ-wéi*).

24. *Scaptochirus moschatus* A. M. Edw. (North China Mole).

This peculiar species of mole was for the first time discovered by Mr. Swinhoe in 1860; but had not been described and named, when P. David sent specimens of it to Paris. Professor Milne-Edwards pointed out its peculiarities and gave it the above name referring to its strong musky smell, which even the skin retains for a long time. The Peking mole, which is not of very frequent occurrence, is of rather small size and of a greyish black colour. The eyes are merely rudimentary, being quite invisible from without, and consist simply of two very minute black points attached to the skin, which latter is entire and unprovided with eyeholes. The fore paws are very large and furnished with very strong claws. The dental system is different from that of all species of the genus Talpa, which fact has caused it to be classed under the new genus Scaptochirus. I only once obtained a living specimen, which died after a very short time; its habits were exactly the same as those of the European mole.

The mole is described in the Pên-ts'ao as 田鼠 *t'ien-shu* "field-rat," with the synonyms 鼢鼠 *fên-shu*, 鼹鼠 *yen-shu*, 陰鼠 *yin-shu*. These names, besides the various species of moles in the different parts of China, include probably the mole-rats as well. Our Peking species is called by the common people *ti-p'ai-tszé*, for which name no Chinese was able to write me down the proper characters, as is very often the case with Su-'hua terms. But Mr. Arendt pointed out to me a passage of the 遼史, the history of the Liao dynasty, written in the 14th

century, which contains this popular name of the mole; book 116 f. 14: 地拍田鼠名 i. e. *ti-p'ai* is the name of the mole (*t'ien-shu*). It is also called 地拍鼠 *ti-p'ai-shu*, which might be translated by "ground-rat." The same work mentions that moles were burnt on new year's day in order to avert influences of bad omen.

## Rodentia.

25. *Siphneus psilurus* A. M. Edw. (North China Molerat).

地羊 *ti-yang* "ground-sheep" P.—臭地拍子 *ch'ou-ti-p'ai-tszĕ* "stinking mole" P.—瞎老鼠 *hsia-lao-shu* "blind rat" P. (in the hills).

This large molerat belongs to the family of the Georhynchi, Rodents with the habits of the mole, and more or less rudimentary eyes. Of the genus Siphneus only one; a Siberian species was formerly known, but P. David has discovered the existence of no less than three new species, two of which occur in eastern Mongolia, one in Chihli. The latter which is not rare in earthy banks in the neighbourhood of Peking, is an ungainly thickset animal, more than one foot long and of uniform ashen grey colour. It has scarcely any visible ears, large forepaws furnished with long claws, and a very short tail. The eyes are indicated by rather large yellow spots, but are quite covered by the skin. Its habits are like that of the mole: a living specimen which I kept for some time was sleepy in the day-time but very noisy in the night, always gnawing with its large yellow incisors. It escaped by perforating the strong wooden box in which it was kept.

26. *Lepus tolai* Pall. (Mongolian Hare).

野猫(兒) *yeh-mao(-rh)* P. T. 兎 *t'u*, *t'u-tszĕ*, 山兎 *shan-t'u*, 野兎 *yeh-t'u*. W.

The Mongolian hare, which occurs in Mongolia and northern and central China, and is much smaller than its European congener, is common all over Chihli. The Chinese are fond of pursuing it with hawks, for which purpose they commonly train the goshawk (Astur palumbarius).

27. *Dipus annulatus* A. M. Edw. (Mongolian Gerboa).

跳鼠 *t'iao-shu* P.—跳兎 *t'iao-t'u* "jumping hare." P. Ts., Sh. Ch.—蹙鼠 *chüeh-shu* "nimble rat." P. Ts.—蹙 *chüeh* E.Y.

When P. David discovered this gerboa, he took it first for the Siberian Alactaga, the *Dipus jaculus* Pall. to which it is indeed very closely allied. Professor Milne-Edwards however found out that it presents specific differences, and described it as a new species. It is common in the sandy tracts of Mongolia, but occurs also in Chihli between Kalgan and Hsüan-'hua-fu. Its hind legs are four times the length of the forelegs, the tail is longer than the body and tasselled on the end, the head somewhat like that of a hare with long ears and large round eyes. These different characteristics give it a slightly strange appearance, although its grace and agility render it a very pretty little animal. It uses the forelegs only when feeding quietly, otherwise proceeds by jumps on the hindlegs; when in flight, its speed is very great and is said to exceed even that of a horse. It burrows large holes in the ground in which it sleeps during the winter.

The description given in the Pênts'ao kang mu of the *t'iao-t'u* leaves no doubt that the gerboa is meant. It is described as having head, eyes, ears and colours like the hare; claws and feet like the rat; the forelegs a little more than one inch, the hindlegs nearly one foot in length, the tail long and shaggy at the end; and as clearing several feet at one bound.

28. *Gerbillus unguiculatus* A. M. Edw.
29. *Gerbillus psammophilus* A. M. Edw.

沙鼸子 *sha-ê-tszë* P.

These two species of gerbillus, peculiar to North China, were discovered by P. David near Hsüan-'hua-fu and Kalgan and in Mongolia; they have not been observed in the Peking plain.

30. *Spermolegus mongolicus* A. M. Edw. (Mongolian Ziesel or Suslik).

大眼賊兒 *ta-yen-tsei-rh* "large-eyed thief" P.—豆鼠 *tou-shu* "bean-rat" P.—Sh. Ch.— 鼸鼠 *nien shu* Sh. Ch.

In the Peking plain, but more commonly in the plateau between Ch'atao and Kalgan, and abundantly in Mongolia, these pretty ziesels or susliks make their burrows in sand or loess banks, in which they live like the prairie dogs of North America. Our species is about ten inches long of rather slender appearance, light yellowish brown above, cream-colour underneath and along the sides. The tail is three inches long, with short red brown hair on the root, which grows longer as it approaches the end, expanding into a spatula shape, and rufescent in the centre

with a broad black and a narrow white border round it. They are often brought alive to Peking and kept like squirrels; I had therefore the opportunity of observing their habits in captivity. They remained rather wild; at the approach of men or animals they uttered a peculiarly shrill squeaking cry and were fond of biting. They fed on nuts, grain, green beans, cabbage, salad, etc.; in feeding they used to sit on their strong hind legs taking the food with the forepaws. They were indefatigable in scratching and gnawing, and ran rather fast, but were not able either to jump or to climb. They did not live very peacefully together and a duel between two of them resulted in one of them receiving injuries which caused its death.

31. *Pteromys xanthipes* A. M. Edw. (North China Flying Squirrel).

飛鼠 *fei-shu* ("flying rat") P.

This flying squirrel, which is closely allied to that of Siberia, *Pteromys volans* Pall. is very rare in the woods of northern Chihli; I have not been able to secure a specimen. The Chinese call it 飛鼠 *fei-shu* "flying rat." This name given in the literature as a synonym of the bat, is in the present colloquial language only used for the flying squirrel; besides which the drawing of the *fei-shu* in the *San-ts'ai-t'u-'hui* represents unmistakeably a Pteromys, not a bat. The 鼯鼠 *léi-shu* (also 鼺鼠), also called 鼽鼠 *wu-shu*, 耳鼠 *ôrh-shu*, 夷由 *i-yu*, 飛生 *fêi-shêng*, "flying-beast," 飛生鳥 *fêi-shêng-niao* and 飛鼺 *fêi-lêi*, seems to include both the flying squirrels and the large chiroptera, flying fox, kalong, etc. The descriptions say: "it is like a small fox, has large wings like the bat and red brown hair, the back is grey, the abdomen yellow, the face whitish, the four feet short with large nails, the tail very long; it flies in the night; the fur is used for making caps." Indeed, there are skins both of flying squirrels and of flying foxes to be found in the Peking and Tientsin fur shops, of which caps are made. Probably some of the above names were meant only for the different species of Pteromys, some only for the flying fox, but as both these animals are rather rare in China, they have been confounded.

32. *Sciurus vulgaris var. nigra* (Black Squirrel).

松鼠 *sung-shu* ("pine-rat" P. (ex parte).

The black variety of our common squirrel occurs in Chihli and Manchuria; near Peking it is rather rare and for want of

woods confined to the groves near temples or cemeteries. I saw it several times in the lonely valley of the Shih-san-ling or Ming tombs, in the majestic pine trees which surround the Mausolea.

33. *Sciurus davidianus* A. M. Edw. (North China Squirrel).

松鼠 *sung-shu* P.—臊羊 *sao-yang* P.—灰鼠 *'hui-shu* P. (in the hills).

Of uniform greyish brown colour with a long brown bushy tail and whitish underparts. These pretty squirrels are not uncommon in the western hills; they are much less arboreal in their habits than our common squirrel, but are, like the following species, frequently seen among the rocks or in the low wood.

34. *Sciurus striatus* Pall. (Striped Squirrel).

花鼠 *'hua-shu* ("variegated rat")—花布簾子 *'hua-pu-lien-tszĕ* P.—五道眉兒 *wu-tao-mei-rh* ("five-striped eyebrow") P.—臊鬧子 *sao-nao-tszĕ* P.

The range of this striped squirrel of Siberia and Mongolia extends into Chihli, but it seems to be very rare near Peking. It is common in the north-western part of the province and occurs also in the western hills. I procured a couple of these pretty animals during a trip to the Pai-'hua-shan; they are very tame and show no great difference in their habits from the common squirrel. No mention of the present names of the different squirrels is made in the Pên-ts'ao, but the term *sung-shu* occurs both in the Shêng-ching-t'ung-chih and the Chi-fu-t'ung-chih. In the latter work it is said that there are two kinds of *sung-shu*, one of small size with stripes is properly called *sung-shu*, the other of grey colour, fond of fruits, is called 臊鼠 *sao-shu*. The first would appear to be the Striped Squirrel, the other Sciurus Davidianus, which has still the name *sao-yang* among the mountaineers.

As it is very improbable that an animal as well-known and of such frequent occurrence as the squirrel should not have been recorded in the Pên-ts'ao-kang-mu, we have to look for it there under another name. There is only one species in the order of Rodents, 鼠類, the description of which may be referred to the squirrel; the *shih-shu* 鼫鼠, of which 碩鼠 *shê-shu* "great rat," 鼩兒 *cho-shu*, 雀鼠 *ch'iao-shu* "sparrow rat," and 鼷鼠 *chun-shu* are synonyms. Its description is as follows: "The *shih-shu* occurs everywhere, it lives in *excavations of the ground* or hollow trees. Its appearance is like that of a big rat, its

head like that of a hare, the tail is bushy. Its colour is greyish yellow (黃青) it is fond of squeaking, it can stand upright like men and dance with the forelegs folded, it feeds on grains and is like the mole destructive to agriculture. The mole is small and lives in the plain, but the *shih-shu* is bigger and lives in the hills." In a note it is further mentioned that the *shih-shu* furnishes hair for pencils.

This does not seem to be a very distinct description of a squirrel, especially if we think of the habits of our European species; but it is to be remembered that the Chinese squirrels are much less arboreal in their habits. Especially the commonest species of the North, Sc. Davidianus, lives exactly as the Chinese author says, in hollow trees or in holes under rocks, and the striped squirrel seems to be quite confined to rocky hills. The colour mentioned is that of David's squirrel, and of the common species of central China, Sciurus Chinensis; the bushy tail and the harelike head agree likewise very well with the squirrel. This identification is confirmed by the remark, that the *shih-shu* is a *common* animal and that its hair is used to make pencils. There is no other Rodent to which this may be referred.

35. *Cricetulus griseus* A. M. Edw. (Chinese Dwarf Hamster).

豆鼠兒 *tou-shu-rh* P.—倉鼠兒 *ts'ang-shu-rh*, 倉官兒 *ts'ang-kua(n)-rh* P. ("granary-rat" or "granary keeper" from its habit to heap up grain in its burrows).—辦倉鼠 *pan-ts'ang-shu* P.

The Peking plain abounds with this dwarf hamster, which is only 118 millimeters from snout to tail, the latter being 40 millimeters long; of light brown colour mixed with grey on the back, with a darker line along the spine and whitish on the underparts. It is like its German ally, the hamster, very pernicious to agriculture, and in spite of its small size readily uses its teeth in self defence. I obtained living specimens several times, they were sleepy during the day, but very lively in the evening and during the night. Their large black eyes, the expanding black ears with a fine white margin, and their quick agile movements render them very pretty little animals, while the large European species is of rather ugly appearance. In feeding they sit on the hindlegs and fill their large pouches by means of their forelegs; then retire to a quiet corner to take their meal. They are not very sociable, on the contrary often fight fiercely; and I have several times seen small ones killed and half eaten by their companions. They seem to couple early in spring; I obtained

pregnant females in the middle of April, one of which produced a rather large dead young one.

86. *Mus humiliatus* A. M. Edw. The common Peking rat differs from our black rat, and has been described as a new species.

87. *Mus decumanus* L. Père David does not record the common brown rat as indigenous to Chihli; it is however very common in Tientsin and occurs also in Peking.

Both the preceding species are called in Chinese 鼠 *shu*, 老鼠 *lao-shu* or 耗子 *'hao-tsze*.

88. *Mus plumbeus* A. M. Edw. Discovered by P. David in Hsüan-'hua-fu and Mongolia, I have never seen this rat.

89. *Mus musculus* L. According to David the mouse occurs in Chihli; it seems to be very rare. I have never heard of it in Peking and the Chinese have no special name for it.

The white mouse, often with brown and black spots, is frequently kept by the Chinese and sold in the markets, but it is certainly brought from the south. Its Chinese name is 白耗子 *pai-'hao-tsze* and 花耗子 *'hua-'hao-tsze*.

### Multungula.

40. *Sus aper* L. The wild boar is not very common in Chihli, and those brought in the winter to Peking all come from the north-east, especially from Jehol. In Chinese 野猪 *yeh-chu* "wild boar."

### Ruminantia.

41. *Antilope* (*Nemorhedus*) *caudata* A. M. Edw. David, Rens. l. c. p. 233. O. von Möllendorff Mitth. Deutsch. Ges. Ostas. July 1876, p. 19. *Antilope crispa*, David, Hist. Nat. de Pékin. *Ant. crispa*, Schrenck, Prshevalski, Radde (nec Temminck).

羚羊 *ling-yang* P.—山羊 *shan-yang* P.—青羊 *ch'ing-yang* P. Ch. F.

The subgenus *Nemorhedus* is constituted by a number of Asiatic Antelopes which have the following characteristics in common: a thickset goatlike body, rather shaggy hair of greyish brown colour, short slightly curved black horns. The species first known were the Goral, *Antilope goral*, of the Himalayas, and the Japanese *Antilope crispa*; Père David added to these not less than three new forms from the Chinese empire. *Antilope grisea* M. Edw. from Kokonor, *A. Edwardsii* Dav. from Ssé-

ch'uan, and *A. Caudata* from Chihli and Shansi. All these species live like the Alpine Chamois on the most elevated mountains, and present in their general appearance a strong resemblance to the Chamois, so that they might well be called the Asiatic Chamois.

The North China species is distinguished chiefly by the length of the tail; not only does the number of caudal vertebrae exceed that of the other forms, but a brush of very long hairs renders the tail one foot long from its root. The horns of the buck are short and slightly curved, smooth and glossy black at the points, and furnished below with ten to twelve irregular transverse rings. The hair is dense and rather coarse, of a brown colour mixed with yellow and grey, darker along the spine and lighter on the underparts.

Our species agrees very well with the excellent description of the chamois of the Amoorland given in Radde's Reisen im Süden von Ostsibirien (I, 1862, p. 146, t. XII) which the author, however, identifies with the Japanese A. crispa. It is very improbable beforehand that the insular species should occur in Manchuria, whilst in the neighbouring mountains of North China a different form has been observed; and indeed, according to Radde's description, the Manchurian chamois agrees with Antilope caudata in all the peculiarities by which the latter species differs from Antilope crispa. I have no doubt, therefore, that the Antilope observed by the Russian travellers in Manchuria is A. caudata, while Antilope crispa is confined to the Japanese islands.

In the province of Chihli the species occurs in all the higher mountains, but is confined to the most inaccessible rocks. It is of frequent occurrence on the more elevated ranges of the Si-shan, but has likewise been observed in the hills to the north and north-east of Peking. The native hunters persecute the animals chiefly for the horns, which are highly esteemed in Chinese medicine. The meat is not valued much because of its strong smell like that of a he-goat. The pursuit is described as extremely difficult, not only from the wild character of the animals' abode but also from their sagacity and wariness.

Of the present colloquial designations for this antelope *ch'ing-yang* and *ling.yang* are in more general use; *shan-yang* is only used in some parts of the province. The term *ling-yang* is of very ancient origin. It was originally written 羚 *ling* and considered to be akin to the deer; it included probably all forms of antelopes Chinese and foreign. The short description and the drawing given of the ling-yang in the Pên-ts'ao points to Antilope caudata, or at least, to forms of the group Nemorhedus.

It is said to have grey shaggy hair and short horns, to resemble a goat and to live on high mountains. But from other works it appears that very different antelopes were likewise called *ling* or ling-yang, and the drawings of the ling in the Erh-ya and San-ts'ai-t'u-'hui do not resemble the Goat antelope.

Foreign antelopes are up to the present time designated by the same name; the horns, for instance, of the Saiga antelope of the Russian and Siberian steppes (Cervicapra Saiga), which are imported to China in large quantities, and which I have seen myself in Peking shops, are sold as *ling-yang* horns and are considered the best sort. Under the same appellation the Saiga horns are mentioned in P. Isaia's catalogue of goods imported to China from Kiachta.

42. *Antilope gutturosa* Pall. (Dseren, Goitred Antelope).

黃羊 *'huang-yang* P.

It is doubtful whether the Dseren or "goitred antelope" of Mongolia forms part of the Fauna of Chihli or not; the assertion however that it has occasionally been seen in the northern part of the province is not improbable, as localities occur similar to those in the adjoining parts of Mongolia. Also the Chi-fu-t'ung-chih records the *'huang-yang* as indigenous to the district of Hsüan-'hua-fu. A great number of them are brought every winter to Peking, a fact which has been mentioned already by the Jesuits in the 17th century, who call this antelope "chèvres jaunes," a translation of the Chinese name.[7]

These "yellow goats" play a prominent part in the descriptions of the Imperial chases in Mongolia and Manchuria related by P. Gerbillon and others.[8]

In the Imperial Hunting Ground South of Peking, the Nan-'haitszè, a number of 'huang-yang are kept in a half wild state; I have seen them several times quietly grazing on the wide expanse of that large inclosure in small herds from five to ten. They were not at all shy and let us approach within thirty paces, then ran away a few yards and turned to stare curiously with their pretty eyes at the strange appearance of foreigners on the forbidden ground.

The Chinese name *'huang-yang* is mentioned in the Pên-ts'ao, but curiously in the class of domestic animals, the 畜類 *ch'ü-lui*: 羵羊 *fan-yang* and 麋耳羊 *mi-êrh-yang* are mentioned as synonyms. The description says: "The 'huang-yang lives in the west

[7] Du Halde, Descr. of China, German Edit. II, p. 164.
[8] Du Halde IV, p. 137, 142, 169, etc.

of the frontier, in Hsi-fan, also in Kwei-lin; there are four kinds. One is like a sheep in appearance but lower and smaller, yellow coloured on the sides and underparts; its horns are (like a ram's. It is fond of sandy tracts and lives in the desert 沙漠), it can run fast. It lives solitary. Its tail is black and it is called *black tailed huang-yang* (黑尾黃羊). Another kind lives on grassy steppes in herds of several scores, it is called *huang-yang*. A third kind lives in Lin (臨, in Shansi) and near the river T'ao (洮, in Kansu); it is very big and its tail is like that of a roe or deer. This is called *t'ao-yang* (洮羊). In the south, near Kwei-lin, there is another kind, of dark yellow colour with black neck and white spots, which resembles a deer." This description points evidently to the Dseren or Antilope gutturosa, which is meant by the second kind; the black-tailed huang-yang is the newly discovered *Antilope subgutturosa*, found by the Russian traveller Prshevalski near the Alashan mountains in southern Mongolia, which is smaller than the Dseren and has a black tail. It is very curious, however, that the Chinese author puts these wild antelopes in the order of domestic animals; the *fan-yang*, which the Pên-ts'ao considers to be the same as the *'huang-yang*, is likewise mentioned among the domestic animals in the Erhya. Perhaps the Chinese authors thought that these animals, which they probably never saw in their wild state, were kept tame by the Mongols like goats.

43. *Ovis jubata* Peters. (Wild Sheep or Argali of Eastern Mongolia).

*Ovis jubata* Peters, Monatsberichte der Kgl. Academie der Wissenschaften zu Berlin. März 1876, p. 177-188, t. I-IV.—*Ovis Argali* David (nec Pallas) Rens. p. 233.

The gigantic wild sheep of central Asia, called "Argali" in the Mongolian, Manchurian and Kalmukian tongues, have from a very early period attracted the attention of western and eastern writers. Their deerlike body with a ram's head, and enormous spiral horns which measure four feet in length, could not fail to make a striking impression on the mind of the traveller. Indeed, we find these animals mentioned by Marco Polo, Rubruyk and other mediæval travellers, as well as by the Chinese writers of an early period. But the first scientific record was made by T. G. Gmelin, who travelled in 1752 and 1753 in eastern Siberia, and who examined some "Argalis" on the upper Irtysh near the Altai mountains. He called the species "*Rupicapra cornubus arietinis*" (chamois with ram's horns). In 1766 Linnaeus published this species in his Systema under

the name of *Capra Ammon*, which however included several other forms. An excellent description was given by the renowned traveller Pallas in 1776, who observed the wild sheep in Dauria. He, for the first time, introduced the name "Argali" (*Ovis fera sibirica vulgo Argali dicta*); and considered all the forms of Siberian wild sheep then known from the Altai, eastern Siberia and Kamtschatka, to form the Siberian variety of the European wild sheep or mouflon. In 1829 the Kamtschatkan form was described as a new species, *Ovis nivicola*, which resembles more the American big horn, *Ovis montana*, than the argali. Later on wild sheep have been discovered on the Pamir plateau and in the T'ienshan mountains, which differ from the argali and have been described under new names. The species of the Pamir had been observed and very well described by Marco Polo, and justly bears his name now: *Ovis Poli* (Blyth). Other species are known from Tibet and the Himalayas.[9]

The species of Gmelin and Pallas, now generally quoted as *ovis argali* Pall., is therefore confined to the Altai and Daurian mountains. But there lives a species of wild sheep in eastern Mongolia and in the northern parts of the provinces of Shansi and Chihli, chiefly on the Yin-shan range. This species has been observed by P. David and Prshevalski, and it was generally believed to be identical with the Siberian argali. In 1874 I got a fine male specimen from the Yin-shan mountains near Kuei-'hua-ch'êng 歸花城 (or Ku-ku-kho-tun), which I sent to Berlin. Professor Peters found out that it differed sufficiently from the argali to establish a new species, and gave a detailed description in the Monthly Reports of the Berlin Academy under the name of *Ovis jubata*. Its chief characteristic is the longer hair on the neck, withers and throat, which forms a short mane. Other differences are to be observed in the length and the spiral direction of the horns, in point of colouring and the dimensions. The new race, the Maned Argali, does not belong to the largest forms of this tribe, but still is a very powerful animal. The total length from muzzle to tail is 1.705 mètres or 5¼ feet, the height 1 mètre or 1⅛ feet, the length of the horns along the curve 0.920 mètres or about 3 feet, the distance of the points of the horns 0.540 mètres or 1¾ feet.

The geographical distribution of this new species and the true

[9] Severtsoff in his work on the "Vertical and horizontal distribution of the animals of Turkestan" (in Rep. Soc. Imp. d. Natural. Moscou, vol. VIII, 2. 1873, p. 153) records 21 species of wild sheep,—9 of the sub genus Musimon in Europe, Asia Minor, Persia and the Punjab; and 12 of the subgenus Ovis,—2 in America, 4 in Central Asia, 2 in the Himalayas, 2 in Siberia, 1 in Kamtschatka, 1 in Mongolia and the Altai.

Ovis argali Pallas has to be studied yet. Probably the habitat of the latter race does not extend beyond the Gobi, and Ovis jubata probably occurs in the mountains of eastern Mongolia and Manchuria.

The present Chinese name of the argali is 盤羊 *p'an-yang* (*p'an*, a bowl, refers to the spiral curve of the horns). The Erh-ya has a very good drawing of the argali under the name of 羬羊 *yüan-yang*; the description is very short, and merely says that the animal is like a ram, but has bigger horns which are cylindrical (牆), and that it lives in the west (西方). In the Pên-ts'ao the argali is described as 山羊 *shan-yang*; 野羊 *yeh-yang*, wild sheep, and *yüan-yang* are recorded as synonymous appellations, it is said to have big horns curved like a bowl (盌). The *yüan-yang* is likewise mentioned in the San-ts'ai-t'u-'hui. In the 後出塞錄 'Hou-ch'u-sai-lu, a description of a voyage from China to Mongolia, written in the beginning of the last century, the *yüan-yang* is mentioned as a wild sheep of western Mongolia of enormous size, 300 catties weight, with large spiral horns.

The name "argali" is as mentioned above, of Mongolian or Manchurian origin: means, according to Schmidt's Mongolian dictionary a "wild mountain sheep;" and the same word is translated by "wild goat" in Wassilyeff's Manchurian dictionary.

The Mongolian name is mentioned by the travellers of the 13th century. It is not quite certain whether Marco Polo understands the wild sheep by *Erculin*, which he mentions as an animal of Siberia,[10] but Rubruyk (1254) unmistakeably means our species in the following passage:[11] "I saw another kind of beast which is called *Arcali*. Its body is just like a ram's and its horns spiral like a ram's also, only they are so big that I could scarcely lift a pair of them with one hand. They make huge drinking vessels out of these."

44. *Moschus moschiferus* L. (Musk Deer).

香麝子 *hsiang-chang-tszĕ* P.—麝 *shê*, *shê-lu*, *hsiang-chang* W.

The musk deer has gradually become very rare in Chihli; its extinction proceeding at the same rate as the diminution of

[10] Yule's Edition II, p. 412.

[11] Yule *l. c.* I, p. 414 note.—The latin text has the following: Vidi etiam aliud genus animalis quod dicitur Arcali, quod habet recte corpus arietis et cornua tortua ut aries, sed tantae quantitatis quod vix poteram levare una manu duo cornua. Et faciunt de cornibus istis ciphos magnos.

woods, and it has retired to the most remote corners of the province. It is recorded as still occurring in the mountains southwest of Peking near the frontier of Shansi, and in the east towards Manchuria.

According to the Chinese it was common formerly in the western hills; and in a letter of one of the Jesuit missionaries in the last century it was then frequently shot near Sang-yü.[12] I have been informed by the French missionaries of Peking that in 1870 a musk deer was killed in the mountains near Sang-yü, and the people in the neighbourhood of the Po-'hua-shan told me that musk deer are still seen, though rarely, in those parts.

45. *Cervus pygargus* Pall.

The Asiatic roebuck is larger than ours and of lighter colouring; a slight difference exists also in the shape and position of the horns. Still, the establishment of the species is based on not very decisive characteristics, and the opinion of some authors, that the Cervus pygargus Pallas is only a geographical race of our Cervus capreolus, is perhaps to be accepted.

In Chihli the roebuck is not of very frequent occurrence, and I am not aware of any having been shot by European sportsmen; a small number of them however are brought to Peking every winter, principally from the mountains to the north-east and east. Mr. Swinhoe mentions the Cervus pygargus as being kept in the Imperial hunting park on the *Hsiang-shan*, north of Pata-ch'u.[13]

The roebuck has the following names in the Peking vernacular: 麅子 *p'ao-tszĕ*, 麅鹿 *p'ao-lu*, 麞子 *chang-tszĕ*, *chang-p'ao*. The name of the roedeer in Wên'hua is not to be indicated with certainty, and about the names of the roebuck, muntjak, and other small species of the cervine tribe, namely 麞 *chang*, 麅 *p'ao*, 麇 *chün*, 麂 *chi*, 麏 *ching*, there seems to prevail a great confusion among the Chinese themselves.

The 麞 *chang* of the Pên-ts'ao is said to be of a yellow colour, to live on the banks of rivers, to have no horns but long tusks and to be called in Su-'hua 牙麞 *ya-chang*. This description would agree with the hornless river deer of the Yang-tszĕ described by Mr. Swinhoe as *Hydropotes inermis* (Proc. Zool. Soc. 1870, p. 89 pl. IV, VII, ibid. p. 644), which is still called on the Yang-tszĕ *chang*, *chang-tszĕ* or *chang-lu* and which European sportsmen often erroneously term Roe-deer. But the drawing

[12] Lettr. Edif. XXIX (new ed.) p. 188-191, 1717. Du Halde, Descr. German Ed. II, p. 183.

[13] Proc. Zool. Soc. 1870, p. 434.

of the *chang* in the Pên-ts'ao *has* horns very similar to those of the roebuck or the muntjak. The muntjak of southern China (*Cervulus Reevesii* Ogilby) is often called *chang*, or 四眼麞 *ssĕ-yen-chang* "four-eyed deer." In the Chi-fu-t'ung-chih and Sheng-ching-t'ung-chih *chang* is also described as a small hornless deer; but as there occurs no hornless deer in Chihli or Manchuria except the musk deer, the compilers of those works probably gave that name only as a quotation from older writers without having seen the animal itself. *Chang* would therefore appear not to be the name of the roedeer in Wên-'hua, but to include the muntjak and the hydropotes.

On the other hand, the 麂 *chi* of the Pên-ts'ao has also the synonym *ya-chang* and the descriptions point likewise to the hydropotes, which is called *chi* (*ki*) up to the present time in Shanghai. 麏 *ching* is according to the Pên-ts'ao a large variety of the *chi;* but in Canton the cervulus or muntjak is termed 黃麏 *'huang-ching*.

A further term is 麇 *chün*, often translated by roe, which is more poetical and said to be the synonym of *chang* and a general name (摠名) for small species of the cervine tribe.

I have accordingly been led to the following conclusion:—

麞 *chang* and 麇 *chün* are general terms of small deer, being properly applied to the muntjak, but including the river-deer (hydropotes) and perhaps also the roebuck.

麂 *chi* and 麏 *ching* are probably meant for the hydropotes.

The Chinese of the north, no species of muntjak occurring in their country, identified the *chang* with the *Cervus pygargus*, although there exists a proper name for the roebuck namely 麅 *p'ao*. This character, often confounded with 麃 *p'ao* or *piao*, is given in the Pên-ts'ao simply as synonym of *chang*, but from other works it appears to be the roebuck. As I have mentioned above p'aotszĕ is at present the popular name of the roedeer at Peking.

46. *Cervus mantchuricus* Swinhoe.

47. *Cervus mandarinus* A. M. Edw. Etud. p. 184 pl., 22, 22 A.

梅花鹿 *mei-'hua-lu* P.—羊鹿 *yang-lu* P.

As Professor Peters informs me, the above two species have lately been declared to be identical by Sir Victor Brooke, their only difference being a slight deviation in the curve of the antlers. I have never seen the description of Swinhoe's *Cervus mantchuricus*, but known only his short note given in his description of the Formosan Axis, *Cervus pseudaxis* Eydoux et Souleyet,

(Proc. Zool. Soc. 1870, p. 644): "The C. pseudaxis is restricted to Formosa, North China produces a larger allied species, the C. mantchuricus mihi." Cervus mandarinus, discovered by David in North China, is considerably smaller than our red deer, has rather slender antlers with four tynes each; its winter coat is of greyish brown colour very much like that of a roebuck; in summer the colour changes into reddish brown with pure white spots. The traces of these spots are sometimes still visible in the winter coat.

David's specimens have been got from the Imperial hunting parks near Peking; and as Mr. Swinhoe mentions that his C. mantchuricus occurs both in the Park north of Pa-ta-ch'u and in the Nan-'hai-tszĕ, it is very probable that the two species are identical, because in these parks there lives certainly but one form of spotted deer. The name published by Mr. Swinhoe would then have the priority.

The yang-lu is very rare in Chihli, and seems to occur only in the north-eastern mountains, chiefly near Jehol. Those brought to Peking in winter are said by the game dealers to come from Jehol and from Manchuria.

48. *Cervus elaphus var. xanthopygus* A. M. Edw.

馬鹿 *ma-lu* P.

This large red deer is also kept in the 靜宜園 *ching-i-yüan*, the Imperial park on the Hsiang-shan north-west of Peking. It was described as a new species by Professor Milne-Edwards, but recent investigations have resulted in showing that it is merely a geographical race of the common red deer. Whether it occurs still in a wild state in the province of Chihli, I have not been able to ascertain; it is certainly very rare. In Manchuria the red deer is still common.

49. *Cervus* (*Elaphurus*) *Davidianus* M. Edw. Ann. d. Scienc. Nat. V. sér. Zool. V. 1866, pp. 380 pl.—Etud. Faun. Mammal, 1870.—David, Hist. Nat. Env. Pékin (*Cervus tarandoides*); Rens. T. N. Ch. Br. R. As. Soc. 1871, p. 233.—Swinhoe, Proc. Zool. Soc. 1871, p. 434.

四不像 *ssĕ-pu-hsiang* P.—麋 *mi*, 麋鹿 *mi-lu* W.

The famous "Tailed Deer" of the Imperial hunting ground south of Peking is the most remarkable of Père David's discoveries. The adult male measures 2.20 mètres from the muzzle to the root of the tail, and is 1.20 mètres high at the shoulder. The thick hair is of pale yellowish brown and grey colour, darker on the back and lighter on the underparts. The feet,

rather large and clumsy in proportion to the slender legs, show comparatively small hoofs; behind those there are broad callous cushions. In walking the animal steps chiefly on the callosities, only a small part of the hoofs touches the ground. The dew-claws are well developed and nearly reach the ground, so that the feet resemble somewhat those of the reindeer. The tail is 50 centimètres long, and like that of a donkey tasselled at the end; the number of caudal vertebrae is fourteen. The most characteristic difference from the other species of deer is to be observed in the antlers of the buck. From a very thick base a straight stem rises of about half a foot in length which divides into two branches; a very long and strong one stretches backwards, and bears on its surface a number of perpendicular parallel tynes. The other, the main branch, rises almost perpendicularly, but is very sinuous and terminates in a fork; one of the secondary branches going backwards, the other projecting outwards, and both ending in another fork. All these branches and tynes are covered with a great number of smaller prominences, sometimes only short knots. The horn is not very hard and partly porous.

These peculiarities led at first to the establishment of the new genus Elaphurus, which however is now considered to have only the value of a sub genus.

As is well known, David's tailed deer has only been met with in the Imperial hunting ground south of Peking, the *Nan-yüan* 南苑 or *Nan-'hai-tszĕ* 南海子; the habits of the animal will be more clearly seen from the nature of its home, and I will, therefore, try to give a description of that large enclosure which as yet has been visited by very few Europeans. Leaving Peking by the central gate of the southern wall, the Yungtingmen, we reach after a ride of about two miles a long brick built wall of about ten feet in height, which extends to East and West as far as eye can reach. Making many curves its general direction is from East to West, and extending beyond the southern wall of Peking on both sides, but far more on the East, it is more than eleven miles long; there are two large gates on this northern side of the Haitszĕ. The western side, which is likewise somewhat irregular but runs in general from North to South, is from eleven to twelve miles long, and has three gates. The southern wall inclines to the south-east, is nearly thirteen miles long, and has two gates; the eastern is twelve miles in length, and has also two gates. The space enclosed by this wall is therefore an irregular square of about fifty miles circumference. The ground is quite level throughout, and is irrigated by several small streams; the Liang-shui-'ho which enters the wall in the North,

and leaves the park in the East near the village of Machüch'iao, and two others which spring from marshes in the Haitszĕ itself and run to the South. Neither these streams nor the marshes in their neighbourhood are of any considerable extent, and do not justify the name, which may be translated by "Southern Pond" or "Southern Lake."[14] Near the northern wall there is an imperial residence or hunting seat, lately rebuilt for the last emperor; in its environs several picturesque temples have been erected. Near the Ta'hungmen on the North side stand the buildings for the officials superintending the place, and between the two gates there is a large camp. About the centre of the park are situated two villages occupied by military colonists. Besides there are some temples and farm-houses in the south. The ground around the villages and near the gates is partly cultivated, partly used as pasture land for herds of ponies and sheep. The remainder of the place is uncultivated grass land with a soil rich in alkaline salts (like most fields in the Peking plain), very much like a steppe; there are no trees, no woods, except the usual groves near the temples and villages, and some avenues of trees on the roads which lead through the enclosure. Numerous hares, flocks of the dzeren (*Antilope gutturosa* Pall.), a few Cervus mantchuricus and the elaphuri

[14] This name has been the reason that the place has been mistaken by European Geographers for a large marsh or lake, and we find it marked as such on European maps even of recent date. It seems the waters in it have been of greater extent at earlier periods; the 日下舊聞考 (6. 74 p. 7) asserts that the name Nan-'hai-tszĕ had been given because there were five lakes (五海子) in it. At the time of the Yüan dynasty the place was called 飛放泊 *i. e.* the pond of falconry. The real nature of the Nan-'hai-tszĕ might have been perceived from the descriptions given during the last century by the Jesuits; Du Halde (Description de la Chine, T. II, p. 23) gives the following account of it, which is copied from one of P. Gerbillon's letters (Lettres édifiantes, Nouv. Ed. XXVIII 1832, p. 35): "On y voit la maison de plaisance des anciens empereurs. Elle "est d'une étendue prodigieuse, car elle a bien de tour dix lieues communes "de France, mais elle est fort différente des maisons royales d'Europe. Il "n'y a ni marbre ni jets d'eau, ni murailles de pierre; quatre petites rivi- "ères d'une belle eau l'arrosent, leur bords sont plantés d'arbres. On y "voit trois édifices fort propres et bien entretenues. Il y a plusieurs "étangs, des pasturages pour les cerfs, les chevreuils, les *mules sauvages* et "autres bêtes fauves; des étables pour les troupeaux; des jardins potagers, "des gazons, des vergers et même quelques pièces de terre ensemencées; "en un mot tout ce que la vie champêtre a d'agrément s'y trouve. Cest là "qu'autrefois les Empereurs se déchargeant du poids des affaires, et quit- "tant pour un temps cet air de majesté qui gène, allaient goûter les dou- "ceurs d'une vie privée." The wild mules mentioned there are perhaps the Elaphuri, which in winter, being destitute of horns, present indeed some vague resemblance to a mule or donkey.

care the only denizens of this vast expanse, which is abandoned to them.

The latter live in herds of more than hundred head, and seem to prefer the damp ground. When I visited the place, we came across only one herd of about 150 head grazing near the water. They let us approach within fifty yards, then started off and galloped away with their tails in the air like cattle. Their gallop seemed to be heavy, but although we chased them at the utmost speed of our ponies, we were not able to keep up with them.

The hind carries about eight months, and brings forth in May, the fawns have a coat of deep yellowish brown colour, spotted all over with large white spots, which disappear in three months. The buck first gets antlers in the second year; they are shed annually in December, whilst our red deer sheds them in February.

The question whether this interesting animal still exists in a wild state, and where it has been brought from to its present abode has not been settled yet. Notwithstanding all the explorations lately made in Asia no trace of it has been found; and although there are regions of Central Asia which have not yet been investigated by a naturalist, still a species of deer of such striking appearance could not have failed to attract the notice even of an unprofessional traveller. The present habits of the elaphurus show sufficiently that it is an animal of the steppes, not like other deer an inhabitant of mountain forests. As I will show further on, Chinese literature indicates that it was once an animal of common occurrence in China proper, and I should therefore deem it very probable that the elaphurus was originally indigenous to the plains of northern and central China, and that it has gradually been extinguished by the progress of cultivation. In case this theory should be well founded, we are indebted for the preservation of this most interesting species to a whim of one of the Sons of Heaven, who little thought how great a service he was rendering thereby to European science. The preservation of the elaphurus in a half domesticated state would then be an analogous case to the Ure (Auerochs, *Bonassus Bison*) in the forest of Bialovicza in Lithuania, and that of the wild cattle in Chillingham Park.[15]

[15] I have been informed lately that some years ago gentlemen from Tientsin shot in the east of the province a curious deer "like an Elk," very large, and according to the description most probably an Elaphurus. I am not prepared to decide, whether the animal had perhaps run away from the Haitszĕ or the species still exists in the eastern parts of the province which have as yet been very little explored.

The history of the Nan-'hai-tszĕ, which, as mentioned before, can be traced back as far as the Yüan dynasty, does not enlighten us on the question of the introduction of the elaphuri into the park. The Chinese works only mention that during the Yüan, Ming and Ts'ing dynasties the place was used by the Emperors for hunting purposes.

The present Chinese name is 四不像 *ssĕ-pu-hsiang* i. e. the four dissimilar *sc.* attributes; it is said to have the head of a deer, the neck of a camel, the feet of a cow and the tail of a mule. It is sometimes, though rarely, call *mi-lu*, and its antlers are designated in the trade by 麋茸 *mi-jung*. The Pên-ts'ao-kang-mu gives the following description of the *mi*:—

"The *mi* belongs to the tribe of the deer; the male has horns. The deer (lu) is fond of mountains, it belongs to the *yang* (male principle), and therefore sheds the horns in summer; the mi is fond of marshes, belongs to the *yin* (female principle), and so sheds the horns in winter. The mi is like the lu, but its colour is grey (青黑), it is as large as a small ox, the hoofs are fleshy; below the eyes there are two holes which are called night eyes (夜目). Therefore 'Huai-nan-tszĕ (淮南子) says that if pregnant women see the mi, their children are born with four eyes. The Po-wu-chih (博物志) says: 'In the South from a hundred to a thousand head of *mi* form a herd; they feed on marshy grass. The place where they graze gets muddy and is called 麋埈 *mi-chün*; such a place is good for agricultural purposes. The place where the lu dwells is called 鹿場 *lu-ch'ang*.' At the present time, the hunters do not distinguish them, and confound the mi with the lu. The stags may still be distinguished by the antlers, but the hinds are always called 塵鹿 (*i. e.* female lu)."

This description fully justifies the application of the term *milu* to the Ssepusiang. The time of shedding the antlers, the predilection for marshes, the deep lacrymal pits, mentioned by Li-shih-chĕn, are all peculiarities by which the elaphurus differs from the other species of deer. The remark that the hoofs are of flesh seems strange, but is explained by the nature of the feet of the elaphurus, which indeed from the large callous cushions referred to above appear to be fleshy when compared with the hard hoofs of the common deer. We only miss in the description the mention of the long tail of the elaphurus; but in spite of that omission I have no doubt that the animal described by the compiler of the Pên-ts'ao is the Elaphurus Davidianus.

The character 麋 is often met with in Chinese literature, even of the earlier periods. *Mencius* B. I. P. 1. ch. II: "The

king (of Leang) went and stood with him by a pond, and looking round at the wild geese and deer (*mi-lu*), said," etc.[16] *Mencius* B. I. P. 2. ch. II: "There was a park of forty square *le*, and he who killed a deer (*mi-lu*) in it was held guilty of the same crime as if he had killed a man."[17] *Ch'un-ts'ew*, 17th year of Duke Chwang (B. C. 675): "In winter there were many deer (*mi*)."[18] The *êrhya* does not give a drawing of the *mi*, not even a description, but merely states that male, female and fawn have especial name.[19]

The above quotations from the classics do not, it is true, give any indication of the nature of the *mi*, except that it is fond of places near the water, and lives in large herds. But the Li-ki observes that in the second moon of the summer, the *lu* sheds the antlers, and in the second moon of the winter, the *mi*.[20] The elaphurus being the only species of deer of which this discrepancy in the period of shedding the antlers is known, we cannot hesitate to conclude that the *mi* of ancient literature is identical with that described in the Pên-ts'ao, and therefore the Elaphurus Davidianus. From the above quotations it appears that the species was once of frequent occurrence all over China, and well known to the people, who applied different denomination to the different sexes and ages only of common animals.

Li-shih-chên's statement that at his time people were not able to distinguish the mi and the lu, would find its explanation in the gradual diminution, and final extinction of the species. It is not to be wondered at, therefore, that Chinese works of more modern date give descriptions of the 麋 which are not in accord either with those of the older books or with the peculiarities of the elaphurus. The 三才圖會, of the same period as the Pên-ts'ao-kang-mu gives an entirely fictitious drawing of the *mi*, which has one stumpy horn on the forehead; the description runs as follows:—"The 白虎通[21] says 'the bear is the cleverest and strongest of all animals, the *mi* the most stupid; therefore the Emperor shoots the bear, the feudal

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[16] Legge's Cl. II, p. 3: 王立於沼上顧鴻鴈麋鹿.

[17] Legge's Ch. II, p. 30: 有囿方四十里殺其麋鹿者如殺人之罪.

[18] Legge's Ch. V, 1 p. 96. One commentator thinks that these creatures appeared in such numbers as to be a plague.

[19] 爾雅 vol. III, p. 30: 麋牡麋牝麎其子麋.

[20] 禮記 胎 III, p. 65 (仲夏) 鹿角解 III, p. 89 (仲冬) 麋角解.

[21] The Pai-'hu-t'ung-i of the Han dynasty, first century of our era. See Wylie Not. on Ch. Lit. p. 127. Mayer's Manual, p. 166.

princes the mi.' The mi is an animal of the water, of grey colour, and has fleshy hoofs. The character is formed from 鹿 and 米, because the disposition of the animal is stolid (迷)."

The Shêng-ching-t'ung-chih says under the heading of *mi-lu*: "The lu is tall, the mi small. It is said in 禮月令[22] that the mi sheds the antlers in the eleventh moon (仲冬), the lu in the fourth moon (仲夏), but according to present investigations the mi as well as the lu shed their antlers in summer. In the Imperial poem 'on the shedding of the antlers by the deer,'[23] it is stated that in the provinces of Shingking and Kirin there occurs the mi, not the lu."[24] It is evident from this passage that the character 麋 was used by Kienlung to designate the common deer, not the Ssë-pu-hsiang; for, as it is well known, the red deer as well as the axis are common in Manchuria. The elaphurus, at that time, probably occurring nowhere in China in a wild state, the quotations of older authors, who by mentioning the exceptional time of shedding the antlers unmistakeably refer to the species of the Haitszë, were misunderstood or overlooked, and the term *mi* used as a poetical denomination for other kinds of deer.

A similar error has slipped into the topographical description of Formosa quoted by Mr. Swinhoe,[25] in which work the name *mi* is applied to the plain brown deer of Formosa, Cervus (Rusa) Swinhoei.

Williams[26] identifies the Chinese name 麈 *chu* with the Cervus Davidianus; he states that the Chinese description ascribes a *long* tail to it and gives Tung-ch'uan.fu in Ssë-ch'uan as the habitat. I have not been able to find out from what work this information has been obtained, but according to the books to which I had access, 麈 cannot be explained as a name of the

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[22] See the above quoted passage of the Li-ki.

[23] 御製詩, a collection of poems, published by the Emperor Kienlung, see Wyli'se Notes, p. 190.

[24] The Shêng-ching-ching-t'ung-chih quotes at the same place another passage from the poems of Kienlung, which refers to the Reindeer, and its employment for domestic purposes, the only mention of the Reindeer I have as yet met with in Chinese books. "In the neighbouring state of Russia no cattle or horses are kept, but deer (鹿) are mostly used as beasts of burden and draught."

[25] Birds and beasts of Formosa, Journ. N. Ch. Br. R. As. Soc., Shanghai, 1865.

[26] Syllabic Dictionary 1875, p. 88. Williams ascribes to the Elaphurus the denomination of "Chinese Elk." Elk (or Moose) is the English name of Cervus Alcesh L.; in America the Wapiti or Canadian deer (C. canadensis) is sometimes called Elk; but the Chinese species cannot be compared with either of these animals.

Ssë-pu-hsiang. The Pên-ts'ao-kang-mu says under the heading of 麁 "A large stag is called *chu*, the herd following it is guided by its tail. The tail can banish dust (辟塵); if felt is dusted with it, there will be no worms; if it is put into madder for dyeing silk, the red colour will not grow darker for a long time." This passage is quoted from the 名苑.

In the Kanghi dictionary *chu* is explained to be the denomination of a large stag, also of a deer of the tribe of the 麋. The *chu* is further mentioned in the San-ts'ai-t'u-'hui; the drawing given in that work represents the animal as a deer covered with large spots like flowers, with a *short* tail, and one stumpy horn. The description is almost verbatim identical with that of the Pên-ts'ao.

From these notes I should conclude that *chu* originally does not designate any particular species of deer, but is the term for a large stag, especially the leader of the herd. This is confirmed by the present use of the term. I have seen the following phrase in an official communication: 祗聆麁談 *chih-ling-chu-t'an*, which may be rendered by: "I listen to your instructions by which I will guide my course. *Chu-t'an* lit. "phrases of the leading stag," signifies the instructions, by which the hearer will be guided as a herd of deer is guided by the leading stag.

The Hsi-yü-wên-chien-lu mentions the *chu* as forming part of the Fauna of Tarbagatai, and says, that several hundreds form a herd. In smaller letters it is added by the editor that the common name is ssë-pu-hsiang.[27] Tarbagatai is now partly Russian territory, and its Fauna has been well enough explored to leave very little doubt that the elaphurus does not occur in those regions. The author meant by *chu* probably the large red deer of Central Asia, Cervus Maral; it was perhaps merely the predilection of Chinese writers for uncommon characters which induced him to ascribe the name 麁 to a species of deer. Why the editor identified this name with the Ssë-pu-hsiang, cannot be seen from the explanations given for *chu* in Chinese literature; perhaps because the elaphurus was the only species of deer within his knowledge which lived in large herds. Howbeit, his statement cannot invalidate the arguments given above for the theory that 麋 is the proper name of Cervus Davidianus.

[27] 西域聞見錄 Chap. I, f. 13: 多麁數百爲羣俗名四不像

## II. Birds.

(In the following list the initials S. and D. indicate whether the species has been recorded as occurring in Chinese by Swinhoe or David; + is added to a species which has not previously been mentioned as forming part of the Ornis of the province).

1. *Gypaetos barbatus* Cuv. (Bearded Vulture, Lammergeyer).—D.

2. *Vultur monachus* L.—D.—This vulture does not occur near Peking, but is not uncommon in the northern and north-western parts of the province. It has been seen in the Nank'ou Pass. In Chinese 狗頭鵰 *kou-t'ou-tiao* i. e. dog-headed eagle.

3. *Aquila chrysaetos* Cuv. (Golden Eagle).—D. S.—紅頭鳥 *'hung-t'ou-tiao* P.

Not rare in the western hills, but confined to the highest peaks.

4. *Aquila bisfasciata* Gray.—D.

5. *Aquila amurensis* Swinh. (Tawny Eagle).—D.—大花皂鵰 *ta-'hua-tsao-tiao.*

6. *Aquila naevia* Briss.—D.—小花皂鵰 *hsiao-'hua-tsao-tiao* P.

The general term for eagles in Chinese is 鵰 *tiao*, which includes the vultures and sea eagles; 鷲 *ch'iu* and 鸇 *t'uan* are synonyms. 皂鵰 *tsao-tiao* is a general name of all species of Aquila.

7. *Haliaëtos albicilla* L. (Sea Eagle).—D. S.—黃嘴鵰 *'huang-tsui-tiao* P. 接白鵰 *chieh-pai-tiao* P. Sh. Ch.

This species, which is rather scarce in Chihli, is most probably the 海東青 *'hai-tung-ch'ing*, sometimes written 海青鵰 *'hai-ch'ing-tiao* or *ch'ing-tiao* or *'hai-ch'ing*, which was in former times trained by the Chinese for hawking purposes, especially to catch deer. It was considered to be the best of all birds of falconry. The Shêng-ching-t'ung-chih relates that the 'hai-tung-ch'ing was used to catch roebuck by the emperor Kienlung when he hunted in Manchuria. In a long list of birds of prey trained for falconry, which is quoted from the T'u-ching-chih-shu in the 日下舊聞考 Jih-hsia-chiu-wen-k'au the 'hai-tung-ch'ing is the first mentioned. With these statements agrees a passage in P. Du Halde's description of China (vol. I, p. 34) which I here insert; "On compte avec raison parmi les beaux oiseaux celui qu'on appelle *Haitsing*. On n'en prend que dans le district de Han-tchong-fu, dans la province de Chensi, et dans quelques cantons de la Tartarie. Il est comparable à nos plus beaux Faucons, il est cependant plus gros et plus fort. On peut l'appeller le Roi des Oiseaux de proye de la Tartarie et de la Chine, car c'est le plus beau le plus vif et

le plus courageux ; aussi est-il si estimé que dès qu'on en a pris un, on doit le porter à la cour, où il est offert à l'Empereur et remis aux officiers de la Fauconnerie."

8. *Haliaëtos pelagicus* Pall.—D.—骨頭鵰 *ku-t'ou-tiao* P.

This giant sea eagle, which has been observed in Chihli by P. David, is probably meant by the term 虎鵰 *'hu-tiao*, tiger eagle, of the books ; it is said to measure with outspread wings one chang, or ten Chinese feet.

9. *Archibuteo aquilinus* Hodgs.—D.—豪豹 *'hao-pao* P.

The Su'hua name of this large buzzard in Peking, 'hao-pao, corresponds to 花豹 *'hua-pao* and 白豹 *pai-pao* mentioned as popular names of birds of prey in the Shêng-ching-t'ung-chih. The species is not of frequent occurrence near Peking.

10. *Buteo asiaticus* Lath. (Asiatic Buzzard).—D.

11. *Poliornis polyogenys* Temm.—D.

12. *Pandion haliaetus* L. (Fishhawk, Osprey).—D. S.—魚鷹 *yü-ying* P. Ts.—鶚 *é* P. Tl.—鵰雞 *tiao-chi* P. Ts.

I have never heard a popular term for the fishhawk; the people in Peking as well in Tientsin apply the name yü-ying, yü-ying-rh or yü-ying-tszë to the different species of gulls and tern. The Pên-ts'ao-kang-mu on the other hand undoubtedly describes the fishhawk by yü-ying. Amongst the synonyms of yü-ying given there 雎鳩 *tsü-chiu* and 王雎 *wang-tsü* are doubtful; these appellations are explained in other works as names of water birds, and more probably designate a gull or skua.

13. *Falco peregrinus* L. (Peregrine Falcon).—D. S.

14. *Falco sacer* Schl. (Gyrfalcon).—D. S.—白鷹 *pai-ying* P.

15. *Hypotriorchis subbuteo* L. (Hobby).—D. S.—青條子 *ch'ing-t'iao-tszë* P.

16. *Hypotriorchis aesalon* L. (Merlin.—D. S.—朶子 *to-tszë*, 朶兒 *to-rh* P. Sh. Ch.—舵兒 *to-rh* Ch. F.

17. *Tinnunculus japonicus* Schl. (Japanese Kestrel).—D.S.—兎鶻鷹 *t'u-'hu-ying* P.

18. *Erythropus amurensis* Radde.—D. S.—青鷹 *ch'ing-ying* P.

19. *Tichornis pekinensis* Swinh. (Pekinese Kestrel).—S.

20. *Pernis apivorus* L. (Honey Buzzard).—D.

21. *Milvus govinda* Sykes. (Kite).—D. S.—鴞鷹 *yao-ying*, 老鴞鷹 P.—Sh. Ch.—鳶 *ch'ih* P. Ts.—鳶 *yüan* P. Ts.—Sh. Ch.—雀鷹 *ch'iao-ying* P. Ts.—(屎鷹 *shih-ying* P. *pa-pa-ying* T).

The Kite, everywhere in China the commonest bird of prey, is now considered by Swinhoe to be identical with the Indian species,

whilst in former notes it was supposed to be the Japanese M. melanotis Schl. It is abundant in Peking and Tientsin, feeding on the refuse in the streets. The nests are mostly in the high towers of the city wall, but I have also seen one on a tree.

22. *Astur palumbarius* L. (Goshawk)—D. S.—鷹 P. Ts.—P.—T.—*ying*, *ying-rh*, *ying-tszĕ*.—黃 鷹 *'huang-ying* P.

23. *Accipiter nisus* L. (Sparrowhawk).—D. S.—鷂 子 *yao-tszĕ* P.—細 胸 *hsi-hsiung*. Sh. Ch.—P.

24. *Accipiter stevensoni* Gurney.—D. S.—松 兒 *sung-rh* 松 子 鷹 *sung-tszĕ-ying* P.—Sh. Ch.—鬆 兒 *sung-rh* Ch. F.—青 眼 子 *ch'ing-yen-tszĕ* P. ("green-eyed hawk").

25. *Micronisus soloënsis* Horsf.—D.

The Goshawk as well as the Sparrowhawks are used by the Chinese for hawking purposes, also, but less commonly, the Hobby, the Merlin and the Kestrels. The goshawk is trained to catch hares; the smaller birds of prey to fly at small birds, quails, etc. I have never seen the real falcon employed by a Chinese falconer.

26. *Circus spilonotus* Kaup.—D.

27. *Circus cyaneus* L. (Blue Harrier).—D.—灰 鷹 *hui-ying* P.

28. *Circus melanoleucus* Gmel.—D. S.

29. *Circus pallidus* Sykes.—D.

The harriers are included in the term 鷂 *yao* in Chinese books. Of all species of Accipitrinae the Pên-ts'ao distinguishes only two kinds; the *ying*, which includes all the larger hawks, buzzards and falcons, and of which the goshawk seems to be the type; and the *yüan* or *yao* which designates especially the kite, but includes all the smaller birds of prey, sparrowhawks, harriers, etc.

30. *Athene plumipes* Swinh.—D. S.

Swinhoe discovered this little owl near Ch'atao on the Nan-k'ou Pass (Proc. Zool. Soc. 1870, p. 448). David gives as the habitat "Pékin, Mongolie." I have not been able to find the species in the neighbourhood of Peking, but saw it once near Kalgan.

31. *Ninox japonica* T. & Schl.—S.

32. *Bubo maximus* Sibb. (Horned Owl).—D. S.—鴟 鵂 *ch'ih-hsiu* W.— 角 鴟 *chüeh-ch'ih* P. Ts.—怪 鴟 *kuai-ch'ih* ibid. 老 兎 *lao-t'u* ibid. 鈎 鵂 *kou-ko* ibid. (*i. e.* the bird which hooks pigeons). 鵰 轆 鷹 *ku-lu-ying*, 呼 嘶 鷹 *'hu-ku-ying* P. Ts. (onomatopoëtic, cf. the Latin ulula, German Uhu, etc.). 夜 食 鷹 *yeh-shih-ying* P. Ts. 訓 狐 *hsün-'hu* ibid. 猫 頭 鷹 *mao-tou-ying* ibid., also P. (*mao-rh-t'ou-ying*). 恨 狐 *'hen-'hu* P.

33. *Scops sunia* Hodgs. (Screech Owl).—D. S.—夜猫子 *yeh-mao-tszĕ* P. 獅子鴟 *shih-tszĕ-ying* P. 鵂 *fu* W.

34. *Syrnium nivicolum* Hodgs.—D. S.

35. *Otus vulgaris* Flem. (Eared Owl).—D. S.

36. *Otus brachyotis* L.—D. S.

A collective name for the two preceding species and other smaller owls in Wên'hua is 鴞 *hsiao*, of which the Pên-ts'ao records the following synonyms: 梟鴞 *hsiao-ch'ih* 山梟 *shan-hsiao*, 土梟 *t'u-hsiao*. 流離 *liu-li* (*i. e.* the vagrant bird).

37. *Caprimulgus jotaka* T. & Schl. (Japanese Goatsucker).—D. S.—鐵樹皮 *t'ieh-shu-p'i* P.—鐵鸝子 *t'ieh-li-tszĕ* P.—*kueî-niao* P.

38. *Caprimulgus stictomus* Swinh.—D.

The name of the Goatsucker in Wên-'hua is most probably 杜鵑 *tu-chüan*, which name has been explained in European dictionaries (Morrison, Williams) as that of the Cuckoo. But as I shall try to prove further on, the name of the Cuckoo is 鳲鳩, and the descriptions of the *tu-chüan* evidently point to the Goatsuker.

The Pên-ts'ao-kang-mu (6. 49 f. 14) gives the following synonyms: 杜宇 *tu-yü*, 子規 *tszĕ-hsi*, 子規 *tszĕ-kuei*, 鶗鴂 *ti-kuei*, 催歸 *ts'ui-kuêi*, 陽雀 *yang-ch'iao-(rh)*, 怨鳥周燕 *yüan-niao-chou-yen*. The first five names are intended to imitate the bird's note which, according to the Pên-ts'ao, is like 不如歸去 *pu-ju-kueî-ch'ü*. I do not know exactly what the note of the Chinese species is, but Jerdon mentions that that of Caprimulgus indicus is *tu-yo*; this is very much like the Chinese name *tu-yü*, and the first part of *pu-ju-kueî-ch'ü*. The last of the above names indicates the relation of the bird to the swallows, and the Goatsucker is indeed placed near the swallows in European systems. The description runs as follows:—

"The *tu-chüan* comes from Ssë-ch'uan and occurs also in the South. It is like a sparrow but of a dull black and red colour (摻黑赤). It has a small crest on the bill. It cries in the end of spring during the whole night, in crying it looks towards the North. The cry is most powerful in summer, then it makes no difference between day and night. The note is a very plaintive one. By hearing it the peasants know the time for their work. It eats insects and grubs; it makes no nest but breeds in the nests of other birds. In winter it becomes torpid."

The dark unattractive colouring, the habit of crying during the night, the plaintive voice, the feeding on insects and the incapacity of building nests are all well marked peculiarities of the

Goatsuckers, and the description would not admit of any other identification. The drawing of the tu-chüan given in the Pên-ts'ao cannot be considered to be a very striking likeness of a caprimulgus, but certainly does not offer any opposition to our explanation.

The present popular name in Peking, *kuei-niao*, of Caprimulgus Jotaka is perhaps an abbreviation of one of the above names given in Pên-ts'ao, and would in that case add another proof that *tu-chüan* is the goatsucker, if there should be any doubt left.

39. *Cypselus pekinensis* Swinh. (Pekinese Swift.—D. S.—野燕 *yeh-yen* (yeh-ye'rh) P.

The Peking Swift is distinguished from our home species, to which it is very closely allied, chiefly by the larger extent of the white on the throat, the light brown colour of the rump, tail and wings, and the deep purplish brown legs. It arrives in large numbers in the beginning of May, and leaves in August.

40. *Cypselus pacificus* Lath.—D. S.

41. *Chaetura caudacuta* Lath. (East Asian Swift).—D. S.

42. *Hirundo gutturalis* Scop. (Eastern House Swallow).—D. S.—家燕兒 *chia-ye'rh* P.

43. *Cecropis arctivitta* Swinh. (Chinese Striped-bellied Swallow).—D. S.—花燕兒 *'hua-ye'rh* P.

44. *Cotyle riparia* L. (Sand Martin).—D. S.—水燕兒 *shui-ye'rh* P.

45. *Ptyonoprogne rupestris* Scop.—D. S.—石燕 *shih-yen* P. Ts.

46. *Chelidon lagopoda* Pall.—D. S.

47. *Halcyon pileatus* Bodd.—D. S.—秦椒嘴 *ch'in-chiao-tsui* P. ("red-pepper-bill," from the resemblance of the bill to the husk of Capsicum annuum).—喜鵲串兒 *hsi-ch'üeh-ch'ua´n)-rh* T.

This large kingfisher is closely allied to the Turquoise kingfisher, Halcyon smyrnensis, which latter species furnishes the beautiful blue feathers for the well known female ornaments of southern China. The Chinese books distinguish only two species of kingfisher, a larger one with brilliant plumage and a smaller one. The latter is the 翠鳥 *li* or Alcedo bengalensis; the other the 翡翠 *fei-ts'ui*, 翠碧鳥 *ts'ui-pi-niao*, 鵋 *yü* or *ts'ui-yü* is the Turquoise kingfisher, but includes also the Halcyon pileatus, although its plumage is less brilliant, and no use of its feathers seems to be made. The popular name used in Tientsin, refers to the black and white colouring of the neck and breast, which presents some resemblance to the Magpie (hsi-ch'üch).

48. *Alcedo bengalensis* Gmel.—D. S.—翠雀兒 *ts'ui-ch'iao-rh* P.—柳翠 *liu-ts'ui* P.—鴝 *li*, 魚狗 *yü-kou*, 天狗 *t'ien-kou*, 水狗 *shui-kou*, 魚虎 *yü-'hu*, 魚師 *yü-shih* P. Ts.

49. *Upupa epops* L. (Hoopoe).—D. S.—鵖 *chi*, 鴷 *pi*, 戴鶏 *tai-jen*, 戴勝 *tai-shêng* E. Y.

The above names are accompanied in the Erh-ya by a very good drawing of the Hoopoe, and there is no doubt that they designate that bird. The names have been identified by native writers with the 鶻鶹 *ku-chao* or 鶻鳥 *ku-chou*. The compiler of the Pên-ts'ao expresses his doubts about the correctness of this identification; and it cannot be but erroneous because the Erh-ya mentions the Ku-chou as a different bird, and gives a drawing of it which has not the slightest resemblance to the Hoopoe. But what bird the ku-chou really is, I have not been able to find out.

50. *Zosterops erythropleura* Swinh. (Chinese White Eye).—D. S.—粉眼兒 *fên-ye(n)-rh* P.

51. *Sitta villosa* J. Verr. (Chinese Nuthatch).—D. S.

52. *Sitta amurensis* Swinh.—D. S.

53. *Certhia familiaris* L. (Creeper).—D.

54. *Tichodroma muraria* L. (Wallcreeper).—D.

55. *Troglodytes fumigatus* Temm. (Wren)—D.

56. *Rhopophilus pekinensis* Swinh.—D. S.

57. *Calamodyta orientalis* Temm. & Schl, (Eastern Reed-sparrow)—D.

This and the following reed birds are called by the Chinese in Peking 葦岕兒 *wei-jung-rh* i. e. vagabond of the reeds, 葦串兒 *wei-ch'ua(n)-rh* i. e. the bird which flits about through the reeds, or 葦鶿子 *wei-cha-tszĕ*.

58. *Calamodyta bistrigiceps* Swinh.—D. S.—吁喇子 *tszĕ-la-tszĕ* P.

59. *Arundinax aëdon* Pall.—D. S.

60. *Herbivocula flemingi* Swinh.—D. S.

61. *Calamoherpe concinens* Swinh. (Reed Wren).—D. S.

62. *Locustella certhiola* Pall.—D.

63. *Locustella lanceolata* Temm.

64. *Sylvia curruca* L.—D.

65. *Philacantha nisoria* Bechst. (Babbling Warbler).—D.

66. *Orcopneuste armandi* A. M. Edw.—D.

67. *Phyllopneuste fuscata* Blyth.—黑頭燕兒 *'hei-t'ou-ye(n)-rh* P.

68. *Phyllopneuste coronata* Temm. & Schl.—D.

69. *Phyllopneuste xanthodryas* Swinh.—D. S.

70. *Phyllopneuste plumbeitarsus* Swinh.—D. S.

71. *Phyllopneuste borealis* Blasius. (Willow Wren).—D. S.—柳串兒 *liu-ch'ua(n)-rh* P.

72. *Reguloides proregulus* Pall. (pseudo Gold Crest).—D. S.—樹串兒 *shu-ch'ua(n)-rh* P.—槐串兒 *'huai-ch'ua(n)-rh* P.

73. *Reguloides superciliosus* Gm.—D. S.—(Chinese names same as last species).

74. *Regulus japonicus* Bp. (Japanese Gold Crest).—S.

75. *Ruticilla aurorea* Pall. (Redstart).—D. S.—花紅燕兒 *'hua-'hung-ye(n)rh* P.

The Chinese consider most of the smaller birds with long tail as akin to the swallow, and therefore form their names with the character *yen*, see Chinese names of nos. 67, 76, 131, 152, 153.

76. *Ruticilla fuliginosa* Vig.—D.—燕石青兒 *yen-shih-ch'ing-rh* P.

77. *Larvivora cyane* Pall.—D. S.—藍尾巴根子 *lan-i-pa-kén-tszĕ* P. ("blue tail's root").

78. *Ianthia cyanura* Pall.—D. S.—The Chinese name of last species is sometimes likewise applied to this bird.

79. *Erithacus akahige* Temm.—D.

80. *Cyanecula caerulecula* Pall. (Redspot Bluethroat).—D. S.—籃點頦兒 *lan-tien-k'ê-rh* P. T.

81. *Calliope kamtschatkensis* Sm.—D. S.—紅點頦兒 *'hung-tien-k'ê-rh* (mas.) 白點頦兒 *pai-tien-k'ê-rh* (fem.) P.

82. *Saxicola leucomela* Pall. (Wheatear).—D.

83. *Pratincola indica* Blyth. (Indian Whinchat).—D. S.

84. *Accentor erythropygius* Swinh.—D. S.

85. *Accentor montanellus* Pall.—D.

86. *Parus minor* Temm. & Schl. (Japanese Titmouse).—D. S.—呼呼黑兒 *tszĕ-tszĕ-'hei-rh* P.—呼呼哼兒 *tszĕ-tszĕ-'hêng-rh* P—自自回回 *tszĕ-tszĕ-'hui-'hui* Ch. F.

87. *Parus pekinensis* Dav. (Pekinese Titmouse).—D. S.—Chinese names the same as those of the last species.

88. *Poecile kamtschatkensis* Bp. (Eastern Marshtit).—D.

89. *Poecile cincta* Bodd.—D.

90. *Orites glaucogularis* Gould. (Longtailed Tit).—D. S.—洋紅兒 *yang-'hung-rh* P.

91. *Orites ouratensis* A. Dav.—D.

92. *Motacilla paradoxa* Schrenck.—山石花兒 *shan-shih-'hua-rh* P. (*i. e.* pied like marble).

This pied wagtail, probably merely an eastern variety of our motacilla alba, has formerly been observed in Amurland and by P. David in Mongolia. It passes Peking in spring, where I secured specimens in April, 1874 and 1875.

The above Chinese name is given to all pied wagtails. Wagtails in general have the name 鶺鴒 *chi-ling* in books (*e. g.* in the Shêng-ching-t'ung-chih; the term is not mentioned in the Pên-ts'ao).

93. *Motacilla baicalensis* Swinh. Proc. Zool. Soc. 1871, p. 363. Observed in the Trans Baikal, and by Swinhoe on the Upper Yangtszĕ. I have obtained a specimen of this eastern representative of our common pied wagtail, to which it is very closely allied, near Peking in April 1875.

94. *Motacilla ocularis* Swinh.—D. S.—A third species of pied wagtail, which differs from all other kinds by the black streak through its eye.

95. *Budytes flavus* L. (Yellow Wagtail).—D. S.—馬棟花兒 *ma-lien-'hua-rh* P. (*i. e.* [yellow] like the *malien*, a kind of Iris, used in medicine).

96. *Budytes cinereocapillus* Sav.—D.

97. *Budytes citreolus* Pall.—D.—金香爐兒 *chin-hsiang-lu-rh* P. (lit. "golden incense jar" referring to the golden yellow crown of the head.)

98. *Calobates melanope* Pall.—D. S.

99. *Limonidromus indicus* Gmel. (Indian Wood Wagtail).—D. S.

100. *Anthus cervinus* Pall. (Pipit).—D. S.

101. *Corydalla richardi* Vieill.—D. S.

102. *Turdus naumanni* Temm. (Thrush).—D. S.—山畫眉 *shan-'hua-mei* P.—北畫眉 *pei-'hua-mei* P.

'Hua-mei, "painted eyebrow," is the famous song thrush of southern China, *Leucodiapteron sinense*, which is frequently kept in cages by the Pekinese, but does not resort to Chihli. The above names refer justly to the relation of that bird to the thrushes; they are given to most of the following species.

103. *Turdus fuscatus* Pall.—S.

104. *Turdus ruficollis* Pall. (Siberian Fieldfare).—D. S.—穿草雞 *ch'uan-ts'ao-chi* P.—Ch. F.

105. *Turdus musicus* L. (Song Thrush).—D.

106. *Turdus pallidus* Gm.—S.

107. *Turdus chrysolaos* Temm.—S.

108. *Turdus obscurus* Gm.—D. S.

109. *Turdus auritus* J. Verr.—D.

110. *Oreocincla varia* Pall.—D. S.

111. *Monticola saxatilis* L.—D.

112. *Petrocincla gularis* Swinh. (Peking Forest Thrush).—D.

113. *Petrocincla manilla* Bodd. (East Asian Rock Thrush).—D. S.—水嘴 *shui-tsui* P. ("chatterbox").

114. *Myiophoneus brevirostris* Wagn.—D.

115. *Pterorhinus davidi* Swinh.—D.

116. *Suthora webbiana* G. R. Gray.—D.—相思鳥 *hsiang-ssĕ-niao* P. (*i. e.* love-birds).—驢糞球兒 *lü-fén-ch'iu-rh* P.

This pretty little brown bird, in general appearance not unlike a titmouse, is not uncommon near Peking in spring and autumn. Being favourite cagebirds among the natives they are caught in large numbers. Swinhoe states that they are kept for fighting in Shanghai and in the South; I have never seen them used for that purpose in the North nor could I observe that they are of very pugnacious disposition. I kept a great number together with many other small birds; they used to sit always on the same stick and slept in a line touching each other, thus justifying the popular name given to them: hsiang-ssĕ-niao. This name is, besides, given to several other birds, *e. g.* the southern Leiothrix lutea (Scop.) and to the true love-birds, the small green parrots (Psittacula).

117. *Ampelis garulla* L. (Bohemian Chatterer).—D. S.—太平鳥 *t'ai-p'ing-niao* P.

118. *Oriolus chinensis* Gmel. (Chinese Oriole).—D. S.—黃鸝 *'huang-li* P. Ts.—Sh. Ch.—P.—T. etc.—鶯 *ying* P. Ts.—黃鳥 *'huang-niao* ibid.—倉庚 or 鶬鶊 *ts'ang-kĕng* P. Ts.—Sh. Ch.—青鳥 *ch'ing-niao* P. Ts.—黃伯勞 *'huang-po-lao* ibid. ("the yellow shrike")—黧黃 *li-'huang* ibid. (*i. e.* the black and yellow sc. bird).

119. *Lanius lahtora* Sykes.—D.

120. *Lanius major* Pall.—D.

121. *Lanius sphenocercus* Cabanis.—雲南青 *yün-nan-ch'ing* (*i. e.* the grey bird from Yünnan) P.—山虎伯勞 *shan-'hu-po-lao* P.—寒露兒 *'han-lu-rh* (*i. e.* the bird which arrives at the Han-lu [cold dew] period, about the beginning of October) P.

Père David mentions two species of the larger shrikes as being rare at Peking, I have never seen either of them. But I secured specimens of a shrike in April 1874 and September 1875, which was determined by Mr. Cabanis as his Lanius sphenocercus. Perhaps David's L. major was also this species.

The ancient bird name 伯勞 *po-lao*, which is mentioned in the classics, has been identified with the shrike; and I have no doubt that this identification is correct. The bird at least, which the Pên-ts'ao-kang-mu describes under that name, is certainly the shrike. The following synonyms of polao are recorded there: 博勞 *po-lao*, 伯鶐 *po-liao*, 伯趙 *po-chao*, 鵙 *chü*, 鴃 *chüeh*. According to Swinhoe the shrikes are still called

*po-lao* or *chü* in Formosa. In the North all shrikes are called *'hu-po-la* (also 'hu-pu-la or 'hu-pa-la) which is most probably derived from po-lao; *'hu*, tiger, being added to describe the fierce and cruel disposition generally ascribed to these birds.

122. *Lanius magnirostris* Less.—D.

123. *Lanius bucephalus* Temm. & Schl.—D. S.—蠻子 *mantszĕ* T. ("Southerner," also applied to the three following species).

124. *Lanius cristatus* L.—D.

125. *Lanius superciliosus* L.—伏地虎伯勞 *fu-ti-'hu-po-la* P.

126. *Lanius lucionensis* L.—D. S.—花虎伯勞 *'hua-'hu-po-la* P. (also applied to the three preceding species).

Of the Redtailed Shrikes only L. lucionensis seems to breed in Chihli; L. cristatus L. and L. superciliosus pass Peking during their migration. The latter species had not previously been observed in Chihli; I obtained specimens in May 1874 and 1875.

I have seen the smaller shrikes trained by natives to fly at sparrows and other small birds; they were carried like hawks with a rope tied to one of the legs. One of them, I believe a Lanius bucephalus, caught a sparrow in my presence. The Chinese asserted that it is much more difficult to tame and train a shrike than any hawk.

127. *Dicrurus cathoecus* Swinh. (Chinese Black Drongo).—D. S.—黎雞兒 *li-chi-rh* P.—Sh. Ch.—鶺鴒 *chi-chiu* P. Ts.—E. Y.—鵖鶺 *p'ing-chi* P. Ts.—E. Y.—鵖鴒 *p'i-chi* P. Ts.—鵖鴒 *p'i chia* ibid.—祝鳩 *chu-chiu* ibid.—烏鶖 *wu-chü* ("black shrike") ibid.—鴉鶖 *ya-chü* ("crow-shrike") ibid.—鴷犁 *chia-li*, 稺油郎 *cha-yu-lang*, 鐵鸚鵡 *t'ieh-ying-wu* (*i. e.* iron coloured parrot), 夏雞 *hsia-chi* ibid.

Common in the hills near Peking during the summer; it leaves in August.

128. *Buchanga leucogenys* Walden.—D.

129. *Chibia brevirostris* Cab.—D. S.

130. *Pericrocotus cinereus* Lafr.—D. S.

131. *Pericrocotus brevirostris* Vig.—D.—賓紅燕兒 *pin-'hung-ye(n)-rh* P. ("the foreign red swallow").

A few of this pretty black and red flycatcher pass Peking every spring during their migration. One was shot in the British Legation in spring 1875.

132. *Butalis sibirica* Gm. (Siberian Flycatcher).—S.

133. *Butalis latirostris* Raffl.—D.

134. *Erythrosterna luteola* Pall.—D.

135. *Erythrosterna albicilla* Pall.—D.—黃點頦兒 *'huang-tien-k'ĕ-rh* P.

136. *Xanthopygia tricolor* Hartl.—D.

137. *Cyanoptila cyanomelaena* Temm —D.—藍靛缸兒 *lan-tien-kang-rh* P.

The Chinese name means literally "the indigo jar;" the idea is probably that, the plumage being indigo blue all over, the bird looks as if it had been in a dyeing jar.

138. *Tchitrea incei* Gould. (Paradise-Flycatcher).—D. S.—紫綀 *tszĕ-lien* (male), 白綀 *pai-lien* (female) P. T.—綀鵲 *lien-ch'üeh* W.—拖白綀 *t'o-pai-lien* P. Ts.—Ch. F.—帶鳥 *tai-niao* Sh. Ch.—拖尾鳥 *t'o-wei-niao* Sh. Ch.—壽帶鳥 *shou-tai-niao* S. Ts.—紅壽帶 *'hung-shou-tai* P.

This beautiful bird, with elegant brownish red (male), or pure white (female) plumage, and long tail, the two central feathers of which exceed the body in length, arrives near Peking in May and leaves again in September. It is not common, at least in the neighbourhood of the capital; but is often to be bought in the fairs from the Chinese, with whom it is a favourite cagebird.

The nomenclature of this species as given above requires some explanation, as 綀鵲 (not 雀, as Williams has it) has been identified with the red legged blue magpie, *Urocissa sinensis*. (Williams' Diction., Bridgman's Chrestom.). In the description of the *lien-ch'üeh* given in the Pên-ts'ao, it is said that it has a long tail of white colour like white silken ribbon (綀帶) and that its popular name is *t'o-pai-lien*, i. e. the bird which drags white silk. The latter name, a very good designation for the long soft tail feathers of the Tchitrea, occurs also in the Chi-fu-t'ung-chih; and the present terms of the Peking and Tientsin vernaculars, *tszĕ-lien* and *pai-lien*, are evidently derived from that name. The San-ts'ai-t'u-'hui says that the *lien-ch'üeh* is like the *shan-ch'üeh* 山鵲 (Urocissa sinensis, as I shall show further on) but smaller, and that the popular name is *shou-tai-niao*. 壽 is perhaps mistaken for 綬, silken ribbon; in that case shou-tai-niao would express the same idea as *t'o-pai-lien*. The male Tchitrea is still called *'hung-shou-tai* in Peking. The Shêng-ching-t'ung-chih gives as synonyms of lien-ch'üeh *t'o-wei-niao*, i. e. the bird which drags a [long] tail and *tai-niao* "ribbon bird." In all the books quoted above *ch'üeh* (or *ch'io*) is never written with the character for sparrow, but with that for magpie 鵲, and indeed the tchitrea offers some resemblance to the magpie; not only in general appearance and habit, but also in its loud and chattering cry.

139. *Garrulus brandti* Eversm. (Siberian Jay).—D. S.—松鴉 *sung-ya* P.

Very much like our European jay; it is very rare in the neighbourhood of Peking, but of frequent occurence in the more remote hills, especially in the East.

140. *Urocissa sinensis* L. (Chinese Blue Treepie).—D. S.—長尾巴練 *ch'ang-i-pa-lien* P.—山鵲 *shan-ch'üeh* P. Ts.—S. Ts.—鷽 *hsüeh* ibid.—山鵲 *shan-cho* P. Ts.—赤嘴烏 *ch'ih-tsui-wu* ibid.

In general appearance like a magpie with red bill and feet; the deep black of the head and neck passes into dark blue on the back; the wings and the long graduated tail are lighter blue with white stripes. This elegant bird lives in wooded valleys of the hills, and is therefore very rare near Peking, but frequently met with in the Sishan as well as in the hills to the North and East. Its shrill cry: 'pink, pink' of almost metallic sound is relieved sometimes by chattering not unlike that of the magpie, or a short melodious flute-like note. In the villages high up the mountains the urocissa plays almost the part of the magpie, crowding the groves which surround them.

As this species has been erroneously identified with the Chinese *lien-ch'üeh*, its proper Chinese names have not been correctly explained. According to Williams, 鷽 "may be the Pica vagabunda(?), but it is more probably a sort of Garrulax or thrush." The description of the *hsüeh* or *shan-ch'üeh* in the Pên-ts'ao says that it occurs everywhere in mountain woods; its appearance is like that of the magpie, its colour is dark with stripes, its beak and feet red, it cannot fly very far; it feeds on smaller birds. The Sants'ai-t'u-'hui describes the *hsüeh* as similar to the magpie, but having variegated striped plumage, red bill and red feet. These descriptions and the drawing given in the last-named work leave no doubt that *hsüeh* is the Urocissa.

The use of the character 練 in the present popular name *ch'ang-i-pa-lien* has probably given rise to the *erroneous* identification of *lien-ch'üeh* with the Urocissa.

141. *Nucifraga caryocatactes* L. (Nutcracker).—D. S.—葱花兒 *ts'ung-'hua-rh* P.

142. *Pica media* Blyth. (Eastern Magpie).—D. S.—喜鵲 *hsi-ch'üeh*, 四喜鵲 *ssĕ-hsi-ch'üeh* W.—P.—T.—飛駁烏 *fei-po-niao* P. Ts.—乾鵲 *kan-ch'üeh* ibid.—神女 *shên-nü* ibid.

Although the differences by which the Asiatic Magpie is distinguished from our home species in plumage and note are not very great, it is now considered by Ornithologists to be a different species. It is the commonest bird in Peking, and one of the small number which stay here all the year round.

The magpie is considered a bird of good omen by the Chinese, and is therefore called hsi-ch'üeh "the propitious bird" or ssë-hsi'ch'üeh *i. e.* the bird of fourfold joy. In Williams' dictionary the name is translated "the joyous birds, so named from its incessant bowing." But the Pên-ts'ao says: "it can announce joy, therefore, it is called the bird of joy.[28]

143. *Cyanopolius cyaneus* Pall. (Asiatic Blue Magpie).—D. S. —山喜鵲 *shan-hsi-ch'üeh* P.—灰喜鵲 *'hui-hsi-ch'üeh* P.

144. *Corvus japonensis* Bp. (Japanese Raven).—D. S.—老鴰 *lao-kua* (Kalgan).

This large Raven is not met with near Peking, but frequently beyond the inner Great Wall; especially near Hsüan-'hua-fu and Kalgan.

145. *Corvus sinensis* Gould. (Chinese Carrion Crow).—D. S. —老鴰 *lao-kua* P.—老公 *lao-kung* T.

146. *Corvus torquatus* Less. (White necked Crow).—D. S.—白脖老鴰 *pai-po-lao-kua* P.—寒鴉兒 *'han-ya-rh* P.—燕白頦烏 *yen-pai-tou-wu* E. Y. (v. III, fol. 14, fig. 3 and fol. 20).—鵶鴉 *hsia-ya* P. Ts.—鬼鳥 *kuei-niao* P. Ts.—白脖老公 *pai-po-lao-kung* T.

147. *Frugilegus pastinator* Gould. (East-Asian Rook).—D. S. —老鴰 *lao-kua* P.—山老公 *shan-lao-kung* T.

148. *Lycos dauricus* Pall. (Eastern Jackdaw).—D. S.—小寒鴉兒 *hsiao-'han-ya-rh* P.— 鶐 *yü*, 鵸鵌 *p'i-chü*, 鵸烏 *p'i-wu* E. Y. (v. III, fol. 14, fig. 2, fol. 20).

149. *Lycos neglectus* Schleg. (Black Jackdaw).—D. S.

"Closely allied to the European Jackdaw, but it has a much smaller and slenderer bill, and no grey on the sides of the head and neck." (Swinhoe). Very rare near Peking.

150. *Fregilus graculus* L. var. *brachypus* Swinhoe. Proc. Zool. Soc. 1871, p. 383. (Short footed variety of the common Chough). —D. S.—紅嘴鴉 *'hung-tsui-ya* P.—山烏 *shan-wu* P. Ts.—鴽 *i* P. Ts.

Common in the hills; rarely seen in the plain except in winter, when they resort to Peking in large numbers.

All species of the corvinae are included in the ancient terms 烏 *wu* and 鴉 *ya*. In the Pên-ts'ao four species are distinguished: first 慈烏 *tsz'ĕ-wu* gentle or affectionate crow; small, of uniform black colour with small bill, which returns to feed.[29]

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[28] 能報喜故謂之喜.

[29] 反哺 *fan-pu*. This has been translated (Williams' Dictionary, p. 714) "disgorge to feed their young." There is a proverb: 羊羔跪乳.

This is probably the Black Jackdaw, *Lycos neglectus:* second 鴉烏 *ya-wu*, also called 烏鴉 *wu-ya*, *lao-ya*, or 大嘴鴉 *ta-tsui-ya*, larger than the last, with large bill. This is probably the common crow, including the raven and rook: third 燕烏 *yen-wu*, 白脰 *pai-tou*, 鬼烏 *kuei-niao* or 鵲鴉 *hsia-ya*, similar to the *ya-wu*, with a white neck. This is the "Ringed Crow," *Corvus torquatus*. The Pên-ts'ao gives *yen-wu* and *pai-tou* as two different names, but the Erh-ya writes *yen-pai-tou-wu* as one name; the drawing of the bird given in the latter work is a very fair likeness of the Corvus torquatus: fourth 山烏 *shan-wu* or 鵯 *i*, like the ya-wu, but smaller and with red bill, = the Chough, *Fregilus graculus* var. *brachypus*.

寒鴉 *'han-ya* "cold crow" is mentioned in the Pên-ts'ao without indication to which of the four kinds described it belongs; the term is now applied in Peking both to the white necked crow and the pied Daurian Jackdaw.

鴨鵡 *p'i-chü* or 鶐 *yü* of the Erh-ya is according to the drawing given of it unmistakeably the Daurian Jackdaw; the Pên-ts'ao records the name as a synonym of wu-ya, without mentioning to which of the four kinds it is to be referred.

151. *Temenuchus dauricus* Pall.—D. S.

152. *Sturnus cineraceus* Temm. (Eastern Starling).—D. S.—燕八哥兒 *yen-pa-ko-rh* P.—高粱頭 *kao-liang-t'ou* P.

The first of these names means literally "swallow-pako; pako is the name of the Mainah of southern China, *Acridotheres cristatellus*, the above name thus justly referring to the relation existing between the Starling and the Mainah. *Yen*, swallow, is probably added to designate either the colouring or the smaller size of the starling. The other name is perhaps given to the bird because a yellowish spot behind the eye resembles somewhat a grain of the Kao-liang or Sorghum.

The starlings arrive in Peking in March, and are among the earliest birds of passage in spring. Swinhoe records that they breed in north China; but I have never observed the species near Peking during the summer, only during a short time in spring and autumn.

153. *Fringilla montifringilla* L. (Mountain Finch, Brambling).—D. S.—燕雀兒 *yen-ch'iao-rh* P.—虎皮兒 *'hu-p'i-rh* T.

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烏鴉反哺 "the lamb kneels down to suck, the crow returns to feed," *i. e.* nature itself teaches filial piety. Fan-pu might therefore signify that the birds feed their old parents in return for their being brought up by them. The Pên-ts'ao quotes 孝鴉 *hsiao-ya*, *i. e.* the dutiful, filial crow, as a synonym of *tsz'ŭ-wu*.

154. *Chrysomitris spinus* L. (Siskin).—D. S.— 黃雀兒 *'huang-ch'iao-rh* P.—T.

155. *Chlorospiza sinica* L.—D, S.—金翅兒 *chin-c'hih-rh* P. T. ("Goldwing").

156. *Leucosticte brunneinucha* Brandt.—D.

157. *Aegiothus borealis* Temm.—貯點紅 *chu-tien-'hung* P. —Ch. F.

158. *Passer montanus* L. (Sparrow).—D. S.—雀 *ch'iao.*—家雀兒 *chia-ch'iao-rh* P.—T.—Sh. Ch.—Ch. F.—麻雀兒 *ma-ch'iao-rh* P.—老家子 *lao-chia-tszĕ* P.—瓦雀兒 *wa-ch'iao-rh* P. Ts.—Ch. F.—賓雀兒 *pin-ch'iao-rh* P. Ts.

159. *Coccothraustes vulgaris var japonicus* T. & Schl. (Japanese Hawfinch).—D. S.—錫嘴 *hsi-tsui* P.—Sh. Ch.—老西兒 *lao-hsi-rh* P. (the Pekinese nick-name for Shansi people, from which province the bird is supposed to come).

160. *Eophona melanura* Gm.—D. S.—皂兒 *tsao-rh* P.

161. *Eophona personata* Schl.—D. S.—梧桐鳥 *wu-t'ung-niao* P.—蠟嘴 *la-tsui* ("wax-bill," so called on account of its yellow beak) P.—Ch. F.—Sh. Ch.—P. Ts.

The three preceding species of hawfinch are frequently kept by the Chinese, especially the last: they are carried about on short twigs, and trained to perform various tricks. A globule (made of bone or ivory) is thrown in the air, the bird flies at it, and after having caught it returns to the hand of his master. Groups of Chinamen are often to be seen in the streets of Peking, each carrying one or several of these clever "wutungs," and competing against one another with their birds; frequently bets are made. The bird very seldom misses the globule, but often catches two in the same flight.

The hawfinches are, together with the Java Sparrow (Rice bird), Bull finch, etc., collectively described in Chinese literature as 桑鳸 *sang-'hu* or 鳸鳥 *'hu-niao*. The Pên-ts'ao gives some other names for it, viz: 青雀 *ch'ing-ch'iao*, i. e. grey sparrow, 蠟嘴鳥 *la-tsui-niao* "wax-billed bird," 窩脂 *chieh-ch'ih*, and states that there are varieties with yellow, white, grey, black and red bill, and that they are frequently taught to perform tricks. *La-tsui* and *hsi-tsui*, still popular names of the yellow beaked and the common hawfinch, are mentioned as synonyms or varieties of the *sang-hu* in the Shêng-ching-t'ung-chih. All the colours mentioned in the Pên-ts'ao occur in the tribe of the Hawfinches and Bullfinches: the Java Sparrows have red, some varieties white bills, the Bullfinch a grey one, the bill of the Eophona personata is yellow, etc.

162. *Pyrrhula griseiventris* Lafr. (Eastern Bullfinch).—D. S.
163. *Carpodacus erythrinus* Pall.—紅麻料兒 *'hung-ma-liao-rh* P.—T. (male).—青麻料兒 *ch'ing-ma-liao-rh* P.—T. (female). —*'hung-liao, ma-liao, ma-'hung-liao* Sh. Ch.—Ch. F.
164. *Carpodacus pallasii* Bp.—D. S.
165. *Carpodacus davidianus* M. Edw.—D.
166. *Carpodacus mongolicus* Swinh.—D. S.
167. *Uragus sibiricus* Pall.—D.
168. *Loxia albiventris* Swinh. (Chinese Crossbill).—D. S.—male: 紅交嘴 *'hung-chiao-tsui*, female: 黃交嘴 *'huang-chiao-tsui* P.
169. *Euspiza aureola* Pall. (Eastern Ortolan).—D. S.—黃鴨 *'huang-tan* P.
170. *Euspiza rutila* Pall.—D. S.—紫背兒 *tszĕ-pie-rh* P.
171. *Emberiza rustica* Pall.—D. S.—花眉子 *'hua-mei-tszĕ* P.
172. *Emberiza spodocephala* Pall.—D.—青頭兒 *ch'ing-t'ou-rh* P.
173. *Emberiza elegans* Temm.—D. S.—黃眉子 *'huang-mei-tszĕ* P.
174. *Emberiza chrysophrys* Pall.—D. S.—大眉兒 *ta-mei-rh* P.—五道眉兒 *wu-tao-mei-rh* P. ("five-striped-eyebrow;" referring to the yellow, black and white streak above the eyes).
175. *Emberiza leucocephala* Gmel.—D. S.
176. *Emberiza tristrami* Swinh.—D. S.
177. *Emberiza castaneiceps* Gould.—D.—三道眉兒 *san-tao-mei-rh* P.—Ch. Sh.—灰眉子 *'hui-mei-tszĕ* P.—T.
178. *Emberiza pusilla* Pall.—D. S.—虎頭兒 *'hu-t'ou-rh* P. ("tiger's head," from the brown and black streaks on the crown).—山家雀兒 *shan-chia-ch'iao-rh* T.
179. *Emberiza passerina* Pall.—D.
180. *Schoenicola pallasii* Cab. (Reed Bunting).—D.
181. *Plectrophanes nivalis* L. (Snow Bunting).—D.
182. *Plectrophanes lapponicus* L. (Lapland Bunting).—D. S.
183. *Alauda arvensis* L. (Skylark).—D. S.—阿藍兒 *ê-la(n)-rh* P.—Sh. Ch.—阿灤 *a-lan* Ch. F.

The name is apparently intended to imitate the bird's note, like our Alauda, Lerche, Lark; it is likewise applied to the two following species.

184. *Galerida cristata* L. (Crested Lark).—D. S.—鳳頭阿藍兒 *fêng-t'ou-ê-la(n)-rh*, *fêng-t'ou-rh* P. *fêng-t'ou-niao* Sh. Ch.

Fêng 鳳 is the male of the Phœnix, which is supposed to have a beautiful crest; therefore fêng-t'ou occurs often in names of birds which have a crested head.

185. *Alaudula chiliensis* Swinh.—D. S.

186. *Melanocorypha mongolica* Pall. (Mongolian Lark).—D. S.—*Pai-ling* 百靈, 百鴒, 百鸝, or *pai-ling-rh*.

Common in Mongolia, resorts to Chihli only in the winter. It is the most highly priced cagebird throughout China; in Peking its beautiful song is heard in every lane. The name *pai-ling* meant originally the "hundred spirits" with reference to the manifold notes of the bird; the other characters have been formed afterwards. [A similar change is to be observed in the name of the Antelope, *ling-yang*, see above].

鴒 is used as a general term for Lark and Wagtails; the latter are called 鶺鴒 *chi-ling*, the crested lark 角鴒 *chüeh-ling*. In Bridgman's Chrestomathy the name of the Skylark is written 哦鴒 *é-ling*, singing lark; I do not know on what authority. Perhaps the northern name of the Skylark, ê-larh or êlirh has been thought to be a contraction of ê-ling. But as I have mentioned above, this name is written 阿藍 *é-lan* in the Shêng-ching-t'ung-chih, and besides, *ling* would not be contracted with *rh*; the name would be pronounced *é-ling-rh*, as the name of the Mongolian lark is always pronounced *pai-ling-rh*.

187. *Otocorys alpestris* L.—D.

188. *Otocorys sibirica* Eversmann.—D. S.

189. *Picus mandarinus* Gould. (Chinese Pied Woodpecker. —S.—香嘴打木 *hsiang-pên-ta-mu* P.

This species, although not mentioned by David, and *Gecinus canus* are the commonest woodpeckers near Peking. All other species mentioned below are rare and confined to the hills.

All woodpeckers are called pên-ta-mu (pen-terh-mu) in Peking; the general term for them in books is 啄木鳥 *cho-mu-niao*, of which 斲木 *cho-mu* and 鴷 *lieh* are synonyms. The Erh-ya gives under this heading a fair representation of a pied woodpecker.

190. *Yungipicus scintilliceps* Swinh.—D. S.

191. *Hypopicus poliopsis* Swinh.—D. S.

192. *Dryocopus martius* L. (Black Woodpecker).—S.

This must be the 山啄木 *shan-cho-mu* or 大老鴉 *ta-lao-ya* of the Pên-ts'ao, which is described as a large black woodpecker with a red crown.

193. *Gecinus canus* Gmel. (Green Woodpecker).—D. S.—臭嘴打木 *ch'ou-pên-ta-mu*, 花嘴打木 *'hua-pên-ta-mu* P.

194. *Yunx japonica* Bp. (Eastern Wryneck).—D.—蛇皮鳥 *shé-p'i-niao* P.

195. *Cuculus canorus* L. (Common Cuckoo).—D. S.—喀咕 *k'o-ku* P.—鳩鳩 *shih-chiu* P. Ts.—鴶鵴 *chia-chü*, 獲穀 *'ho-ku*, 郭公 *ko-kung*, 布穀 *pu-ku* ibid.

*Shih-chiu* has been explained as a kind of woodpigeon or turtledove (Bridgman's Chrestomathy, Williams' Dictionary; Watters, Chinese Notions of Pigeons and Doves in Journ. of N. Ch. Br. of R. As. Soc. 1867). But the description points evidently to the Cuckoo; more especially the mention of the habit of that bird of not building nests, but laying its eggs in the nests of other birds would not admit of any other identification. Besides, Mr. Swinhoe asserts that *chia-chü* is still used in the south to designate the Cuckoo.

196. *Cuculus striatus* Drapiez. (Striped Cuckoo).—S.

197. *Cuculus indicus* Cabanis.—花喀咕 *'hua-k'o-ku* P. ("Variegated Cuckoo").

A specimen of cuckoo shot near Peking in July 1875 and sent to Berlin, was identified with Cuculus indicus by Mr. Cabanis.

198. *Columba livia* Briss. (Rock Pigeon).—D. S.—野鴿子 *yeh-ko-tszĕ* P.

199. *Columba rupestris* Bp.—D. S.

200. *Turtur rupicola* Pall. (Eastern Turtledove).—D.—班鳩 *pan-chiu* P.

201. *Turtur risorius* L. (Barbary Dove).—D. S.

202. *Syrrhaptes paradoxus* Pall. (Sand Grouse).—D. S.—沙鷄 *sha-chi* P.—T.—Ch. F.—Sh. Ch.—鵝鳩 *t'o-chiu* E. Y.—P. Ts.—Sh. Ch.—Ch. F.—突厥雀 *tu-chüeh-ch'iao* (Turks' bird) P. Ts.—寇雉 *k'ou-chih* (rebels' pheasant) E. Y.—P. Ts.

This grouse characterised by very low feet which are covered down to the nails with thin hairlike feathers, and are destitute of hindclaws, and with two long and pointed central feathers in the tail, is common on the steppes of Mongolia and Siberia; but resorts to northern Chihli in winter. It is renowned for its long migrations, probably caused by extremely cold winters; in 1861 it was common all over the plain of Chihli, whilst during my stay in Peking from 1873 to 1876, I have only seen one specimen, shot in February in outer Chihli.[30]

The species long ago attracted the notice of the Chinese, as it can be seen from the following description of the *t'o-chiu* in the Erh-ya: "The t'o-chiu is as large as a pigeon, resembles

[30] In 1863 the Syrrhaptes came in great numbers to Europe, and in Germany, the "Steppenhuhn" or Grouse of the Steppes as it was called, was common during the winter all over the northern plains.

a female pheasant, has feet like a rat, no hindclaws, a bicuspidate tail; it is stupid and flies in large flocks."

The Pên-ts'ao repeats this description, and adds *tu-chüeh-ch'iao* as another name of the same bird. This name, "bird of the Tu-chüeh," and *k'ou-chih*, "rebels' pheasant," are referred to the superstitious belief that the arrival of great flocks of the syrrhaptes from the country of rebellious tribes indicated the approach of the rebels. The Pên-ts'ao quotes a passage from the 唐書 (History of the T'ang Dynasty) "At the time of Kao-tsung when the Tu-chüeh invaded the country, flocks of the syrrhaptes also passed the frontier; the people on the frontier were frightened, and said: 'these birds are called Turks' birds and fly towards the south, the Turks will certainly invade our country.' And so it really happened."

The present popular name is *sha-chi* "sand-chicken," which term is identified with *t'o-chiu* both in the Shêng-ching-t'ung-chih and Chi-fu-t'ung-chih. Abbé Huc mentions in his Travels that syrrhaptes was called lung-kiao "dragon-foot," by the Chinese in Mongolia.

203. *Phasianus torquatus* Gmel. (Ringed Pheasant)—D. S.—野鷄 *yeh-chi* P. T.—山鷄 *shan-chi* P.—雉 *chih* W. H.

Still common in Chihli, though not in the close neighbourhood of the capital. Some have been shot on the hills near the Summer Palace, but the grounds where pheasants are still plentiful, commence only at about two days' journey from Peking. The best shooting is to be had in the hills to the north.

204. *Syrmaticus reevesii* Gray. (Reeve's or Longtailed Pheasant).—D. S.—雉雞 *chih-chi* P.—山雉 *shan-chih*, 山雞 *shan-chi*, 鶅雞 *ti-chi*, or *ti-chih* P. Ts.

This magnificent pheasant has, as far as I know, never been shot by Europeans within the province of Chihli, but a few are generally brought to Peking in winter, probably from the south-western hills. It is of more frequent occurrence in Shansi, Shensi and Ssë-ch'uan.

205. *Pucrasia xanthospila* Gray.—D.

206. *Crossoptilon mantchuricum* Swinh. (Hoki Pheasant).—D. S.—鵪雞 *'ho-chi* P.—P. Ts.—Sh. Ch.—Ch. F.—黑雞 *'hei-chi* Sh. Ch.—黑雉 *'hei-chih* P. Ts.—鴙 *chieh* P. Ts.

The genus Crossoptilon or Eared Pheasant, which is peculiar to north China, Manchuria and eastern Central Asia, is at once distinguishable by its large size, broad bushy tail and the white tufts of feathers on both sides of the red face. There are three or four species known: first, Crossoptilon auritum, already described as Phasianus auritus by the Russian Natu-

ralist Pallas in the last century. In the succeeding period the knowledge of its habitat had been lost, but P. David discovered the species again in Kokonor. He took it for a new species and described it as Crossoptilon caerulescens, but the identity with Phasianus auritus Pall. has since been pointed out. (cf. Swinhoe Proc. Zool. Soc. 1871, p, 399). The second species is Crossoptilon drouynii Milne-Edwards, discovered by David on the eastern frontiers of Tibet, perhaps the same as Crossoptilon tibetanum Hodgson. The third species is spread over north China and Manchuria. It was at first also taken for Phasianus auritus Pall., but is justly described as a new species, Cr. mantchuricum, by Swinhoe (Proc. Zool. Soc. 1862, p. 287). It is a fine bird; nearly as large as a turkey, with dark blue almost black plumage, with which the bushy greyish white tail, the white tufts on the head, the red face and red legs contrast beautifully.

The Crossoptilon lives on wooded hills, and is for that reason very rare near Peking. The nearest place where they are to be found, is the country round the coal mines of Chaitang, west of Peking; from those hills which are still well wooded, P. David got his first specimens. The Crossoptilon is of more frequent occurrence in the north, in the part of Chihli outside of the Great Wall and towards Manchuria; European sportsman have several times succeeded there in bagging this remarkable game bird.

There is no difficulty in tracing out the name of this species in Chinese literature; the present popular name, *'ho-chi* ('ho-ki) is the same as 鶴雞 in the books; and comparing the description of this as given in the Pên-ts'ao or Sants'ai-t'u-'hui one cannot but wonder why Williams explains it as "a variety of Reeves' pheasant, Phasianus superbus." The Pên-ts'ao says that it is like a pheasant but larger, of yellow and black colour, and has horns of feathers (毛角) on the head, and gives *'hei-chih* "black pheasant" as a synonymous appellation.

207. *Perdix barbata* J. Verr. & Desm. (Grey Partridge).—D. —半翅 *pan-ch'ih* ("half winged") P.—沙鷄 *sha-chi* P.

Common on the bare hills northwest of Peking, especially beyond the inner branch of the Great Wall.

208. *Caccabis chukar var. pubescens* Swinh. (Chinese variety of the Himalayan Chukar Partridge).—D. S.—石雞 *shih-chi* P.—Sh. Ch. or *shih-chi-tszĕ* P.

Common in the hills near Peking.

Partridges are designated in the books by 鷓鴣 *chê-ku* or 越雉 *yüeh-chih*.

209. *Tetrastes bonasia* L. (Hazelhen, Hazelgrouse.—D.—松雞 *sung-chi* P.

The European Hazelgrouse (Haselhuhn), which is common all over Siberia to the Amur, has been observed by David in northern Chihli. Specimens are sold in Peking occasionally; some are said to be kept in the Nan-'hai-tszĕ.

210. *Tetrao urogalloides* Pall. (Siberian Capercailzie).—D. Observed by David in northern Chihli.

211. *Coturnix communis* Bonn. (Quail).—D. S.—鵪 鶉 *an-ch'un.*

212. *Hemipodius vicarius* Swinhoe.—水鵪鶉 *shui-an-ch'un* P.

213. *Otis tarda* L. (Bustard).—D.—地 鴇 *ti-pu* P.—Sh. Ch. —鴇 *pao* P. Ts.— 獨豹 *tu-pao* ibid.

The Great Bustard is getting very rare now in Chihli. In 1860 and 1861 foreigners used to have very good sport after this bird near Tientsin; and in the later years specimens were often sold at the markets, but during the last years I have never seen a single one either in Peking or in Tientsin. The natives, however, asserted that there are bustards still in the northeast of the province.

214. *Grus cinerea* Bechst. (Common Crane).—D.—灰 鶴 *'hui-'hao* P.—Sh. Ch.—Ch. F.—青 鶴 *ch'ing-hao* P.

215. *Grus monachus* Temm.—D.—玄 鶴 *hsüan-'hao* P. Ts.

216. *Grus leucauchen* Temm.—D.

This greyish white crane with red legs, which occurs in Japan, Amurland, Siberia and Mongolia, has been observed by David near Süan-'hua-fu, together with the preceding and following species.

217. *Grus viridirostris* Vieill. (White Crane).—D. S.—仙 鶴 *hsien-'hao* P.—白 鶴 *pai-'hao* P.—Sh. Ch.—Ch. F.—鶴 *'hao,* 仙 禽 *hsien-ch'in,* 胎 禽 *t'ai-ch'in* W. H.

This beautiful white crane with black wings and a red crown is sometimes brought alive to market for sale at Peking, but it is doubtful whether those specimens were caught within Chihli or perhaps brought from Liaotung.

218. *Grus virgo* L.—D.

Breeds in Mongolia, and has been seen in the north-western part of Chihli.

219. *Glareola orientalis* Lath. (Swallow Plover).—D. S.—土 燕 子 *t'u-yen-tszĕ* T. ("ground swallow").

Common near Tientsin in summer; the Chinese name justly refers to the swallow like appearance of the bird and to its habit of nesting in the ground.

220. *Vanellus cristatus* Mey. & Wolf. (Peewit, Lapwing).—D. —窪子 *wa-tszĕ* P.—水鷄 *shui-chi* P.—T.

221. *Chettusia cinerea* Blyth. (Grey Lapwing).—D. S.

222. *Squatarola helvetica* L.—D.

223. *Charadrius fulvus* Gm. (Golden Plover).—D. S.—金背子 *chin-pei-tszĕ* T.

Rare at Peking; uncommon round Tientsin in spring.

224. *Eudromias veredus* Gould.—D.

225. *Aegialites mongolus* Pall. (Mongolian Plover).—雀兒鴴 *ch'iao-rh-cha* T. ("sparrow-plover").

This little redbreasted plover occurs near Tientsin in spring; it is not mentioned by David.

鴴 *cha* (in Tientsin *tsa*) or *shui-cha* is now in Tientsin a general name for smaller water-birds, including snipe, plovers, sandpipers, redshanks and the like. In the books *shui-cha* designates the snipes.

226. *Aegialites hartingi* Swinh. (Chinese Ringed Plover).—D.

227. *Aegialites cantianus* Lath. (Kentish Plover).—D.

228. *Aegialites hiaticula* L. (European Ringed Plover).—D.

229. *Aegialites dubius* Scop. (Sand Plover).—D. S.

230. *Haematopus osculans* Swinh. (Chinese Oystercatcher). —D. S.

231. *Recurvirostra avocetta* L. (Avoset).—D.

232. *Himantopus candidus* Bonn. (Long-legged Plover).—D. —長腿娘子 *ch'ang-t'ui-niang-tszĕ* T.

Only one seen by P. David at Peking; I got several specimens at Tientsin in May 1876.

233. *Totanus glottis* L. (Greenshank).—D.

234. *Totanus fuscus* L. ("Spotted Snipe").—D. S.

235. *Totanus calidris* L. (Redshank).—D. S.—紅腿鴴 *'hung-t'ui-cha* T.

236. *Totanus glareola* L. (Wood Sandpiper).—D. S.

237. *Totanus ochropus* L. (Green Sandpiper).—D. S.

238. *Totanus incanus* Vieill.—D. S.

239. *Tringoides hypoleucus* L.—D. S.

240. *Terekia cinerea* Gmel.—S.

241. *Limosa uropygialis* Gould. (Eastern Godwit).—D.

242. *Limosa brevipes* G. R. Gray.—D.

243. *Pseudoscolopax semipalmatus* Jerdon. (Snipe-billed Godwit).—S.

244. *Scolopax rusticola* L. (Woodcock).—D. S.—大水鴴 *ta-shui-cha* T.

245. *Gallinago solitaria* Hodgs.—D.

246. *Gallinago megala* Swinh. (Eastern Great Snipe, "Double Snipe").—D. S.

247. *Gallinago horsfieldi* Gray.—D. S.

248. *Gallinago scolopacina* Bp. (Common Snipe).—D. S.—水雞兒 *shui-chi-rh* P.—水鴸 *shui-cha* P. T.—(also applied to the two preceding species).—鵪鶉鴸 *an-ch'un-tsa* T. ("Quail-Snipe").

249. *Limnocryptes gallinula* L.—D.

250. *Rhynchaea bengalensis* L. (Painted Snipe).—D. S.

251. *Tringa tenuirostris* Horsf.—D. S.

252. *Tringa canutus* D. (Knot).—D.

253. *Tringa damacensis* Horsf.—D. S.

+254. *Tringa salina* Pall.

This "Little Stint," the eastern representative of Tringa minuta of Europe, has not previously been recorded as forming part of the Fauna Pekinensis. It arrives with the snipe in spring, and is not uncommon on the marshes near Peking.

255. *Tringa subarcuata* L.—D. S.

256. *Tringa cinclus var. chinensis* Gray.—D. S.

257. *Tringa temminckii* Leisl.—D. S.

258. *Numenius phaeopus* L. (Whimbrel).—D. S.—小雘嘍兒 *hsiao-kou-lou-rh* T. *perh-perh-kou-lou-rh* T. (perhaps to be written 本兒本兒 |||, both kou-lou-rh and perh-perh are imitations of the cry of the curlews).

259. *Numenius tahitiensis* Gmel. (Eastern Curlew).—D. S.—雘嘍兒 *kou-lou-rh* T.—彰雞 *chang-chi* P.

260. *Ibidorhynchus Struthersi* Vig.—D.

261. *Ibis nippon* Temm. & Schl. (Japanese Ibis).—D.

262. *Tantalus leucocephalus* Gmel.—D.

263. *Ciconia alba* L. (Common Stork).—D.—鸛 *kuan*, 白鸛 *pai-kuan* P. Ts.—青? *ch'ing-chiu* P.

The stork resorts to Chihli but occasionally; P. David saw it once near Taku, and I have only once seen a small flock near Peking in summer 1875.

The Chinese name *kuan* has been identified by Swinhoe (Birds and Beasts of Formosa, Journ. N. Ch. Br. R. As. Soc. 1865), and Williams with the Heron; and it is very probable that, the stork not occurring in southern China, the term is applied there to the different species of Ardea, but in the books, at least in the Pên-ts'ao, *kuan* designates undoubtedly the stork. The description given by Li-shih-chên says: "The kuan is like the crane but the crown of the head is not red; the neck is long, the bill red, the plumage is ashen grey and white, the wings and tail quite black. It nests mostly on high trees."

Another author, quoted in the Pên-ts'ao, says that the kuan does not cry, but produces a noise by flapping the bill together, and that it chiefly nests on roofs.

The T'ien-ching-fu-chih quotes a passage from the 格物總論 about the *kuan* in which it is described as being like the crane but without a red crown, having red legs and nesting on high trees or on roofs. These notes mention all the well known peculiarities of the stork: its clattering noise, its nesting on roofs and trees, its red bill and feet. The name *kuan* is not in general use now at Peking, but in the hills the people called the black stork *hei-kuan*, and told me there was a *pai-kuan* which was very rarely seen, and which according to their description unmistakably was the common stork.

In Peking the stork is sometimes called *ch'ing-chiu*, the grey heron *'hui-chiu*, the egret *pai-chiu*; I have not been able to find out the meaning of *chiu* (in the third tone) nor was any Chinese able to write the proper character for it.

264. *Ciconia nigra* L. (Black Stork).—D.—烏 鸛 *wu-kuan* 陽烏 *yang-wu* P. Ts.—黑 鸛 *'hei-kuan* P.

The black stork is less uncommon in Chihli than the white stork. P. David mentions that it nests on rocks in the mountains near Peking; I saw it myself several times in the western hills in summer.

265. *Ardea cinerea* L. (Common Heron).—D. S.—青 莊 *ch'ing-chuang* P.—Ch. F.—Sh. Ch.—青 鶬 *ch'ing-chang* Sh. Ch. 一信 天 緣 *hsin-t'ien-yüan* ibid.—逢 子 *wa-tszĕ* T.

The present popular name of the common heron *ch'ing-chuang*, *i. e.* the grey serious *sc.* bird, occurs in the Chifu-t'ung-chih and Shêng-ching-t'ung-chih; in the latter work this name is identified with *ch'ing-chang* and *hsien-t'ien-yüan* (*i. e.* the bird which confides in providence. The Pên-ts'ao records *hsin-t'ien-yüan*, to which *ch'ing-chuan* is added as a synonym, after the description of the Pelican (b. 47, f. 5). The name is said to be given because the bird stands the whole day immoveable near the water, and waits till a fish passes by. This would very well agree with the habits of the heron; but that the heron should be classed with the pelican, would appear strange even in a Chinese zoological system. It is doubtful, therefore, whether these names have the same signification in the Pên-ts'ao as they have now.

The Chifu-t'ung-chih on the other hand identifies *ch'ing-chuang* with 交 鶬 *chiao-ching*. Of this the Pên-ts'ao gives the following description: "The chiao-ching is as large as a duck but has long legs and a long bill, it is fond of pecking; on the

crown it has a red tuft. The plumage is spotted with green, the bill red, the legs grey (青), it can be trained to perform tricks." The drawing of the chiao-ching is not unlike a heron, but the description does not seem to admit this identification.

266. *Ardea purpurea* L.—D.—天果鳥 *t'ien-kuo-niao* T.—花溼子 *'hua-wa-tszĕ* T.

Passes Tientsin in spring and autumn.

267. *Egretta modesta* Gray. (Eastern Egret).—D. S.—白莊 *pai-chuang* P.—鷺鷥 *lu-ssĕ* P. Ts.—S. Ts.—Sh. Ch.—Ch. F.—白鷺 *pai-lu* E. Y.—P. Ts.—絲禽 *ssĕ-ch'in* P. Ts.—雪客 *hsüch-k'o* ibid.—白鳥 *pai-niao* ibid.—春鉏 *ch'un-ch'u* E. Y.—P. Ts. (*i. e.* the bird which arrives at the time of the spring hoeing).—*pai-chiu* P.—白溼子 *pai-wa-tszĕ* T.

268. *Garzetta egretta* Briss. (Little Egret).—D.—白霜溼子 *pai-shuang-wa-tszĕ* T.—鷸鴴 *chu-yü* P. Ts.

The popular term *wa-tszĕ*, applied in Peking to the peewit, means probably "marsh bird," and would best be written as above. In Tientsin it is applied to several birds of the Heron tribe.

269. *Nyctiardea nycticorax* L. (Night Heron).—D. S.—灰溼子 *'hui-wa-tszĕ* T.

270. *Botaurus stellaris* L. (Bittern).—D. S.—水駱駝 *shui-lo-t'o* P. Ts. (*i. e.* water camel, from the peculiar cry of the bittern which presents some resemblance to that of a camel).

271. *Ardetta cinnamomea* Gmel. (Little Bittern).—小水駱駝 *hsiao-shui-lo-t'o* P.—(?)雞子 *kén-chi-tszĕ* P.—水雞子 *shui-chi-tszĕ* T.

Near Peking and Tientsin in summer.

272. *Ardetta sinensis* Gmel.—D. S.—Chinese names the same as those of the last species.

Common near Peking and Tientsin in summer.

273. *Gallinula chloropus* L. (Moorhen).—D. S.

274. *Porzana erythrothorax* Temm. & Schl.—D.

275. *Porzana pygmaea* Naum. (Little Crake).—D. S.

276. *Rallus indicus* Blyth. (Asiatic Water Rail).—D. S.

277. *Fulica atra* L. (Coot).—D. S.—孤頂雞 *ku-ting-chi* P.—T.—Sh. Ch.—姑丁 *ku-ting* (T'ien-chin-fu-chih).

孤 *ku* "orphan" has evidently been chosen merely to express the sound of the popular name. *Ku* ought perhaps to be written 䯮 *i. e.* swollen, tumid; ku-ting-chi would then signify "tumid-crowned hen," thus justly describing the white fleshy excrescence on the head of the coot.

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278. *Podiceps philippensis* Bonn. (Eastern Little Grebe).—D. S.—黃背鴨 *'huang-pei-ya* P.

279. *Merycllus albellus* L. (Smew).—D. S.

280. *Mergus serrator* L.—D. S.

281. *Mergus castor* L.—D.

282. *Cygnus musicus* Bechst.—D.

283. *Cygnus minor* Pall.—D.

284. *Cygnus davidi* Swinh. Proc. Zool. Soc. 1870, p. 430.—D. —Of this little white swan with orange-red bill and legs only one specimen is known, which P. David obtained in the market of Tientsin; it is preserved in the collection of the Roman Catholic Mission at Peking.

All swans are called 天鵝 *t'ien-ê*, of which 鵠 *ku* is a synonym. In the Pên-ts'ao several species are distinguished: the 大金頭鵝 *ta-chin-t'ou-ê* "great golden-headed swan," *hsiao-chin-t'ou-ê* "little golden-headed swan," 小花鵝 *hsiao-'hua-ê* "little variegated swan."

285. *Anser segetum var. serrirostris* Gould. (Bean Goose).—D.

286. *Anser albifrons* Gmel.—D.

287. *Anser cygnoides* L.—D.

Wild Geese are 鴈 *yen* or 鴻 *'hung* in Chinese; in Peking they are called *ta-yen* or *ta-ye(n)-rh*.

288. *Anas boschas* L. (Mallard).—D.—鳧 *fu*, 野鴨 *yeh-ya*, 野鶩 *yeh-mu*, 鶩 *shih*, 沉鳧 *ch'ên-fu* W. H. (wild duck in general).—綠頭鴨 *lü-t'ou-ya* P. Ts.—Sh. Ch.—P.—水鴨子 *shui-ya-tszĕ* P.—紅脚鴨兒 *'hung-chiao-ya-rh* P. ("red footed duck")—大紅腿鴨 *ta-'hung-t'ui-ya* P.

289. *Anas zonorhyncha* Swinh.—D. S.

290. *Tadorna cornuta* Gmel. (Sheldrake).—D.—冠鴨 *kuan-ya* T.—冠鳧 *kuan-fu* P. Ts.

Tientsin in spring.

+291. *Casarca rutila* Pall.—黃鴨 *'huang-ya* P.

Peking and Tientsin in spring, very rare.

292. *Spatula clypeata* L. (Shoveller).—D.—琵琶嘴鴨 *pi-pa-tsui-ya* T. ("guitar-shape-billed duck").

Rare near Peking, common near Tientsin in spring.

293. *Dafila acuta* L. (Pintailed Duck).—D. S.—尖尾鴨 *ch'ien-wei-ya* P.—Sh. Ch.—P. Ts.

294. *Mareca penelope* L. (Widgeon).—D.

+295. *Cyanopterus querquedula* L.—白眉鴨 *pai-mei-ya* P. ("white-eyebrowed duck").

Not mentioned by Swinhoe or David as occurring in China; I obtained one specimen at Peking in spring 1874.

296. *Querquedula crecca* L. (Teal).—D. S.—小冰鴨兒 *hsiao-shui-ya-rh* P.—T.—小琪鴨 *hsiao-pa-ya* P.—T.—黃臉鴨 *'huang-lien-ya* P. ("yellow faced duck").—泥瓜打兒 *ni-kua-ta-rh* P. (*i. e.* the duck which gaggles in the mud).

297. *Aix galericulata* L. (Mandarin Duck).—D. S.—鴛鴦 *yüan-yang*.

298. *Eunetta formosa* Georgi. (Anas glocitans Pall).—D. S.—花臉鴨 *'hua-lien-ya* P.

299. *Eunetta falcata* Pall.—D. S.—羅文鴨 *lo-wên-ya* T. (*i. e.* the duck striped like network).

300. *Harelda glacialis* L.

Taku (David).

301. *Fulix cristata* L. (Tufted Duck, Scaup).—D.—鳳頭鴨子 *fêng-t'ou-ya-tszĕ* P.

302. *Phalacrocorax carbo* L. (Cormorant).—D. S.—鸕鷀 *lu-tszĕ*, 鸕 *i*, 水老鴉 *shui-lao-ya* ("water crow"[31]) W. H.

303. *Pelecanus philippensis* Gmel. (Pelican).—D.

+304. *Pelecanus rufescens*.—I bought two specimens of a Pelican at Peking in 1874, which were determined as P. rufescens at Berlin.

The pelicans are called 淘河 *t'ao-'ho* in Chinese.

305. *Larus niveus* Pall.—D.

306. *Larus crassirostris* Vieill.—D.

307. *Larus cachinnans* Pall.—D. S.

308. *Larus occidentalis* Aud.

309. *Chroicocephalus brunneicephalus* Jerdon.—D.

310. *Xema kittlitzii* Licht.—D.

311. *Sylochelidon caspia* Pall.—S.

312. *Hydrochelidon nigra* L. (Black Tern).—D. S.—黑頭鷹子 *'hei-t'ou-ying-tszĕ* T.

魚鷹子 *yü-ying-tszĕ* "fishhawk" is a general term for terns at Peking and Tientsin, especially applied to the common tern. In forming special names for the different species *yü* is often omitted.

313. *Sterna hirundo* L. (Common Tern).—S.—*yü-ying-tszĕ* P.—T.

314. *Sterna fuliginosa* Temm.—D.

315. *Sternula minuta* L. (Lesser Tern).—D. S.—黃嘴鷹子 *'huang-tsui-ying-tszĕ* T.

+316. *Diomedea albatrus* Pall.—海鵝 *'hai-ê*.

Seen near Taku.

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[31] "Water Crow" corresponds to the European terms of the Cormorant. *German*: wasserrabe, seerabe, *French*: cormoran, contracted from the Latin *corvus marinus*, *i. e.* sea raven.

## III. Reptiles.

1. *Clemmys reevesii* Gray Syn. Rept. p. 73, Cat. of Shield Rept. p. 18, t. V.—Strauch, Verth. d. Schildkröten über d. Erdball St. Peterb. 1865, p. 65.—*Emys sinensis.* David Rens. p. 228.—龜 *kuei.*

A small marsh tortoise peculiar to China, where it has been found in various provinces. I am not aware of its occurrences near Peking, but it is not uncommon at Tientsin.

2. *Trionyx sinensis* Wiegmann Nov. Act. Acad. Leop. XVII, p. 189.—Strauch, Verth. Schildkr. p. 129. (=T. Schlegelii Brandt, T. japonicus Schlegel, T. perocellatus Gray, T. tuberculatus Cantor, teste Strauch).—*Gymnopus perocellatus.* David Rens. p. 228.—甲魚 *chia-yü* P.—T.—鼈 *pieh,* 團魚 *t'uan-yü* P. Ts.

The genus trionyx, of which there are several species known from Africa, America and India, is distinguished by the soft cartilaginous covering of the body, the protracted nose like a short proboscis and the very long neck. In China, "Snapping Turtles" occur in all provinces, which have been described as different species under the above names. One of the best authorities on shield reptiles, Dr. Strauch of St. Petersburg, considers not only all the Chinese forms to belong to the same species, but also to be identical with the Japanese trionyx.

The Chinese trionyx is common in the rivers of Chihli, even in the small streams near Peking; it often reaches one foot in length, without the neck.

The Chinese call it at present *chia-yü,* "scaly fish;" its book-name is *pieh* 鼈 or *t'uan-yü* "lump fish." The description of the pieh unmistakeably points to the trionyx: "The pieh is a scaly animal, which lives in the water but is bred on land. Its spine and ribs are connected like those of a turtle, but it has on all sides a fleshy rim. Therefore it is said 'the turtle (*kuei*) has the flesh within the shell, the *pieh* the shell within the flesh.'"[32]

3. *Eremias argus* Peters Monatsber. Berlin Acad. 1869, p. 61, f. 3.—Steindachner Sitz. Ber. Wien. Acad. LXII. 1. p. 336, t. II, f. 1, 2.—Swinhoe Proc. Zool. Soc. 1870, p. 410.—*Er. variabilis* David Rens. l. c. p. 227.—*Podarces argus* (Peters). Strauch in Prshevalski's Mongolia and the country of the Tanguts II (1876) p. 32.—痲蛇子 *ma-shé-tszĕ* P.

[32] Pên-ts'ao-kang-mu B. 45, f. 12: 龜甲裏肉鼈肉裏甲. Why Williams translates *pieh* by Sea Turtle, is not easily conceived; all turtles are *kuei,* and there is no species of the Chelonae in the Chinese waters without a hard covering.

The common lizard of the cultivated fields about Peking, especially near the hills. The same species has been found around Chefoo, in Mongolia and in the Ortous country. How far it ranges to the south is not known yet.

4. *Phrynocephalus caudivolvulus.*—David Rens. l. c. p. 227.

All lizards are called 石龍子 *shih-lung-tszĕ* or 山龍子 *shan-lung-tszĕ* in the books.

5. *Gecko japonicus* Dum. & Bibr. (Japanese Gecko).—守宮 *shou-kung* P.Ts.—壁宮 *pi-kung*, 壁虎 *pi-'hu*, 蝎虎 *'ho-'hu* ('-grub tiger"), 蠍蜓 *yen-t'ien* ibid.

Common in Chihli and all over China.

6. *Elaphis taeniurus* Cope.—Günther Rept. of Brit. India, p. 242.—Swinhoe Proc. Zool. Soc. 1870, p. 410.

This snake had formerly been observed at Shanghai and Ningpo; I captured a very large specimen in the monastery of Ta-chio-ssĕ, northwest of Peking, which measured about 7 feet.

7. *Elaphis dione* Pall.—Strauch, Schlangen des Russ. Reich., p. 82. Prshevalski's Mongolia II, p. 46.—David, Rens. l. c. p. 227.—黃長虫 *'huang-ch'ang-ch'ung* P.

The commonest snake near Peking, and very variable in colouring. I got a specimen also from Manchuria. It is common in Mongolia and Siberia.

8. *Coluber mandarinus* Cantor.—花帶子 *'hua-tai-tszĕ* ("variegated girdle").—T.

A black water snake with orange-red marks.

9. *Tropidonotus tigrinus* Russel.—*Amphiesma tigrinum* David, Rens. l. c. p. 227.—野雞脖 *yeh-chi-po* ("pheasant's neck") P.—青長虫 *ch'ing-ch'ang-ch'ung* P.

North China and Japan. Greyish olive green with red marks on the neck, and black spots on the sides.

10. *Masticophis spinalis* Ptrs. Monatsb. Berl. Acad. 1866, p. 91. Strauch in Prshevalski's Mongolia II, p. 46 (Zamenis).

This pretty snake, brownish black with bright yellow marks, had been described by Professor Peters some time ago, but the habitat of the species was hitherto unknown. I discovered it in the western hills near Peking. Prshevalski found it on the Alashan mountains in Mongolia.

11. *Halys blomhoffii* Schlegel.—Günther Rept. of India, p. 393.—Swinhoe Proc. Zool. Soc. 1870, p. 412.—*Trigonocephalus blomhoffii* Strauch in Prshevalski's Mongolia II, p. 52. David, Rens. l. c. pp. 227-228.

This spotted brown viper has been observed in Japan, Formosa, Mongolia, Ssĕ-chu'an and Kiangsi; it is the only venemous snake in north China. Near Peking it is not of frequent occur-

rence, and during all my rambles through the hills of Chihli I have come across only two specimens. A very fine one was captured near the temples of Patach'u by gentlemen of the British Legation in 1875.

The Chinese dread this viper very much and call it 飛上草 *feri-shang-ts'ao* i. e. the snake which flits on the grass, or 七寸子 *chh'i-ts'un-tszĕ* i. e. the snake of seven inches.

12. *Rana reinhardti* Peters. (Edible Frog).—田雞 *t'ien-chi* ("field chicken") P.—P. Ts.—蛙 *wa* W.—青鷄 *ch'ing-chi* ("green chicken") P. Ts.—坐魚 *tso-yü* ("sitting fish") ibid. 蛤魚 *hsia-yü* ibid.

The edible frog of Peking was determined as R. reinhardti by Professor Peters. Besides this species there occurs another frog in the waters of Chihli, very much like our common frog, R. temporaria; which, however, I cannot properly classify, the necessary literature not being at my disposal.

13. *Hoplobatrachus davidi* A. Dum.—David, Rens. l. c. p. 227.

14. *Bufo vulgaris* Lat. (Common Toad).—蝦蟆 *'ha-ma*, 癩蝦蟆 *lai-'ha-ma*.

*Ha-ma* has often been translated by frog (*e. g.* by Williams, Morrison), but it is always applied to the toad in Peking. In the books, at least in the Pên-ts'ao, *'ha-ma* or *hsia-ma* means certainly the toad, not the frog. Frogs are called *wa* or *t'ien-chi* in Wên-'hua as well as in Su-'hua.

## IV. Fishes.

The subjoined list embraces only the fresh-water fishes of the province; I have had no opportunity yet of studying the marine Fauna. The scientific nomenclature will be found imperfect in many instances; the only literature available for me consisted, besides some general books of reference, of Basilewski's Ichthyographia Chinae borealis and Bleeker's Mémoire sur les Cyprinoides de la Chine (Amsterdam 1871).

1. *Siniperca Chua-tsi* (Basilewski).—*Perca Chua-tsi.* Bas. l. c. p. 218, t. I, f. 1.—花鯚魚 *'hua-chi-yü* P.

This peculiarly coloured perch, called "Mandarin Fish" by foreigners, is very common in the fish markets of Peking and Tientsin.

2. *Siniperca chuan-tsi* (Bas.)—*Perca chuan-tsi.* Bas. l. c. p. 218, t. II, f. 1.—黃鯚魚 *'huang-chi-yü* P.

The perches of variegated colouring are described in the Pên-ts'ao as 鱖魚 *kuei-yü* (*chüeh-yü*) or 鬾魚 *chi-yü*, 石柱魚 *shih-kuei-yü*.

The character 鯚 is not mentioned in the Pên-ts'ao, but it is identified with 鱖 in the T'ien-ching-fu-chih.

3. *Labrax luyu* Basil. (Chinese Sea perch).—Labrax ly-iuy Basilewski l. c. p. 219.—鱸魚 *lu-yü* P.—T.—W.

The Labrax, although a marine fish, comes up the river as far as Tientsin; I have seen myself fresh *lu-yü* caught in the Pai-'ho. The Pên-ts'ao-kang-mu asserts that it occurs in the Sung-kiang [淞江, the upper Wusung river], and does not mention at all that it is found in the sea. The description is too short and insignificant to make it at all sure that the *lu-yü* of the Pên-ts'ao is the same as the *lu-yü* of the colloquial language; but the fact that the different species of labrax are called *lu-yü* in Canton as well as in the north renders this identification very probable. Besides, Li-shih-chên says that the species of the Sung-kiang is like a perch (鱖) of white colour with black spots. It would be very interesting if European naturalists could ascertain whether there lives in the Sung-kiang a kind of spotted fish which does not exist in other Chinese waters.

4. *Ophiocephalus argus* Cantor.—*Ophioc. pekinensis*. Basil. l. c. p. 225, t. XI, f. 3.—黑魚 *'hëi-yü* P. ("black fish").—鱧魚 *li-yü* P. Ts.—鱺魚 *li-yü*, 黑鱧 *'hei-li*, 玄 *hsüan-li*, 烏 *wu-li*, 銅魚 *t'ung-yü*, 文魚 *wén-yü* ibid.

The Chinese Ophiocephalus or Snakefish, for the first time discovered by Cantor on the inland of Chusan, has afterwards been observed all over China, and is common in the rivers of Chihli.

Williams justly identifies the *li-yü* of Chinese literature with the Ophiocephalus; I subjoin the description given in the Pên-ts'ao-kang-mu which is remarkable for its correctness: "The body is long, head and tail round, the scales fine, the colour black (玄); it has spots and variegated stripes (有斑點花文), and is somewhat like a snake, it has a tongue and teeth, and a stout back and belly; the dorsal fin is connected with the caudal one, the latter is not forked."

5. *Polyacanthus opercularis* (L.)

A small species of the *Labyrinthici* which I discovered in the small rivulet formed by the discharge of the hot spring of Wên-ch'üan-ssë north-west of Peking. The same fish occurs in the waters near the hot springs of T'ang-shau. It has not yet been observed in other localities of the province.

6. *Gasterosteus sinensis*.—David, Rens. l. c. p. 227.

A new species of stickleback discovered by David, of which I have not been able to obtain specimens or to ascertain a Chinese name.

7. *Salmo* sp. an nova?

Neither Basilewski nor David mention the occurrence of a trout in Chihli, and I have not myself been able to discover a species of salmonidae in the rivers of our province. In autumn 1875, however, Mr. E. L. B. Allen of H. B. M.'s Consular service brought me kindly a specimen of trout which he caught during a sporting expedition to the northern part of Chihli. Although not full grown and not very well preserved, the fish was unmistakably a trout, of reddish grey colour with small black spots. Mr. Allen told me that the species lives in great numbers in a river in outer Chihli, about four or five days' journey north of Peking, probably an affluent of the *Luan-'ho*, and that he has seen specimens of one foot and a half in length. Whether this trout, which does not agree with any of the European trouts I know, is a species hitherto undescribed, or perhaps identical with a trout already known from Manchuria or the Amoorland; I am not prepared to decide.

The Chinese call the trout 花魚 *'hua-yü*, *i. e.* variegated (or spotted) fish.

8. *Silurus asotus* L. (Sheatfish).—Basil. l. c. p. 241, t. III, f. 4.—鮎魚 *nien-yü* P.—T.—P. Ts.—鯰魚 *t'i-yü* P. Ts.—鮧魚 *yen-yü* ibid.

Common, up to five feet in length.

9. *Pseudobagrus fulvidraco* Richardson.—*Silurus calvarius* Basil. l. c. p. 241, t. IX, f. 1.—咯魚 *ka-yü* or *ka-rh-yü* P. (imitation of the curious creaking sound this fish produces).—黃顙魚 *'huang-sang-yü* (yellowforeheaded-fish).—黃鱔魚 *'huang-chang-yü*, 黃頰魚 *'huang-chia-yü* (yellow-cheeked fish.—鮠魚 *yang-ya*, 黃魠 *'huang-ya* P. Ts.

A kind of sheatfish, peculiar to China, greenish brown above and bright yellow underneath. It is smaller than the common sheatfish, but sometimes attains the length of three feet.

The above quoted booknames have been otherwise explained as the "Goby" (Williams' Dictionary p. 1068), but it is clearly seen from the following description that our species is meant: "The *'huang-sang-yü* is a fish without scales, the body and tail like a small sheatfish (*nien-yü*), the underparts are yellow, the back greenish yellow (青黃). On the gills there are two transverse bones (? [33]); the two cirri have——[34]. It swims

[33] 腮下有二橫骨.

[34] 兩鬚有胃.

in flocks, it makes a noise like *ya-ya*[35]. It has a very tenacious life." (Pên-ts'ao b. 44, f. 15).

10. *Misgurnus anguillicaudatus* Günth. (Chinese Loach).—*Cobitis anguillicaudatus* McCl., *C. bifurcata* McCl., *C. pectoratis* McCl. (teste Bleeker Mém. Cypr. p. 17).—*Cobitis psammismus* Richardson.—*Cobitis decemcirrosus* Basil. l. c. p. 239, t. VII, f. 2. —泥魚 *ni-yü* P. ("mud fish").—鰍魚 *ch'iu-yü* P. Ts.—泥鰍 *ni-ch'iu* ibid.—鰌 *hsi* E. Y. (vol. III, f. 3)—P. Ts.—泥鰌兒 *ni-ch'iu-rh* T.

Père David records a *Cobitis pavonaceus* (Rens. l. c. p. 227) from Peking, which is probably the same as Basilewski's species; I have never seen but one cobitis in Peking. Dr. Williams explains the *ch'iu-yü* as an eel, "the large mud or conger eel." The conger eel is called 海鰻鱺 *'hai-man-li*, as Williams himself mentions (Syll. Dict. p. 575); the identity of *ch'iu-yü* with the cobitis can easily be seen from the drawing given in the Pên-ts'ao, or still better from the very correct illustration of the *hsi* or *ch'iu* in the Erh-ya.

11. *Carpio vulgaris* Rapp. (Carp).—*Cyprinus chinensis* Basil. l. c. p. 227, t. II, f. 3.—*Cyprinus obesus* Basil. l. c. p. 228, t. I, f. 2; t. V, f. 2.—鯉魚 *li-yü*.

The *Carp*, common all over China, is no other than the European species. The various species described by Basilewski from Peking (*C. chinensis, obesus*) and by Richardson from southern China (*C. atrovirens, flammans, acuminatus, sculponeatus, hybiscoides*) are all forms of the *Cyprinus carpio* or *Carpio vulgaris*, slightly different in colouring or dimensions. (*cf.* Bleeker, Mém. sur les Cyprinoides de la Chine 1871).

12. *Carassius auratus* L.—Bleeker, Mém. Cypr. de la Chine 1871. p. 7.—*Carassius pekinensis, caeruleus, discolor* Basil. l. c. p. 229, t. III, f. 3; t. IX, f. 2.—*Cyprinus auratus, macrophthalmus, quadrilobatus* Basil. l. c. pp. 229-230, t. V, f. 1, 2, 4, 5.—*Cyprinus gibelioides* Cantor, *C. abbreviatus* Rich., *C. carassioides* Rich., *C. langsdorfii* Val., *C. lineatus* Val., (teste Bleeker).—Normal form: 鯽魚 *chi-yü* P.—T.—P. Ts.—鮒魚 *fu-yü*.—Golden variety: 金鯽魚 *chin-chi-yü* P.—T.—金魚 *chin-yü*.

According to Bleeker all the species of "Bastard Carp" or Carassius described by various authors from China belong to the "Gold Fish" or the Cyprinus auratus of Linnaeus. The normal colouring of the species is greenish-brown, and the "Gold Fish" is a variety which has been developed by domestication. It is even doubtful whether golden-coloured fish occur at all

[35] 軋 *ya*, a creaking sound.

in a state of nature.[36] I must mention, however, that in Tientsin a golden-coloured carassius was brought to me which had been caught in the Pai-'ho; it was considered to be a great curiosity, and to be different from the gold fish kept in captivity.

The common form here is that called *Carassius pekinensis* by Basilewski; it attains about one foot in length, and its colouring is brown above, greenish brown on the sides. Forms of bluish-silvery colour (*C. caeruleus* Bas.), or of a lustre changing from silvery to blue, green and golden (*C. discolor* Bas.) are found singly among the typical ones.

All these forms are called *chi-yü* in Peking and Tientsin, and the one specimen of golden-coloured carassius—a "wild gold fish" as we might style it—was designated by *chin-chi-yü*. 鯽魚 *chi-yü* is likewise the name of the carassius in the Pên-ts'ao.

The numerous monstrosities and varieties of the gold fish kept in confinement have all different names; the fishes furnished with trilobous or quadrilobous tail, and large prominent globous eyes are 龍金魚 *lung-chin-yü*, those without a dorsal fin 鴨蛋魚 *ya-tan-yü* etc.

13. *Pseudogobio rivularis* Basil. (Chinese Gudgeon).—*Gobio rivularis* Basil. l. c. p. 231.—*Gobio sinensis* Bleeker.—*Pseudogobio sinensis* Günther Cat. Fish. Brit. Mus. VII, p. 175.—*Pseudogobio rivularis* Bleeker Mém. Cypr. Chine, pp. 8-23, t. VIII, f. 1.—虎頭魚 *'hu-t'ou-yü* P. (tiger-headed fish."

Uncommon near Peking and Tientsin, has likewise been observed at Shanghai.

14. *Leuciscus aethiops* Basil. l. c. p. 233, t. VI, f. 1. Bleeker Mém. Cypr. Chine, pp. 10-45, t. XIV, f. 1.—黑點魚 *'hei-tien-yü* "Black-spotted fish" P.—青莊魚 *ch'ing-chuang-yü* T.

A dark coloured "Bleak," about one foot long, peculiar to north China.

15. *Leuciscus idellus* Val., Richardson, Bleeker Mém. Cypr. p. 47, t. X, f. 2.—*Leuciscus tschiliensis* Basil. l. c. p. 233.—厚魚 *'hou-yü* P.—T.

Not uncommon at Peking and Tientsin; it has likewise been found in the Yang-tszĕ-kiang and near Canton.

16. *Elopichthys dauricus* Basil.—*Nasus dauricus* Basil. l. c. p. 234, t. VII, f. 1.—黃 (?) 魚 *'huang-tsuan-yü* P.

According to Basilewski this fish is only brought to Peking in winter from Mongolia and Manchuria, but I have seen quite fresh specimens, and the Chinese assert that it occurs in the

[36] *cf.* Darwin, The Variation of Animals and Plants under Domestication I, p. 296.

rivers of Chihli. It attains the length of about four feet; its flesh is yellow and resembles in colour and flavour somewhat that of the salmon.

17. *Squaliobarbus curriculus* Richardson.—*Leuciscus curriculus* Rich. Ichth. Chin. p. 299.—*L. teretiusculus* Basil. l. c. p. 232, t. IV, f. 1.—*Squal. curr.* Bleeker Mém. Cypr. Chin. pp. 12-48, t. XIII, f. 3.—Prshevalski's Mongolia II. Fishes p. 19.—鱒魚 *tsun-yü* P. Ts.—P.—鮅魚 *pi-yü* ibid.—赤眼魚 *chih-yen-yü* "red-eyed fish" ibid.

The most widely distributed species of the Chinese leuciscini; it has been observed in Canton, Ningpo, Shanghai, Kiukiang, Ssĕ-ch'uan, Tientsin, Peking, and lately by Prshevalski in Mongolia.

The Chinese names as given above probably include several other species of the same tribe.

18. *Xenocypris macrolepis* Bleeker Mém. Cypr. de la Chine pp. 14-53, t. V, f. 2.—*Leuciscus argenteus* Basil. l. c. p. 232.—小白魚 *hsiao-pai-yü* P.

19. *Culter recurviceps* Richardson.—*Leuciscus recurviceps* Rich. Ichth. Chin. p. 295.—*Culter alburnus* Basil. l. c. p. 236, t. VIII, f. 3.—*Culter recurviceps* Bleeker Mém. Cypr. Chine p. 15.—翹頭魚 *ch'iao-t'ou-yü* P. (*i. e.* the fish with the head bent upwards).

20. *Culter erythropterus* Basil. l. c. p. 236, t. VIII, f. 1.—Bleeker Mém. Cypr. Chine p. 15.—河白魚 *'ho-pai-yü* P.

The genus Culter is peculiar to China as well as the allied genera of Pseudoculter and Semiculter; its chief characteristic is the prominent inferior maxilla which bends upwards. There are eight species known, one of which, the C. recurviceps, has been found all over China, whilst the C. erythropterus is peculiar to north China, and six other species have only been observed in the Yang-tszĕ-kiang.

All forms of this group are included in the term 白魚 *pai-yü* or 鱎 *chiao*. The latter name is explained in the Pĕn-ts'ao as formed from *fish* and 喬 *curved*, because "head and tail are bent upwards" (頭尾向上).

21. *Pseudoculter pekinensis* Basil.—*Culter pekinensis* Basil. l. c. p. 237.—*Pseudoculter pekinensis* Bleeker Mém. Cypr. Chine p. 14.—鐮子魚 *lien-tszĕ-yü* P.—T. ("sickle-fish").

22. *Pseudoculter exiguus* Basil.—*Culter exiguus* Basil. l. c. p. 237.—*Pseudoculter exiguus* Bleeker Mém. Cypr. Chine p. 14.—黃花條子 *'huang-'hua-t'iao-tszĕ* P.—黃鮈魚 *'huang-ku-yü* P. Ts.

From the entrails of this little fish the Chinese distil a yellow oil of rancid smell used in lamps.

23. *Parabramis pekinensis* Basil. (North China Bream).—*Abramis pekinensis* Basil. l. c. p. 239, t. VI, f. 2.—*Parabramis pekinensis* Bleeker Mém. Cypr. pp. 15-80.—扁魚 *pien-yü* P.—T.—鯿 *pien*, 魴 *fang* W. (including all species of Bream).

24. *Hemiculter leucisculus* Basil.—*Culter leucisculus* Basil. l. c. p. 238.—*Hemiculter leucisculus* Bleeker Mém. Cypr. pp. 15-76, t. II, f. 1.

25. *Anguilla pekinensis* Basil.—*Muraena pekinensis* Basil. l. c. p. 246, t. III, f. 2.—白鱓魚 *pai-shan-yü* P.—T.—P. Ts.—鰻鱺魚 *man-li-yü* P. Ts.—蛇魚 *shé-yü* ("snake fish").

The Pekinese eel although very much like our common eel in appearance is considered to be a different species.

26. *Monopterus javanensis* Lacépède. (Mud Eel).—*Apterigia saccogularis* Basil. l. c. p. 247, t. VIII, f. 2.—*Apterigia nigromaculata* Basil. l. c. p. 248, t. II, f. 2,—*Apterigia immaculata* Basil. l. c. p. 248.—鱓魚 *shan-yü* P.—T.—W.—黃鮎 *'huang-tan* P. Ts.—黃鱓 *'huang-shan* T.

The three species of "Apterigia" described by Basilewski are to be combined into one, the latter two forms being rare varieties slightly diffrent in colouring. This mud eel, common all over China, is identical with the species known from India.

27. *Ophidium aculeatum* Basil. l. c. p. 248.

Another species of the eel family mentioned by Basilewski; I have never seen this fish.

28. *Acipenser mantschuricus* Basil. l. c. p. 250.—黃魚 *'huang-yü* P.—T.—W.—鱣魚 *shan-yü* P. Ts.—蠟魚 *la-yü* ibid. ("wax fish," from the yellow colour of the flesh).—玉版魚 *yü-pan-yü* ibid. ("jade-slab fish," from the hard bony scales of the sturgeon).

The large sturgeons sold at Peking and Tientsin in winter are mostly brought from the Amoor, but also from the Yellow River, and the Chinese assert that the sturgeon occurs likewise though rarely in the rivers of Chihli. The Pên-ts'ao contains a fair drawing and a very good description of the sturgeon, and says that it lives in all the great rivers of China, and the T'ien-ching-fu-chih mentions the *shan-yü* as forming part of the Fauna of the Tientsin prefecture.

## ARTICLE III.

## ON THE STYLE OF CHINESE EPISTOLARY COMPOSITION.*

### A REVIEW.

By the Rev. W. A. P. Martin, D.D.

In no other language is the style of private correspondence so widely separated from that of official or public documents as in the Chinese. The latter, simply and direct in expression, eschews ornament and aims chiefly at clearness and force; the former, artificial to the last degree, bristles with trite allusions which are rather pedantic than elegant.

With us, in this as in so many other things, the reverse is not far from the truth. It is the official despatch that is cast in iron moulds; and the familiar letter is left free to take any shape the easy play of thought and feeling may impress upon it. Authors accordingly sometimes choose to throw their compositions into the convenient form of epistles, when they wish to invest them with the double charm of clearness and vivacity. By employing the form of letters, Pascal imparted to polemic discussion the grace and humour of the comic drama; while Swift and Junius availed themselves of the same weapon in their terrible attacks on the government.

Not so the Chinese: while necessity leads to the discussion of grave topics in the form of letters, and the teachings of some of their ancient philosophers were communicated in the way of correspondence, among them no modern author ever thinks of throwing his ideas into such a shape. Neither does any author treat a grave subject under the form of the modern prize essay; and thoughtful men denounce the regulation essay as utterly useless; but they never denounce the conventional style of letter-writing, though both have a family likeness. The reason is, that the letter of friendship or business is a social necessity; and the literary ornament with which it is tricked out is deemed essential to save it from vulgarity.

* Read before the Society on the 8th December, 1876.

In friendly correspondence the opening paragraphs are always consecrated to the expression of high-flown sentiments, real or assumed, and not unfrequently, the falsetto pitch of the exordium is painfully sustained to the very close. Nothing is more offensive to our taste, or less calculated to encourage the labour of acquisition.

If a letter contains any serious business, the foreign reader, if he does not as in most cases, rely on a native teacher for explanation, finds that he can arrive at it by a process of elimination, *i. e.* by leaving out of account all the unintelligible rhetoric.

But this is not merely unscholarly: it limits the use of correspondence, and shuts out the student (he does not deserve the name of student if willing to be shut out) from a department of literature which more than any other presents us with pictures of individual character and social life.

The student who desires to enter this field will find numerous private collections of more or less celebrity, soliciting his attention.

If any of them were from the pens of gifted women; and if the canons of Chinese taste, (for the fault is not in the language) permitted them, like their sisters of the west, to write as they talk, he might, even in this department, verify the quaint old maxim, "the sweetness of the lips increaseth knowledge." But alas! there is no Sévigné who by her brilliant gossip can shed the dews of immortal youth over the ephemeral intrigues of a Court, and by her wit give a value to things that are worthless, as amber does to the insects which it embalms: there is no Wortley who chats with equal charm of literature and love: no Lady Duff Gordon, who by her genius and enterprise puts us in love with boat-life and Bedouins.

The paths of epistolary literature, where the choicest flowers are dropped from female hands, are in China all untrodden by female feet; and a reason gravely given for with-holding from women the key of knowledge is, that men are *afraid they will learn to write letters.* It is not nature but man that is ungenerous to the daughters of the East.

> "Knowledge to their eyes her ample page
> Rich with the spoils of time did ne'er unroll;
> Chill *jealousy* repressed their noble rage,
> And froze the genial current of the soul."

Nor, it must be confessed, is there any such indemnity in store for our student, as the epistles of a moralizing Seneca, or the correspondence of a malignant and intriguing Walpole, which lifts the veil, from the mysteries of contemporary politics, and

from the writer's own bosom; so that Macaulay ingeniously compares the flavour of the letters of the great minister to that of *patés de fois gras*, because derived from a disease of the liver in the animal that produced them.

But as some of our most eminent poets, such as Dryden, Gray and Cowper, have left behind them letters that are preserved as models of elegance in which fancy and feeling are no less happily blended than in their poetical works: so we find that in China the list of distinguished letter-writers is headed by the names of poets; showing that they enjoyed the favour of the *musa pedestris* as well as of her winged sisters.

The earliest collection of letters, or at least the most famous of those that are accepted as models of epistolary style, came from the pens of two celebrated poets of the Sung dynasty, Su-tung-p'o 蘇東坡 and Hwang-t'ing-kien 黃庭堅 under the joint name of Su-Hwang-ch'i-tuh 蘇黃尺牘. Though not properly a *brief-wechsel* or correspondence between the two authors, it has ever since the battle of Hastings given law to this species of composition.

Though the stream of time, like that which floated the borrowed axe of the prophet, usually carries down the weightier matters, and deposits the less important as sediment; yet in this instance we have reason to regret that like natural rivers it has only brought down to us the lighter material on its surface.

Both writers held high offices: and one of them was especially honoured at the imperial court; but their letters have little to do with state policy; and the selection has obviously been made on the principle that if one of their merits is in the elegance of their form, another ought to be in the absence of facts. Still even these shining husks if carefully sifted, will be found to yield some grains of valuable information.

A book of letters of more modern date and scarcely inferior in reputation, is the Ch'i-tuh of Siao-ts'ang 小倉山房尺牘 or of Sui-yuen 隨園尺牘, as it is variously styled.

The author, Yuen-mei 袁枚, a native of Che-kiang, won a seat in the Imperial Academy in the reign of Kien-lung; and declining office, passed his life at Nanking, chiefly engaged in scholastic pursuits, boasting that for thirty years he never appeared at court.

Known mainly as a professor of *belles-lettres*, with pupils dispersed over several provinces, instead of collected into one lecture-room, and communicating by post, instead of *viva-voce*, this worthy man has not merely left models of composition, but

set an example both as scholar and instructor, which is much admired though little followed.

A poet of refined taste, and not without talent, it is interesting to know that he gave instruction in the art of poetry to numerous ladies of high family and culture, making from time to time the circuit of the cities where they resided—a fact, the rarity of which, rather supports than invalidates the view above given of the deficiencies of female education.

There are numerous works passing under the general name of Ch'i-tuh, which were prepared expressly for form books, and will repay perusal for that purpose. Of these I may mention the Yen-chi-mu-tan 胭脂牡丹, Hai-shang-hung-ni 海上鴻泥, Liu-ts'ing-tsi 留青集; but they have not the merit of a history.

It is however, with a view to drawing attention to a more recent collection that this article is written.

The Tsze-yuen Ch'i-tuh 滋園尺牘 published at Peking a few years ago in four thin volumes, consists of a selection from the letters of Liu-kia-chu 劉家柱.

This is a name which being unknown, carries no weight; and our author, like Hawthorne in one of his earlier works, might speak of himself as enjoying the distinction of being one of the obscurest men of letters in all China. A native of Hunan, he passed many years in the Yamen of the Governor of Canton; a representative of that nameless but influential class who transact the business while their superiors enjoy the honours of official station.

During this period he wrote, he tells us, heaps of papers higher than his head, among which one might play hide and seek in more senses than one. Most of them were of course sent forth in the name of others, and the writer facetiously compares himself to a milliner who prepares the clothing for a bride, or a go-between who arranges for her nuptials. Of these he gives us none, unless indeed by surreptitiously changing their address, and adapting them to his own use.

The most of his papers bear unmistakable marks of having been culled from his private portfolio; affording such incidental glimpses of life and manners, that one is compelled to accept them as a genuine record—a portion of the writer's autobiography. This gives the work an element of interest of no mean order, and a value of its own, as a mirror held up to the face of Chinese life by the hand of a native. So frank indeed are its disclosures, so little care is taken to draw a veil over things that are deemed discreditable, that one might almost regard

the work as belonging to the category of 'confessions'—originated by St. Augustine, and rendered popular by Rousseau.

As to the literary merits of the performance, it is sufficient to cite the names of the two sponsors under whose patronage the author comes before the public—Kwo Sung-tao, minister to England, and Hang K'ai-tai, the late enlightened governor of province of Fohkien:—each of them having filled the post of governor of Canton, and employed Liu-kia-chu as a confidential secretary.

Other great names are invoked in a long list of laudatory notices; and some that we meet with incidentally in the course of the correspondence, such as Tseng Kwo-fan, Tsiang Ih-li, Li Hung-chang and Liu Ch'ang-yiu, the present viceroy of Yunnan and Kweichau, impart to it an air of historical truth that is much in its favour.

Without pausing longer to discourse about the book, let us open its pages, and see what we shall find there.

To begin; we shall find a meteoric shower of allusions. This is the most prominent characteristic of this species of writing; and its primary object is to hide the nakedness of commonplace. Employed in excess, or handled clumsily, it aggravates the evil by exposing the poverty of the writer, or substitutes the graver faults of pedantry and cant: used with skill and taste, it throws over the page a glitter of iridescent hues; or it may be, contributes largely to the significance and force of language.

These allusions are of various kinds. Some suggest whole chapters of history; others bring up the words or actions of real or mythical personages; while others still, by a single word or phrase cast a beam of light on some poetical tableau, which brings its entire effect to bear on the subject in hand,—for instance when Dryden says of Thais that

"Like another Helen she fired another Troy."

——what a crowd of teeming associations he condenses into the space of a single line! How much is expressed by such brief phrases as "a Barmecide feast," "a Bellerophon letter," "a Judas kiss!"

The Chinese language—I do not say literature, abounds in such; and no one can be said to understand the language who is not in some degree familiar with them.

Then there are curt allusions of a purely literary kind, catch words which suggest any one of the three hundred classic odes, or refer to thousands of well-known passages in later literature.

To these we may add a vocabulary of metaphorical words and phrases, the use of which is *de rigeur* in a certain style which makes it a point of taste not to call things by their right names. Thus the poet or the elegant letter-writer never speaks of copper

cash, but calls them "green beetles:" a sheet of paper he calls "a flowery scroll:" an epistle is "a wild-goose." Husband and wife are *Ch'ang-sue*, bass and tenor: *K'ang-li*, strength and beauty; *Yuen-yang* duck and drake, and a hundred other pretty things, at the poet's option. A man is a prince and his wife a princess; his house a palace, and his children a phœnix brood.

To repay the kindness of parents is to emulate the stork: to return a borrowed article is to restore the gem; and a man of genius employed in a work of drudgery—as Charles Lamb in the India Office—is a race-horse in a salt-waggon.

These are but a few specimens of a sort of dialect that has its own dictionaries without number or limit; and of which every reader of Chinese is under the necessity of knowing something, if he does not master it. Perhaps the best key to it for any student, native or foreign, is a collection of *wen-chang* or of well-written letters such as those of our obscure friend Liu-kia-chu.

In dictionaries and cyclopædias, or in such a useful handbook as Mr. Mayers' Chinese Readers Manual, he will find gems arranged as in a mineralogical cabinet; but in these compositions he meets them in their proper setting. The object of such works is to aid, not to supersede the reading of difficult authors—as a certain learned Dutchman proposed to do for Homer by presenting the Homeric archaeology in a tabulated form.

We now proceed to the substratum of facts underlying the gold and tinsel of which we have been speaking. Of little importance in themselves and not by any means thick-sown through these pages, they are still not devoid of interest, as illustrations of character personal and national.

It was from the letters of Cicero that Mr. Middleton drew the principal materials for his admirable life of the great Roman statesman.

But even the letters of Chu-fu-tsze or Su-tung-p'o would furnish scanty materials for a history of their lives; and meagre indeed are the outlines of biography which we are able to extract from the sentimental effusions of Liu-kia-chu.

Our author first drew his breath, and with it what poetic inspiration he possessed—amid the mountain scenery of southern Hunan, about the middle of the reign of Kiaking (circa 1810.) Born in a rustic village not far from the city of Sin-hwa 新化, he came of a family distinguished for scholarship; —a fact, of which he never ceases to remind the reader; and there can be no doubt that he inherited talent, though his patrimony included little else.

Boasting somewhat of his early precocity, he hints at youthful dissipations as having proved fatal to his career as a scholar, and planted the seeds of unending regrets. He failed, probably from a defective chirography as many a worthier man has done, to win the first or lowest degree in the civil service examinations; and about the age of thirty he removed with his family to Canton, forgetting, it seems, to liquidate certain debts of honour.

Concerned in the conduct of a charity school, Liu, thinking that charity ought to begin at home, "borrowed" a portion of the funds to meet his own necessities. Arrived at Canton he learned with much regret that the slight liberty he had taken with its capital was likely to occasion the dissolution of the school. Against this he protests with much eloquence; but has nothing more substantial to encourage the good work than "promises to pay."

In this connexion, his reference to himself as a good example of the benefits of education, is to say the least a little *naif*.

After this, we are not surprised to find many epistles filled with complaints of poverty. He has work enough, but scant remuneration. Great men admire his genius and load him with compliments; but like virtue, which he does not much resemble in any other respect—*laudatur et alget*.

From one friend he begs the loan of a "few hundred pieces of gold," and from another he borrows a suit of decent apparel. Good models these letters for one who has much to do in the line of begging or borrowing!

All this time, Liu's family is increasing at a rather alarming rate; not that he has any children born, but from time to time he takes a new beauty into his harem in the hope that children will follow. One is presented to him by a friend; another, not unnaturally runs away, or as he euphemistically term it, "carries her guitar to another door."

A correspondent of comparatively severe morals, expostulates with Liu on this seeming abandonment to a life of sensuality; and the latter replies by drawing an affecting picture of an aged father who cannot die in peace without the joy of embracing a grandson!

At length his hopes are awakened only to meet with disappointment; one of his wives presenting him with a daughter. The little creature appears not to be altogether unwelcome; and in fact makes for herself a warm place in her father's heart; though he frequently alludes to her in terms borrowed from one of the odes of which the following couplet gives the leading idea:—

A girl is born; in coarse cloth wound
With a tile for a toy, let her lie on the ground, &c., &c.

The spell broken, another of his ladies crowns his desires by giving him a son; whose advent is duly hailed by a flourish of trumpets, and further quotations from the Book of Odes,—

A son is born; on an ivory bed,
Wrap him in raiment of purple and red,
Gold and jewels for play things bring
To the noble boy who shall serve the king.

In a few months this child of many hopes sickens and dies. The disconsolate father mourns deeply, and fills many sheets with melodious *tristia*.

About this time, the doors of official preferment, before which he had been so long waiting—(having failed to find the key in his earlier youth), began slowly to open before him. Appointed magistrate of a sub-district in the country, called *Toh-kang*, he contrived to send some one to act in his stead (perhaps subletting the profits of the position) whilst he remained at the capital, in midst of the literary society which he loved so much.

Another time, appointed to Kowloon on the main opposite to Hongkong, Liu finds excuses for not repairing to his post, and the governor offended by his tardiness cancels the appointment. After due penance he is restored to favour, and offered another post, such as Caesar himself would have preferred to being the second man at Rome. Taught by experience, he lost no time in installing himself in his new yamen. Its roof leaks, its walls are crumbling, and all its apartments filled with rubbish; but to compensate for all this, it contains a *throne*, which if he had read Milton, he might have compared to that of the "anarch old" who ruled the realms of chaos.

Here he finds a new order of talents called into requisition: he has to deal with facts instead of words; and is evidently proud of the success with which the performs the functions of a judge,—favouring us with one of his judgments as a model of its kind. It betrays however the fact that his right hand has not forgotten its cunning; that he continues to be a rhetorician in spite of himself, and is more at home in reading a lecture than in pronouncing a sentence.

Unique among the rose-water productions of his epistolary pen, his report of this law-suit reminds us that Liu has also given us a few specimens of another species of composition.

In the course of his career, he is sometimes assistant examiner, and sometimes appears in the character of a competitor;—not indeed in the ordinary examinations, but in those special trials which expectant officers are required to pass at the provincial

capitals. On one of these occasions Liu's essays were endorsed by the high authorities in terms which placed them on a level with the best productions of the classic ages.

These eulogies he not only repeats in many of his letters, but favours his friends with copies of the fortunate papers, that they may judge for themselves whether the praise is merited; pleasing himself with the reflection that but for the injustice of the lower courts, he might long since have worn the highest honours of the literary arena.

Liu's literary ability is also duly recognized by a host of junior aspirants, who solicit copies of his MSS., send presents on his fête days, and institute theatricals in his honour.

His moral character is more doubtful. A polygamist on principle, he disclaims the virtues of an ascetic philosopher in order to emulate the libertinism of certain dissolute poets. Had he indeed done nothing worse than fill his own cage with bright-winged songsters he would have been walking too closely in the footsteps of saints and sages to attract attention. To vindicate a poor spirit—one that spurns what he denominates the "minor morals"—he mingles occasionally with the "soiled doves" of the street.

For this, his best apology is found in the fact that the silly occupants of his own dove-cot are incapable of appreciating his genius; while some of these unappropriated, like the hetaerae of Greece, had their claims enhanced by the advantages of education. He gives us a letter which he wrote to one of this class, with hypocritical morality recommending her to take refuge in a house of religion.

But in an epistle to another friend, he gives us reason to suspect that even the vestals of Buddha were not sacred in his eyes; and that with him sacrilege was necessary to give the highest flavour to license.

Freely unfolding his inner life, and trenching often on forbidden ground, it is something in his favour that he is always elegant and never indecent.

After this account of his morals it would be useless to inquire for his religion. He says indeed very little on the subject. He alludes to a "creator" more than once, but in language of studied levity, shewing that to him the author of nature was not a "living god."

As to outward observances he conforms to popular usage; he believes in fate, and impatient to know its decrees, applies to a professional fortune-teller; in all these points only too true a type of the average literati of his country.

Our hasty sketch may serve to indicate the range and variety

of this correspondence, which, with all its finish resembles a Chinese garden, where *artis est* NATURAM *caelari* by twisting flower and plant into the grotesque shapes of bird and beast.

The boundary line between friendly and official correspondence is not easily to trace. It is to the former that we confine ourselves in the present communication; but it will not be amiss to remark that much of the best writing in the Chinese language may be found on intermediate ground between formal business documents and friendly letters.

In this class of compositions vaguely described as official letters—the grace of the polished epistle is often added to the directness and force of the despatch style; a happy combination, of which some of the best specimens may be seen in the published correspondence of Hu-lin-yeh, canonized under the title of Hu-wen-cheng-kung.

## ARTICLE IV.

# ON CHINESE NAMES FOR BOATS AND BOAT GEAR WITH REMARKS ON THE CHINESE USE OF THE MARINER'S COMPASS.*

By J. Edkins, D.D., Peking.

CONFUCIUS in his part of the Yi-king says that Fuhi made the first boats, by hewing planks, and sharpening and planing wood to be used as oars.

In this he acted, adds Confucius, in accordance with the idea of the Kwa called Hwan 渙, which consists of the symbol of wind above and of water below.

Boat building, like every thing else, finds its place in the system of symbols of which the Yi-king consists; and this is a conspicuous example of the manner in which Confucius aided to maintain the position of the old divination of Cheu-kung and Wen-wang. All the useful inventions of sages and their thinkings on nature and man were supposed to be included in the Yi-king in a symbolical form.

As far back as the Han dynasty, we are told, that the Chinese painted the figure of a water bird called Yi-8-ngik 鷁 in the prows of their boats. This is stated by the commentator on Hwai-nantsï, who mentions "dragon boats with what he calls ngik prows."

At that time, as we learn from Panku's history, emperors were rowed in boats on the Yang-tsï-kiang, with oars resting on pivots far in the front and a rudder at the stern.

We are also told that in ancient times boatmen worshipped the spirit of the boat under the name Meng-kung and Meng-mu (孟公 and 孟姥). This is said to be an impersonation of the spirit of water under the name 玄冥 *hiuen-ming*, from identity of sound. *Hiuen-ming* means "dark" *Ming* and *Meng* were both formerly *mang*.

This little circumstance is worth noting in illustration of the growth of the worship of the San-kwan, that is of 天官, 地官,

* Read before the Society on the 8th December, 1876.

水官, *t'ien-kwan, ti-kwan, shui-kwan.* The third of these is the boat god here referred to. See article on boats in 格致鏡原 *ke-chi-king-yuen.*

The dying day of the river god 河伯 *ho-pe* was avoided as unlucky for navigation, as our sailors like to avoid Friday. The ancient Chinese sailors had a reason to give for their objection to a special day; but I have never heard that our sailors have any cause to assign for their prejudice against Friday.

Native writers say that boats were made from seeing falling leaves float on the water. Hwai-nan-tsï ascribes the first idea of a boat to wood being seen floating. Another account is that men first made rafts, and then the conception of a boat occurred to them.

Chinese authors attribute this and other inventions to one and another of the mythical sages without much discrimination. It may have been Fu-hi or Hwang-ti; or Hien-yuen or Heu-tsi, or some ancient officer of Hwang-ti. It does not strike them that the idea may have been brought to the country from the west by early travellers or colonists. To me the most probable origin for boats is in the knowledge that the earliest Chinese acquired in countries farther west. They would come to China with this as an element of their civilization. At the same time boats were possibly possessed by the aborigines who preceded the Chinese in this country.

The two principal words for boats and ships are 舟 *cheu* and 船 *c'hwen*, of which I take the old sounds to be *tok, dun. Ch* is a late letter preceded by *t* or *d*. The final *k* occurs in several words commonly applied to boats such as 艘 *sau*, 艣 *li*, 艇 *ti*, 艘 *su*, to which a final *k* is natural; and in which the initial letters *s, l, t* are regularly interchangeable with *ch*. These words may have had different origins of course, but some of them at least should be referred to the dialectic changes of the old root *tok. T'* appears as *d*, as *s* or as *l* according as habits of pronunciation, growing up in different parts of the country, led to their adoption. Thus *t* became *s* by a common law of change. *Tok* then was heard as *sok* and the *k* being dropped this became *su* or *sau*. After this a character was invented for the new sound as required.

We have then *tok*, and *dun*, as two roots for boat. I now proceed to mention others.

We find 艇 *hang*, 航 *hang*, 艎 *hwang*, 艨 *kung*, 舡 *hang*, *kang*. The common root of all these words I take to be *gam*. By a law for the proof of which I may here refer to my "Introduction to the Study of the Chinese Characters;" final *ng* comes from

an earlier *m*. But we also have 舲 *kh'in* used in Sïchwen for a boat, and *hien*, 艦 or *gam*. Perhaps this root means "that which moves." Some of the words may have originated from arbitrary circumstances now beyond recal, but the most suit well with the idea of common origin in one root *gam*.

The characters 舸 *ko*, 舸 *ko*, and 舸 *kia* make up between them a root *ka*.

A very common root is *bak*. It is found in 舶 *pe*, 艀 *fu*, *bok*, 艀 *fu*, *pok*, 舶 *mu*, *mok*, 艨 *mek*. Here *m* may have come in place of *p*, as often happens, the original letter being *b*.

In these cases we come in contact with families of words which are multiplied by the effect of dialectic change, just as *c'hwen*, "boat" is called *zen* in Shanghai, *zhön* at Wu-si, *chun* at Amoy.

Chinese dictionaries are defective in not explicitly recognizing the identity of words which are one in reality, but different in the mode of writing them. Thus for Yü-hang, the name of a place near Hangcheu, Kanghi gives two modes of writing; 禹航 means the ferry, or ferry boat, of Yü: that is, the great emperor Yü whose tomb is at Shau-hing near this spot. But it is usually written 餘杭 *yü-hang*, as if to say, "the surplus of Hangcheu." This is, says Kanghi, a modern mode of writing; evidently as it would seem, introduced since the time when Hangcheu became a great city.

Another common root is *bat* or *bot*. For this are used 舤, *fu* 1 *pot* 艀 *fu* 8 *bot* 筏, 艖 *po* 1 *po* a large boat 筏 *fa* 8 *bat*, "raft," "ferry boat." 桴 *fu* 1 *pot* "raft," "ferry boat." The radical conception of this group is in 孚 *fu* 5 *bot*, "to float." That which floats.

Eminent modern philologists say that the time has not yet come for comparing Chinese roots and those of the Indo-European family. When it does come, this will be the most obvious among the Chinese roots, to be compared with our English boat and float.

Another common root is *tap* 艖 *c'ha*, 艓 *tie* 8 *dip*, 舣 *c'ha* 楫 *tsi* 4 *tsip*. The old form of this root, or of these roots, is *tap* or *tip*. An oar was called *tip* from its being planed and sharpened. Hence boats were also called *tip* or *tap*. At least the last of these four words is used for boat as well as oar. Perhaps the first three rather belong to a root *dap* to "pass over." For the final *p* in the first and third words see my "Introduction to the Study of the Chinese Characters."

Long and narrow boats are called *ting* 艇 probably from their resemblance to a long and thin pole or staff.

OAR.—There are three groups of words for oar. They are (1) *chau, cho, tok* 棹, 棹. This and the next mean "the shaker." (2) 槳 *tsiang, tong, tom.* (3) 楫 *tsi* or *tsip.* It is also written 檝.

SCULL.—*Lu* 6. In Chinese boats the scull rests on a pivot near the stern on the right hand side of the boat. Three or four men work the scull. This root seems also to mean "the shaker." The pivot in which the scull revolves is called *Lu-chwang.* The word *chwang* is used for piles driven into the ground. But *ch* is changed from *t* and the word is probably nothing more than *ting* a "nail," a variation of *tang* to "beat," "strike."

Words for RUDDER. 舳 *chu* 8 *dok.* The commentator on Yang-hiung's work on dialects says this word was used for rudder in Kiang-tung *i. e.* the modern Kiang-su.

The chief word is 柁 *to,* 6 *dap,* or 舵. The etymology of the root is perhaps found in "dropping." The rudder going straight into the water suggests a connection with 垂 *c'hui* 5 *dop,* to "drop vertically." Also 舵 and 柂.

梢 *shau* 1 *shok.* Every one who has travelled in boats at Shanghai has heard the term *pan-shau* or *pan-sô* and *t'ui-shau* or *t'ê-sô. Shau* properly means the raised part of a boat at the stern, the upper part of a thing. But it is used also for the rudder, says Williams, or for the tiller, as says Douglas. *Pan* is to pull to. *T'ui* is to push away. In other words *pan-shau* is "push to the left," and "*t'ui-shau*" to the right or "port" and "starboard" respectively. How old this word *pan* is, in the sense of pulling the rudder may be judged by the character 般 its first representative.

This character *pan* is rendered in our dictionaries, "class," "sort." It is formed from *cheu* boat and one of the radicals for hand, and was probably first used for the act of the steersman when pulling the rudder towards him. It was afterwards used for 班 *pan* "kind of," "sort," *pan* "to remove" from one place to another, *p'an* "a platter," *p'an* "to revolve," "to wind," and other words each with an appropriate radical. Thus 搬 *pan* 1 "remove," 磐 *p'an* 5 "grindstone," 盤 *p'an* 5 "platter," "tub." In Canton *man* is used for *pan* "port," "pull." This I take to be changed from *pan* by transmutation of the initial letter.

搬 At present the hand radical *shiu* is added to *pan* and without this addition it has no longer the signification "pull to." The right hand *n* is added I believe simply as one of the hand radicals. According to the Shwo-wen it means however to

"turn round," in allusion to turning the boat round by means of the rudder.

The word *shau* referred to above seems to be the handle of the rudder: such is the statement in Douglas' dictionary. Yet it is said in the dictionaries Cheng-tsi-t'ung and Tsï-hwei that *shau* is the *tail* of the rudder. Can there be a mistake in these dictionaries? *Shau* meaning the upper part of anything, it would seem that there is.

A sail is 帆 *fan* 5 *bam* or 艂 *peng* 4 *pang*, 艋 *feng*, 篷 *p'eng* 55 *bam*. The sails mentioned in old Chinese books are of bamboo matting made in horizontal strips, which are drawn up and down like the folds of a fan.

The loadstone is not mentioned in accounts of Chinese boats. But it is expressly referred to very early as being used for directing carriages. Mr. Mayers has drawn attention to the omission of any account of the mariner's compass, in early books; but it is of course possible that Chinese junks may have used the compass for centuries before it was explicitly chronicled. In the long ocean voyages made by Chinese junks, for example by Fahien, the Buddhist pilgrim in the fifth century, it is difficult to understand, well acquainted as the people of this country were at that time with the loadstone, why they should not in any case use it for sea voyages, when they were accustomed to employ it for land carriages. Yet, proof is entirely wanting except in the instance of boats on the ornamental waters of imperial gardens till the Sung dynasty.

The loadstone is used in geomancy, in land travelling, and recently in sea voyages. A sedan chair carried by two or more bearers has, when fully equipped, a small magnetic compass; this is placed, if I remember rightly, on a cross bar in front of the person sitting. In junks that go to sea a *fang-p'an* is used containing a magnetic needle and the points of the compass. In books on geography the direction of sailing is given for foreign ports visited by Chinese junks. It was in the Ming, Yuen and Sung dynasties that this custom began to prevail. In the work 東西洋考 *Tung-si-yang-k'au*, a chapter of sailing directions for parts adjacent to China is given. This book belongs to the reign Wan-li in the 16th century.

In Cheu-ta-kwan's work on Cambodia A.D. 1296, the directions for reaching that country from Wencheu, (just made an open part, September 1876) are expressed by the words 行坤申針 *hing-k'wun-shen-chen* "sail with the needle pointing to k'wun-shen" or 225° to 240° of the compass.

Further back, in the journal of Sü-king, sent as ambassador

to Corea, A.D. 1122, it is stated that he left the capital Kai-feng-fu, proceeded to Ningpo and from thence by sea to Corea. On the voyage he describes the use of the floating needle to learn the north and south points of the horizon at night time, in the absence of the stars. According to his account, when the stars could be seen the navigators proceeded by the stars, and otherwise by the needle.

No indications of the use of points of the compass occur in this work. Geomancy with its minutely divided compass had been commonly used at that time in the country for more than two centuries. It is only reasonable to infer that since they used the floating needle of the geomancers, they would also use their division of the compass then, as in the time of the traveller to Cambodia referred to above. Even when shaping their course by the stars navigators would inevitably employ the compass to assist them in fixing the direction of sailing.

The Chinese compass is in fact an azimuth instrument which might be used in a rough way for fixing the position of the heavenly bodies at a given time; and for taking the bearings of mountains and islands as seen from a ship, in the way commonly followed on European vessels with our own compass.

The chief opponents of the antiquity of the knowledge of the magnet are Dr. Legge and Mr. Mayers.* To the former of these scholars we owe a valuable collection of passages bearing on the subject, Shoo-king, vol. II, p. 535. The result at which Dr. Legge arrives is that the story of Cheu-kung having given south pointing chariots to the ambassadors of the Yue-c'hang (Et-dong) to the south of China, must be false. Mr. Mayers accepts this conclusion and gives in *Notes and Queries*, February 1870, a passage shewing that a south pointing chariot was really made by Ma-kiun in the Wei dynasty, A.D. 222-239.

I will now made some observations on the origin of the knowledge of the loadstone. In the work Ku-kin-chu 古今註 of the Tsin dynasty by Tsui-p'au it is added, after the passage given by Legge, "the officers who accompanied ambassadors to their country then returned. They came back in the same carriages in a direction opposite to that towards which they pointed, and occupied a year as the journey out had done. The axles and protruding axle ends were originally of iron, which was completely rusted away when they returned. The chariots

* Since this paper was read before the Society, Mr. Mayers, on reconsidation of the claim of the Chinese to an early knowledge of the magnet, has recognized it on the ground that they found it in the course of their early mining and smelting operations in north-eastern China.

were entrusted to officers to be kept for the use of the envoys of subject states located at a distance. The method of constructing these chariots was lost in the confusion that attended the downfall of the Han dynasty. Ma-kiun renewed the knowledge of it; and it is his method that is followed in making the present south pointing chariots." So far the Tsin author, writing at a time when south pointing chariots were a regular part of the imperial equipages.

Iron was extensively worked in Shensi B.C. 220, for at that time a heavy excise duty was levied on it by T'sin-shï-hwang.

Ma-twan-lin says in his account of salt and iron taxes, that they were first levied by Kwan-chung, made in B.C. 685 prime minister of T'si-kwan-wang. He cites the book ascribed to Kwan-tsï. That book says that every person must eat salt, and every woman must use a needle. Hence the advantage of laying a duty on these two material products. The duty is at once uniform and universal.

Yet the part of Kwan-tsï referring to iron has in it traces apparently of Han dynasty origin. A sentence in it speaks of casting iron money which, say some, was not done before the T'sin dynasty. This anachronism betrays a pen later than that of the supposed author.

If we were to rely on Ma-twan-lin's citation, treating the sentences just referred to as a gloss, iron must have been extensively worked in Shansi B.C. 700, or only four centuries after Cheu-kung. Magnetic iron is found abundantly at T'sï-cheu, a city of Chihli close to the Honan border, and in the same system of iron stone mountains to which the Shansi iron belongs.

The city of C'hü-fu was at once the home of Confucius, and the capital of the principality of Lu, which was assigned, as a reward for his great services, to Cheu-kung. It was within 200 English miles of the loadstone district, so that there was every opportunity for his possessing a special knowledge of the south pointing property of the magnetic needle. Any one in that neighbourhood might know it.

The first mention of the tradition was, as pointed out by Mr. Mayers, in the works of Kwei-ku-tsï in the fourth century before Christ. I take this as an indication that magnetic iron was known in north China at that time. The real question here is not whether the Chinese borrowed the magnetic needle from India; but when the iron stone was first worked in which magnetic ore is found. I cannot but think the supposition of the two eminent investigators, my two friends already cited, that India had anything to do with teaching the Chinese the use of the mariner's compass an entirely gratuitous one. The name

of India does not occur among the countries possessing the loadstone.

The name 磁石 *t'sï-shï* means the "stone of the city of mercy." The word 慈 *t'sï* "mercy" was applied to the city[1] for some centuries before it was changed[2] to 磁州. The city gave its name to the loadstone, and then the loadstone gave its name to the city.

Mencius speaks of agricultural implements as made of iron; and though there is one authority who mentions that weapons of war were made of copper till the time of T'sin-shï-hwang, when they were made of iron, he must surely be in error. The remarkable passage in Kwan-tsï speaks of agricultural implements being of iron in his time. Thus he gives the following reason why a duty should be levied on iron. Every farmer must have his iron ploughshare, his hoe and his rake; and, as above mentioned, every woman her needle.

As to the extensive smelting of iron in the Shansi district it was then certainly in active operation B.C. 200, and possibly B.C. 700. As to the loadstone, Ma-kiun, A.D. 200 (about) made use of it in constructing for court usage "south pointing chariots;" and legends then existed of its use for this purpose under the direction of Cheu-kung, B.C. 1100.

The polarity of the magnet and its power of attracting iron filings might be discovered at any time in the manufacture or use of sewing needles. The use of it for directing land travelling was soon thought of. Its application to voyaging at sea was not made till long after. A late authority says, indeed, that the sailors of Kiangsu, Chekiang, Fukien, Canton, etc., learned the habit of using the "dry" mariner's[3] compass in the Ming dynasty from the Japanese. Yet in this case the loadstone being Chinese, and the idea of applying it to navigation and to carriages being also Chinese, it was specially the application of the dry compass to sea voyaging that was made by the Japanese, imitating the practice of European navigators. The use of magnets in pleasure boats is mentioned in the Tsin dynasty. The account of the emperor's palaces and pleasure gardens in the Tsin dynasty, says the Yuen-kien-lui-han, mentioned a boat named *chï-nan-cheu* 指南舟 which floated on the lake called 靈芝池 *ling-chï-c'hï*, "lake of the plant of immortality."

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[1] K'ai-hwang-shï-nien A.D. 591.

[2] Kwang-te A.D. 763.

[3] Before this they used the floating compass. The dry compass appears to have been imitated by them from the Europeans in the way here stated.

In the fourth century therefore, the magnetic needle was used in boats as in carriages. There is no need then to suppose that the idea of the mariner's compass was borrowed from the Japanese. They simply extended an improvement in its use when communicated to them probably by the Portuguese.

The cause which prevented the use of the dry compass by Chinese junks in early times appears to have been that they found it easier to construct a water compass. The needle floated in water. When the Japanese pirates infested the Chinese coasts, their vessels were all supplied with a compass in the stern, and the needle was in a dry box resting on a pivot. From them the Chinese first learned the use of a dry compass for sea voyages. But on proceeding to make it they found that in the process of smelting, the loadstone was apt to lose its polarity. 但其鍼用碰石炙制氣過則不靈.[4] It was not equal to the water compass, says the native author, who is however not sufficiently explicit in his statement.

The words used for mariner's compass are 方盤 *fang-p'an* "box of the quarters," and 羅經 *lo-king*, a term properly applicable to the compass of the geomancers. I cannot find these names in the Yuen-kien-lui-han. The reason is probably that they do not belong to the Confucian system. The term lo-king was however early used by the geomancers.

The anchor of a boat is *mau* 錨. It may be of wood, stone, or iron. The word probably means "that which is cast" by change from *p* to *m*, the root being 拋 *p'au*, "to cast," "throw," "cast anchor."

The pole with its spike and hook of iron or spike only is 篙 *kkau* 1 *kok*. It may be derived from *k'au* 3 *k'ok* "to rest" or from *kkeu* 1 *kok* "to hook." The first is the more probable.

The words for mast are 檣 *t'siang* 5 *dzung*, and 桅 *wei* 5.

Since we have *sung* as a common root for "high," and since the phonetic portion of 桅 *wei* is *ngok*, which is also a root for "high," both words may have grown out of the idea of "high."

The word for "fathom" in describing depth of water is 托 *t'o* 4 *t'ok*, a measure got by stretching the arms in opposite directions.

The word for needle 指南針 as applied to navigation occurs in the Ming dynasty work referred to above. It treats partly of sea voyaging in the vicinity of China, and is called Tung-si-yang-k'au

[4] See 玉芝堂談薈 *yü-chi-t'ang-t'an-k'wei* by 徐雲林 *si-yün-lin* chapter 28, where the passage is quoted from a work called 稚遂寤語 which I have not seen.

東西洋考. The preface dates 1619. This was in the century following that of the Japanese raids. The book is a sort of guide book for the Chinese navy of that age, as well as a geographical compendium for countries bordering on China.

In indicating a ship's course the 24 points made up from the cycles of 12, 10 and 8 are used. The cycle of twelve is the basis; and to this are added eight of the cycle of ten, and four of the cycle of eight. Tsï 子 is the north point; and the rest, 丑 *c'heu*, etc., follow the order east, south, west, as the Roman Numerals on the dial of a clock. For example 用坤申針 *yung-k'wun-shen-chen* or 225 to 240 degrees; 用庚酉針 *yung-keng-yeu-chen* or 255 to 270 degrees. Thus there are twenty-four points to the Chinese compass. In addition to cases where two characters combine, the characters of the compass are also used alone as points, as in 用單亥針 *yung-tan-hai-chen*. "Take the needle of hai alone"—that is 330 degrees.

Distances between one place and another at sea are counted by watches. A day is divided into ten watches, and the distance is estimated by the time occupied when the wind is fair. A watch then 更 *keng*, is two hours and twenty-four minutes, when used as a measure of distance in voyages at sea.

The larger junks of the Chinese in the Ming dynasty are said to have been 36 feet wide and more than 100 in length. The smaller were 20 feet wide and 70 or 80 feet in length.

Ibn Batuta, A.D. 1350, when describing Chinese junks says, each of the greater ships (jonuk, singular junk) has from twelve sails to three. More details may be seen in Yule's Marco Polo.

In the year A.D. 417, Fa-hien a Buddhist priest came back to his native country, China, from Ceylon after visiting the Buddhist holy places. He describes his voyage in a vessel containing more than two hundred persons. Behind the large vessel was a smaller one to be used in case of disaster to the larger one. They had a good wind taking them east for two days, the phrase for good wind is 好信風 *hau-sin-feng*. They then met with a tempestuous wind, and the vessel beginning to leak (般漏水入 *c'hwen-leu-shui-ju*) the merchants wished to transfer themselves to the smaller vessel. This was prevented by the crew of the small craft cutting the connecting hawser from fear of their being swamped by numbers. The passengers threw bulky cargo into the sea, and Fa-hien threw in his staff and bathing vessel with other things. Then fearing lest the sailors should threw his Sanscrit books (Fan-king) and holy images into the sea, he prayed to Kwan-shi-yin and all the Buddhist priests, who had safely reached China, in the following words:

"I have travelled far in search of the law, and desire that you powerful spirits may smooth the sea, so that I may arrive at the country to which I am voyaging." After the tempest had lasted 13 days and nights, they reached an island where they anchored. On the tide retreating they found the leak, filled it up and proceeded on their voyage. In the midst of the immense and shoreless ocean, they could not distinguish east from west. They could only proceed by observing the sun, moon and stars. In dark and rainy weather they were driven by the wind without any certainty as to their direction. Nor could they bring the vessel to a stand by throwing out their stone anchors. They were forced to sail on till fair weather came, when they would know east from west. After 90 days they reached Java.

In stating that in the deep sea it was impossible to anchor, Fa-hien says there was no place where they could send down stones and stop the ship. Here the meaning is large stones that were used as anchors. The French translation misses the meaning and refers the word "stone" to rocks underwater.

From Java, after remaining there for five months among Brahmans who opposed Buddhism, the voyager proceeded in a ship to Canton, called in Fa-hien's narrative Kwang-cheu, its present name. He left Java on the 15th of the fourth month. Near the end of the fifth month, he and his fellow voyagers, more than two hundred in number, met a tyfoon, the first on record. It came on, says the traveller, at the 2nd watch (夜叉二時 *ya-ko-ni-zhi*) of the night. He calls it a black wind attended with heavy rain. Fa-hien prayed again to Kwan-shi-yin and all the Buddhist priests (who had safely reached China in former voyages). By the help of these powerful spirits 威神 *wei-zhin*; they were preserved till the morning.

I now mention a striking coincidence with the voyage of Jonah in the Mediterranean. The merchants and other passengers were much alarmed. In the morning a number of Brahmans consulted together respecting this Shamen (Buddhist recluse) who was sitting with them on board. It is he they said, that brings us this misfortune. "We ought to take this Bik-shu and throw him into the water beside this island. It is not right that we all should be endangered on account of one man."

A patron of Fa-hien said to them "If you throw this Bik-shu into the sea you must also throw me in. Or I will on arriving in China speak about this matter to the king, who is a great friend of the Buddhist recluses." They then desisted from their intention. The ship was afterwards driven up the coast of China to Shantung. Here Fa-hien landed and proceeded to Sii-ngan-fu, then the capital.

## Note on the Mariner's Compass.

The name used for the mariner's compass by Sü-king in A.D. 1122, who saw it in use on board his vessel when going to Corea, and who speaks of it as what was customarily employed, is 指南浮針 *chï-nan-fu-chen*. He does not speak of the card. The name when the card or round pointed platter is referred to is 方盤 *fang-p'an*, "platter of the quarters," another name is 羅盤 *lo-p'an* or *lo-king* 經. This name is frequently applied to the geomancers' compass. In the work Tung-si-yang-k'au, composed at the time when the floating compass was already changed for the modern one, the name *chï-nan-chen* is used, the word *fu* floating being omitted.

The Lo-king is said to have been first made by a T'ang dynasty geomancer named K'ieu. When the twelve points Tsï, Ch'eu, Yin, Mau, etc., were adopted from the old astronomical division of the horizon, more were found necessary. The ten counters Kia, Yi, Ping, Ting, etc., were applied and used according to their distribution among the five elements. Thus according to the geomancers, and the Han authors before them, Kia, Yi belong to the east, and they are therefore placed one on each side of Mau. Ping, Ting belong to the south and are placed one on each side of Wu. Wu, Ki belong to the centre and are therefore not used. Keng, Sin belong to the west and are made supporters of Yeu. Jen, Kwei belong to the north and support Tsï. Both cycles are arranged from east to west.

A space has to be filled up in each quarter at its middle point. Four of the eight symbols of Fuhi are used for this purpose. The Han dynasty writers and perhaps those of Cheu were accustomed to place the eight symbols, Pa-kwa, in a circle in a certain order called the Pa-kwa of Wen-wang, or the Heu-t'ien-pa-kwa, the "Eight symbols of the later heaven."

The Heu-t'ien order is *ch'ien, tui, k'wun, li, sun, chen, ken, k'an*. These correspond in position to NW, W, SW, S, SE, E, NE, N. The 1st, 3rd, 5th and 7th are used in their places in the order from west to east; and in an order opposite therefore to that of the cycles of 12 and 10.

These are all the points necessary according to Chinese notions for the mariner's compass. They called them the twenty-four Fang-wei or twenty-four *shan* "mountains."

For the use of geomancers many additions are made. The twenty-eight constellations form a circle. Seven imaginary moving stars perhaps of Indian origin form another. The *Feng-chen* and *Chung-chen* form two more circles. A circle of twenty-four selected stars distinct from the twenty-eight, form

another. There is a circle of nine fictitious stars, one of seventy-two dragons and another of sixty dragons.

The arrangement called *Feng-chen* was added by Yang-yi near the end of the T'ang dynasty, A.D. 900. He noticed that the magnetic needle was variable and that it varied to the extent of half a point to the west of south and east of north. He therefore added a circle of twenty-four points corresponding to the intervals between the twenty-four points of the circle of his predecessor K'ieu. He called the circle of K'ieu the *cheng* 正針 *chen* and his own the *Feng-chen*. Feng is "seam," "interval." Each point in Yang's circle is 7½ degrees to the left of each point in K'ieu's circle.

Later on in time, towards the end of the Sung dynasty, about A.D. 1200, another author on geomancy invented a circle called the *Chung-chen* 中針 "central needle." It begins to the right of 子 *tsï* and continues its twenty-four points in all cases to the right of the corresponding points in Kieu's circle. This represents western variation, which appears to have been observed by Lai-kung, the author here referred to. It represents 7½ degrees as in the case of Yang's new circle.

I append the passages in geomancers' books which imply an early knowledge of the variation of the compass. As Columbus is one of those who are said to have first noticed the variation of the compass in Europe, the Chinese must have been acquainted with it about five centuries sooner, for Columbus, as all the world knows, discovered America in 1492.

In the account given in 羅經解 *lo-king-kie*, "explanation of the compass," page 2 it is said, "the meridian line of (the daily revolution of) the heavens differs by half a point from the line of the floating needle."

An attempt is made to explain this variation by the analogy of the pole star. The present pole star was observed to be between *k'ien* and *hai* or about between 30 and 45 degrees from the pole of revolution. Not knowing why the pole changes its place among the stars, nor why the needle points to the south, the ancient Chinese imagined a connection between the two things. If the pole star was then several degrees from the pole (say 8 degrees in the Sung dynasty) why should not the magnetic needle vary in a certain proportion? The time was not come for learning that the causes of these peculiarities are hidden in the earth itself, and are not even yet fully known. The geomancers simply looked on the variation of the needle as a marvel, indicating that heaven and earth are under the control of the same laws.

In page 23, the same author describes the north pole as

inclined to the north-west, and the sun's shadow at noon as inclined to the south-west. The two positions of the needle introduced by Yang and Lai are therefore, he adds, not without reason and ground in nature. Where there is 理 *li* (underlying reason or law) there will be 氣 *c'hi* (moving influence, active physical power), and where there is *c'hi* there will be a phenomenon representing it (*siang*, image 象).

He goes on to say, pp. 23-24, that because the needle varied at its northern end to the eastward, and at its southern end to the west, Yang-kung added the *Feng-chen*, and the addition of the *chung-chen* is described in a similar way.

In p. 16 the author specially notices that the first point of the Feng-chen does not intrude on the second duodecimal division of the Cheng-chen. This I think means that in the time of Yang-kung, A.D. 900, eastern variation was not more than 15 degrees as observed by that writer.

The state of the case is this. The division *tsï* 子 occupies 15 degrees on each side of the north point. The second 丑 *c'heu* occupies 15 degrees on each side of our 30 degrees. Yang-kung made a subdivision of 120 parts or 10 in each member of the duodecimal division. In doing this the ten parts proper to Tsï did not intrude upon the domain of C'heu, *i. e.* were not more than 15 degrees east of the north point. Just before it is said that the ancients used a wooden gnomon to fix the north and south point by the sun's shadow, and whether on the longest or shortest days, it was found that the floating needle varied 7½ degrees. I suppose the variation to have been something within 15 degrees on each side, and that the geomancers took 7½ degrees as a convenient average.

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NOTE ON TERMS FOR "MARINERS."

Fa-hien used 海師 *hai-shï* in the sense of seamen. Sü-king uses 篙 *kau-shï*, "pole men" in the same sense. The modern term is 水手 *shui-sheu*, "water hands."

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ON THE VARIATION OF THE COMPASS AS OBSERVED IN CHINA IN THE VIIITH, IXTH, XITH, XIITH AND XVIITH CENTURIES.

In the above paper on Chinese navigation and the use by the Chinese of the mariner's compass, I gave evidence of its employ-

nment at sea in the year A.D. 1122. An ambassador from China to Corea went in a vessel, and by this the mariners shaped their course in cloudy weather when out of sight of land.

The origin of the mariner's compass was traced to the Feng-shui superstition which grew up in the T'ang dynasty and was extended throughout China in the Sung.

In the compass used by the geomancer a magnetised needle was always included. Like the wooden horizon round a globe the compass of the Chinese is inscribed with several cycles. A general description of these cycles was given, and it was pointed out that the existence of two of them is due to the curious, but very natural circumstance that the variation of the compass was noticed by those who early used the instrument.

Since the paper was presented I have been able to bring forward some new instances of the declination of the needle being known anciently by the Chinese. One of them is found in the writings of a man who was not a professor of Feng-shui, and who says nothing about the geomancer's compass. His name was Shen-kwa. He was an eminent Sung dynasty author. He watched the experiment carefully as a thing interesting in itself, though not admitting of explanation.

He has carefully recorded the mode in which he suspended his needle by attaching it with wax to a silk thread, and the compiler of the Pen-t'sau or Materia Medica of China has in describing the loadstone, had apparently before him this very passage.

This statement is earlier by about forty years than the voyage to Corea in which the floating needle is recorded as having been used.

On mentioning to Mr. W. F. Mayers my desire to find more passages in old authors bearing on this subject, he kindly made search in several works of the Sung and Ming dynasty. What he found he communicated to me. The first was from 物理小識 of the Ming. It mentioned the record by Shen-kwa about A.D. 1080 of the western variation of the needle, and proceeded to say that in Europe it varies to the east 大秦西海佰丁位. This information is ascribed to 舶商 *pe-shang* "merchants from Ocean ships."

This knowledge of eastern variation must have been derived from Roman Catholic missionaries who would know that 大秦 is an ancient name of Western Asia and Europe, or rather of the Roman empire. It is added by the author of Wu-li-siau-shi to the extract from the Sung dynasty author. *Pe-shang* "ship merchants," would be perhaps the commercial agents on board the vessels by which the missionaries came to China.

The Si-hai, "western sea" will be the Atlantic Ocean.

The first edition of his work was published in 1631. The introduction of western science in the reign of Wan-li is mentioned in the preface.

I am indebted to Mr. Wylie for the knowledge of the other instance which is found in the life of Yi-hing, a Buddhist priest and imperial astronomer at the beginning of the 8th century. I use Mr. Wylie's translation (in *North-China Herald*, March 15th, 1859) "on comparing the needle with the north pole, Yi-hing found that the former pointed between the constellations *hü* and *wei*. The pole was in just six degrees of *hü*, from which the needle declined to the right 2° 95′." Since the right is west, and reference is here made to the south point of the horizon, the declination was eastern in reference to the north point of the horizon. Let it be here noted that the circle was divided in and previous to the Yuen dynasty into 365 and a quarter degrees; and each degree into 100 minutes and each minute again into 100 seconds.

It will be readily understood how much more convenient it was to measure the amount of declination from the south point of the horizon if it is remembered that on the ancient measuring spheres of the Chinese made before the time when the Jesuits were in Peking, the additional five degrees and a quarter are added in two equal portions at the north pole. This mode of dividing the circle may be seen on the machines for observing the stars constructed by Kwo-sheu-king, and now standing in the large court of the Imperial Observatory in Peking. Last summer at Mr. Wylie's request I examined the marking of degrees on those instruments, and found it was so in each case. On the instruments which stand on the terrace the marking of degrees and minutes is invariably according to the European method.

Yi-hing, who observed the variation of 2° 95′ was a contemporary of K'ieu-yen-han, inventor of the compass of 24 points. For the latter was living in A.D. 713, as we learn from a notice, in the catalogue of the Emperor C'hien-lung's four libraries, of his work 天機素書 *t'ien-ki-su-shu*. It is in that section of the catalogue which treats of the works of geomancers.

Possibly then Yi-hing may, since he was living at the time of the invention of the floating compass of 24 points, have had something to do with that invention. Tradition however clearly ascribes it to K'ieu-yen-han, who does not seem to have been aware of any declination.

In other extracts with which Mr. Mayers has kindly furnished me it is said that geomancers 方家 are in the habit of rubbing

the point of a needle with a magnet to give it south-pointing power. But the needle does not point due south. Without exception it prefers to point a little to the east of south (west of north).

We know from the books of the geomancers that in the latter part of the T'ang dynasty the variation was eastern, for the noted writer on Feng-shui, who is known as Yang-yi, then introduced into the Geomancer's compass a new circle on which the first of the twelve hours 子 is placed at 7½ degrees east of north. We find western variation to the same amount denoted by another circle introduced by Lai-wen-tsiün in the time of the southern Sung dynasty.

The place of the observation of Shen-kwa is between these. He was born in A.D. 1030 and died in A.D. 1094. Hence we learn that the variation was eastern in China in A.D. 713, and sat about A.D. 900. After that time it became western, and was so at about A.D. 1080, and nearly a century later in the time of Lai-wen-tsiün.

These three statements of the variation of the compass are long anterior to any made in Europe. Columbus was astonished to notice it in 1492. There is an uncertain notice of it as known in 1269; and it is said that a Chinese compass was taken to Europe in A.D. 1260.

Shen-kwa proceeds to say in the 夢溪筆談 that "the needle floating on water takes a long time to settle and is very liable to shake. It can be made to revolve on the edge of a finger nail or the rim of a basin, and will then settle more quickly. But it is so apt to fall in such circumstances, that the best mode is to suspend it by a silk thread. Let it be taken from a new cocoon and fastened to the middle of the needle by means of a little wax. If hung away from any current of air the needle will always point south."

"There are needles which when rubbed point north. I possess some needles which point south, and some which point north. The pointing to the south of the magnet is like the pointing to the west of the juniper and cypress. It cannot be explained." Mr. Wylie has also published a translation of this passage.

Shen-kwa adds in a supplement to the Meng-hi-pi-t'an (Pencil talk of the brook of dreams) that "the north pointing and south pointing powers resulting from rubbing the point of a needle with a magnet are perhaps caused by differences in the nature of the magnetic stone made use of. In summer the small deer casts its horns. In winter the large deer does so. There should

be some cause for this opposition in time, but it has not yet been deeply investigated."

The first tables of declination of the compass were made in 1599, by the Dutch.

The following notes of variation of the compass in Europe are here added:—

Paris A.D. 1541, E 7½ degrees; 1550, E 8½; 1580, E 11½; 1630, 4½; 1663, nothing.

London A.D. 1580, E 11° 15′; 1622, E 6; 1660, nothing; 1692, W 6; 1730, W 13; 1818 W 24° 41′; 1850, W 22° 30′.

These data show how in Europe eastern variation prevailed from the time when magnetic phenomena began to be closely observed till A.D. 1660, when western variation began to be the law in England; as it has continued to be till the present time. In the present century the line of no variation passes from the Arctic regions through the United States, and the South Atlantic Ocean to the Antarctic part of the world. From that region it comes by Van Diemen's Land, and the Indian Archipelago into Asia. Here it parts into two branches. The one proceeds by Cape Comorin and Persia to Lapland and the Icy Sea. Another traverses China, and makes its exit from the Asiatic Continent by Eastern Siberia.

The result of the observations of the geomancers and others is that we acquire the knowledge of the fact, that as a part of the present century is a time of small or no variation in China, so was also a part of the tenth century and also of the eighth. But further, the circumstance that no later geomancer has made an unconscious register of a new change observed by him from west to east variation or *vice versa*, by adding a new circle to the compass, must not be taken as indicating that the line of no variation has not passed through China during the interval between the tenth century and the present. They may have often observed it, but their compass was complex enough. Why increase its many circles? It is cumbersome as it is. Why make it more so?

Mr. Wylie pointed out in his paper of 1859, that the observation of Yi-hing was taken at Chang-an, the present capital of the province of Shen-si, and that that of Shen-kwa is to be supposed to have been taken at Pien-liang, the present K'ai-feng-fu. He also cites a passage from Sü-kwang-k'i which says that the direction of the needle differs from the line of the meridian. There is a variation for each place. In Peking the variation is 5° 40′ east. This is found in his work Li-yi.

Mr. Wylie also gives from the celebrated mathematician Mei-

wu-ngan, who lived in the middle of the 17th century the following observed variation. At Nanking the variation was three degrees east. At Sucheu it was two and a half degrees east.

Mei-wu-ngan was astonished to find that Adam Schaal stated the variation to be seven and a half degrees, and expresses his doubt of the fact.

Schaal was probably speaking of the amount of variation in Europe at the time.

Mei-wu-ngan was an elderly man when the emperor Kang-hi was a young man, and received from that monarch high marks of respect.

Mr. Wylie adds that at Canton in 1817 there was no variation, and that at Peking in 1829, the variation was one degree forty-eight minutes west.

We see by the London and Paris observations, that between 1541 and 1850 there was a change from eastern to western variation, and that the western variation had begun to decline between 1818 and 1850.

The following table is extracted from Ganot's Physics as translated by Atkinson, 1871.

[*Observations at Paris.*]

| | | | |
|---|---|---|---|
| 1580, | E 11° 30′ | 1825, | 22° 22′ |
| 1663, | 0 | 1830, | 22 12 |
| 1700, | W 8 10 | 1835, | 22 4 |
| 1780, | 19 55 | 1850, | 20 30 |
| 1785, | 22 | 1855, | 19 57 |
| 1805, | 22 5 | 1860, | 19 32 |
| 1814, | 22 34 | 1865, | 18 44 |

It appears therefore that in 1663 the line of no variation passed through Paris. It reached the greatest western variation 151 years later. It is possible then that the interval between the maximum eastern variation, and the maximum western variation is about three centuries.

The needle consequently may in China since the Tang dynasty have had western variation, and exchanged it again for eastern two or three times.

In the above mentioned work 物理小識 Shen-kwa is quoted as saying that in the place where he was writing the needle persistently pointed to 丙位 *ping-wei*. This means on the Chinese compass fifteen degree east of south. Transferred to our compass this is the same as fifteen degrees to the west of north. The writer of this Ming dynasty book when he adds that merchants who have travelled in ships say that in the European ocean the needle points to the 丁位 *ting-wei*, means

fifteen degrees of eastern variation. European missionaries about A.D. 1580, when at Paris it was actually fifteen degrees and a half, may, as already hinted, have given the author 方以智 this information.

The time at which Yi-hing and K'ieu-yen-han lived, was about A.D. 713.

The catalogue of Ch'ien-lung's library states that Yang-yi is reported to have been called to court about A.D. 1041.

Another passage in the same catalogue, in a notice of Han-lung-king 撼龍經 a work of Yang-yi, says, he was living about A.D. 880, and is doubtfully reported to have been an official geomancer in connection with the observatory.

The chronology of Lai-wen-tsiün who marked western variation needs still to be determined. The catalogue of Ch'ien-lung says of him that he wrote a book containing the reign Shau-hing in its title. This reign extended from A.D. 1131 to 1163. We must suppose that he lived at that time.

Let me add in conclusion that while the observation by Shen-kwa about A.D. 1080 of the variation is free from the superstition of the Feng-shui, and therefore more scientific than the observations of Yang-yi and Lai-wen-tsiün; yet that the observations of these two geomancers, although clouded with much false science, have in them a real value as being the result of an actual knowledge of the variation, at the times and in the places (K'ien-cheu in Kiangsi, and C'hu-cheu in Chekiang) in which they lived.

A passage already cited above says that the floating needle is found to vary half a division westward from the south point of the compass. This is said in the midst of a statement of the theories of Yang-yi, and can only be referred to him.

Further, the fact that the variation was western in 1080 indirectly confirms the opinion that it was the observed western variation of the needle that led Lai-wen-tsiün, about 1160, to place on the compass a new cycle beginning from 7½ degrees west of the north point.

## ARTICLE V.

### CHINESE EUNUCHS.*

By G. Carter Stent.

MUCH has been said and written about eunuchs at various times, but very little seems to be really known concerning them, save that they are unnaturally mutilated, and that their duties chiefly consist in attending on the inmates of harems. In fact, everything relating to them is described so vaguely that one is almost tempted to believe that eunuchs exist only in the Arabian Night's Entertainments and other eastern tales, or in the imaginations of the writers, rather than actually belonging to and forming no inconsiderable portion of the human race.

Curiously enough, with one trifling exception, eunuchs are only to be found in eastern despotic countries, the enlightening influence of Christianity preventing such unnatural proceedings being practised in the countries of those who profess it. This serves to shew at least one beneficial result of the spread of Christianity; for while we are free from the baneful practice, it is a vile blot on less fortunate countries; too palpably shewing in what a low estimation the women of these countries must be held, when their husbands or masters conceive it necessary to resort to such horrible mutilations of *one* sex to keep the *other* pure;—for it is but sophistry to say that eunuchs are merely kept to mark the rank of the owner, to add to the dignity of his establishment, and other balderdash of a like nature. There can be no other motive in using them than the suspicion, distrust and jealousy of eastern potentates and others, of the fidelity of their wives and concubines; and the dread that if *men* were employed, licentiousness and profligacy would run riot in their harems.

Eunuchs are generally represented as being vindictive and revengeful in disposition; this, if true, cannot be wondered at, for if they have been made eunuchs in their childhood, and against their own inclination, the injustice and barbarity perpetrated on them, as they grow up and fully perceive its greatness, must naturally rankle in their minds and tend to breed and develop all those vices for which we give them credit. On

* Read before the Society on 26th March, 1877.

the other hand, should they have arrived at a period of adolescence, and have enjoyed intercourse with the opposite sex previous to castration or mutilation—either with or without their own consent—no punishment can be conceived more horrible than that which they daily and hourly endure—that of seeing women in their most abandoned moments, and knowing at the same time they have for ever lost their virility, and consequently, all power of the greatest enjoyment in life. They may be, and are, at the time, physically dead to all feeling of sensual pleasure, but it is impossible their minds and memories can be dead or oblivious of what *had* been or might *still* have been theirs, but for their mutilation. Those, therefore, who have indulged in sexual intercourse previous to castration, must feel the loss of their virility much more keenly than those who have been made eunuchs before they felt or experienced those mysterious workings of nature which accompany the adolescence of both sexes; and this also would tend to embitter and envenom all their after lives, and fill them with but ill-concealed envy and hate.

I shall not endeavour to give a detailed account of the origin of eunuchs—particularly those of other countries—but, with the exception of a short extract or two, shall only give a brief sketch of here and there one known to Chinese history, a few of their peculiarities, and the mode of depriving them of their procreative powers, which would seem also to deprive them of every virtue, leaving them the vile and contemptible beings they are generally depicted.

In "Smith's Bible Dictionary" we find the following remarks regarding eunuchs:—

"The origination of the practice is ascribed to Semiramis (Amm. Marcell. xiv. 6), and is no doubt as early, or nearly so, as eastern despotism itself. Their incapacity, as in the case of mutes, is the ground of reliance upon them (Clarke's Travels, part ii. § 1-13; Busbeq. Ep. i. 33). By reason of the mysterious distance at which the sovereign sought to keep his subjects (Herod. i. 99. comp. Esth. iv. 11), and of the malignant jealousy fostered by the debased relation of the sexes, such wretches, detached from social interests (especially when, as commonly, and as amongst the Jews, foreigners), the natural slaves of either sex (Esth. iv. 5), and having no prospect in rebellion save the change of masters, were the fittest props of a government resting on a servile relation, the most complete *organa eupsycha* of its despotism or its lust, (but see Esth. ii. 21), guardians (Xenoph. Cyrop. vii. 5. § 15: Herod. viii. 105) of the monarch's person, and the sole confidential witnesses of his un-

guarded or undignified moments. Hence they have in all ages frequently risen to high offices of trust, etc."

To quote again from "Smith's Bible Dictionary," in speaking of eunuchs, we find the remarks:—

"The moral tendency of this sad condition is well known to be the repression of courage, gentleness, shame and remorse, the development of malice, and often of melancholy, and a disposition to suicide." . . . . . .

"The operation itself, especially in infancy, is not more dangerous than an ordinary amputation. Chardin (ii. 285), says that only one in four survives; and Clot Bey, chief physician of the Pasha, states that two-thirds die. Buckhardt, (Nub. p. 329), is mistaken, when he says that the operation is only fatal in about two out of a hundred cases."

I shall have occasion hereafter to call the attention of my hearers to some of the preceding remarks, and see how far they agree with the facts as they stand regarding Chinese eunuchs.

The Cyclopedia (Penny) gives the definition of eunuch as "one who has care of a bed;" and goes on to say in regard to the custom of making eunuchs:—

"This peculiar species of barbarity was a Persian practice (Herod. vi. 32). It appears however that the Greeks sometimes carried on the trade of making eunuchs, whom they sold at Ephesus and Sardis to the Persians for high prices; the Persians considering that eunuchs generally were more trustworthy than other men. (Herod. viii. 105). Tavernier tells us that in the kingdom of Bootan twenty thousand eunuchs were annually made in his time, to sell to other nations; and the seraglios of the east are principally served and guarded by them to the present day."

"The Christian emperors of Rome forbade the practice of making eunuchs, particularly Constantine; and Justinian imposed a law of retaliation upon such as exercised this inhumanity. In Italy however the process of castration is still practised upon children intended to supply the operas and theatres of Europe as singers. The council of Nice condemned those who from excess of zeal made eunuchs of themselves. Persons so mutilated were not admitted into holy orders."

"Certain heretics of the third century bore the name of Eunuchs, who had the folly or madness, after the example of Origen, not only to castrate those of their own persuasion, but all whom they could lay hands on. They were also called Velasians, from Velasius, an Arab, who was their chief. (See Epiphanius and Baronius' Annals, under the years 249 and 260)."

In an able article in Blackwood's Edinburgh Magazine,

(Vol. lxxv. p. 60) named "The Past and Future of China," we find:—

"The evils of polygamy, however, were aggravated by the monarchs of the 'Han dynasty raising eunuchs of the court to important offices in the State. In China, these men, emasculated in everything save craftiness and ambition, came to exercise a pernicious influence on the government; but, forming an association for mutual aid among themselves, they were the means of ruining many successive dynasties without themselves being displaced." . . . . . .

"Long experience has shewn, in China as in other empires, that the energetic founders of a dynasty are by-and-by succeeded by men who give themselves up to pleasures—betaking themselves to the harem, and resigning the reins of government in many cases to crafty and ambitious eunuchs—a class of men who, as we have seen, have proved the bane of almost every dynasty for the last sixteen centuries."

Herodotus (iii. 49), informs us that "Periander had selected the sons of the Corcyræan nobles, and sent them to Sardis to be emasculated, in revenge of an insult offered him; for the Corcyræans had first committed an outrageous deed against him."

Again, we find (Herod. vi. 32), that when the Persian generals "had made themselves masters of the cities they selected the handsomest youths, and castrated them, and made them eunuchs instead of men."

Further on, (Herod. viii. 105), we are told that Panionius "whenever he purchased boys remarkable for beauty, having castrated them, he used to take and sell them at Sardis and Ephesus for large sums; for with the barbarians eunuchs are more valued than others, on account of their perfect fidelity."

Eunuchs, in all generations and in all countries appear to have been objects of hate and fear, and often not without reason; for, strangely enough, when in possession of power, they have almost invariably presumed on it; the result has been that the whole class has often suffered through the fault of one person. There have been periods when the hatred against them, through their overweening arrogance, has reached to such a pitch that a general massacre of the eunuchs has taken place ere the hatred of the populace could be appeased.

Our earliest impressions of eunuchs—and those that cling longest and most tenaciously to the memory of most persons belonging to western nations— are derived from tales of eastern romance. In these the eunuch seems almost a mythical personage; he appears occasionally on the scene, generally entrusted with some death-dealing commission, which he proceeds, scy-

meter in hand, or provided with bag, cord, box, or poison to execute; we follow his actions with awe; when he disappears we know no more of him—his further life is shrouded in mystery. Some eunuchs, I doubt not, could tell strange tales of eastern licentiousness and despotism in the harem, had they the opportunity of doing so—safely.

In the bible eunuchs are variously spoken of as eunuchs, officers, chamberlains, etc. (See note at end), and we see that they have often risen—like those in China, formerly—to high rank, both in civil and military capacities: that they have often been the possessors of great power, which they have wielded to their own benefit, have had, at times, undue influence with their employers, and have been entrusted with duties which could not conveniently have been given to others. Indeed, there is a great similarity in the history of eunuchs, in no matter what time or country they may have belonged. We notice this remarkable difference, however, that whereas in other eastern countries *any* wealthy persons can employ eunuchs in their families, in China they can only be used by certain members of the imperial family, and in the families of the high hereditary princes whose ancestors assisted in establishing the present dynasty. These eight princes possess—in some cases—more than royal privileges;[1] their rank is hereditary. In brief, eunuchs, to all intents and purposes are, in China, an appanage of royalty only.

## Origin of Eunuchs B.C. 1100.

As far as I can ascertain, no mention is made of eunuchs in Chinese history previous to the Chou dynasty, or about 1100 B.C. At this period we are told that Chou-kung, 周公, the younger brother of Wu-wang, 武王, the first monarch of the Chou dynasty, framed a code of laws for China, and among the five[2] modes of punishment he introduced, we find castration. Although I can find no actual law where the criminal, after being

[1] Members of the collateral branches of the imperial family, each generation becoming a degree lower in rank, (and it may be added, poorer in pocket) till eventually they become mere members of the family, with no rank whatever, wearing however the "Yellow Girdle," and receiving a trifling allowance from government. These persons are known as "Yellow Girdles," and some of them may be found in the lowest walks in life—beggars and thieves, even.

[2] These are, *mo*, 墨, *pi*, 劓, *yüeh*, 刖 *kung*, 宮, and *ta-p'i*, 大辟. Branding on the forehead, cutting off the nose, maiming, by cutting off the ears, hands, or feet (chiefly feet), castration, and capital punishment.

castrated, was made to serve the members of the royal family, yet both history and tradition says that such was the case, and there can be very little doubt but that it was really so. Indeed, the very name of the punishment is proof sufficient—*kung-hsing*, 宮刑. (Palace punishment); while one of the common terms for eunuch is also another convincing proof—if one were needed—lao-kung-yên, 老宮人—the centre character meaning both palace and castration.

It may be presumed that the system of employing eunuchs in the palace was found to answer; and gave such satisfaction, that finding, in the lapse of years and the increase of licentiousness, the supply of criminals to be made eunuchs not being equal to the demand for their services, other means were resorted to to obtain them. Boys were either bought, sent by their relatives, or obtained from other sources, and castrated to fill the various posts in the palace, caused by keeping up establishments, rendered necessary by the increasing style of splendour and luxury in which each succeeding monarch lived; till what had been originally a punishment only, became by custom or necessity an established rule.

In other dynasties eunuchs generally possessed great power and influence, in this, they fortunately possess little or none; consequently we do not hear much of them or their doings; and a foreigner might live in China—even in Peking—for years, and scarcely know there were such persons in the country, unless indeed, he was familiar with the language and casually heard the word "eunuch" applied to another as a term of abuse.[3]

But little is mentioned of eunuchs in Chinese History, save of those who have distinguished themselves in some form or other; as a rule they are spoken of vaguely, as if not worth mentioning. I will select a few from amongst those who have come prominently before the Chinese world; tracing one or more from the dynasty in which they commence, through succeeding ones, down to the present time, giving a slight account of each, and finishing with a brief sketch of the eunuchs of the present dynasty and reign.

Having said thus much I shall now proceed to introduce each eunuch in turn, and will commence with one named Ch'in-yen, 秦烟,[4] who lived about 720 B.C.

In the reign of Chou-'huan-wang, 周桓王, of the Chou dynasty, the country was split up into a number of petty states:

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[3] In the south 太監 is commonly used.

[4] To be found in the 列國.

one of these was governed by a prince named Sung-kung, 宋公.

This prince was holding his court one day, when a minister named 'Hua-fu, 華父, had the daring to kill a rival minister in his actual presence. The whole of the officers were naturally indignant, and concerted measures to slay the obnoxious 'Hua-fu on the following day. Their plan, however, was frustrated by the eunuch, who secretly despatched a letter to 'Hua-fu, informing him of the conspiracy against his life.

The next day 'Hua-fu entered the court, bringing with him eight hundred soldiers, and slew not only the ministers but the prince himself. Ch'in-yen, the eunuch is spoken of as the one who "spoilt the affair" by his officiousness.

An instance is given in the Lieh-kuo, 列國, where a eunuch was employed as a minister of death, which gives one an idea that—like eunuchs in other countries—they were employed as "private executioners" occasionally.

Chin-hsien-kung, 晉獻公, of the Chou dynasty (B.C. 650), instigated by a favourite concubine, ordered a eunuch named, Kuo-chi, 勃鞮, to go and slay his second son Chung-êrh, 重耳. The eunuch departed on his mission, but the prince, being secretly informed of this design, jumped over the wall of his palace and fled; so closely, however, had he been pursued, that the eunuch in making a cut at the prince while he was getting over the wall, cut off a portion of his sleeve, which he carried back to his royal master to shew that he had done his utmost to effect his object.

About the same period (B.C. 651), we have the following tale, which shews how a eunuch, to gratify his hatred, succeeded in setting a father against a son:—

The king of Chi (齊王), had a favourite concubine, named Ts'ou, 鄒, with whom he was much infatuated. He also had a favourite eunuch, named I-li, 伊力.

This eunuch had an intense hatred to the heir-apparent, on account of having been kicked by him for his insolence on one occasion. He was too cunning to report the conduct of the prince to his father, as investigation might elicit facts which would not redound to his own credit. He therefore, as he imagined, ensured the destruction of his enemy by a more certain means; this was by playing so on the feelings of the concubine as to cause her to influence the king to destroy the prince.

The eunuch set to work by representing to the concubine that the prince constantly spoke of her in a disrespectful manner,

implying that her conduct was no better than it should be. His account inflamed the anger of the concubine to such a pitch that she determined to have revenge on the prince; scratching her own face, therefore, and disordering her robes, she ran to the apartments of the king in this state, declaring his son had done it in the struggle to take liberties with her.

The king readily believed the tale of his favourite, and flying into a rage, immediately ordered the eunuch to behead the prince; but the latter, being informed of his intended fate, fled. Wandering about at night the prince was taken up as a vagrant and brought before a Censor, who discovering his rank and the danger he was in, concealed him in his own house.

The eunuch, meanwhile, taking with him a number of soldiers, instituted a strict search through the houses of the officers of the court—feeling positive that the prince must be secreted in one of these; at length he came to the Censor's house, which he searched, the prince escaping only by being disguised as a woman, and passing off as one of the female members of the family.

The prince afterwards fled the country, and on the death of his father some years later, he returned to his home and beheaded his old enemy the eunuch.

I shall now skip over a period of some 400 years and bring my subject down to the Ch'in dynasty, about 250 B.C.; where casual mention only, in the Hsi 'Han, 西漢, goes to prove that eunuchs began to be largely used in excess of those who might have been punished by emasculation.

We are told in the book above quoted that Ch'in-shih-'huang, 秦始皇, built a palace, which he named, O-'huang-kung, 娥皇宮,[5] the walls of which were 15 *li* in circumference. Within this enclosure at every fifth step was a tower, and at every tenth an enclosed pavilion. Within the walls, also, were gardens filled with rare flowers and plants, and a crystal stream, spanned here and there by marble bridges, meandered through the gardens, adding to the beauty of the scene.

In this delightful place the emperor kept three thousand beautiful concubines who were attended by innumerable female servants. After he had dismissed his court, the emperor loved to come hither and enjoy himself in the society of the ladies, drinking with them, listening to their music, or strolling with them through the beautiful gardens.

But as it was impossible to keep so immense a place in order

[5] This palace was burnt down by Pa-wang, 霸王, B.C. 206.

with women only, and as he feared the ladies would give way to licentiousness were he to employ *men* to do the necessary work, the emperor selected a great number of lads who were made eunuchs for this purpose.

Mayers' "Chinese Readers' Manual" gives a short account of a eunuch named Chao-kao, 趙高, who existed during the same dynasty. It says there that he was a "eunuch in the service of Ch'in Shih-'huang-ti, 秦始皇帝, on whose death, B.C. 210, he conspired with the minister Li-ssŭ, 李斯, in fabricating a false testament, by which the sovereignty of the empire was bequeathed to the Emperor's second son 'Hu-'hai, 胡亥; the heir apparent Fu-su, 扶蘇, having previously been sent into banishment. Chao-kao ingratiated himself with his Imperial protégé by yielding boundless compliance with the latter's wishes, but his ambition still aimed at a more entire control of power. In furtherance of this secret design he sought to remove from his path all possible antagonists; and in order to discover who were boldest among the courtiers he, on one occasion, presented a stag to the young sovereign, saying 'This is a horse for your Majesty.' Some of the courtiers, on being asked by the Emperor what the animal was, remained silent; others replied 'This is certainly a stag.' Of all these, whom he regarded as daring to oppose his will, Chao-kao speedily effected the destruction. Trusting at length in his supposed power, he deposed the Emperor, B.C. 207, and put him to death, but was shortly afterwards assassinated by the youthful heir to the Throne."

This little episode shews the daring of the eunuch, and that he scrupled at nothing to obtain his ends, even going to the length of regicide.

A hundred years later, or about 100 B.C., we find an instance of castration as a punishment. Wu-ti, 武帝, of the former 'Han dynasty despatched a general named Li-ling, 李陵, with a large force to subjugate the Hsiung-nŭ Tartars. He was defeated, however, and fearing to return to his own country, voluntarily gave himself up a prisoner to the enemy.

On this being reported to Wu-ti, the enraged emperor ordered the whole of Li-ling's family to be beheaded. One of his ministers, named Ssŭ-ma Ch'ien, 司馬遷, however, remonstrated with the emperor, telling him that Li-ling was loyal, and that even if he had submitted to the Tartars he had good and sufficient reasons for doing so. The emperor, angry with Ssŭ-ma Ch'ien for daring to take the part of a traitor, ordered him to be castrated and thrown into prison, where he lingered for a while,

but was eventually taken into the palace and did duty there as a eunuch. (He completed his great work "Historical Records," 史記, after castration). His punishment is spoken of as "palace punishment," 宮刑.

I now take another leap of 200 odd years, or to about A.D. 170, at the time of the 'Han dynasty, before Liupai ascended the throne.

The emperor Ling (靈帝), had ten favourite eunuchs. These managed, not only the affairs of the palace, but the more important business of state; without scruple, making use of their influence and power to extort wealth from all ranks and classes; and those who failed to comply with their rapacious demands were invariably made to feel the power of the eunuchs by being stripped of office and honours, as well as having their wealth squeezed out of them.

When the emperor died the ten eunuchs conspired together to establish his second son on the throne, in preference to the eldest who was weak and delicate; but 'Ho-chin, 何進, the uncle of the two princes, expressed his intention of going against the wishes of the ten eunuchs, and of supporting the eldest son as the rightful heir to the throne.

The eunuchs, hearing of this, persuaded 'Ho-chin to enter the palace and discuss the matter over with them—they having previously concealed assassins there with instructions to murder him. 'Ho-chin entered the palace alone and without suspicion, his followers, numbering above five hundred, remaining outside waiting to hear the result of the discussion.

After waiting a long time, and finding their master did not return, they grew impatient and clamoured for his appearance, when to their horror, the head of 'Ho-chin was flung over the palace wall into their midst—he having fallen a victim to the daggers of the assassins.

'Ho-chin's followers were so enraged at the sight of their master's bloody head that they vowed vengeance; bursting open the gates, therefore, they rushed into the palace, set it on fire, and slew every eunuch they encountered. Among the victims were the ten eunuchs who had brought the attack on by their treachery.

The empress and her eldest son made their escape out of the back gate of the palace, but were afterwards sought for, and brought back; for the followers of 'Ho-chin, having glutted their vengeance on the eunuchs, hastily extinguished the fire they had themselves ignited, and order was once more restored in the palace; the eldest son succeeding to the throne.

Some sixty years later (A.D. 230), mention is made of a eunuch, named 'Huang-'hao, 黃皓, who lived during the reign of A-tou, 阿斗, the son of Liu-pai.[6]

This eunuch, out of revenge to a general who had vainly endeavoured to persuade A-tou to take his life, supressed despatches sent to A-tou entreating reinforcements, on two occasions, when the general was beaten by the enemy.

Seventy more years brings me to the Chin (晉) dynasty, or about A.D. 300.

The emperor 'Huai, (懷帝), of that dynasty had a minister named 'Ho-tao-an, 何道安, whose daughter was one of his concubines. Both father and daughter were ambitious; and enlisting the services of Chia-yü, 賈羽, a eunuch, they conspired together to kill the emperor and place the son of the concubine on the throne.

In furtherance of this scheme the eunuch concealed an assassin in the palace, with instructions to watch his opportunity and kill the emperor; the man was, however, seized in the attempt by the guard and at once consigned to prison.

The eunuch, fearful that the prisoner would confess who his instigator was, caused him to be secretly poisoned; and although the jailors and many others suspected the eunuch of having done so, yet none dared accuse so powerful a person of the act and he escaped.

Another leap of 300 years brings us to the emperor Yang (煬帝), of the Sui (隨) dynasty, about A.D. 600. We are told[7] that this licentious emperor caused subscriptions to be raised in every province under his sway, to enable him to build six palaces. When these were built, he selected three thousand women whom he placed in them as concubines. These were all entrusted to the charge of a eunuch, named Hsü-yüan, 許宽.

This eunuch was very covetous and avaricious, and the women, knowing his weak points, used to bribe him with money or presents to induce him to recommend them to the favourable notice of the emperor; each one doubtlessly hoping that *she* might eventually aspire to be raised to something higher than a mere concubine—perhaps even to share the imperial throne.

Among the ladies was one who had never even seen the emperor, as she had no money to bribe the eunuch with. She grew melancholy, and the thoughts of her hard lot preyed so

[6] San-kuo-chih, 三國志.

[7] In the Sui T'ang, 隨唐.

much on her mind that she committed suicide by hanging herself.

The eunuch reported her death to the emperor, and he taking into his head to look at the corpse, found, to his surprise, that she had been more beautiful than any lady he possessed. He bitterly reproached the eunuch for not having introduced so lovely a creature to him while she was living, but must needs wait till she was dead and then tell him of it. Some of the ladies, gathering courage, now related a few of the eunuch's malpractices to the emperor, who immediately ordered him to be beheaded.

Tradition says that the emperor was so smitten with the charms of the lovely corpse, that he wept over and embraced it, regretting that he had never had an opportunity of doing so while it was living; and finally, tired out with unavailing lamentations and caresses, he felt asleep with the corpse of the beautiful concubine in his arms.

During the same emperor's reign (A.D. 605), it is related that a southern tribe sent tribute to him; among the tribute bearers was a lad, eighteen years of age, named Wang-i, 王義.

Wang-i was a dwarf, but was smart in appearance, well-behaved, and naturally very intelligent. The emperor noticing this, took him into his service, employing the lad as one of his personal attendants.

When the emperor paid visits to the apartments of the ladies Wang-i, to his astonishment, was never allowed to enter; on enquiring the reason from a eunuch, he was told that none but eunuchs were allowed to see the ladies. On further enquiry Wang-i expressed a wish to become a eunuch, and succeeded in persuading his informant to perform the necessary operation on him, which the eunuch did shortly after while Wang-i was in a drunken stupor.

When the emperor was informed of his attendant having voluntarily become a eunuch, he shewed a greater partiality for him than ever, and made him chief favourite. Wang-i, however, did not make use of this to further his own ends, but used all the influence he possessed to promote the welfare of the people; and shortly afterwards, when there was a rebellion, he boldly—in a memorial—taxed the emperor with having brought it on by bad government.

The emperor was enraged at the temerity of his favourite, and ordered him to be brought into his presence immediately; but Wang-i, having conscientiously performed what he considered to be his duty, and anticipating the death that was in store for him, committed suicide by cutting his throat—hoping

remonstrances and death would have the effect of causing his master to abandon his evil courses.

Yang-ti was much grieved at the death of his favourite, but still continuing to oppress his people, he lost his empire and his life ere the year was completed. He was put to death by a body of conspirators A.D 618.

Nearly a hundred years later (A.D. 713), in the T'ang (唐) dynasty, during the reign of the emperor Hsüan Tsung, 玄宗, (for as he is more commonly called T'ang-ming-kuang, 唐明光), mention is often made of a eunuch, named Kao-li-shih, 高力士, who faithfully followed the fortunes of his master for nearly fifty years.

He was chief eunuch and privy counsellor of the emperor, and has the credit of assisting this licentious monarch in many of his voluptuous orgies. Some historians also give him the credit of strangling the beautiful Yang-kuei-fei, 楊貴妃, by the order of the emperor who was compelled to sacrifice her life to satisfy the hatred of his mutinous soldiery.

Whatever the faults of this eunuch might have been, he was at least faithful to his sovereign, and followed him in adversity as well as in prosperity. He died A.D. 762.

In the same dynasty and reign was a eunuch, named Li-fu-kuo, 李輔國, who attained to exalted rank and power, but who was eventually assassinated. Mayers thus briefly gives his history:—"A eunuch of the household of T'ang Hüan Tsung, and the latter's most trusted counsellor during the closing years of his reign. When Hüan Tsung abdicated the throne in favour of his son, the emperor Suh Tsung, the latter was similarly led to repose unbounded confidence in Li-fu-kuo, under whose influence he raised to the rank of empress the lady Chang, one of the chief inmates of his seraglio (A.D. 757). From this period the control of State affairs was almost wholly engrossed by Li-fu-kuo, who was advanced to the post of minister, and for a time his influence with the empress (張后), who virtually ruled the State, was unbounded. She began, however, to weary of his dictation and sought to compass his death; but her consort died before she was able to accomplish the project, and in the ensuing confusion, Li-fu-kuo caused the empress herself to be put to death in her own apartments. On the accession of the heir apparent (the emperor Tai Tsung), Li-fu-kuo was for a time treated with marked respect and continued in the discharge of his high functions; but the emperor, fearing his encroaching disposition, caused him shortly afterwards to be secretly assassinated." This was in A.D. 762.

Progressing onwards for some 300 years we come to the Sung (宋) dynasty, or about A.D. 1000.

In the reign of Ch'ên-tsung, 眞宗, there was a chief eunuch, named Ch'ên-lin, 陳琳. He was one day going out of the palace gate, when he encountered a female slave, named Kou-ch'êng-yü, 冠成玉, bearing in her arms a small box.

The eunuch stopped the slave, and making her open the box, found that it contained an infant. He at once taxed her with being the mother of it, and demanded to know what she was going to do with it. The slave told him that the child was not hers, but that it was a prince, the son of the lady *Li*, (李娘娘), and that her rival the lady Liu (劉娘娘), had secretly exchanged her female baby for the prince, and had ordered her to throw him into the river.[8]

The eunuch could scarcely credit the slave's story, but on her repeating it and solemnly swearing to its truth, he believed her, and taking the box from the slave, he determined to save the prince; he therefore bore him out of the palace into that of the emperor's uncle, to whom he told the tale, and who secretly brought up the child as his own.

Meanwhile the slave returned to her mistress, and told her that she had disposed of the child by throwing it into the river. The lady *Liu* congratulated herself on having so easily got rid of her rival's child. She had reason afterwards, however, to suspect that the child still lived, and resolving to ascertain the truth, she ordered Ch'ên-lin to flog the slave girl till she confessed what had really become of the babe and who had saved it.

The eunuch was compelled to flog the slave for his own sake, but the brave girl bore it without flinching, and allowed herself to be flogged to death rather than confess; she encouraging the eunuch in flogging her and making him understand that she would not divulge, he feeling as much anguish in flogging the heroic girl as she did in receiving it, but each knowing that discovery must ensue were they not both resolute to carry out their *rôle*. Thus the prince was saved at the sacrifice of the girl's life.

We now take another leap of about 350 years, to the reign of Yüan-shun, 元順, the last monarch of the Yüan dynasty (from A.D. 1333 to A.D. 1341).

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[8] Tradition also has it that the lady *Liu* shewed the emperor a skinned kitten, which she asserted was the child of the lady *Li*. The emperor was so revolted at her giving birth to such a monstrosity, that he consigned her to the Cold Palace, 冷宮, *i. e.* disgraced her. The tale from which this incident is taken is not unlike one in the Arabian Night's Entertainments.

This monarch had a daughter, known as Po-'hua, 百花, who was not only very beautiful, but was also skilled in all manly exercises. She had a eunuch to wait upon her, named Pa-la, 叭喇, who having a hatred against a young student, and wishing to compass his death, invited him into the palace, where he supplied him so plentifully with drink that the young man got intoxicated, and in this state was led by the eunuch to the sleeping apartment of the princess and left asleep on her couch.

When the princess returned to her chamber for the purpose of retiring, and drew back the curtains of her bed, she was much astonished at seeing a very handsome youth sleeping there. She at once drew her sword and was about to kill him when he awoke, and throwing himself at the feet of the princess entreated her to spare his life; explaining how he had been invited into the palace by the eunuch, had been made intoxicated, and that he must have been conducted hither while in that state.

The princess was charmed with the young fellow's appearance and ingenuous manner; and instead of killing him, as she at first intended, she became deeply enamoured of him, and kept him concealed in her chamber.

This did not suit the views of the treacherous eunuch, and he informed the emperor of the princess having a young man concealed in her room. Yüan-shun, hereupon, ordered the eunuch to search his daughter's chamber and slay the person concealed there; but the princess, hearing of the intended search, giving her lover a sword as a keepsake (表記), bade him fly—she, herself, assisting him over the wall.

The search was in vain, and the eunuch in a fright now entreated the princess to save his life from the anger of her father. As she could not do this without implicating herself she sternly refused. The emperor, disgusted at having listened to the tales of a eunuch impeaching his daughter's honour, and conceiving he had been made a fool of, ordered the wretched eunuch to be instantly beheaded.

We now skip to the commencement of the Ming (明) dynasty, or about A.D. 1410.

Yung-lo, 永樂, the founder of Peking, had a favourite general, named Kang-ping, 剛秉, and knowing him to be brave and loyal, on one occasion when he went out hunting, he left the general in charge of the palace.

Kang-ping was much gratified by the confidence shewn in him by his royal master in giving him such an important trust.

Fearful, however, that some enemy might endeavour to do him an injury by reporting some imaginary irregularity on his part among the ladies of the palace, which he might have difficulty in refuting, he determined to guard against it by castrating himself.

As the general had anticipated, when Yung-lo returned, one of the ministers reported that he had had improper intercourse with some of the palace ladies. In reply to this accusation Kang-ping briefly related how he had made a eunuch of himself, and as a proof that he had done so, shewed the emperor the parts emasculated, to the utter confusion of his detractor. The emperor was so struck with the general's loyal conduct that he made him chief eunuch.

When Kang-ping died the emperor deified him, giving him a niche in a large temple he had built to the God of War (關帝). He also bestowed a large piece of ground to be used as a cemetery for eunuchs. The temple and cemetery are outside the P'ing-tzu-mên, 平則門, about twelve *li* distant from Peking, at a place called Ching-ên-chuang, 境恩庄. Since the death of Kang-ping and his deification by the emperor all eunuchs consider him as their patron saint or deity, and worship him accordingly.

The eunuchs, during the reign of Chien-lung of the present dynasty, also built a temple, which they named after and dedicated to their patron deity; calling it Kang-ping's temple (剛秉廟), they also enclosed a spot of ground for a cemetery. These are on the large plain called the 'Hai-tien, 海淀. Both temples are used as hospitals for sick eunuchs; and most eunuchs, when they die, are buried in one or the other of the cemeteries.

When eunuchs are seventy years of age, or are rendered unfit for duty through sickness, etc., they are allowed to retire on a pension varying from two to six taels per month, and those who wish to do so, have the privilege of living in the temples rent free.

As eunuchs, after death, cannot be sacrificed to by their children—they have none,—the government allows a yearly sum to enable a certain number of eunuchs to go to the cemeteries in the spring and autumn to burn paper money, and offer sacrifices at the tombs of those who have been buried there.

With this slight digression I will now resume my narrative chronologically. A hundred years later brings it down to the reign of Chêng-tê, 正德 of the same dynasty.

In the reign of this monarch there was a eunuch, named Liu-chin, 劉瑾, who attained to extraordinary power. This eunuch

was a great favourite with the empress-dowager, and was raised by her to the rank of "Nine thousand years;"[9] his greatest recommendation to her favour apparently being, that he could write equally well with either hand.

Liu-chin was very rapacious by disposition, and stopped at nothing—even to the ruin of his country—so that he could fill his own coffers. One instance will suffice for present purposes and I will briefly relate it:—

To the west of Peking is a hill, named "Ten Prospect Hill," 十景山. In this hill a spring rises which flows eventually into the Yellow River. Liu-chin employed workmen to cut out and enlarge the spot from whence the water sprung, thinking by this means its volume would increase to such an extent that it would inundate the country about Peking; when he would, in consequence, have the disposal of ample funds from government to repair the damage caused by the floods which he himself had originated. In this instance, however, he was doomed to be disappointed; for after squandering immense sums of his own money in the undertaking, he was compelled to give it up as a failure.

Liu-chin built the celebrated stone road leading to the Lu-k'ou bridge, and many other works of a like nature owe their origin to him. He died a natural death.

In the same reign was another eunuch, named Wei-chung-hsien, 魏忠賢, who ranked as a prince (千歲). This eunuch was also of a rapacious disposition, and generally succeeded in compassing the destruction of those who thwarted his wishes. His ambition was such that he even dared to raise his eyes to the "dragon throne," and plotted to obtain possession of it.

Wei-chung-hsien stealthily kept a concubine, and so desirous was he of having a son that he secretly sent in search of the Ling-tan, 靈丹, or any other medicine that would cause his procreative powers to re-develop themselves. A doctor told him that if he extracted the brains from seven living men and ate them, his genitals would return to their original state and his impotency be cured. He therefore procured seven criminals, had their heads split open, the brains extracted from them, and devoured the revolting mess. Tradition does not inform us whether this horrible remedy produced the desired effect or not.

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[9] 九千歲. Princes are styled "thousand years," 千歲; the emperor is addressed as "ten thousand years," 萬歲, consequently this eunuch was next in rank to the emperor.

This eunuch built a tomb for the emperor.[10] He also built a temple for himself at Hsin-chuang-'rh, 新庄兒, a place seventy *li* to the west of Peking. This temple he constructed rather as a place of refuge where he could fly to in case of danger, or where he could carry on his malpractices without interruption or dread. It was strongly fortified, and resembled a walled-in city more than a temple, being surrounded by a lofty stone wall, so broad, that a carriage might be driven on the top of it; while at each corner was a watch-tower. In the enclosure were numerous buildings, and in the centre was a lofty tower or keep, which had seventy-two circular entrances. There was only one gateway to the temple, within which was a deep well covered with a revolving trap. Every one entering the gateway must cross this trap, which could be so arranged that the persons crossing could be easily deposited in the well. To render the entrance additionally dangerous, on either side was a niche where men might be concealed and thrust at any one entering. The temple is still standing, but is now called Hsüan-ching-kuan, 玄靜觀.

In the succeeding reign, that of the emperor Chia Ching, 嘉靖, who came to the throne A.D. 1522, we have an interesting account of a eunuch and the mode of disposing of him.

Chia Ching, we are told, had a daughter who had such an inordinate liking for lichees (荔枝), that, partly to gratify her liking, and partly to reward a deserving officer, a native of Kuang-tung, 廣東, (Canton) named Tao, 陶, was selected by the emperor to be her consort (駙馬).

Tao returned to his native place, taking with him his bride, a large establishment of servants, and a eunuch, named Hsü, 許; who was sent by the emperor expressly to wait upon the princess.

The eunuch was an arrogant, overbearing sort of person, and was both feared and hated by the Cantonese who had any dealings with him, and the upper seat was invariably given to him wherever he went as a guest. This coming to the ears of Tao, he determined to humble the pride of his follower; and representing to his informants that the eunuch was merely a slave, he desired them not to make so much of him for the future. To set them an example, Tao shortly after gave a large party and ordered the eunuch to wait upon the guests. This humiliating treatment so exasperated the eunuch that he vowed

[10] All emperors have their tombs built for them while they are yet living. Curious that the "Lord of ten thousand years," should have his tomb prepared while he is, perhaps, not twenty years of age.

revenge, and at once secretly despatched a messenger to Peking with a letter to the emperor, in which he stated that Tao was on the point of rebellion.

Fully believing the eunuch's tale, the emperor sent an officer to order his son-in-law back to Peking, and the latter, not knowing of what crime he had been accused, committed suicide out of sheer fright. The princess, however, was not of so timid a disposition, and having gathered all the information she could concerning the eunuch's plot, she hastened to Peking, and explained everything to the emperor, who, enraged at the eunuch's treachery, ordered him to be rolled up in cotton well saturated with oil, and then suspended from a beam, heels uppermost. While in this position the wretched eunuch was set fire to from the top—where his feet were—and in this state remained, slowly burning downwards, till death put an end to his sufferings. This mode of death was called "Lighting the human lamp," 點人油燈.

A hundred years later and we come to the last year of the last emperor (Ch'ung-chên, 崇禎), of the Ming dynasty A.D. 1628.

In the stirring times which preceded the fall of the Ming (明) dynasty, a eunuch named Tu-shih-'hêng, 杜士恆, comes into prominent notice. This eunuch was governor of the nine gates of Peking at that exciting period, and it was he who opened the city gate[11] and admitted Li-tzŭ-ch'êng, 李自成, the rebel chief and his horde, who speedily overran the city and palace, committing all sorts of atrocities.

As is well known, the rebel-chief reigned as emperor eighteen days, having a dynastic title (永昌), and even casting cash having these characters on them during that brief period. One of the first acts he did was to behead the eunuch for opening the city gate, so that he reaped the reward of his treachery in a manner different from what he anticipated. This eunuch is spoken of with execration even to the present time.

In contrast to the above-mentioned eunuch was one who, living at the same time, was equally celebrated for his loyalty. This eunuch's name was Wang-chêng-ên, 王承恩; he re-

[11] This gate was the P'ing-tzŭ-mên, 平則門. On the accession of Shun-chih, 順治, the first emperor of the present dynasty, he caused a flower resembling a peony to be cut into one of the bricks on the left side of the gate-branding it, in fact, as a thief would be on the left temple. The gate is known as "The Rebel's Gate" (賊門) to this day. By a curious coincidence, on the arrival of Shun-chih, Li-tzŭ-ch'êng fled out of the city by the same gate he had so recently entered.

mained faithful to the last. Such was his devotion, that when his imperial master hung himself on Prospect Hill, he also committed suicide.[12]

Another hundred years brings us to Chien-lung, 乾隆, of the present dynasty, A.D. 1736.

In Chien-lung's reign the palace eunuchs were very arrogant and overbearing, and were detested by every one: knowing this, it seems strange they did not assume a more conciliating attitude; such, however, was not the case, and the following sketch shews that they suffered for it in a very remarkable manner.

President Liu (劉中堂) was noted for bringing the delinquencies of officials to the notice of the emperor, by sending in written reports of their misconduct; so that every one stood in dread of him and his mischievous pen, except the chief eunuch, who thought he and his eunuchs were beyond the reach of the president's predilection for reporting; and not content with *thinking* so, must needs tell him as much. One day he stopped Liu's carriage, and insolently told him he knew he was fond of reporting others, but that as the eunuchs never misconducted themselves they could laugh at him, as he was unable to report them. Simply remarking that he would do so on the morrow Liu went on his way.

The next day the president was as good as his word, and sent in a memorial to the emperor, in which he stated that "although the eunuchs had originally been castrated, yet the mutilated organs must, in many cases, have grown to such an extent as to render re-castration necessary. He had heard such a thing had occurred in the Ming dynasty,[13] and the result had been licentiousness and disorder in the palace between the eunuchs and ladies. This coming to the emperor's ears, he had ordered an inspection of eunuchs, when it was found necessary to re-emasculate many of them. To prevent such a scandal occurring again the memorialist begged that the whole of the eunuchs might at once be inspected, and that those whose organs had partially grown might have them 'swept clean,' (掃淨).

Chien-lung assented to this proposal, and immediately issued orders for the whole of the eunuchs to be examined and re-emasculated, if necessary, lest they should presume on their position and the facilities afforded them, to cause licentiousness in the palace.

[12] See "Lamentations of Ch'ung-chên," "The Wry-necked Tree," and "The Cursed Temple." *China Review*, IV, 294; 255.

[13] This did not actually occur; the president was drawing on his imagination.

This order was strictly carried out and many of the eunuchs underwent another operation at the hands of the "knifers." Many of the eunuchs died shortly after the operation, or as the Chinese tersely express it, were "swept dead," (掃死); others recovered, but there can be no doubt that they must have suffered severely. All this death, suffering, and consequent shame on the part of the surviving eunuchs originated entirely through the insolence of the chief eunuch to president Liu, who took this strange method of punishing it.[14]

In the 18th year of Chia-ch'ing, 嘉慶, (A.D. 1814) a great many of the palace eunuchs were implicated in a plot to overturn the Manchu government. These eunuchs were members of a secret society, called "The White Feathers,"—numbering only a few hundred men:—

"The little society had the audacity to attack the Imperial palace at Peking, succeeded in effecting an entrance, and but for the bravery and determination of one of the princes, who effectually opposed and destroyed the rebels, this little rising might have had a startling influence on the future destinies of the empire."[15]

On the discovery of the part played by the eunuchs, those who were implicated in the conspiracy were apprehended, and upwards of a hundred of them were beheaded.

To come nearer to our own times, we find that castration has not altogether been discontinued as a punishment. The following facts are in the memory of thousands of Pekinese:—

In the 1st year of Hsien-fêng, 咸豐, (A.D. 1851) a yamên or court, known as the Hsün-fang-chu, 巡防處, was instituted in Peking, expressly to try and punish all rebels who were unfortunate enough to be captured and brought before it. It is needless to say that very little mercy was shewn to the prisoners, death being the invariable sentence.

In the 7th year of Hsien-fêng, some rebels were brought in prisoners; among them were seven boys, none of them over ten years of age. The full-grown rebels were all decapitated at once, but the law not allowing children to suffer death—or till they are fifteen years of age, when they are considered adults—the boys were sent to the Board of Punishments, for that tribunal to decide what was to be done with them.

As the Chinese notion is that the sons of rebels must breed rebels, and as the boys were of too tender an age to suffer death,

[14] It is said that the emperor ever afterwards felt compunction for having ordered the re-emasculation of the eunuchs.

[15] See "The White Feathers,"—*China Review*, vol. IV., pp. 361-364.

the Board decided that they should all be emasculated and sent to the frontiers to become slaves of the troops stationed there. This sentence was carried into effect.

The most notorious and powerful eunuch of the present times was An-tê-'hai, 安德海, whose adventures and tragic end will probably from the theme of many a tale, play, or poem, when this dynasty shall be succeeded by another; for till such an event takes place, historiographers, poets, and play-writers will not dare relate his deeds, under penalty of losing their heads. The following brief sketch of his life and death may, however, be received as correct; as I obtained the particulars from one who knew him personally, and who was familiar with his history.

An-tê-'hai was brought up in La-ku (燈庫) lane,[16] just outside the Ti-an gate (地安門) of the palace. His parents, who were very poor, compelled him, at the age of twelve (1855), to become a eunuch,—this was in Hsien-fêng's reign. The young eunuch was very handsome, and on that account was selected by Hsien-fêng's empress (the mother of Tung-chih) as one of her personal attendants; and the lad displayed so much intelligence and activity in his duties that she took a great fancy to him, and had him constantly about her.

While Hsien-fêng was living, the partiality of the empress for her favourite eunuch did not excite much attention; but after the emperor's death, her infatuation for An-tê-'hai daily increased, and she treated him more like a son than a slave; and although he held no office, the empress made him a "white button," supplied him liberally with money, and indulged his every whim.

Some idea may be formed of his extravagance and the money required to keep it up—money which could only be procured from the empress—when the reader is informed that An-tê-'hai, a mere eunuch, had a large establishment outside the palace, where he kept sixty of the finest horses procurable, numbers of hunting-hawks and badger-dogs, with their keepers, and a large retinue. He had also a wife—an unnecessary appendage to a eunuch—but one which he conceived his riches and power entitled him to indulge in.

As An-tê-'hai grew in years[17] and in favour with the empress, so also his arrogance increased; his conceit and insolence knew

[16] He was born in the 23rd year of Tao-kuang (1843), was emasculated in the 5th year of Hsien-fêng (1855), and killed in the 6th year of Tung-chih (1867).

[17] At this time Hsien-fêng was dead and Tung-chih quite a child.

no bounds, and so great was his presumption, that on one occasion he actually rode his horse round the courtyards of the palace, a thing the emperor, only, was entitled to do. Prince Kung was so enraged at the eunuch's audacity that he ordered him to be bound and taken to the Shên-hsing-ssŭ, 愼刑司, for instant punishment. The favourite was saved, however, for a eunuch ran off and informed the empress, who at once dispatched a messenger to the yamên ordering his immediate release, as she had important business for him to do. Even prince Kung dared not detain the eunuch after this mandate, and he was accordingly released.

Among the many marks of favour shewn by the empress to this eunuch may be mentioned one which finds no parallel in the annals of China. On the death of his father (1866)[18] An-tê-'hai applied for and obtained a hundred days leave to perform the necessary mourning ceremonies. During the whole of this time the empress ordered him to be supplied with food from her own kitchen; and every morning eunuchs bearing covered dishes might be seen issuing from the palace gates. This hitherto unheard of proceeding attracted much attention, and many queer remarks were made at the time of a not very complimentary nature; high and low expressing their wonder at the empress so publicly displaying such an interest in a slave. The young emperor, Tung-chih, is also said to have disapproved of his mother's strange partiality for a eunuch, and there is no doubt he would have put a stop to An-tê-'hai's career when he grew up.

An-tê-'hai spent a great deal of his time beyond the precincts of the palace, visiting all the temples and places of note in the vicinity of Peking, and invariably accompanied by a large retinue, consisting chiefly of loose characters, who imposed on and ill-treated the inhabitants. He even, on one occasion, extended his peregrinations as far as Tientsin, and squandered upwards of 3,000 taels during his trip; this money-indeed the money for all his extravagancies, being supplied by the empress.

In the sixth year of Tung-chih (1867), An-tê-'hai went on a pleasure trip to Shantung, taking with him above thirty followers. On this occasion he even went so far as to use the flag of his imperial mistress; his followers, taking their cue from this, gave out that he was on a special mission for the empress; and on the strength of this, imposed on people of all ranks. The expedition, however, was brought to an abrupt termination, for the governor of Shantung, Ting-pao-chên, 丁寶楨, the

[18] In the 5th year of Tung-chih.

present governor (1877)—who it is said had received private instructions from prince Kung—sent soldiers to seize An-tê-'hai and his party, and the whole, after some resistance, were seized and thrown into prison.

The governor now sent a despatch to prince Kung in which he stated that the eunuch and his followers had so grossly misconducted themselves on their arrival in Shantung that he had been compelled to place them in prison, and he wished to know what should be done with them. Prince Kung is said to have written in reply that he was to behead the whole party. The governor carried out these instructions almost to the letter; one man alone, a carter, being spared, and he only by proving that he did not belong to the party but had been engaged at a roadside village.

The governor afterwards reported what he had done, and gave as his reason for doing so, the abduction of two girls by An-tê-'hai's party, and the subsequent death of one of them. Whether the party were guilty of the crime, or whether it was a tale concocted to give a plausible excuse for executing them all, no one appears to know; but one thing is certain, pamphlets were sold in Peking giving an elaborate account of the abduction and its consequence.

When the news of An-tê-'hai's death reached the empress, she is said to have repudiated all knowledge of his journey to Shantung, and whatever she may have felt, she wisely held her peace. The eunuch's property was confiscated, but the empress ordered her brother, Duke Chao, 趙公爺, to support An-tê-'hai's mother in his own palace, which he did till the old lady died.

Having thus briefly given the history of a few of the more celebrated eunuchs, from the Chou dynasty (720 B.C.) to A.D. 1867 of the present dynasty, I shall endeavour, as briefly as possible, to describe them as they now are; and give, as well as I can, a few of their distinguishing traits, the mode of emasculation, the rules they have among themselves, the duties they undertake and other details. Without farther preamble, therefore, I shall commence—giving first a list of those ranks which entitle the possessor to employ eunuchs, and the number of eunuchs each is entitled by his rank to employ. It will be seen by the following that (with one exception) the employment of eunuchs is strictly confined to the imperial family.

The emperor ought to have 3,000 eunuchs to perform the various duties of the palace; at the present time there are not above 2,000 employed.

Princes of the blood *(Ch'in-wang,* 親王), sons of the emperor, may use thirty eunuchs in their establishments.

Imperial princesses[19] *(Kung-chu,* 公主), daughters of an emperor—who have been bestowed in marriage on high officials, or on Mongolian or Tartar princes, are also entitled to use thirty eunuchs.

*Chun-wang,* 郡王, nephews or younger sons of the emperor, may use twenty eunuchs.

*Pei-lê,* 貝勒, grandsons of the emperor, may use ten.

*Pei-tzŭ,* 貝子, sons of Pei-lê, may use six.

*Kung-yeh,* 公爺, sons of Pei-tzŭ, may use four.

The exception spoken of previously, is the hereditary princes. *(Hsi-wang,* 襲王,[20]) descendants of the eight Manchu chiefs who assisted *Shun-chih* in establishing the present dynasty. These are *entitled* to employ twenty eunuchs, but *must* employ some in their service, or they are liable to be reported and lose their rank for failing to keep up the dignity of their station.

The above-mentioned, only, are entitled by their rank to employ eunuchs in their establishments, and they are all *compelled* to do so.

Having, in the above list, given the titles of those who are privileged to use eunuchs, I shall now proceed to relate how eunuchs are procured for the imperial palace, from whence they are procured, and who furnish them, etc.

Every fifth year each prince[21] is required to furnish, for the use of the palace, eight young eunuchs. These must have been previously well trained, and before they enter on their duties in the palace, must be inspected and guaranteed to be pure eunuchs—*i. e.* properly emasculated, clean in person, and free from all disease. The sum of 250 taels is paid for each of these eunuchs to the princes who send them, to recoup whatever expense they may have incurred in purchasing and training them. This system is adopted to ensure a constant supply of handy and faithful servants, as they have served a long proba-

[19] These are supposed to be given in marriage before they reach the age of eighteen. It is related of Taokuang that he disliked his fifth daughter, on account of her lachrymose disposition. One day the emperor became so much annoyed at her bursting into tears when summoned before him, that he swore he would marry her to a beggar; and actually carried out his threat, for he married her to a common soldier, a bannerman, earning only four taels a month. The man, however, was well-connected and was a fine looking fellow. When he became the husband of the princess a palace was given to him with an allowance suitable to his rank. The princess lived with him ten years and died childless.

[20] These are also called *Tieh-mao-tzŭ-wang,* 鐵帽子王, *lit.* Iron-capped princes, figurative for the durability of their rank—never wear out-hereditary.

[21] The Chin, Chun, and Hsi-wangs, only.

tion before entering the palace; and, moreover, each prince is responsible for his quota of eunuchs sent.

But as this system does not nearly supply the number of eunuchs required, they are obtained from other sources as well; large numbers of boys, and even grown up men—either purchased from their relatives, or voluntarily offering themselves—being constantly emasculated, and when recovered from the operation, drafted into the palace.

Most eunuchs are natives of Chihli, (indeed *all* eunuchs are supposed to be natives of that province, though it is probable here and there one may be found who is not) and of these again, by far the greater number are from a place named 'Ho-chien-fu, 河間府, some 350 *li* to the south of Peking: this has been the case ever since the Ming dynasty. Chinese say that the natives of the place *like* to be eunuchs, but it would be more reasonable to suppose that compulsion had a good deal to do with it in the first instance, and it has gradually grown into a "custom," which (in China), like the laws of the Medes and Persians "cannot be altered."

Among the *reasons* why persons become eunuchs at the present day may be enumerated the following:—

Compulsion:—This one reason will account for at least seven-eighths of the number of eunuchs made; as in the case of boys of tender age, who are compelled by their parents or relatives to become eunuchs, either for the sake of the money which will accrue to them by the sale of the boys for that purpose, or from the desire of seeing them provided for in life.

Poverty:—In the case of those who are grown up, and who, having no means of getting an honest livelihood, prefer becoming eunuchs to beggary or theft.

Choice—or rather *laziness*:—As in the case of those who become eunuchs on account of the high duties they will have to perform; which, with good board and lodging, together with the certainty of a comfortable provision for old age, renders the prospect of a eunuch's life one to be envied and desired.

Other reasons might be given, but I shall content myself with the three already specified. In the first case—compulsion; every one in China is aware that a parent's word is law to his child, so that the boy would submit implicitly to whatever fate his parent might choose for him. In the second case—poverty; men of twenty years of age or upwards may, in many instances, be their own masters, and have their destiny in their own hands. When these desire to become eunuchs they must first find a security as to their honesty and general character. When this is obtained, they have the operation performed; wait till they

are recovered, and are then drafted into the palace, where they are employed as gardeners, cooks, or in some other menial work which does not necessitate their entering the private apartments of the ladies.

Cases have been known of middle-aged men becoming eunuchs, and there are at the present time in the palace several eunuchs who are married and have families. These, of course, were made eunuchs after their marriage, being driven to it, some, by poverty, and it is even said, some, by the tongues of their better-halves. Those of the palace eunuchs who have wives and families are allowed to go out and spend a few days with them occasionally.

In regard to the latter reason, "Choice or Laziness," an illustration or two will serve to shew that such reasons can be assigned. I'll first briefly relate an instance of a failure:—A few years ago a newly-married young man expressed a strong desire to become a eunuch, as he said he should then have nothing to do but eat, drink, and sleep. His relatives endeavoured to dissuade him from so insane an idea, and refused to become surety for him; whereupon he attempted to perform the operation on himself, but did it so clumsily that no one would employ him. He, therefore, had mutilated himself for life without gratifying his desire of living the easy life of a eunuch.

To quote another case:—There is at the present time in the palace of prince Su[22] (肅王府 opposite the British Legation, Peking), a young man who became a eunuch from choice. He had been married only a year when he mutilated himself with a common butcher's knife; this occurred about five years ago. When he recovered he was employed in the Su-wang-fu, where he has remained ever since; going out occasionally to spend a day or two with his wife and daughter. In the case of this young man no other reason can be given except that he did it from choice. His friends are well to do, he is blessed with youth, a wife and child, and all the comforts of a home, and yet he voluntarily becomes a eunuch by performing the operation on himself!

A curious case occurred in the 3rd year of the reign of Hsien-fêng (1853) which is worth recording as shewing to what an extent a Chinese will go to obtain his ends, and at the same time have revenge:—A poor man entered a pawnshop one day and wanted to pledge his coat for a small sum. Seeing that it was worthless, the pawnbroker refused to advance anything on it, whereupon, the man in a rage pulled out a knife, emasculated

[22] Prince Su is one of the hereditary Tartar princes.

himself on the spot, threw the parts emasculated on the counter, and insisted on pledging them for thirty *tiao*, (about $4). The pawnbroker was naturally much alarmed and at once reported the circumstance. Strange as it may appear to foreigners, the pawnbroker was compelled for his own sake to send the man to a temple, and furnish him with food and medical attendance till he recovered, when he sought for and obtained a situation for the self-made eunuch in the palace of one of the princes; for had the man died, his death would have been laid at the pawnbroker's door, or having recovered, and not being satisfactorily provided for, he would have been a source of endless annoyance and persecution to the unfortunate pawnbroker.

Having given some[23] of the reasons why persons are made eunuchs, I shall as briefly as possible endeavour to describe where the operation is performed, by whom, and how it is done.

The place where men or boys are made eunuchs is just outside the inner Hsi-'hua gate (內西華門) of the palace, and within the imperial city. It is a mean-looking building, and is known as the Chang-tzŭ, 廠子, *the shed*. Within this building reside several men recognized by government, yet drawing no pay from it—whose duty consists in emasculating those who are desirous of becoming, or are sent to become—eunuchs.

These men are called tao-tzŭ-chiang, 刀子匠, "*knifers*," and depend entirely for their living on making eunuchs. They get a fixed sum—six taels—for every operation they perform on boys sent or brought to them, and for keep and attendance till the patients are properly recovered.

Grown up men desirous of becoming eunuchs, but who are too poor to pay the necessary fees, make arrangements with the "knifers" to repay them out of their salaries. But in any case the "knifers" dare not operate on them unless they (the candidates) have securities to vouch for their respectability.

The "knifers" have generally one or two apprentices to learn the profession; these are almost invariably members of their own families, so that the profession may be said to be hereditary.

When the operation is about to take place, the candidate or victim—as the case may be—is placed on a *kang* in a sitting—or rather, reclining position. One man supports him round the waist, while two others separate his legs and hold them down firmly, to prevent any movement on his part. The ope-

[23] Among the reasons given might be mentioned the following: 看破紅塵. Having "thoroughly seen the world"—disgusted with it, used up *blasé;* antipathy to women, having had too much of them: and some become eunuchs because they think it a sin to indulge in sexual intercourse.

rating "knifer" then stands in front of the man—with his knife in his hand—and enquires if he will ever repent.[24] If the man at the last moment demurs in the slightest, the "knifer" will not perform the operation, but if he still expresses his willingness, with one sweep of the knife he is made a eunuch.

The operation is performed in this manner:—white ligatures or bandages are bound tightly round the lower part of the belly and the upper parts of the thighs, to prevent too much hæmorrage. The parts about to be operated on are then bathed three times with hot pepper-water, the intended eunuch being in the reclining position as previously described. When the parts have been sufficiently bathed, the *whole*,—both testicles and penis—are cut off as closely as possible with a small curved knife, something in the shape of a sickle. The emasculation being effected, a pewter needle or spigot is carefully thrust into the main orifice at the root of the penis; the wound is then covered with paper saturated in cold water and is carefully bound up. After the wound is dressed the patient is made to walk about the room, supported by two of the "knifers," for two or three hours, when he is allowed to lie down.

The patient is not allowed to drink anything for three days, during which time he often suffers great agony, not only from thirst, but from intense pain, and from the impossibility of relieving nature during that period.

At the end of three days the bandage is taken off, the spigot is pulled out, and the sufferer obtains relief in the copious flow of urine which spurts out like a fountain. If this takes place satisfactorily, the patient is considered out of danger and congratulated on it; but if the unfortunate wretch cannot make water he is doomed to a death of agony, for the passages have become swollen and nothing can save him.[25]

In spite, however, of the rough mode in which the operation is performed, it is rare that a death occurs; one case, only, having come to my informant's notice during many years,—the victim being a man of thirty years of age. This is entirely opposed to Chardin, who says that "one only in four survives," and to the chief physician of the Pasha, who states that two-thirds die. It would seem that Buckhardt was nearer the mark when he says that the operation is only fatal in about two out of a hundred cases. (See page 145).

[24] 後悔不後悔. Boys are not asked the question, the consent of their friends being amply sufficient.

[25] It must be borne in mind that the Chinese have not foreign appliances in the shape of catheters or bougies to facilitate the free passage of urine.

When thoroughly cured—which he generally is in about a hundred days—the eunuch[26] is sent into the palace of one of the princes, to learn his duties; at the end of a year, or so, he is transferred from thence to the imperial palace and appointed to wherever his services may be required. If a number enter the palace at one time, the ladies who require additional eunuchs, select from them according to their rank.

Newly joined eunuchs, previous to entering on their duties, are closely inspected by an old eunuch to see that they are *bona fide* eunuchs. They are then instructed in the duties of their respective posts till they are considered proficient in them.

The parts emasculated are called the "precious," 寶; these, having been prepared by some process, are carefully kept by the "knifers" in common pint measures hermetically closed, and placed on a high shelf. This is called high promotion (高陞) —figuratively that the owners of them may rise to high rank. Those, however, of the newly made eunuchs who demand their "precious," or who have relatives who claim it for them, are allowed to retain it in their own possession; these are likewise placed in pint measures on high shelves, being treasured with the utmost care.

The "precious" are kept for two reasons; the first of which is, should a eunuch be promoted to any grade he *must* shew one, or he cannot obtain his rank—the possession of a "precious" rendering him eligible. *It* is inspected by the chief eunuch; this is called "inspecting the precious" (驗寶). This inspection is a source of profit to the "knifers," for those eunuchs who have, through ignorance or carelessness, neglected to claim their "precious," when emasculated, are often, on promotion, compelled to pay a large sum for one—sometimes as much as fifty taels. It often occurs, too, that a eunuch loses his "precious," or has it stolen from him, and then, in the event of his being selected for promotion, he is either driven to the necessity of buying one from the "knifers," or has to borrow or hire one from a friend, so that it may well be termed "precious," for on these occasions it is really so.

The second reason why the "precious" are so much prized is, that each eunuch, when he dies, has his own particular one placed in his coffin and buried with him—or if he cannot obtain his own, that of some one else. This is done, partly because the eunuch wishes to be as *complete* as possible when departing

[26] This applies chiefly to persons who are emasculated when grown up; boys up to twelve or fourteen years of age may be taken to the imperial palace immediately they are cured.

into another world—for Chinese have a horror of being mutilated —and partly to hoodwink the King of Hades (閻王), who is supposed to transform defunct eunuchs into she-mules; and by having his "precious" with him, he hopes to evade this fate.

It would take up too much time and space to specify particularly all the duties eunuchs have to perform in the palace. They may be summed up in a few words; as regards out-door employment, they are water-carriers, watchmen, chair-bearers, gardeners, etc., while their in-door work is such as would be performed by cooks, chamber, parlour, scullery maids, and persons of that class in our own countries. In short, they do everything in the palace.[27] I shall speak more particularly of two or three special employments of eunuchs as I am on the subject, the first of which may be styled of a religious nature, so I give that the precedence.

In the palace are eighteen Lama priests, who are also eunuchs. These priests are supposed to represent the Lo-'han,[28] and are kept expressly to attend to the spiritual welfare of the ladies of the palace.

When a vacancy occurs in the eighteen it is speedily filled up by selecting a eunuch who has either a desire to become a priest, or fancies he has a vocation that way; so that, independent of not having been trained to the priesthood from childhood, many of them know nothing whatever pertaining to their craft when they join; some of them, too, can neither read nor write, and we can readily imagine the amount of ignorance and superstition to be found among these eunuch priests, and the spiritual benefit likely to accrue to the employers of their services.

These eighteen Lama priests draw a double allowance of salary, receiving an allowance as priests in addition to their salary as eunuchs; this is a strong temptation to many eunuchs, and any vacancy in the ranks of the priesthood is—under these circumstances—filled without difficulty.

The next "special employment" of a number of eunuchs is theatricals. That the ladies of the palace may be gratified in

[27] It must not be imagined by this that there are no female servants in the palace. Every third year a certain number of girls, between the ages of fourteen and sixteen, are selected from the families of Bannermen to perform such light duties as embroidery, etc., in fact, they are called "embroidery girls" (綉女). These girls all dress in male attire; they remain in the palace for five years, when they receive a small bonus and are sent back to their respective families. There are also matrons for performing such duties as can only be performed conveniently by such persons.

[28] 羅漢. These deities, eighteen in number, are the attendants of Kuan-yin, 觀音, the goddess of mercy.

their taste for theatrical entertainments, and as no outsiders can enter the palace, a dramatic corps is kept up especially for that purpose. This corps numbers over three hundred, and is composed entirely of eunuchs, the whole of them under the control of a chief eunuch. They live in a building within the Imperial city, but outside the palace, called the Nan-fu, 南府. These eunuchs hâve no other duties to perform but those of playing in the palace, and the rehearsals necessary to render them proficient.

Within the palace is a theatre, known as the T'ung-lo-yüan, 同樂園. In this, it is customary to have one performance every month. This is entirely independent of representations given in honour of officials who may have distinguished themselves; and have therefore been deemed worthy of witnessing what may be termed a "state performance."[29]

In addition to these the emperor or empress often orders a particular performance to be given. Both the present empresses are said to enjoy farces or domestic dramas, in which the homely lives of the poor are depicted, and of which they can learn but very little, or witness in any other manner than by these sources. On the other hand an emperor would invariably select pieces of an historical nature. It is related of Hsien-fêng that he was once so frightened at the "make up" and acting of a dramatic player, that he ordered the unfortunate eunuch to receive twenty blows for daring to startle him. This mode of complimenting a player would rather astonish some of our dramatic performers, and would not have a tendency to develop "native talent," one would imagine. These players draw the same salaries as other eunuchs, but often get a largess bestowed on them by the emperor or empress when they are particularly pleased with a performance.

The following brief sketch, although somewhat trenching on another subject, serves to shew one more special duty which some of the eunuchs have to perform, so I will relate it:—When the emperor wishes for the presence of any particular concubine in his bed-chamber, he gives a label or tally, on which he has written the name of the lady, to the eunuch in waiting, who takes it to the lady in question and she is borne in a chair by eunuchs to the emperor's sleeping apartment, which is named the Yang-hsin-tien, 養心殿.

On retiring to rest the lady does not dare get into the emperor's bed in the usual manner—that is, from the head, or rather,

[29] Ladies do not attend these representations.

side—but it is etiquette for her to crawl in from the foot till she comes in a line with her imperial bedfellow.

Two eunuchs keep watch outside the door, and before break of day they arouse the concubine and she is borne back again to her own apartment. The circumstance of the concubine having slept with the emperor is then recorded in a book, with the name of the lady, and the date of the visit. The entry is signed by the emperor, and the book is referred to to substantiate the legitimacy of the child, in the event of the concubine giving birth to one. It is considered of the utmost importance that this book should be strictly kept; and the visit of every lady to the emperor's sleeping apartment is consequently carefully registered and attested.

For the better management of the eunuchs, and that the work of the palace may be carried on systematically, it is (in the present dynasty) divided into forty-eight departments (四十八處): each one having its own particular class of duties connected with it, and staff of eunuchs to perform those duties; thus, there is the department for looking after gardens, courtyards, cook-houses, armoury, chairs, etc., etc. Each department has a superintendent (總官)—who is generally of the sixth grade, or having a "gold button." Over the whole of the departments is a chief eunuch, or general supervisor (都總官); this officer is usually of the third grade and wears a "red button."

If any eunuch by reason of dislike to his duty, through hardship, ill-treatment, or other causes, should run away from the palace, his absence is immediately reported to the 內大班兒, a species of police corps, whose duty it is to capture runaway eunuchs. The men composing this force are not eunuchs themselves, but know all the eunuchs of the palace; and it is rare that one of them succeeds in escaping, for no sooner is the flight of one reported, than the members of the force—(who are adepts at disguises, and may be considered detectives) spread themselves all over the city, and speedily recapture the deserter; who is then conveyed to a yamên-appointed for the punishment of eunuchs known as the Shên-hsing-ssŭ, 愼刑司, where he is tried and punished according to the nature and degree of his offence.

For a first case of desertion, the culprit is imprisoned for two months; at the end of that period he receives twenty blows and is sent back to his duty in the palace. For the second offence, he is put into the cangue for two months; at the end of which he is again returned to his duty. For the third offence, he is

banished to Moukden[30] for two years and a half, and at the completion of his term of banishment, he is returned to his duty, as usual.

Theft is punished by banishment to Moukden; but if the property stolen should be anything prized by the emperor, such as curios, jewellery, or other valuables, the offender is taken to Chin-shan-k'ou, 金山口—a place about forty *li* distant from Peking—and there beheaded.

Trifling offences, such as neglect of duty, laziness, etc., are punished by the bastinado. When a eunuch commits an offence of this kind, it is dealt with summarily. The chief eunuch summons the attendance of a eunuch from each of the forty-eight departments, each eunuch being armed with a baton-made by glueing together two slips of bamboo, with the rough side outwards—and the culprit receives from eighty to a hundred blows. When the beating is finished he is sent to the surgery, where the doctor—who is also a eunuch—dresses the wounds by rubbing in ointment, and after three days the culprit is again flogged to render the punishment more severe. This second flogging is termed "raising the scabs" (揭痂疽).

Sometimes, when two eunuchs have been implicated in a similar offence, each has to flog the other in turn. This is amusing, for the one who flogs first does not dare strike lightly, lest the chief eunuch, who is looking on, should detect it; while the second hits hard to have satisfaction for the beating he has just received from his present victim. This is called "flogging in turn" (倒打仮).

Palace eunuchs are rarely dismissed, they must be incorrigible before that event takes place. When once they are driven from the palace they cannot be employed as servants by any one, and as they are fit for nothing else, they become beggars and eventually die of starvation. On the other hand, if a prince dismisses a eunuch it is not of so much consequence, as he may obtain employment in the family of some other prince or noble who is entitled by his rank to employ eunuchs.

The actual salaries of common eunuchs vary from two to four taels per month; twelve taels being the highest salary any one receives, no matter what his rank may be. It is not to be supposed, however, that eunuchs are different from other Chinese in one thing—"squeezing:"—and many of them make large sums in various ways, such as by pretending to facilitate, or really facilitating the business of those having audience; making

[30] Shêng-ching. 盛京; also called Fêng-t'ien-fu, 奉天府—the capital of Manchuria.

them comfortable while waiting, by supplying them with tea, pipes, etc., and the thousand and one other ways by which a true Chinaman knows how to "turn an honest penny." The salaries of eunuchs are paid monthly, whereas, other officials draw theirs half-yearly.

Each eunuch, in addition to his pay, is supplied with a certain quantity of rice monthly; and to economize their salaries, as well as for convenience sake, the eunuchs form messes amongst themselves, subscribing so much each to supply meat, vegetables and other kinds of food, which is cooked in the palace.

Every courtyard in the palace has its colony of eunuchs, who live in small houses, called "Menial's houses" (下房兒), at the sides of the main building in which their particular employer resides; so that they can be readily summoned when wanted.

The palace gates are shut at dusk, and opened shortly after midnight, for the admission of such officials as have business with the emperor. Should any eunuch be out of the palace when the gates are closed he is compelled to stay out all night, and is sure to be severely punished the next day. Official hats have to be worn on all occasions by eunuchs, no one being allowed egress or ingress without a hat on; consequently one mode of punishing a eunuch is by taking his hat from him, and by this means confining him to the palace.

All eunuchs are considered pure (chên, 貞 or ch'ing, 清,) but boys who are made eunuchs when under ten years of age are termed "thoroughly pure" (t'ung-chên, 通貞). These are specially prized, and are employed by the ladies of the palace with as much freedom as if they were girls; performing such offices as ought only to be done by women—some of them of a nature it would be impossible to describe here. These boy-eunuchs are supposed to be free from the least licentiousness—even in thought;—in fact, they are considered to be devoid of all feeling of that kind whatever. They are commonly called "little eunuchs" (Hsiao-t'ai-chien, 小太監); as they grow up they are not allowed such freedom of intercourse, being replaced by others younger than themselves, while they are employed in such duties as do not bring them into the more private apartments of the ladies.

Eunuchs, in common with other Chinese, are not excluded from worshipping in temples, burning incense, fasting, etc., but at the end of a prescribed period of fasting (which generally lasts about fifty days) they are not allowed the privilege of ascending

the tai-chieh, 台戒.[31] In this, however, they are not worse off than many others, for no cripple or deformed person, no one short of an eye, finger, or any portion of the body, nor any woman in her courses, etc., can ascend the dais. In this we have a marked resemblance to the Mosaic Law, as laid down in the book of Deuteronomy, XXIII.

Eunuchs may be known by the voice, want of hair on the face, cringing manner, hangdog, bloated appearance (in some), and an indescribable *je-ne-sais-quoi*, which those who have not been emasculated do not have. To enable a better idea, however, to be formed of them, I will enter somewhat into detail, and describe, as well as I can, some few of their more striking peculiarities.

In the first place, eunuchs, in China, invariably dress in sombre coloured garments (bought by themselves), such as an ash-coloured long coat (p'ao-tzŭ, 袍子), and over this a dark-blue shorter coat (kua-tzŭ, 褂子), trowsers of some dark material, and always the official hat and boots when on duty or out walking;—the boots are more square at the toes than those generally worn by officials.

In walking, eunuchs lean slightly forward, take short steps, keep the legs close, at the same time turning the toes outwards; they may be recognized by their gait for a long distance. In riding, they do not "grip" the saddle, but "ride on the stirrups,"—which are very short—leaning forward and rising up and down in them, "jockeying;"—in fact, depending entirely on the stirrups regardless of either "equitation" or "grip."

Eunuchs, taken as a whole, may be considered repulsive looking, but young eunuchs are often very handsome and feminine in appearance; indeed, one can almost imagine some of them to be young women dressed in men's clothing. As they grow older there is something painfully comical in their appearance; on seeing them one cannot help fancying they bear a resemblance to old women, who forgetting their age and sex, are masquerading in male attire. One is positive, therefore, on encountering a specimen of this sort, that it is either a *bona fide* eunuch, or else a masquerading old lady—the latter not being very probable.

[31] This is a raised dais, stage, or platform, on which the priest sits, and at the end of a period of fasting—which has been previously announced—he examines and receives the confessions (kao-ch'êng, 告成), of those who have prepared themselves by fasting, etc., for the ceremony, and after having done so he absolves them (fang-chieh, 放戒). This is remarkably and like confession and absolution in the Roman Catholic religion—the dais being actually the confessional.

All eunuchs, when they are emasculated, lose their natural voices, those who underwent the operation when children can scarcely be distinguished from young women by the voice; while those who had the operation performed on them after arrived at maturity speak in a cracked falsetto—as a Billingsgate fish-fag might. In fact, there is something grotesque– if I may be allowed the expression—in their voices, not by any means pleasant to listen to.

Actors, who personate eunuchs on the stage, such as attendants who usher in a prince, emperor, or lady of the court, etc., always make a moaning, whining noise, as 'hu-u-u-u, such as a dumb person might make if in pain or distress.

Chinese, in general, are not celebrated for a very liberal supply of "hirsute honours," but all eunuchs are utterly devoid of the nearest approach to a hair on the face: should one have had hair on it when emasculated, in a few months every sign of it disappears, the hairs coming out gradually and imperceptibly till the face is as bare of hair as a billiard ball. It is needless to say that hair in its most incipient form never appears on the faces of those who were emasculated in their childhood.

Young eunuchs, for a long time after they are emasculated, "wet their beds." This is not noticed for a time, allowance being made for the recent operation they have undergone, but a long continuance of it results in a severe flogging to the culprit, which is continued till he either breaks himself of the habit or outgrows it. This habit has originated the expression—which Chinese use when wishing to convey in forcible language how their olfactory nerves have been offended when speaking of them—"He stinks like a eunuch" (臊如老公). Chinese also speak of them as "stinking eunuchs" (臊老公), and aver that they can smell a eunuch for half-a-*li*.

When emasculated young, eunuchs often become stout, but their flesh is soft and flabby; they have no strength whatever, and most of them lose their flesh as they grow older, when they speedily become outrageously wrinkled. It is rare to see a stout elderly eunuch, those who are so look puffy and bloated. Chinese call this sort of corpulency "empty stoutness" (虛胖).

Emasculation seems to take all manhood away from eunuchs; they age rapidly, looking sixty when only forty; they are like children; will burst into tears at a trifle, or give away to ungovernable rage for what another person would scarcely notice, and are as quickly pacified as they are to become angry. They are not by any means bloodthirsty—as eunuchs are usually represented to be—but exactly the reverse, being harmless and conciliating in manner, as if they sought to ingratiate them-

selves with those stronger than they are, by confessing—in their fawning demeanour—their own weakness and inferiority.

Eunuchs who had no voice in their own emasculation—that is, those who were mutilated while children at the instance of their friends—invariably hate their fathers as being the cause of their life-long degradation, impotency and misery; they will often, in after years, refuse to hold any intercourse with them, though at the same time they may be dutiful and affectionate to their mothers.

They are very clannish in disposition, and will always assist one another against those who are not eunuchs, even to the extent of fighting.

Eunuchs are very shy of persons seeing them perform the necessary operations of nature, and will suffer any inconvenience till they can find a place to do them in unobserved. This is a praiseworthy trait in their character, as Chinese, generally, are utterly careless who sees them at such times.

Any allusion, either direct or implied, to their *deficiency* is considered by them a great insult, and resented as such—if possible. If a person, when in company with a eunuch, sees a dog without a tail, or with one that has been docked, he must not speak of it as tail-less or dock-tailed, but as a "deer-tailed" dog (鹿尾兒的狗). If a teapot is minus a handle it must not be noticed or mentioned. When speaking of cutting one must not use the character ko, 割, (which is also used to signify "castrate") but la, 剌, or one of the other characters meaning "to cut."

Most of the eunuchs smoke opium, and to enable them to indulge in this habit without quitting the palace, seven or eight opium dens are opened in its precincts; this is not only a convenience for them, but for officials who may have business in the palace, but are compelled to wait about the outer courtyards. These opium dens are called "smoking establishments; (烟館); the fact of their being in the palace is notorious, but no doubt it is considered policy to shut the eyes—officially—to their existence.

All eunuchs gamble, and spend most of their leisure time in that occupation. It is their greatest source of enjoyment; as they say, if we "do not like gambling we have *no* pleasure" (不愛賭錢沒有樂).

As a class, eunuchs are considered to be very honest, it being a rare occurrence to hear of one having committed a theft. Another good trait in their character is that they are charitable to the poor, and generally carry loose cash about them to bestow in alms on those they conceive deserving.

Eunuchs are much liked by the small tradesmen with whom they have any dealings, for, unlike other Chinese, they do not care to haggle over a bargain; a seller, or workmen, knowing their peculiarity this way, has only to say "give me what you please," and for a trifling job, or for goods not worth half-a-dozen cash, he is sure to receive a handful; so that this class of people generally trust to a eunuch's generosity, and invariably get the best of the bargain. In paying for small articles too, they rarely take back any change,—indeed it is seldom one of them is ever known to be mean or stingy.

A great freedom of speech and manner is allowed to eunuchs on account of their deprivation; language and conduct that would not be tolerated in others being looked over in them with the remark, "he is only a eunuch."

The most common and vulgar name for eunuch is Lao-kung, 老公,[32] which will bear translation either as "Old Earl" or "Old Cock"—the latter translation being the one intended. To *call* them or address them as Lao-kung is an unpardonable offence; they are only spoken of as such when they are not present. When addressing them the proper way is to style them 太監, 內侍, 老爺, 裏面兒, or 內監爺.[33] The term "eunuch" (太監), applied to others—particularly amongst southerners—is a most insulting epithet.

When a person becomes a eunuch he is spoken of as "quitting home" (出家)—the same expression which is used when a layman becomes a priest. Like the priest, too, when a eunuch dies, he is not buried with the rest of his family, so that both priests and eunuchs may be reckoned "outsiders"—beyond the pale of home influences or feelings before death; and separated from his kindred after death.

As regards eunuchs being subject to melancholy and a disposition to suicide (See page 145), close questioning elicited the answer that suicide is almost unknown amongst them, my informant never having heard of a single case during a period of forty years; and that melancholy is not more prevalent amongst them than it is amongst Chinese generally. In short, to sum up in a few words what has already been stated, eunuchs, as a class, love mirth and gaiety—anything conducing to amusement being eagerly sought after by them. That a little amuses

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[32] The real character should be 宮.

[33] These terms are all in common use now; in former times they were called 閹人, or 寺人. There are many other terms for eunuchs, but those quoted have been deemed sufficient, as being those used.

them, while on the other hand, a mere trifle will make them shed tears. That they love gambling, every one of them being gamblers. That they are affectionate to women and children, and are fond of pets—particularly small dogs—almost every eunuch having one. They are *not* by any means revengeful, but are extremely timid, and have a dread of others who are not as they are. An-tê-hai's great dread was that some one would murder him; this is an exceptional case, but his dread was realized. They are irritable and excitable; will give way to bursts of rage and squabble like women, but they are easily pacified. Cases sometimes occur where they become insane when ill-treated or stripped of their rank for some fault, but their insanity is generally of a harmless nature. They are very clannish and will stick to one another through thick and thin. They are honest, generous, and charitable as has been shown. Putting, therefore, their good traits against their bad ones, I think they will shew up favourably with the common run of Chinese; and when one reflects on the awful deprivation they have suffered, one is more inclined to overlook many of their failings and to think them objects of pity rather than execration and contempt.

## Note.

From the foregoing pages it may easily be gathered that the emperor is the only *man* who resides in the palace at Peking. One man, only, in that vast enclosure! Well may he be styled the "solitary man!" (孤人). What a life, too, for the ladies! Incarcerated; shut out from the world, what is the palace but a gorgeous prison for them! Seeing none of their male relatives, and only at long intervals their female ones, all their nearest and dearest home ties must be severed; the most sacred feelings of the heart must become withered and parched up for want of the nourishment necessary to foster them. Hearing nothing from the outside world, but what is filtered through the lips of eunuchs—for all they can gather of what goes on beyond their prison walls *must* come to them through that source—what wonder is it that we hear of heart-burnings, palace intrigues, and struggles for supremacy; each one striving to be favourite so that she can forward her own interests or those of her never-more-to-be-seen relatives. And, lastly, what a life for the eunuchs! Their position must be worst of all. One is at a loss to know which to pity most, the emperor in his solitary

grandeur, the ladies in their gorgeous imprisonment, or the eunuchs in their deprivation of all that constitutes what may be essentially termed manhood.

From everything we can learn regarding eunuchs, but one conclusion can be drawn as to their origin, and that is, polygamy; were it not for that eunuchs would be as rare as unicorns. With this fact in front of us, the question naturally arises in our minds "how about polygamy in the west? If the Mormons, who are polygamists, are left to themselves, will they not hereafter introduce eunuchs?" Revolting and painful as the idea may be, one cannot avoid the reflection that they are gradually trending in that direction; that there is but a step between them and the eastern polygamist, and unless they awake to the error of their ways, or are compelled to reform, that step—in the common course of events—*must* eventually be taken. Let us hope that this foul blot on civilization may be "wiped out" one way or another, by common sense and humanity, if possible, by compulsion, if necessary.

Our bible makes frequent mention of eunuchs; to facilitate comparison of dates, etc., I have given below a short list of texts, in chronological order, in which eunuchs are variously mentioned, commencing with the *first* mention of them, which dates as far back as B.C., 1729.

Genesis xxxvii, 36: "And the Midianites sold him (Joseph) into Egypt unto Potiphar an *officer* of Pharaoh's, and captain of the guard."

Genesis xxxix, 1. (Same date) "And Joseph was brought down to Egypt, and Potiphar, an *officer* of Pharaoh, captain of the guard, an Egyptian, bought him out of the hands of the Ishmaelites, which had brought him down thither."

I. Samuel viii, 15, B.C. 1140. "And he will take the tenth of your seed, and of your vineyards, and give to his *officers*, and to his servants.

II. Kings viii, 6, B.C. 892. "So the king appointed to her a certain *officer*," etc.

II. Kings ix, 32, B.C. 884. "And he (Jehu) lifted up his face to the window, and said, 'Who is on my side? who?' And there looked out to him two or three *eunuchs*."

II. Kings xviii, 17, B.C. 725. "And the kings of Assyria sent Tartan and *Rabsaris* (chief eunuch) and Rabshakeh from Lachish to king Hezekiah with a great host against Jerusalem."

II. Kings xx, 18, B.C., 810. "And of thy sons that shall issue from thee, which thou shalt beget, shall they take away; and they shall be eunuchs in the palace of the king of Babylon.,'

II. Kings xxiii, 11, B.C. 624. "And he took away the horses that the kings of Judah had given to the sun, at the entering in of the house of the Lord, by the chamber of Nathan-melech the *chamberlain*."

II. Kings xxv. 19, B.C. 588. "And out of the city he took an *officer* that was set over the men of war."

Esther i, 10-12, 10 (B.C. 521). "On the seventh day when the heart of the king was merry with wine, he commanded Mehuman, Biztha, Harbona,





Bigtha, and Abagtha, Zethar, and Carcas, the seven *chamberlains* that served in the presence of Ahasuerus the king"

11. "To bring Vashti the queen before the king with the crown royal, to shew the people and the princes her beauty; for she was fair to look on."

12. "But the queen Vashti refused to come at the king's commandment by his *chamberlains*."

Esther ii, 3, B.C. 519. "And let the king appoint officers in all the provinces of his kingdom, that they may gather together all the fair young virgins unto Shushan the palace, to the house of the women, unto the custody of Hege the king's *chamberlain*, keeper of the women." See also verses 8 to 21.

Esther iv, 5, B.C. 510. "Then called Esther for Hatach, one of the king's *chamberlains*, whom he had appointed to attend on her," etc.

Isaiah, lvi, 3, 4, 5, B.C. 712. "Neither let the *eunuch* say, Behold I am a dry tree."

"For thus saith the Lord unto the eunuchs that keep my sabbaths, and choose the things that please me and take hold of my covenant;

"Even unto them will I give in mine house and within my walls a place and a name better than of sons and daughters; I will give them an everlasting name that shall not be cut off."

Jeremiah xxix, 2, B.C. 596. "After that Jeconiah the king, and the queen, and the *eunuchs*, the princes of Judah, and Jerusalem, and the carpenters, and the smiths, were departed from Jerusalem".

Jeremiah xxxiv, 19, B.C. 590. "The princes of Judah, and the princes of Jerusalem, the *eunuchs*, and the priests, and all the people of the land," etc.

Jeremiah xxxviii, 7, B.C. 590. "Now when Ebed-melech the Ethiopian, one of the king's *eunuchs*," etc. See also verses 8 to 13.

Jeremiah xli, 16, B.C. 588. "Then took Johanan the son of Kareah, and all the captains of the forces that were with him, all the remnant of the people whom he had recovered from Ishmael the son of Nethaniah, from Mizpah, after that he had slain Gedaliah the son of Ahikam, even mighty men of war, and the women, and the children, and the *eunuchs*," etc.

Jeremiah lii, 25, B.C. 588. "He took also out of the city an *eunuch*, which had the charge of the men of war; and seven men of them that were near the king's person," etc.

Daniel i, 3, B.C. 607. "And the king spake unto Ashpenaz the master of his *eunuchs*," etc. See also verses 6 to 18.

Matthew xix, 12, A.D. 32. "For there are some *eunuchs*, which were so born from their mother's womb; and there are some *eunuchs*, which were made *eunuchs* of men; and there be *eunuchs*, which have made themselves *eunuchs* for the kingdom of heaven's sake."

Acts viii, 27, A.D. 34. "And he arose and went; and behold, a man of Ethiopia, an *eunuch* of great authority, who had charge of all treasure," etc.

Acts xii, 20, A.D. 44. "And Herod was highly displeased with them of Tyre and Sidon; but they came with one accord to him, and having made Blastus the king's *chamberlain* their friend, desired peace; because their country was nourished by the king's country."

Romans xvi, 23, A.D. 60. "Gaius mine host, and of the whole church, saluteth you, Erastus the *chamberlain* of the city saluteth you, and Quartus a brother."

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