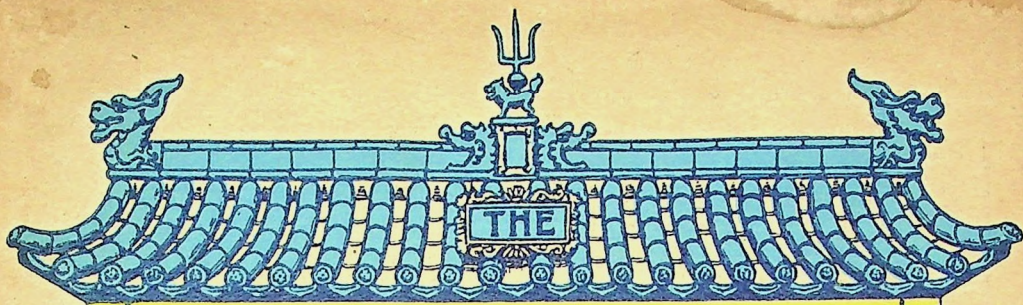
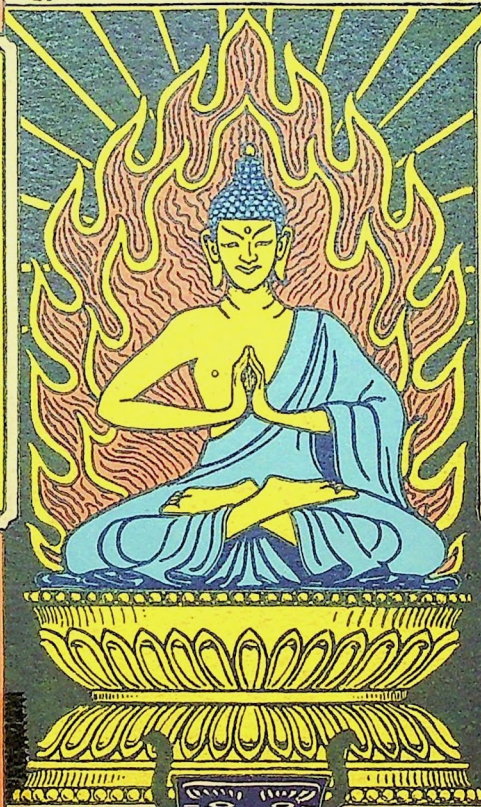




CHINA JOURNAL

中國科學美術雜誌

SCIENCE
ART
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TRAVEL
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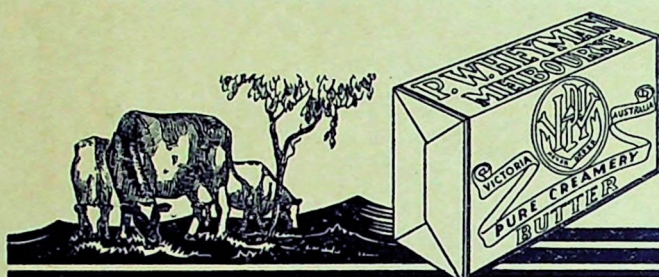
Vol. XVI

APRIL 1932

No. 4

142

HEYMAN BUTTER—On Every Table



HEYMAN'S BUTTER

OBTAINABLE EVERYWHERE

CHINA REALTY CO.
FED. INC. U.S.A.

EVERY PHASE
of
REAL ESTATE BUSINESS
BUYING—SELLING—RENTING
VALUING—MANAGING
MORTGAGES
INSURANCE.

70 Szechuen Road.

中國營業公司

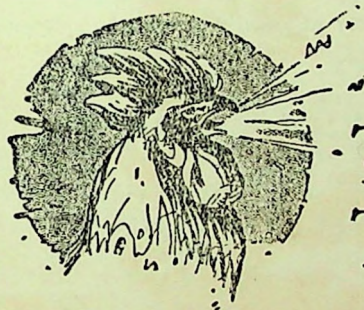
話四
六川
八路
二七
八十
八號
電

"SHANGHAI'S REAL ESTATE MARKET PLACE"

All wrong! — —

What? Pains in the head?

Why don't you take
'Aspirin' tablets?



Tickling Throat

Who wants to hear the cock crow? It's a sign
you're awake when you shouldn't be.

But a tickling throat won't be denied and breaks
your sleep at unearthly hours.

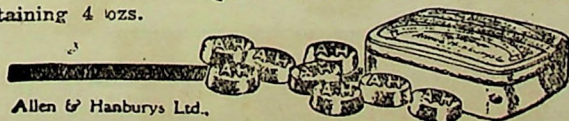
Let an "Allenburys" Glycerine and Black Currant
Pastille dissolve on the tongue at bedtime and
sleep in uninterrupted comfort.

There will be no more 'tickling throat' that night.

Your Chemist
stocks them.

Packed in distinc-
tive tin box con-
taining 4 ozs.

Allenburys
Glycerine & Black Currant PASTILLES



Allen & Hanburys Ltd.,
London and Shanghai

E. LEITZ, OPTICAL WORKS

WETZLAR, GERMANY

MICROSCOPES for Biology

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The world-wide known tiny monster camera with special ENTIRELY NEW FEATURES

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**The MERCANTILE
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(Incorporated in England)

CURRENT ACCOUNTS

Opened in

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GOLD CURRENCIES

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26 THE BUND

LOVELY FRAGILE FROCKS

*can be practical with **LUX** care*

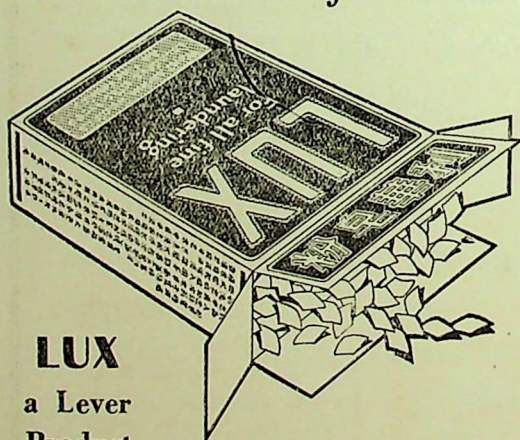
CHOOOSE exquisite fabrics, glorious colours, this season! You'll find them practical and easy to care for if you use Lux! Ordinary soap destroys fragile texture, fades colours. But Lux safeguards the finest material and preserves the most delicate shades. The foamy suds cleanse quickly, thoroughly . . .

You'll be amazed how much longer your clothes will wear if washed this way. Keep your silks new-looking and smart with Lux. Economical to buy, most economical to use.

Begin using Lux to-day for all the washable things in your wardrobe—and lots of things you didn't think were washable before.

If it's safe in water . . .

*it's safe in **LUX***



LUX
a Lever
Product

**Wash Lovely
Garments
this way!**

Dissolve Lux in hot water. Add cold till lukewarm. Do not soap or rub; squeeze garments gently through and through. Rinse in three lukewarm waters—squeezing water out thoroughly. Hang in shade until slightly damp. Press at once with warm iron.

BILIVACCIN

*Anti-Cholera, Anti-Dysentery,
Anti-Typhoid*

The Effective Vaccine to be
taken by MOUTH

**NO DISCOMFORT,
NO REACTION**

Used by Government and Municipal
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Health Work

Lt.-Col. RUSSEL, Director
of Public Health, Madras,
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100,000 Vaccinations were
done in Madras city within
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**NO SINGLE CASE
OF DEATH FROM
CHOLERA AMONG
THE VACCINATED**

**CHOLERA, DYSENTERY,
TYPHOID**, will soon be in
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LAY, NO HOME IS SAFE
WITHOUT A SUPPLY OF
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Sold at All Chemists

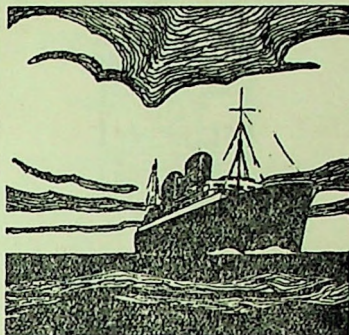
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**GRAND EXPRESS
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SHANGHAI TO
BRINDISI - - 23-24 DAYS
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THROUGH-TICKETS TO
LONDON
(SEA AND RAIL 25-26 DAYS)

**HEAVY LUGGAGE FOR
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RAIL TICKETS FOR LONDON
ARE AVAILABLE FOR 30
DAYS FROM THE DATE THE
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FROM VENICE AND ALLOW
FOR THE BREAK OF VOY-
AGE EN ROUTE

(STOP OVERS IN ITALY, SWITZER-
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THE NATIONAL CITY BANK
OF NEW YORK

1-A KIUKIANG ROAD,
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CAPITAL, SURPLUS AND
UNDIVIDED PROFITS OVER
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DOMINICAN	PANAMA
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YOU ARE ABLE TO GET PORTRAITS
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FOR YOUR EVERY PURPOSE

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BURRELL & CO. LTD., LONDON

Manufacturers of

READY MIXED AND PASTE PAINTS,
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ANTHRACITE BRIQUETTES
ECONOMICAL
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CONVENIENT

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TAYLOR GARAGE,
LIMITED

A new DEPOT in the Centre of the City
is now at your service.

Call in when you are shopping, it is
only a few yards off Nanking Road
(corner of Ezra and Central Roads).

Phone 70050 (4 Lines)

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PLUMBING FIXTURES

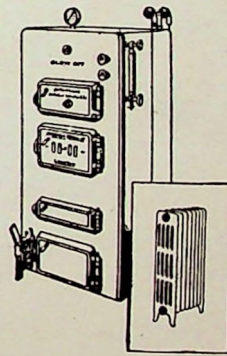


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PLUMBING FIXTURES



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ANDERSEN, MEYER & CO., LTD.

SHANGHAI AND OUTPORTS



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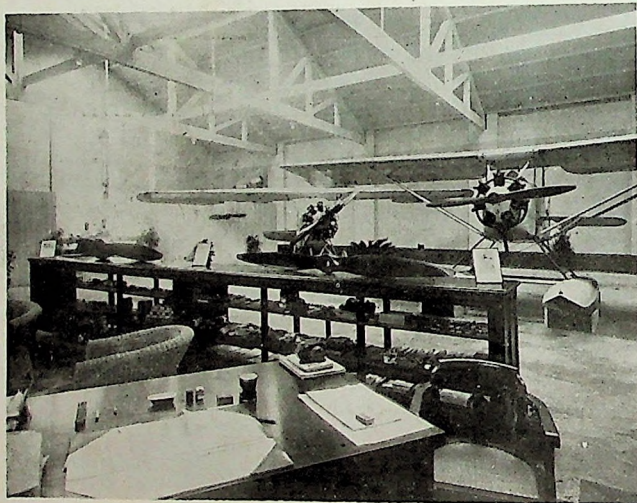
CONSULTING ENGINEERS
FOR ALL
AERONAUTICAL PROBLEMS

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 11674

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ICARUS AERO SUPPLY CO., LTD.

*Player's
Please!*

75 cents-50
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"Its the tobacco that counts"

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WATCHMAKERS



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SILVERSMITHS



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**For BEAUTIFUL JADE and
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CANTON WARE

OUR SPECIALITY

Get a Set for Your Home

*Tea and Dinner Sets of
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AN EXCELLENT VARIETY IN DESIGN AND COLOURING



TRY OUR STYLISH LINGERIE

All sorts of Ladies' silk embroidered
garments sold at extremely low prices.

See our art and curio gallery.

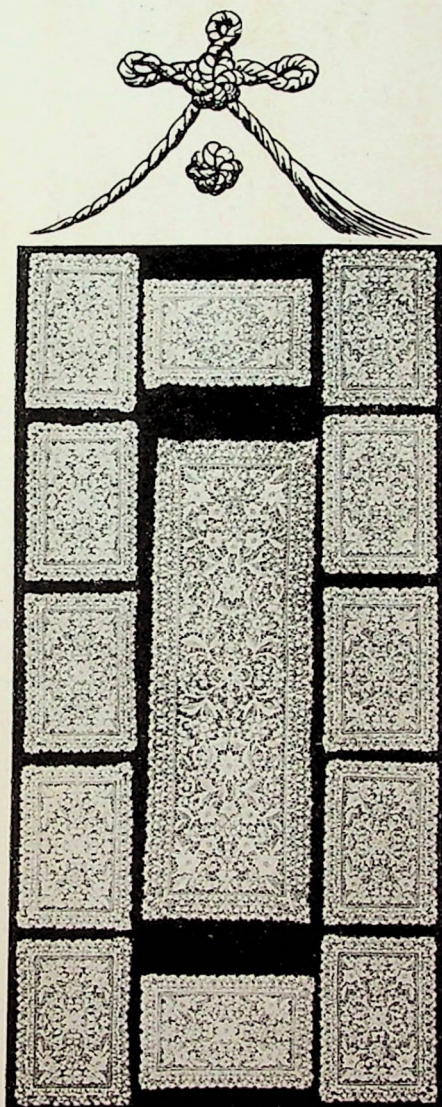
EVERYTHING CHINESE

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Retail and Wholesale

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C. T. TAI & SON



EMBROIDERED LINENS
MONOGRAMMED HANDKER-
CHIEFS, HAND-MADE LACES.

185 ROUTE PROSPER PARIS
(Near Zicawei)

Tel. No. 70636 SHANGHAI



Chinese Antiques

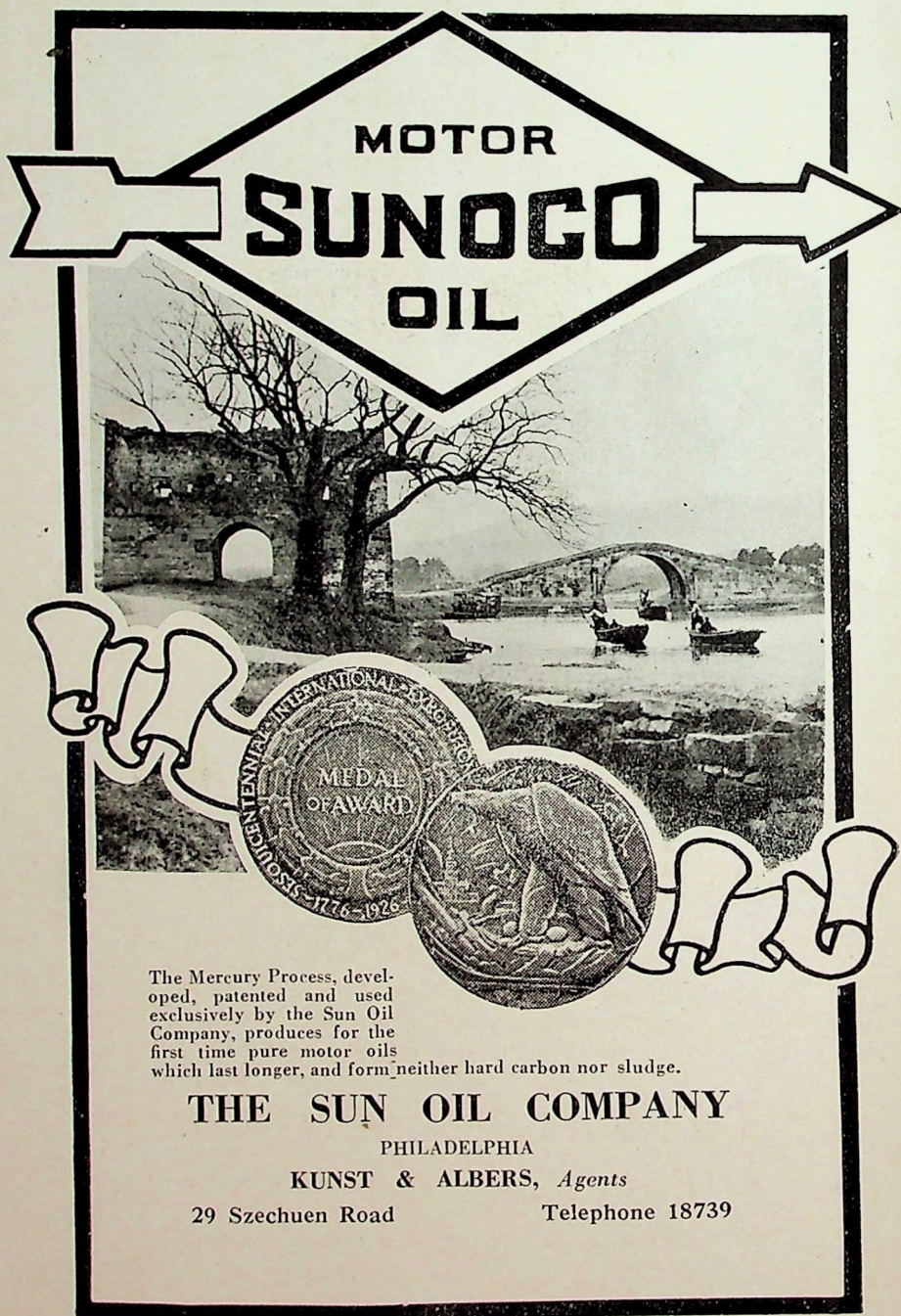
ANTIQUE IVORIES,
PORCELAINS,
BRONZES,
PAINTINGS,
SCROLLS,
LACQUER,
EMBROIDERIES.

PERIOD FURNITURE

made in our own factory
under Foreign Supervision.

THE CARAVAN STUDIO

1041 Bubbling Well Road
SHANGHAI, CHINA



The advertisement is framed by a thick black border. At the top, a diamond-shaped logo contains the word "MOTOR" in a small font, "SUNOCO" in a large, bold, sans-serif font, and "OIL" in a medium font below it. A stylized banner with arrowheads at both ends passes behind the "SUNOCO" text. Below the logo is a black and white photograph of a landscape. On the left, there is a stone wall with an arched opening and a large, leafless tree. In the background, a stone bridge with multiple arches spans a body of water. Several small boats are visible on the water. In the foreground, two circular medals are displayed. The left medal is the "SIXTY-SECOND INTERNATIONAL SYNDICATE MEDAL OF AWARD" from 1926, featuring a sunburst design. The right medal depicts a figure, possibly a deity or a personification of strength, standing on a base. The text below the medals describes the "Mercury Process" and identifies the company and its agents.

MOTOR
SUNOCO
OIL

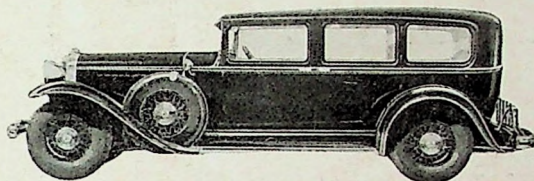
The Mercury Process, developed, patented and used exclusively by the Sun Oil Company, produces for the first time pure motor oils which last longer, and form neither hard carbon nor sludge.

THE SUN OIL COMPANY
PHILADELPHIA
KUNST & ALBERS, Agents
29 Szechuen Road Telephone 18739

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FOR 1932

The Outstanding Buick of all time



FEATURING NEW AUTOMATIC CLUTCH, NEW FREE
WHEELING, NEW SILENT SECOND SYNCRO-MESH

ANDERSON & FERROGGIARO

Sales, Service and Showroom :

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Federal Inc. U.S.A.

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OLDSMOBILE

PONTIAC

OPEL

BLITZ TRUCKS



Phone { 70158
70159

You own a good motor car. Upon its performance depends your comfort and peace of mind. Insure its reliable operation with regular inspection and servicing.

TRIANGLE MOTORS

FEDERAL INC., U.S.A.

99 ROUTE CARDINAL MERCIER

OPEL-BLITZ DIVISION

Show Room: 310 Bubbling Well Road

THORNYCROFT

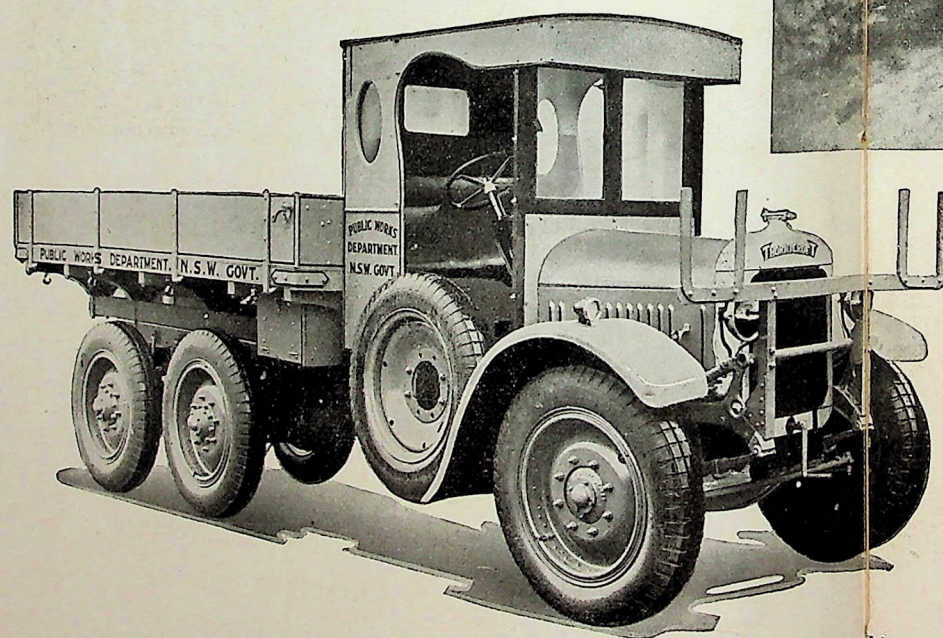
MOTOR VEHICLES

PASSENGER CHASSIS

20 to 70 Passengers

FREIGHT CHASSIS

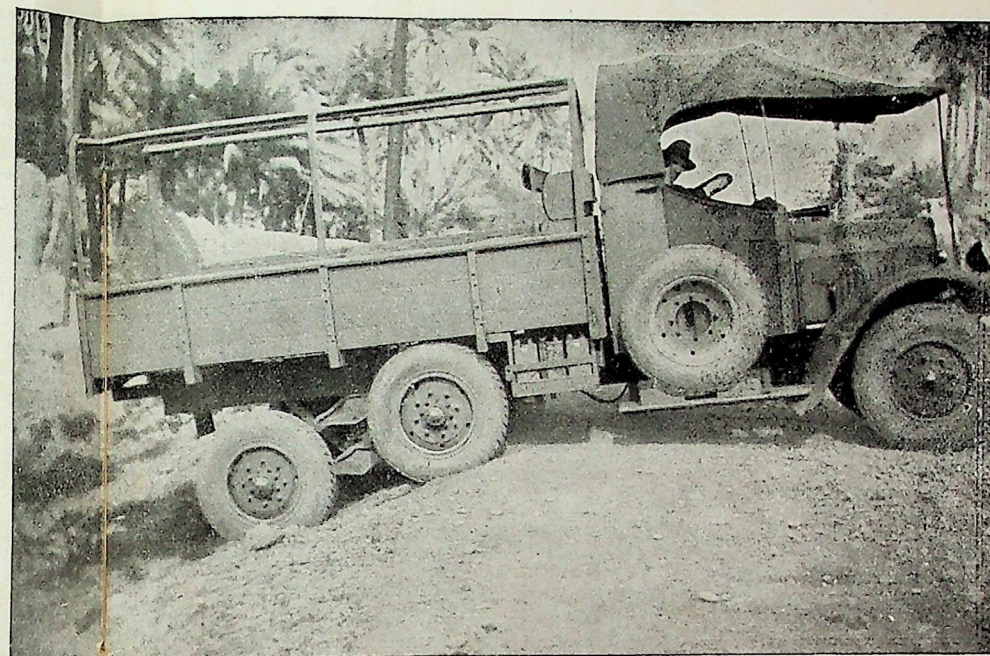
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JOHN I. THORNYCROFT & CO., LIMITED

Dollar Building, Shanghai



THORNYCROFT RIGID SIX WHEELERS

Drive on all Four Rear Wheels

Require No Roads

As used

To cross Kalahari Desert

The Sahara

Also by South African Railways

Prices and Demonstration

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MAGDALEN LLOYD

STUDIO OF

CHINA'S ARTS

Antiques that are Authentic.

Jewelry that is different.

GRAND HOTEL DE PÉKIN

Room 108

PEKING

LARGEST Selling Rug in the WORLD

IMPERIAL PAGODA
CARPET

A. & M. KARAGHEUSIAN

AMERICAN CORPORATION FOR OVERSEAS

135 RUE PASTEUR

TIENTSIN

NICHOLS

MANCHU RUG PALACE

PEKING



ENTRANCE BUILDING SHOWING THE TWO HUGE MARBLE LIONS, EACH CARVED OUT OF A SOLID BLOCK OF MARBLE. THE ENTRANCE GATE FROM HATAMEN STREET IS TO THE LEFT OF THE PICTURE.

We cordially invite you to visit our Palace Factory whenever you are in the Old Capital. Large assortment of all kinds of Chinese Carpets always in stock.

"Made in a Palace and Fit for a King."

YI WANG FU—166 HATAMEN STREET

Shanghai Office
99 Nanking Road

Tientsin Head Office
104 Taku Road

"Daintymaid EMBROIDERIE"



Finest Irish and
French Linens

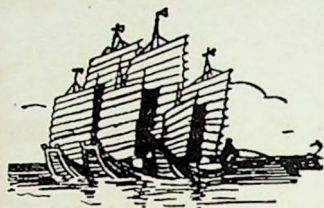
Exquisite Designs

Fully Guaranteed

Call and see our stocks at

84 SZECHUEN ROAD
UPSTAIRS

ACROSS THE STREET
FROM COOK'S



It is Easy Sailing at
**THE
Sea Captains'
Shop**

If you are interested in
the new Sport Pajamas,
for cruising and beach
wear.

Marine blue leads in
smartness with trousers
frightfully nautical.

A wide variety of styles
and colors.

WE EXCEL in superior
lingerie and lead in the
new modes.

**THE SEA
CAPTAINS' SHOP**

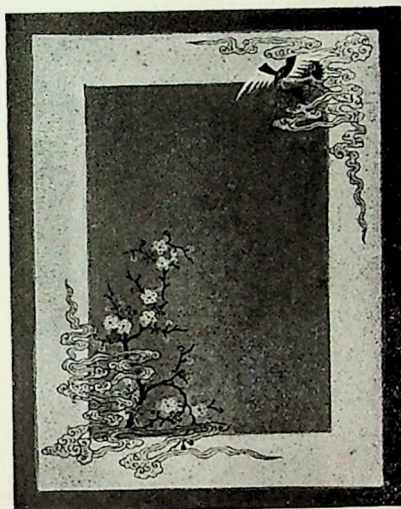
Mrs. W. Tornroth

27C Central Arcade
Building

49 NANKING ROAD

Telephone 10206

Hand Woven Chinese RUGS

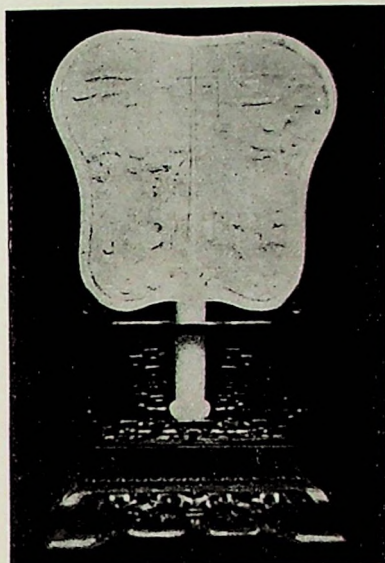


Manufactured by
E. A. Punnett & Co.

Showroom—Main Floor
Room 100
Grand Hotel de Pékin
PEIPING

RUGS
SUCH AS WON
PRIZE AND MEDAL
IN THE
Belgian Centennial Exhibition
BEST IN CHINA

MISS PUNNETT
WAGONS-LITS HOTEL, PEIPING
FURS—JADE—JEWELRY



WHITE JADE FAN
CHIEN LUNG

OLD CATHAY

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Old Rugs, Jades,
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Porcelain, Lacquer

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FURNISHERS & DECORATORS

MODERN FURNITURE

OF

DISTINCTIVE DESIGNS

FURNISHING FABRICS

OF

ALL DESCRIPTIONS

Our wide range of Furnishing Materials
Displaying New Modern Designs and
Colours Offer a Wealth of Ideas for
Distinctive Furnishing Schemes.

SHOWROOM :

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THE FETTÉ RUG CO.

Federal Inc. U.S.A.

MANUFACTURERS & EXPORTERS

QUALITY RUGS

Mail Inquiries Receive
Prompt Attention

8 TUNG TAN ERH T'IAO HUTUNG
PEIPING (PEKING) CHINA

Agents :

Hoggard-Sigler, Shanghai
Helene Griffiths, Manila
The Caravan, Hong Kong
Mrs. C. E. Fette, Honolulu

JEAN LINDSAY,

Cathay Hotel Entrance

and

22 NANKING ROAD,

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Ivories,
 Bronzes,
 Porcelain,
 Pictures,
 Embroideries,
 Black Wood,
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 Crystal Trees,
 Peking Glass,
 Screens,
 Grave Pottery,
 Curios,
 Magnificent Wilson
 super yarn Tien-
 tsin rugs.
 The famous Jen Li
 Peking rugs.
 Hooked rugs, very
 moderate.
 Mongolian Rugs.



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Yü Tah

**THE JADE
PAGODA**

THE FINEST
 Blackwood
 Old Rugs
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 Novelties
 3-4 RUE MARCO
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L A C E S
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in a wide selection at very
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WE EXTEND A CORDIAL
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to all ladies and gentlemen to
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 choice :—

ART LINENS CUT-WORK
 VENETIAN POINT, SILK
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THE PEITAIHO AGENCY

3, VICTORIA TERRACE, TIENTSIN

We rent Summer Houses
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GRAND HOTEL DE PÉKIN

PEKING'S UP TO DATE HOTEL

200 Rooms, 200 Bathrooms and Telephones
Overlooking the Forbidden City and all
of Peking

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ASTOR HOUSE HOTEL TIENTSIN

THE LEADING HOTEL IN BEST
POSITION OF TOWN

Telegrams:
ASTOR TIENTSIN

PAUL WEINGART,
Manager

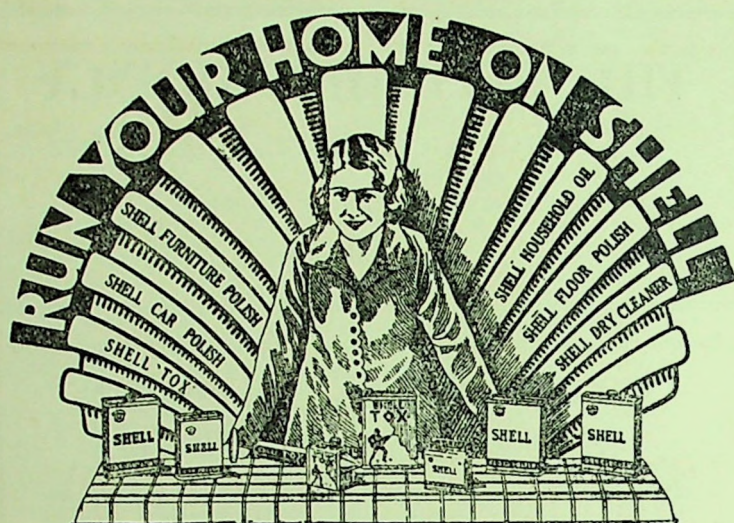
S. KOMAI

MANUFACTURER OF DAMASCENE WARE

Presented to the Prince of Wales by the Municipality
of Kyoto in Honour of His Visit to Japan in 1922

DAMASCENE ETCHING

Agent for Y. Yezaki Tortoise Shell Wares, Nagasaki
298 Bubbling Well Road, Shanghai



Obtainable from—

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At "Shell" Service Stations and All Leading Stores.



"BEAR" BRAND

STERILIZED NATURAL
SWISS MILK

The safest, richest and purest Milk the World produces.

Obtainable from all Store-Keepers and from

HIRSBRUNNER & CO.

SASSOON ARCADE

NANKING ROAD

Tel. 15138

C. N. GRAY & CO.

TAILORS AND HABIT MAKERS, OUTFITTERS,
MAKERS OF CAMEL HAIR OVERCOATS.

EXCLUSIVE DESIGNS

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306-308-310 KIANGSE ROAD, SHANGHAI

**BIANCHI'S
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The
Best
Candy
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Orient

Bianchi

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SHANGHAI

**The
China Jewellery Co.**

We have the best assortment
of

**JADE, MODERN and
ANTIQUE**

Chinese Jewellery

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"KNOWN TO BE RELIABLE"

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QUALITY

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ASK YOUR COMPRADORE FOR 1-lb. TO-DAY

GRAFTON FABRICS

Represent Perfection in

DRESS AND LINGERIE MATERIALS

You Should Wear

GRAFTON SPRING AND SUMMER FABRICS

BECAUSE

of their
outstanding
originality
in
design.



BECAUSE

of their
loveliness
and
perfection
of
colouring.

TRADE MARK

BECAUSE

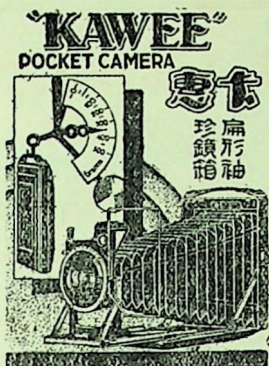
of their steadfastness in colour when exposed
to sunlight and washing.

Obtainable from all the Leading Stores

**THE CALICO PRINTERS' ASSOCIATION
LIMITED**

56 SZECHUEN ROAD, SHANGHAI

Head Office : MANCHESTER, ENGLAND



Most complete and thinnest camera ever made with highest standard of workmanship. Rack and pinion double extension. Very simple operation.

Size: $2\frac{1}{2}'' \times 3\frac{1}{2}''$ and $3\frac{1}{2}'' \times 4\frac{1}{2}''$

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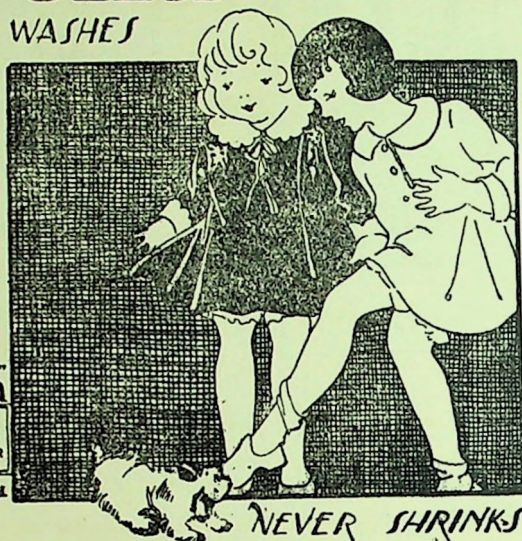
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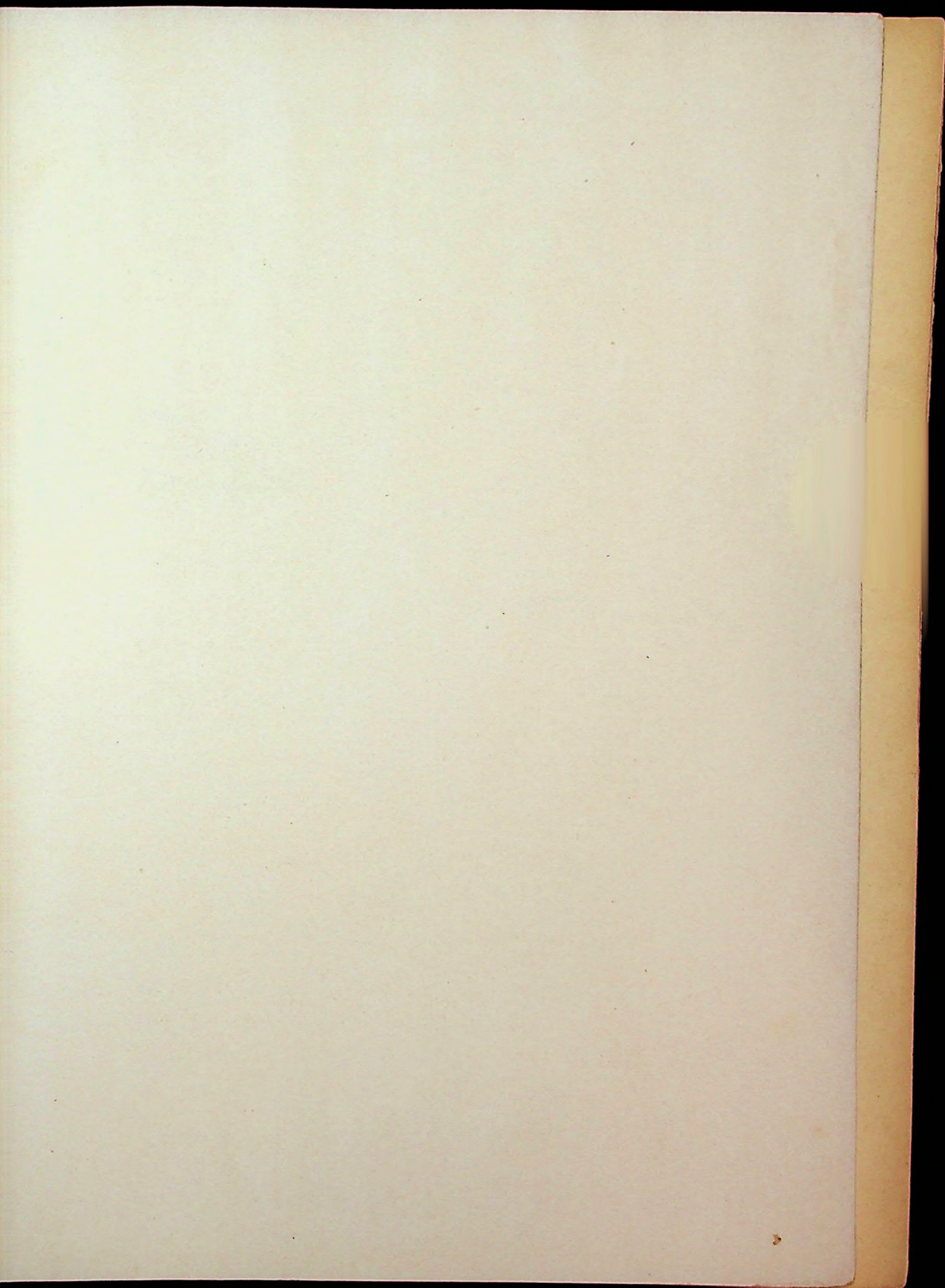
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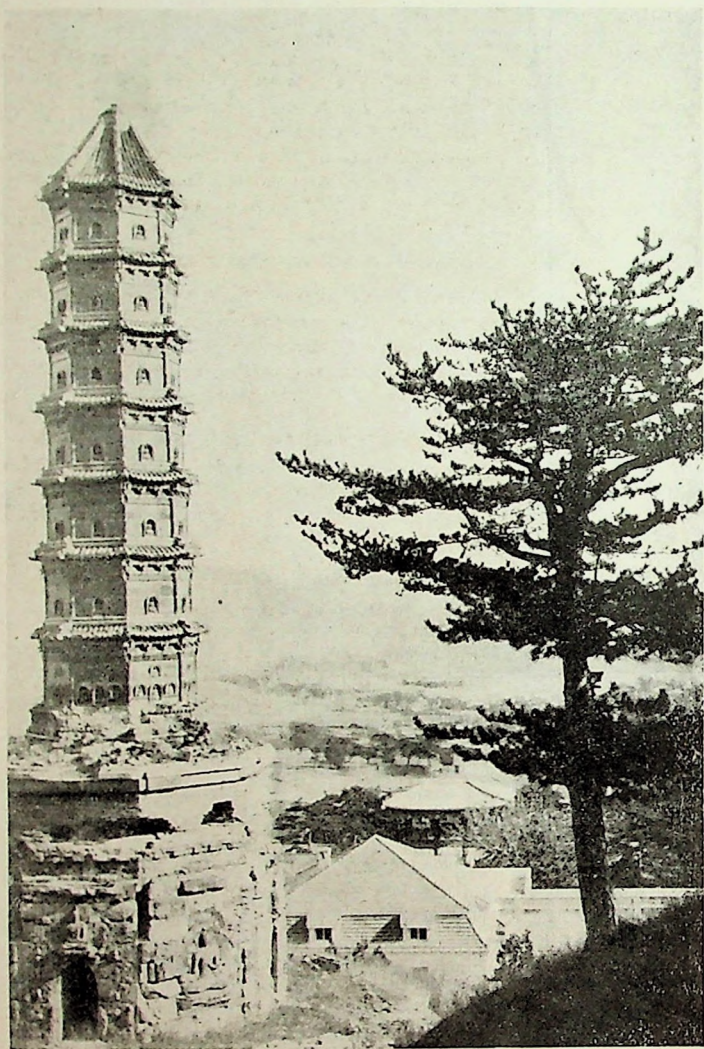
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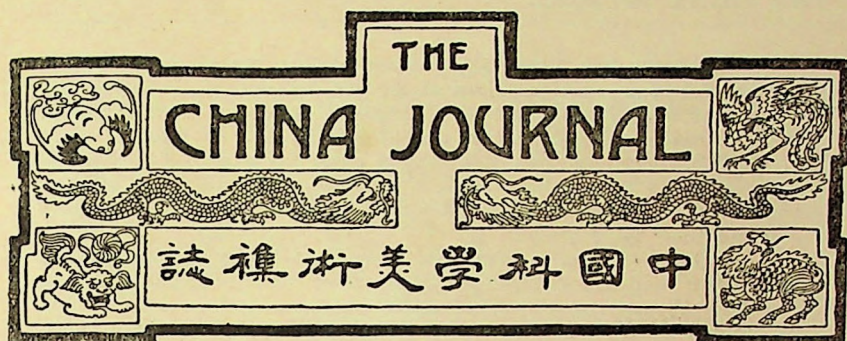
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The Jade Fountain Pagoda, Peking. From the Photograph by C. E. L. Ozorio shown at the Third Annual Photographic Exhibition of the City Bank Club held in Shanghai last December.



VOL. XVI

APRIL 1932

No. 4

WHILE ROME BURNS

BY

ARTHUR DE C. SOWERBY

Nero fiddled while Rome burned. To-day there are many who are fiddling while Rome burns; only it is a different kind of fiddling. It is the fiddling of a child with the parts of a puzzle. Perhaps it would be better to describe it as fuddling.

When we went to press last month the *undeclared* war between China and Japan in the immediate vicinity of Shanghai was at its height. The Japanese forces had launched a big offensive and were meeting with a stubborn resistance from the Chinese. On the night of March 1 the Chinese troops began to withdraw from their positions. This was heralded by terrific fires throughout the Chapei area. On March 2 the 19th Route Army completely evacuated the whole of its positions and retired to a line some twelve miles to the west of Shanghai, leaving the Chapei area a mass of ruins. Woosung Forts fell to the Japanese on March 3. This left the whole area to the east of a line from Liu Ho on the Yangtze south past Kating and Nanziang to the Soochow Creek clear of Chinese soldiers; and there the position has remained till now. Although the commanders of both opposing forces gave orders to their troops to cease fire on March 6, desultory sniping and occasional skirmishes have taken place during the month.

That there could be such a situation as now exists round Shanghai is the direct result of fiddling and fuddling on the part of the statesmen and politicians of the more important countries of the West in the immediate past, that is to say, in the years that have followed the Great War. Much more is the destruction of Chapei to be laid at the doors of these muddlers with their weak and flabby policies than at the doors of the Chinese and Japanese. They sowed the wind: we have reaped the whirlwind.

A conference has been taking place at the British Consulate in Shanghai between representatives of the two contending parties, but up to the time of writing it has been utterly abortive. The members of the Commission of Inquiry sent out by the League of Nations have arrived in Shanghai and departed for the north by way of Nanking and Hankow. They tarried here for half a month while being dined and wined by various organizations, institutions and associations anxious to secure their good graces.

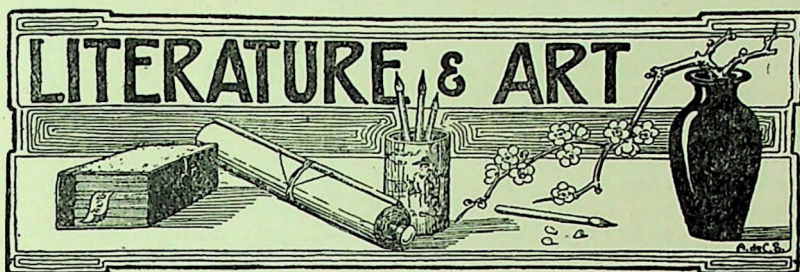
The Chinese banks in Shanghai have kept business paralyzed for the last two months by refusing to open their doors, while shopkeepers have done themselves untold harm by adopting a similar policy. How this kind of thing could possibly hurt anybody more than themselves it is difficult to see.

If all this is not fiddling while Rome burns we should like to know what it is. Why do not those in the position to do so take hold of the situation and bring about a settlement of a dispute that if allowed to proceed much further may end up by shattering the peace of the whole world?

We have heard it stated that the various European Governments and that of the United States of America do not consider Shanghai and the Shanghai situation of any very great importance in world affairs. If this is so the sooner they change their opinions and concentrate their energies upon adjusting things properly here the better, for such an idea is most assuredly wrong. Shanghai is the fulcrum point of the whole of the Far East; and what transpires here in the next few weeks or months must have the most far reaching effects throughout the rest of the Orient, if not throughout the whole world. If Shanghai goes under or becomes nothing more than a pawn in the politico-military game that is being played, as it bids fair to become the way things are drifting, then China herself must go completely to smash. And as China goes down she must inevitably draw Japan and Soviet Russia into the maelstrom, and with them, as our Western politicians must know, most of the rest of the great nations of the world.

Why do not such countries as Great Britain, America, Italy and France approach the contending parties with some sound scheme for the solution of the Shanghai embroglio, a scheme which will place this great and important city beyond the danger of such things as happened in February, instead of sending their delegates to talk useless platitudes? It is obvious that in the circumstances the contending parties must find it extremely difficult to arrive at a mutually satisfactory solution to the problem: they are altogether too resentful and suspicious of each other. Unless something is done and done quickly further hostilities seem inevitable, and what will happen if the Chinese and Japanese commence fighting again in this area it is impossible to foretell.

Surely it is time to stop fiddling and fuddling and instead to set about finding a sane and lasting solution of the Shanghai problem, a problem the solution of which will provide the key to the far greater problem of international relationships throughout the world?



ANCIENT CHINESE JADES

BY

K. C. WONG

KANG-MAO 剛卯 (JADE PENDANT SEAL)

Kang-mao are jade articles of the Han Dynasty. Fu Chien (服虔) in his note to the biography of Wang Mang (王莽) in the Annals of the Han Dynasty said, "A *kang-mao* is worn on the day of *mao* (卯) in the first month of the year. It is eight *tsun* (寸) long, one *tsun* broad and one *tsun* thick in the shape of a hexahedron. It is made of jade or gold or sometimes peach-wood and is usually worn on a leather belt."

Tsin Shao (晉灼) said :

"A *kang-mao* is a solid of four equal rectangular faces and two equal square bases of the dimensions of 1-inch by $\frac{1}{2}$ -inch by $\frac{1}{2}$ -inch (Chinese inch or *tsun*, 寸) with a hole bored through at the centre from the top to the bottom to admit of the passage of a cord by means of which it is worn. From the end of the cord hangs a variegated silk tassel as an ornament at the bottom of the *kang-mao*. On its four faces appears the inscription

莫	庶	以	帝	四	赤	靈	剛
我	疫	教	令	色	青	爰	卯
敢	剛	夔	祝	是	白	四	既
當	瘴	龍	融	當	黃	方	央

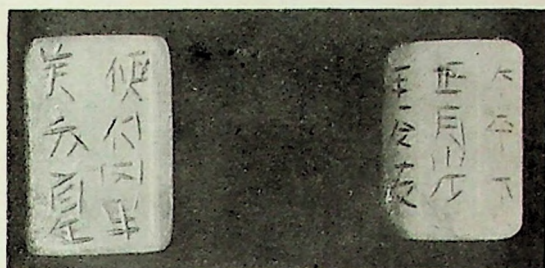
in eight columns (two on each face) serving as a charm to ward off evil spirits and dangerous epidemics. Another inscription which reads

莫	庶	既	既	化	順	帝	疾
我	疫	觚	正	茲	爾	命	日
敢	剛	既	既	靈	固	夔	嚴
當	癉	方	直	爰	伏	化	卯

is found on articles of a similar nature."

Yen Shih-ku (顏師古) says, "Jade *kang-mao* have frequently been dug out from the earth in recent days." According to the above mentioned sizes and inscriptions Fu Chien's statement is correct; but Wu Ta-cheng says that Tsin Shao's words are more reliable. Kao Szu Sun's (高似孫) synopsis (緯畧) says, "Chen Chien-chai (陳簡齋) used a jade *kang-mao* as a birthday present to Shang Hsiang-lin (向薌林). A *kang-mao* is a pendant-seal. It has a quadrangular exterior and a cylindrical interior. An inscription is engraved upon it on the day of *mao* (卯) of the first month of the year in order to keep off evil spirits and dangerous and contagious diseases." It is fully explained in the biography of Wang Mang.

According to the Yu Fu Chih (輿服志) of the later Han Dynasty, the people of Han adopted the decoration style of the Tsing (秦) Dynasty and used the *shuang-yin* (雙印) or double seal (another name for *kang-mao*) as additional sword ornaments. It further says "A *shuang-yin* is a solid with four equal rectangular faces and two equal square base-being $1\frac{1}{2}$ *tsun* long, $\frac{3}{4}$ *tsun* broad and $\frac{3}{4}$ *tsun* thick. The *shuang-yin* for emperors, feudal princes and nobles when riding in carriages were of white jade, for officials whose salaries ranged from two thousand to four hundred *shih* (piculs) of rice a year were of rhinoceros horn and for officers receiving two hundred *shih* (piculs) of rice a year as well as for students of private schools were of ivory, all being equipped with silk. The *shuang-yin* of inferior officers and students were equipped with bead-laces and red woollen tassels, while those of the emperors and feudal princes were equipped with silk cords and red silk tassels. The using of the bead-laces or silk cords for equipping these articles depended on the materials of which they were made. A *shuang-yin* was engraved with the same inscription as the *kang-mao*.



Examples of Ancient Jade Pendant
Seals of the Han Dynasty known
as K'ung-mao (剛卯).



ON THE MAKING OF A MÄRCHEN CHINESE VARIANTS

BY

R. D. JAMESON

Tales about persecuted queens have stimulated the imaginations of story tellers in all ages, in many countries and in almost all cultural complexes. The heroines of these tales are young, beautiful, chaste and possessed of all the domestic, social and religious virtues. They are married to commendably faithful but unfortunately stupid husbands. They are not properly appreciated. The crimes of which they are accused are various and revolting: that they are the mothers of monsters, that they murder and devour their own children . . . and these accusations are all false. Sometimes the husband refuses to believe the first or second accusation, but finally he is convinced. Sometimes he sends his wife into exile where she is again falsely accused of terrible crimes; sometimes he orders her to be burned at the stake. Modern research has not done justice to these unfortunate women who have a talent for being accused of crimes of which they are innocent. As the homicidal maniac thrives on murder, these heroines born to "thralldom and penance" whose pale faces should bring compassion to even the hardest of hearts find fullest scope for their talents only in suffering. Theirs is a masochism with a difference. After many years and many adventures they are reinstated, usually by their children who have accompanied them.

Queen Constance in Chaucer's "Man of Law's Tale" is one of this sisterhood. At the time that Chaucer was recounting her adventures—or a few years later or a few years earlier—Gower was meditating on her life.* She is a familiar figure in märchen† legend and drama.‡ She appeared in China in approximately the same period that her popularity in Europe was at its height.

Where poets lead scholars follow. The particular problems that have exercised academic intelligence are the problem of collection and classification—generally in terms of morphology and source—of the variants of this tale§ and the problem of explaining, frequently in terms

**Confessio Amantis*, ed. R. Pauli (London, 1857) I, 179ff.

†cf "Marienkind," "Aschenputtel," "Die Sechs Schwäne" and in Aarne's index the variants listed under "Treue und Unschuld" (*Typenverzeichnis*, FFC No. 3, 1911) as well as bibliographical references below.

‡Perhaps the best known dramatic versions are Shakespear's Hermione in *The Winter's Tale* and the Flemish play *Esmoreit* recently translated by Harry Morgan Ayres under the title *An Ingenious Play of Esmoreit, the King's Son of Sicily* (The Hague, 1924).

§Much of the Occidental material has been discussed in the following publications: P. O. Backström, *Svenska folkböcker* (2 vol., Stockholm, 1845-1848) Vol. I, pp. 221ff in notes on "Helena Antonia of Constantinople" with particular reference to the relations between Trivet's version ("Life of Constance") and Chaucer; de Puymaigre's article, "La Fille aux Mains Coupées" (*Reb. de l'Hist. des Religions* (1884) X, 193-208) assembles folktales in which the heroine flees from a father who

of the obsolescent customs of savage peoples, the extraordinary crimes of which the queens stand accused. Unfortunately the Chinese versions have received very little of the attention of Western scholars and the Western versions have received, so far as I know, no more attention from Chinese scholars. The purpose of this paper is to survey only one small series of Chinese variants to this story of the persecuted queen, and to articulate these with a few of the more important variants in *märchen* in the hope that some light may be thrown on the genesis of this formula in particular and on the problems of comparative folklore in general.*

1

One group of Chinese variants was studied by Dr. Hu Shih in an article which appeared in two numbers of the *Contemporary Review*.† Dr. Hu's purpose was to show that popular tales are not reliable guides for the historian because they show the influence of popular emotion in the appraisal of character. In this article Dr. Hu traces the development of the formula from a fairly well authenticated series of historical events in the Sung Dynasty through novels, plays and stories to a clear example of the *märchen* type in the Ch'ing Dynasty. This development from history to romance may throw enough illumination on the problem to suggest that the interpretations offered by Western scholars may not be necessary in explaining the motifs found in the European variants.

The Material on which Dr. Hu reports is found in :

Official History of the Sung Dynasty, 宋史, Sung Shih.

Mo Chi 默記, Anecdotes of the Sung Dynasty.

Drama of the Yuan Dynasty, 元無名氏作“李美人御苑
拾彈丸,金水橋陳琳抱粧盒”雜劇

wishes to marry her. Suchier, in his preface to “*La Manekine of Beaumanoir* (pub. by *Soc. des Anc. Textes Franc.* in 1884) studies the cycle of the incestuous father, exile and accusation by the exchanged letter. Gough traced the Constance Saga to an hypothetical Anglian folk-tale of the tenth century or earlier. (See his “On the Constance Saga” in *Palaestra* (1902) Vol. XXXIII). In the same year a similar study was produced by Siefkin, *Der Konstanze-æriseldis-typus in der Eng. Lit. bis auf Shakspier* which was followed in 1903 by his *Das Geduldige Weib in der Eng. Lit.* In 1903 Stefanovic added many Slavonic parallels to those already known in his discussions of the Florence de Rome type in *Anglia* (XXXV, 483) and *Rom. Forsch.* (XXIX, 461). A careful survey was made by Edith Rickert in her edition of *Emar* in 1906. The most careful recent study is Margaret Schlauch's *Chaucer's and Accused Queens*, New York, 1927—see *infra* pp. 21 ff. Further references are to be found in Johannes Bolts and George Polivka, *Anmerkungen zu den Kinder U. Hausmärchen der Brüder Grimm* (3 vols. 1913-1918), Aarne's *Typpenverzeichnis* (*Supra* p. 2, n. 2) and M. R. Cox's *Cinderella* (London, 1893) *passim*.

*This strict limitation is due to the difficulty of properly checking non-Chinese material in a city where the necessary reference books are not available. In view of the fact that opportunity of presenting the notes I have collected may not arise again for several years it has seemed better to present them in their present inadequate form than to suppress them entirely.

†Nos. 14 and 15, March 14, and March 21, 1925. The Chinese name of the *Contemporary Review* is 現代評論, *Hsien Tai P'ing Lun*. For translation of this article and for much additional information I am indebted to Messers Shui Tien Tung 水天同 and Lü Pao Tung 呂寶東. Mr. Lü has been kind enough to collaborate with me in the preparation of this MSS.

ON THE MAKING OF A MARCHEN, CHINESE VARIANTS

Novel of the Ming Dynasty, 包公案, Pao Kung An.

Popular Novel of the Ch'ing Dynasty, 三俠五義, San Hsia Wu I.

The historical facts to which Dr. Hu gives a somewhat guarded assent are in the Official History of the Sung Dynasty* (宋史, Sung Shih). They are (1) The Sung Emperor Chen Tsung (真宗) (998-1022) has in his household the Empress Chang Hsien (章獻) and the usual complement of concubines and ladies in waiting. Among the latter is one who later became Li Ch'ên Fei (李宸妃), silent, composed and well spoken of. (2) She becomes the Emperor's favourite. (3) During the period of her pregnancy she walks with the Emperor on a platform in the garden. A jade ornament falls as they are still there. (4) She fears that this is an evil omen, but the Emperor makes a secret resolution in his cart that if the ornament is not broken in the fall she will bear him a son, and it is not broken. (5) The son Jen Tsung (仁宗) is born. (6) He is adopted by the Empress Chang Hsien (章獻), and is educated by the concubine Yang Shu Fei (楊淑妃). (7) His blood mother, Li Ch'ên Fei, is assigned to a separate dwelling, and (8) on his accession to the throne takes her place as court lady, but (9) without any particular title or distinction. (10) The Empress Chang Hsien rules the court and terrorises it. (11) The Emperor is ignorant of the identity of his blood mother. (12) Shortly before his mother dies she is elevated in rank. (13) The Empress wishes to give her an inferior burial, less than that due a lady in the court. (14) She is opposed by the prime minister. (15) The Emperor was present at the discussion but was led away by the Empress. (16) When the interview is resumed, the Empress Liu reminds the prime minister that Li Ch'ên Fei is only a common woman and should have only a common burial. (17) The prime minister insists that it is his duty to carry out the proper rites and that the welfare of the dynasty depends on offering the proper honour to Li Ch'ên Fei. (18) She is buried in the robes of a queen and the coffin is filled with mercury to preserve the body. "This must be done so that it will not be said later that I have not thought of it." (19) When the Empress dies the Emperor is told the facts of his maternity, and (20) that his mother had died by violence. (21) He goes into deep mourning for his true mother, attends to no business for several days, in a public proclamation he accuses himself of unfilial conduct and raises his mother to the rank of queen with posthumous titles of honour. (22) He goes to her tomb to perform ceremonies, (23) has the coffin opened and discovers that she did not die by violence. (24) He then treats the family of the Empress Liu better than before.

These facts are rehearsed with two significant changes in another Sung book, the Mo Chi (默記), an unofficial collection of anecdotes. The changes are (Official History, 19) that the emperor is told the truth about his maternity in order to *keep him from excessive grief at the death of the dowager*. (Official History 20) Pending investigation of the circumstances of his blood mother's death, he sends soldiers to the home of the dowager's

*To be referred to hereafter as *Official History* with the episodes numbered as below.

family and, as in the 24th episode above, these are withdrawn when the dowager's innocence is demonstrated. In addition to these particular changes the *Mo Chi* makes it clear that the court feared the power and jealousy of the dowager and was generally unfriendly towards her. The *Mo Chi* records other incidents of the period which seem to be as dramatic and novelistic as those just mentioned. They were not included in the subsequent development of the tale.

The historical matrix here presented is suitable for the development of the theme under discussion. An inferior woman of excellent character, good reputation, perhaps, since she attracted the attention of the Emperor, some beauty, and therefore certainly great virtue, becomes the mother of a male child designated as the heir. The chief queen takes charge of the child and the inferior woman is not accorded the honour which she might have expected. The incidents reflect the social organization of that and most other times; and no hypothesis of primitive survival, racial memory or matriarchal society is necessary to understand the forces in this situation. In all societies the woman who becomes mother to the heir enjoys rights and privileges; when she becomes dowager she exercises a power which is eagerly coveted in all societies whether polygamous and Chinese or monogamous and Occidental. The use of this power arouses resentment. The Empress was within her rights in her discussion with the prime minister. Her insistence that an inferior woman should not receive ceremonious burial, particularly since she was not officially and legally recognized as the mother of the Emperor, was as well justified as the prime minister's insistence that the actual blood mother of the Emperor should be buried with the greatest honours. Then ethical problems involved are profound and the conflict between Empress and minister is the kind which the Chinese historian—more interested in morals than history—loves to present.

Two other facts in the historical account may be worthy of note. First, the name of the person who accused the old Empress of murdering the Emperor's mother is not recorded or at any rate not emphasized. The source of the accusation remains for the moment in the air—to be caught presently by feeling and to be attached properly. Second, the innocent and accused woman is, for the moment, the old Empress. With a surprising neatness the official account has supplied us with all the elements, even the false accusation of foul play. And yet, though official historians are by nature apologists, Dr. Hu sees no reason to question the general historicity of the historical account. Even the incident of the jade ornament, which Dr. Hu regards as the intrusion of folklore into an otherwise adequate account, is not necessarily to be rejected. Prospective parents of the twentieth and other centuries have been known to seek by pretty games which were taken more or less seriously advance information as to the sex of their unborn children. When the prognostication proves true, it is repeated, remembered and recorded; when false, it is forgotten. Although for the later development of the story it is comparatively unimportant except that it shows how feeling symbolizes itself in incident—there seems no sound reason to reject it. Even in the historical matrix which Dr. Hu accepts the plain sense (rights and privileges

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of the heir's mother are exercised by another) and the feeling (resentment against the Empress for her exercise of this power) are both fertile for future development.

2

In a short anonymous play of the Yuan Dynasty the feeling of antagonism toward the dowager mother makes her villainy appear greater.* (1) The Emperor Chen Tsung following the advice of his official fortune teller makes a gold pellet which he shoots toward the south-east. He tells his six consorts to find it and announces that the finder will become mother of the prince. (2) Li Ch'ên Fei finds it and the Emperor visits her in her apartments. (3) She becomes mother of a son. (4) The Empress orders her serving woman K'ou Ch'êng Yü (寇承御) to steal the child and kill it. (5) The prince is enveloped in a purple and red fog, sign of future greatness. (6) K'ou asks the advice of an eunuch of high rank. (7) The child is put into a box used for cosmetics and the eunuch attempts to smuggle it out of the palace. (8) He is met by the Empress who asks about the contents of the box and is about to lift the lid when she is called by the Emperor. (9) The child is put in the care of Pa Ta Wang (八大王), an influential courtier. (10) When the child is grown Pa Ta Wang brings him to audience with his father the Emperor. (11) The Empress recognizes his resemblance to his mother Li. (12) She tortures her serving woman K'ou who commits suicide but does not reveal her secret. (13) When the Emperor is about to die he designates as his heir the twelfth son of Pa Ta Wang, and this happens to be his own son by Li. (14) The young man discovers the identity of his mother, and (15) although both she and the Empress are alive he makes no attempt to punish the Empress. (16) He changes his mother's apartments, gives her additional titles and visits her daily.

As Dr. Hu points out the changes are significant. The incident of the jade ornament (Official History 3, 4) becomes the incident of the pellet (Yuan Play 1, 2). Prognostication of the sex of the unborn child becomes prognostication of the mother of the child. This kind of incident, in one form or another, is common to all peoples, its meaning is not difficult to understand. It is not unusual for lovers to conclude that the chance of their discovery is manifest destiny; nor is it unusual for the general public to meditate on the reasons why a desirable man should choose an undistinguished mate, and certainly young people of all periods and cultural complexes have devices whereby they attempt to discover the identity of their future mates. The incident partakes of magic, but it derives from a state of mind which differs very little from modern autistic thinking. If it is regarded as a survival from earlier cultural states, the term survival needs redefinition.

The light and fog about the prince in the Yuan play are another example of symbolization or wish thinking,† and the world would be a

*Pao Chuan Ho, 抱粧盒, see (3) hereafter referred to as "Yuan Play."

†Cf. Mat. II, 2; Luke II, 9. For general discussion of the motif see Prato, *Zs. f. Volk skunde* V, 376; VI, 28, and R. Köhler, *Aufsätze über Märchen und Volkshieder* (Berlin, 1894) and *Kleinere Schriften* (Weimar, 1898-1900). Bolte and Polivka, *op. cit.* II, 393, have other suggestions.

sad place if parents and disciples could not discover signs of greatness gleaming in the faces of their children and masters. Both of these incidents show the effects of the feeling already noted in the matrix, resentment against Liu whose manifest destiny deprived her of her chances of becoming mother of the heir, and sympathy for Li whose child bears upon him marks of greatness. Feeling also controls the other additions, namely, the faithful servant K'ou who saves the prince and dies rather than confess her action, the official who smuggles the prince out of the palace and the added incident of his narrow escape from discovery, obviously an old trick from the story teller's bag. The pathetic figure in this version is the maid K'ou, a substitute for the mother Li. But the fantasy ceases abruptly. The wicked Liu is not punished and the sufferings of K'ou are unavenged. The play ends with the elevation of Li to her rightful position.

3

In the *Pao Kung An* (包公案), a collection of tales about the popular hero Pao Kung, further changes appear. (1) Pao Kung, returning from famine relief, stops at a village where the people bring him many difficult cases for judgment and solution. (2) A poor blind woman who lives miserably in a deserted brick kiln announces to him that she is Li Fei (李妃) and tells the following story: (3) Li Fei bore a son and Liu Fei a daughter. (4) The official in charge of the palaces changed the children and gave Li's son to Liu and Liu's daughter to Li. (5) Li Fei, grieved at having born a daughter, accidentally killed the child. (6) She was wrongly and unjustly imprisoned. (7) A gardener employed in the palaces knew the facts and attempted to report to the Emperor. (8) Liu killed him and his entire family of eighteen persons. (9) When the child became Emperor he freed all prisoners, and (10) Li became the beggar she now is. (11) She substantiates her account by reference to the magic characters which were on the palm of the newly born infant. (See Yuan Play 5). (12) Pao Kung and the Emperor investigate. (13) Liu's accomplice denies the charge in spite of torture (See Yuan Play 12). (14) Pao Kung and the Emperor disguise themselves as the Recorder and the Judge of Hell and appear before the accomplice, who, thinking he has died, confesses his crimes. (15) Li is brought to the palace and raised to her rightful position. (16) The Emperor wishes to boil Liu and her accomplice in oil, but, on representations made by Pao Kung, modifies his sentence to the execution of the accomplice. (17) The Empress is given a piece of white cloth with which she is permitted to hang herself.

This version is obviously the story of the persecuted queen. Li is falsely accused and suffers imprisonment and separation from her son, she becomes a blind beggar and is finally restored to her rightful position as mother of the Emperor. Her persecutor is Liu, her powerful rival. The faithful gardener and Pao Kung are added. The gardener and Liu's accomplice who denies the charge under torture are both related in feeling to K'ou, the faithful servant in the Yuan play (see Yuan Play 12). Pao Kung is the hero of a cycle of tales which has in this instance absorbed the formula of the persecuted queen. Thus the masquerade whereby the

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guilty are made to confess, a device known in many countries, Hamlet, for example, may be left with the cycle of Pao Kung rather than the cycle of the persecuted queens where it is intrusive. Finally, Li's child is not stolen, it is interchanged with the daughter of Liu.

In the *San Hsia Wu I* (三俠五義), a popular collection of the Ch'ing Dynasty, the formula appears in a more complete form. (1) An astrologer reports to the Emperor that the stars betoken great harm to the prospective prince. (2) Both Liu, the Empress, and Li the concubine have conceived. (3) The Emperor gives each of them the following amulets: a jade seal with a silk embroidered cloth, a golden pellet containing a pearl engraved with the owner's name. (4) Li bears a son, and (5) Liu plots with an accomplice to kill and skin a cat which is to be substituted (6) for the son of Li. (7) This son is to be abducted and murdered. (8) The maid consults with an official, (9) puts the child in a box, and (10) barely escapes discovery as she smuggles him out of the palace. (11) The prince is reared as the third son of Pa Ta Wang (八大王.) (12) Li is imprisoned for having born a monster and Liu's son, born later, becomes the heir apparent. (13) After the death of the Liu apparent the Emperor designates Pa Ta Wang's third son, really his own son, as his successor. (14) This young man passes his mother's prison, pities her and begs for her release. (15) Liu tortures the maid K'ou who kills herself, and (16) informs the Emperor that the misfortunes of his reign were due to the evil curse put on him by Li. (17) The Emperor sends Li a cloth to hang herself, (18) a eunuch dies in her place, and (19) she escapes from prison. (20) She becomes a blind beggar, (21) tells her story to Pao Kung (包公), (22) offering the amulets as proof. (23) Pao Kung's wife cures Li's eyes by magic and tells the story to Pa Ta Wang's wife, who tells it to the Emperor. Pao Kung investigates further, (24) Liu's accomplice refuses to confess, and (25) the masquerade of the infernal regions is performed with success. (25) The claims of Li are admitted. (27) She is restored to her rightful position. (28) Liu Fei is ill, and (29) dies on hearing that her crimes have been discovered.

4

An incomplete examination of incidents in Märchen which may be considered similar to those just described has brought to light between 300 and 400 variants* with a geographical distribution which reaches from China and the Sino-Siberian border westward across Mongolia, Siberia, India and Arabia into Europe and on to Louisiana in North America; and from Iceland in the north into equatorial Africa. That other territories are not represented is due probably to the incompleteness of my collections rather than to the absence of the incidents. For the moment, the 300 odd variants in the wide distribution which can be demonstrated for them may serve as a sufficient basis for an inquiry into the meaning of the tale and its provenance.

*Statistics of this kind are unreliable as it is difficult to determine when two versions become two variants, particularly in those districts where bilingualism is common.

These incidents, persecution of an innocent queen and mother with final restitution, are frequently found in the variants of five Märchen published by the Grimms under the titles "Marienkind," "Die Zwölf Brüder," "Sechs Schwäne," and "Die Drei Vügelkins." As will be shown presently "Brüderchen und Schwesterchen" probably belongs to this group. The incidents of the persecuted queen's formula which are sometimes attached to Cinderella may be disregarded for the moment* as they seem to have been taken from the groups mentioned above.

The relevant portions of these formulæ are as follows :

Marienkind. After an introduction, which will be examined presently, a prince decides to marry the heroine against the wishes of his mother. The mother-in-law drowns the first three children, sprinkles the heroine with blood and accuses her of infanticide and cannibalism. The prince refuses to believe the charge at first, but is finally convinced. As she is about to be burned, she is rescued by a mysterious stranger.

The mother-in-law, rather than the first wife, is here the persecutor ; the heroine is accused of infanticide and cannibalism rather than infanticide (Pao Kung An, 5 and 6) or monstrous birth, (San Hsia 5 and 6) but both accusations are false. The mother is separated from her child and suffers almost to the point of death before she is saved. The person of the persecutor is not fixed. In some variants it is a black lady, a virgin, a mysterious man in a grey cloak, or a father with incestuous desires. The persons of the persecutors change, but the sufferings of the heroine remain similar.

Six Swans. A different introduction merges into a similar arrangement of events. Again the heroine is married by a prince. Her sufferings are frequently, though not always, caused by her mother-in-law. In typical versions the children are born while the prince is away at the wars ; an evil person steals the letter which announces the good news and substitutes for it one asserting that the Princess has born monsters (San Hsia 5 and 6). Persecution, suffering and rescue follow as in "Marienkind." Both the "Six Swans" and "Marienkind" became popular in the twelfth century.†

The similarities between this story of the "Six Swans" and the stories of the "Seven Ravens" and the "Twelve Brothers" are so great that they might all three be considered as sub-groups in a large family. In "Twelve Brothers" the sufferings of the heroine undergo some modification in that the incident of the substituted bride is frequently introduced to replace the charge of infanticide, cannibalism or monstrous birth. The variants in which this occurs fall somewhat beyond the limits of the

*When Cinderella becomes queen she takes her step-mother and step-sisters into her service. They attempt to destroy her children and her, but their plans are frustrated.

†Cf. *Vita Offae*, Grüner's dissertation, *Mathei Parisiensis Vitae duarum Offarum*, München, 1907 ; and *Dolopathos* produced about 1190 and frequently discussed as G. Paris, *Romania* II, 490 ; XIX, 324 ; W. Müller, *Germania* I, 420, 425 ; and generally V. Chauvin, *Bibliographie des ouvrages arabes ou relatifs aux Arabes* (Liège, 1892-1909) VIII, 206 and F.H. v.d. Hagen's discussion of the märchen in the *Abhandlungen der Berliner Akademie* (1846).

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present inquiry, although their significance must be noted in passing. The motif of the substituted bride explains that on her wedding day the heroine is hidden away and her place is taken by another who rules in her stead. After a considerable amount of suffering she is restored to her rightful position. The similarity between this and the Chinese group is that the rights and privileges which the concubine Li might have exercised are usurped by the Empress Liu.

Die Drei Vügelkins presents a somewhat different formula. An inferior woman becomes queen. Jealous sisters, mother-in-law, or others kidnap the children and sometimes substitute dead animals in their places. The mother is imprisoned or banished and suffers greatly. The children, miraculously saved, bring about the restitution. In many variants there are three children. Two brothers set out to find magic objects, are petrified and rescued by the sister, who fetches the objects and restores her family.

5.

In the *San Hsia Wu I* and the *Pao Kung An*, the mother, Li, undergoes two cycles of suffering. The arc of feeling first deprives her of her children and imprisons her and then drives her out into the world as a beggar woman. This duplication of suffering in the Chinese versions may be due to a fusing of two versions, but the fact that the heroines of the märchen also undergo two cycles of suffering is not without significance.

An examination of the introductory matter in the folk tale shows that here also there are two cycles of suffering.

Marienkind: An impoverished father has sold his daughter to a mysterious stranger. When nubile she enters the stranger's service, violates a tabu, in many cases is punished by loss of speech, and is sent out into the world. A prince marries her. The story proceeds to the theme of persecution.

Twelve Brothers, Six Swans, Seven Ravens: The girl's brothers come under a spell, in some instances by an innocent action of hers. She can remove the spell only if she maintains silence for a long period of time. During this period a prince marries her and the story takes up the theme of persecution.

Drei Vügelkins: A king overhears three sisters boasting about what they will do for their husbands, (or what marvellous children they would bear for the king). A king marries one. The other sisters kidnap the children, and the mother is falsely accused. The children are saved by the kindness of servants, and the mother is imprisoned. Children seek magic objects. Brothers are petrified. Sister removes spell from the brothers, gets the objects and restores the mother.

Little Brother and Little Sister: A step mother casts a spells over little brother. Sister becomes the king's bride, but is set aside on the way to the wedding or while in childbed. Brother is mistreated. Usually the wicked are punished.

In each of these, the two cycles of suffering are distinct, and in most variants the first cycle helps to explain why the heroine is unable to defend

herself when persecuted. The first cycle of suffering is being sold into bondage (Marienkind) or at the misfortunes of the brothers (Swans, Ravens and Brothers) or under the wicked step-mother. The second cycle of sorrow comes from the persecutions by enemies or in the substitution of another for herself (Brother and Sister).

6.

Several possibilities must be faced in an attempt to estimate the folkloristic and literary significance of the Chinese account when that account is articulated with the folk tale. The most obvious of these is the probability that the author of one of the versions here discussed knew the folk tale, and that the historical material of the Official History was bent to fit the popular formula. Similar situations are not infrequent, and it is a commonplace of folklore that the formula of a legend shows greater rigidity than the name of the hero or the place of his adventures. Identical legends are attached to many different characters in widely separated districts.*

However, when the Chinese variants are re-examined, a difficulty arises. Each of these variants seems to have arisen directly out of the others. There seems to be no point at which we can say that the folk-formula entered and took possession of the historical facts. The *History* and the *Mo Chi* present a matrix, but there is as yet no persecution of the concubine Li. In the Yuan play, Li's persecution is only her separation from her son. Accusation and imprisonment are lacking. Had there been no later versions this story would have been about the tyranny of Liu and not about the persecution of Li. The *Pao Kung An* raises several points of interest. Li's child is kidnapped, but she receives another in its place, the child of the Empress which she thinks is her own. She is imprisoned for having murdered her child, whereas she had killed the child by accident. Manslaughter, not murder should have been the charge. There is no reason to believe that the author of the *Pao Kung An* was following the popular formula, and, even if he knew the formula, its influence on his work was not great. The *San Hsia Wu I* develops suggestions from the earlier versions. Although the substitution of the skinned cat for the concubine's child are of and from the formula, it is obvious that if the author is using only the one child in his tale and that child is to be kidnapped, some way out must be found. The cat and accusation of monstrous birth suit the situation as they give opportunity to direct attention towards the sufferings of Li which are in contrast with the wickedness of Liu. Again the suggestion arises that if the popular formula had been the strongest factor in the development of these plots, the plots would show more signs of influence than they do.

The quality of the adventures in the oriental versions of the folk tale is markedly different from the quality felt in the versions Dr. Hu has discussed.

A variant widely distributed among the Tartar stems is as follows : Three daughters driven out by their step-mother are taken into the house

*cf. Otto Boeckel, *Die Deutsche Volktrage* (2 neted, 1914) 3.

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of a Chan who marries the oldest. She bears a boy and a girl who have golden teeth and hair. The step-mother throws the children into the water, but the river god protects them and tells them of their origin. They return to the Chan.*

A Buriat version tells how the two elder wives throw the child of the younger wife into the sea. The third child is hidden in the arms of the mother who substitutes a dog for it. Mother and child are saved. He soon gets magic objects and rediscovers his brothers.†

In the Mongol version a Chan marries three sisters. The youngest is buried alive at the cross roads because the others had substituted dogs for her twin children. Boy wins a virgin who brings his dead mother back to life.‡

The Karagass of the Sino-Siberian border are said to recount that when God wandered on earth he wished to marry one of three sisters. He kills the two dogs that were substituted for his wife's first two children and sews the wife and the third child into a cowskin and throws them into the sea. The child finds its brothers. Incomplete.§

Although the possibility that the historical material was influenced by the folk tale cannot be ruled out until many more thousands of Chinese märchen than we now have have been collected and studied, there seems to be no direct connection between the folk variants now available and the literary variants under examination. If the influence was felt it was felt in an indirect fashion.

In the Chinese variants, the feeling against the Empress, foreshadowed in the historical matrix, blows with increasing force through all the later developments. This fact may have significance in an examination of the meaning of the tale.

7.

Another possible interpretation of the theme of persecuted queens is found in Dr. Schlauch's dissertation, *Chaucer's Constance and Accused Queens* (New York, 1927). Dr. Schlauch notes that the accusers in the tales are frequently mothers-in-law. Sometimes they are co-wives and at other times a father whose incestuous desires have been frustrated or a witch or a jealous person. The accusations are frequently of monstrous birth, infanticide, or infanticide with cannibalism. She notes the very wide distribution of these tales. She does not think that an African and an Icelandic variant influenced each other, yet "a common denominator exists between Chaucer and an African folk tale, perhaps the heritage of a similar past of half forgotten customs, superstitions and beliefs which dis-

**Sbornik materialov dlja opisaniya mestnostej i plemen Kavkaza* (1-29, Tiflis, 1881-1891) XXIII, 3, 28 no. 6. See XXXIII, p.28 where discussion of distribution among Tartars is to be found.

†M. N. Changelov, *Balagan kij Sbornik* (Toms, 1903) p. 152.

‡Count A. P. Bennigsen, *Legend i kazky centralnoj Azii* (St. Petersburg, 1912) p. 44, no. 28.

§Cf. Bolte and Polivka, *op. cit.* XXX, II, 390.

play a remarkable similarity the world over."* After an examination of a large number of märchen, Schlauch concludes that "the crimes and accusations become more significant when compared with the customs and beliefs current among so-called primitive peoples to-day."† Infanticide is understood and practiced in certain parts of the world. Animal birth, too, is the subject of sober belief. The royal mother-in-law "has an ancient and inherited hostility to the young wife who shares her son's affections." Husband's jealousy is conspicuously absent. Dr. Schlauch thinks that the evidence points to the origin of this formula in a particular kind of primitive culture, namely, matriarchy.

These tales, then, contain survivals of primitive customs "senescent or abandoned, perhaps, but not forgotten. And it is remarkable how long such customs with their cruel logic of life and death and causation survive in the tradition of more enlightened times. They undergo softening or modification, it is true, but their original form is clearly visible."‡

Not only does Dr. Schlauch suggest that the stories can be traced to an earlier state of culture, matriarchal in organization, but she thinks they may be placed in a time when matriarchy was being replaced by patriarchy. Although this applies largely to the group about the incestuous desires of the märchen king, it must, as the accusations seem to be indifferent to the introduction they follow, apply also to the other variants.§

At some later time it may be possible to determine the geographical area and the cultural period when this formula was first used.¶ For the present I am chiefly concerned with inquiring what light may be thrown on the Chinese variants by Dr. Schlauch's contention. This contention leads us to assume: first, that in a matriarchal cultural complex in some undefined area stories arose as statements of sober fact or as phantasies in which a daughter-in-law is persecuted by a mother-in-law eager to preserve her legal position; second, that at some later time other persecutors were substituted for the mother-in-law and other charges for the charges

*Schlauch, *op. cit.*, p. 8.

†*Ibid.*, p. 60.

‡Schlauch, *op. cit.*, p. 15.

§Schlauch, pp. 44-5.

¶Clouston's suggestion in *Burton's Supplementary Arabian Nights* (1887), III, p. 647, that the story of Padmatati may be the original of the entire series is open to objection. This story he took from Mitra, *Sanskrit Buddhist Literature of Nepal* (1882) p. 65. Padmavati bears twins for the king Brahmadata. Jealous co-wives throw the children into the river and tell the king that Padmavati had eaten them. She is condemned to death, but is saved by a sympathetic servant. The sons are raised by a fisherman and later are recognized by their father, who also recognizes his wife in a pilgrim to Benares. It would seem obvious that no adequate conjectures as to the geography or history of these phantasies can be of value until adequate surveys have been completed of the large dark territories of the märchen map. The work of the Finnish investigators offers valuable suggestions: Cf. Kaarle Krohn, *Die Folkloristische Arbeitsmethode* (Oslo, 1926) pp. 33ff., and particularly pp. 53-58 and the same author's "Mann und Fuchs" (*Commentationes der 250-jähr. eier der Hels. Univ.*, I x) pp. 42-47; also *Bär (Wolf) und Fuchs in Journal de la Soc. finno-ougrienne*, VI; A. Arne's investigations in the same journal, Vol. XXVII, 1911.

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of infanticide and cannibalism;* and third, that, when these stories arise in cultural complexes where the new persecutors (jealous co-wives) and the new charges (infanticide and monstrous birth) are credible, the stories either arise from the more primitive matriarchal tales or do not belong to the cycle; Fourth, when these stories are told in fourteenth century England where matriarchy, father-daughter incest, infanticide, cannibalism and monstrous birth are presumably no longer social amenities,† they show us "how long such cruel customs . . . survive in the traditions of more enlightened times."‡

In less than half of the folk versions and in none of the Chinese versions derived from the Sung history are there traces of the enmity of a mother-in-law or of cannibalism. Yet there is a strong affinity between the Chinese and the Western versions of the tale. This affinity is both morphological, in that the incidents of the Chinese versions agree closely with the incidents in many of the Western versions both in fact and in arrangement, and, to use a rough term, aesthetic in that the feeling in both groups is similar: for in both groups a charming and innocent lady is accused by jealous contemporaries of having committed a heinous crime against morality and society. She suffers greatly and is vindicated later by her own children or friends.

Emotions which might be translated as follows "I am a better person than I appear to be (grandiose)." "I am persecuted by people who are jealous of me (persecution)." "I shall be vindicated (self pity and grandeur)" seem to be central to the tale wherever it is found. The person of the persecutor and the nature of the persecution are irrelevant to the definition of the theme, and, *unless all variants are collected and compared*, can give us little information as to the provenance of the tale or its method of distribution. Charges and persecutors are the variant symbols whereby the feeling is made manifest. Many tales undoubtedly do preserve references to customs once alive in earlier forms of society, but even when these primitive survivals have been proved to exist, the task still remains of explaining how and why they should have survived. Mere similarity between episodes in folk-tales and the customs of backward peoples is not sufficient to prove that these customs are reminiscences of earlier cultures.

*However, "I do not mean to reduce the whole problem to a ridiculous simplicity by the statement of a dogma like this:

"A mother-in-law is a more primitive persecutor than an ambitious nephew; and

"The bearing of animals is a more primitive accusation than infidelity; but some such priority does become probable in the light of the *mächen* we have examined." Schlauch, *op. cit.* p. 61.

†To examine Dr. Schlauch's very slight anthropological evidence is probably unnecessary. In which matriarchal societies were male children killed and eaten? Where is father-daughter incest an amenity? When did it cease to become one in Europe and Asia? When it still occurs, as it does at times, in sophisticated cultures, is it to be considered as a survival from some earlier cultural complex? Is the knowledge that human beings bear monsters confined only to obstetricians? Is the enmity between a man's mother and his wife only an historic survival.

‡Schlauch, *op. cit.*, p. 15.

The hypothesis that the theme of the persecuted queen is a survival from a primitive social organization seems to break down on two counts: first, in that many of the variants of this theme do not preserve memories of primitive customs and there is no evidence to show whether these are older or younger than the variants which are supposed to preserve them; and second, there is no evidence to show by what mental process a large number of people, narrators and listeners, should have preserved their interest in customs, which, it is assumed, disappeared long before the stories were told.

8.

If it seems improbable that the Chinese variants under discussion were derived from the folk-tale, and if the hypothesis of primitive origin meets with difficulties, another approach may lead to a more adequate comprehension of this tale, and, by presenting the problem, serve to throw light on similar difficulties elsewhere. Inasmuch as the story of the persecuted queen is found in widely separated territories and among peoples whose interests show great diversity, *the factor which is common to all of its variants must be ubiquitous and must be part of the mentation of the people who tell and hear the story.*

It may or may not be a fact that many wives have been and still are persecuted by mothers-in-law or by jealous contemporaries, but it is a fact that many women permit themselves to believe that they are. This sense of persecution is not restricted to any geographical or cultural area. It is both more universal and more immediate than matriarchy or infanticide or cannibalism. Persecution in the extreme forms in which it is found in these tales is, one hopes, of rare occurrence in most cultures, but the phantasy of persecution is a commonplace of the psychiatric wards.

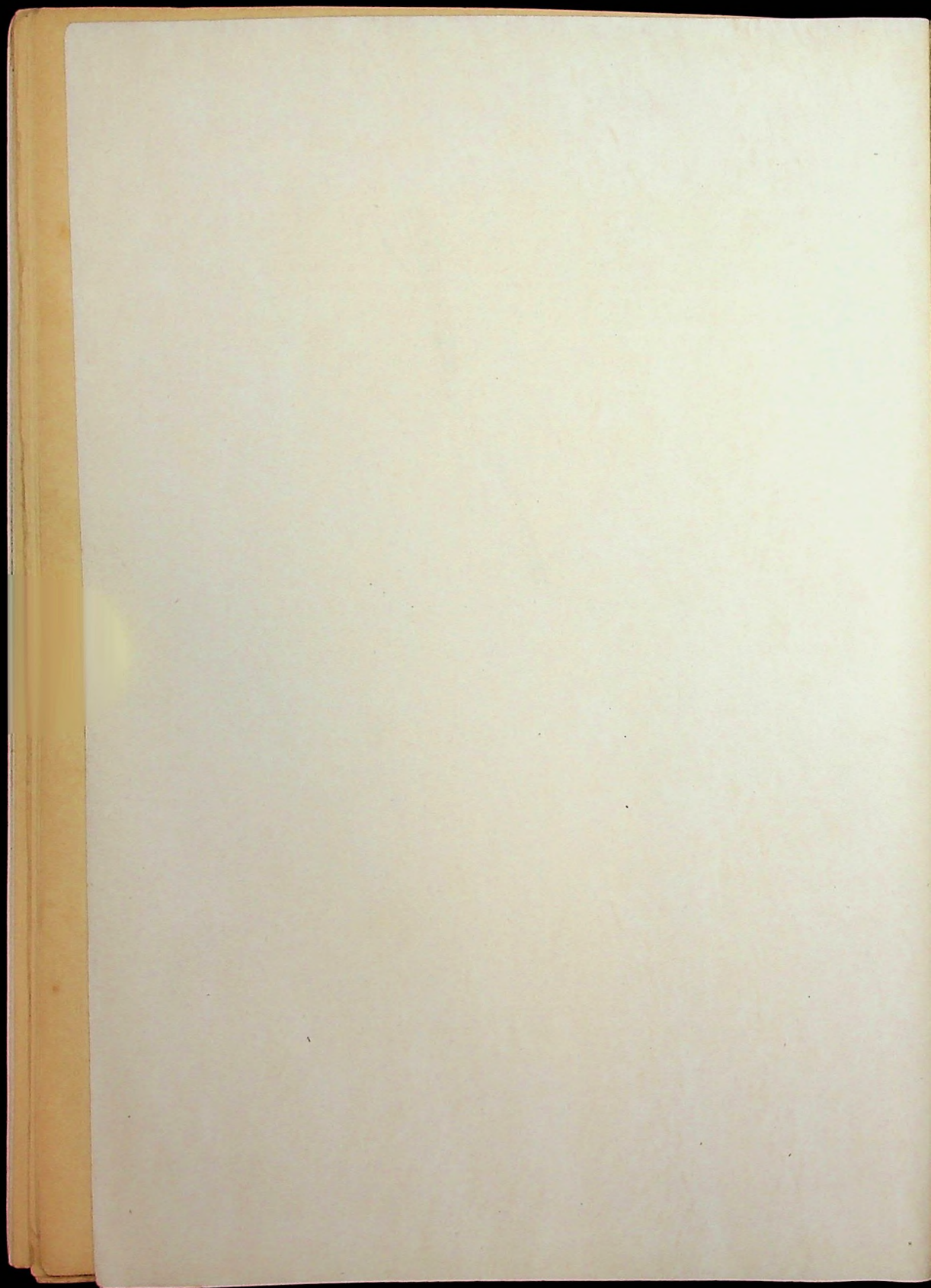
Although the relations between literary phantasy and mental pathology have been examined in some detail during the last twenty years, the experts disagree among themselves with such violence that their results are, thus far, of little service to folklore.* On a few points, however, there is general agreement. Few, for example, will dispute the general adequacy of MacCurdy's statement: "One of the major functions of art is to produce in the reader . . . a subtle emotional reaction. This is done by portraying a situation with which the subject identifies himself unwittingly."† Yet, if this is accepted, the study of the function and effectiveness of literature, which implies in itself the cause and effectiveness of it, becomes a psychological study. If regarded from this point of view the similarity between incidents in *märchen* and the imaginings of psychotics is not surprising. Indeed, the experience of literature—insofar as we identify ourselves as in narrative literature with the hero—

*I refer to the very broad statements of the kind found in Jung's *Psychology of the Unconscious*, Hinrichsen's *Zur Psychologie und Psychopathologie des Dichters*, Mordell's *Erotic Motive in Literature*, books which contain shrewd observations incompletely documented or warped to fit uncertain hypotheses.

†John T. MacCurdy, *The Psychology of Emotion, Morbid and Normal*, (London, 1925), p. 39.



The Village and Caves at Yun Kang, near Ta-t'ung Fu, North Shansi. From the Water Colour Sketch by Anna M. Hotchkis.



ON THE MAKING OF A MARCHEN, CHINESE VARIANTS

might be called a psychosis,* but it differs from the malignant psychoses in that the person who participates in it can with more or less ease leave the phantasy and return to the affairs of everyday life, in that it is better organized than most malignant psychoses, and in that it appears to be characterized by arcs of emotion.† In the story of the persecuted queen a marked similarity exists between the incidents of the folk-tale and a definite symptom complex, at present referred to by the term paranoia, most frequently found, I believe, in schizophrenics.‡ Any psychiatrist who was told by a female patient that she had been pursued by an incestuous father, that her father had sold her when a baby to a mysterious stranger, that she was the innocent cause of bringing a spell upon her brothers, that she had looked into a dark room and had seen something which she dared not speak of, or that she had been deprived of the power of speech by a malignant person, that she was a queen, that her children had been stolen from her by envious people, that she had been accused of infanticide, cannibalism, or of bearing monsters, would immediately suspect the existence of paranoia.§

The existence of the Chinese variants to the tale of the persecuted queen may be found to have significance in illustrating how in this case the literary imagination developed a series of events into a folk-tale. The constellation of ideas in the historical account generated a current of feeling in a person with a paranoid tendency or strengthened a current of feeling which was already present.¶ This feeling symbolized itself in the

*MacCurdy distinguishes between psychosis and insanity, in that "the latter is, strictly speaking, referring to the condition of one who is certified through legal procedure as being mentally incompetent. This implies serious disability, whereas psychosis being a medical term implies only the existence of a mental derangement, no matter how slight in degree." *Op. cit.* pp. 582-583.

†An article in preparation will examine the relation between the marchen theme and the emotional arc. In the Story of the persecuted queen the two arcs which may or may not be presented together are the introductory misfortunes of the heroine and her misfortunes as queen.

‡"Paranoia (Paranoid state): mental disease characterized by ideas of reference, i.e., misinterpretation of the actions of other people, and ascription to them of motives which they do not possess, such as *enmity towards the patient*, and so on." MacCurdy, *op. cit.*, p. 582 (Italics are mine). Kraepelin characterizes "paraphrenia systematica" as an "extremely insidious development of continually progressive delusions of persecution, to which are added later ideas of exaltation without decay of personality" (italics are his) Emil Kraepelin, *Dementia Praecox and Paraphrenia* (Edinburgh, 1919), p. 284. Jelliffe and White, *Diseases of the Nervous System* (Philadelphia and New York, 1919), p. 858 report that Bleuler is of the opinion that paranoia takes its origin in certain constellations of ideas or complexes and the dominant affect with which they are loaded, that these complexes are of precisely the same nature as are formed in healthy individuals and that the disease element which leads to the elaboration of a psychosis is the . . . inability to get away from it (the psychosis).

§If he should happen to be a Freudian psychiatrist of the extreme type, he would make great play with the erotic symbols—incestuous father, dark room, stupor and the like.

¶The questions of homo- and hetero-sexuality enter here in the identification of the reader with the queen, but lead further into psychology than I am at present ready to go.

incidents in the Yuan play. These symbols, as they approached more closely to the paranoid emotional complex typical of the persecuted queen, served to arouse stronger currents of feeling which found the symbols used in the *Pao Kung An*. The process may be generalized. A constellation of ideas or experiences arouses a feeling which symbolizes itself in incidents which transform the constellation. This transformation-increases or "steps up" the feeling. By a process of experimentation, and, under the control of inhibiting factors, the feeling and its symbolization assume typical or classical forms and a märchen or a märchen theme is established.

ART NOTES

THE CAVE TEMPLES OF YÜN KANG

At Yün Kan near Ta-t'ung Fu in North Shansi there are some remarkable cave temples containing numerous figures, both large and small, that were hewn out of the living rock away back in time of the Northern Wei Dynasty, which extended from 386 to 532 A. D.

The Northern Wei Dynasty had its capital at Ta-t'ung Fu, which was then called Tu-p'ing Ch'eng. Its Emperors were Toba Tartars, and they exercised sway over a very extensive area. This dynasty must not be confused with the earlier Wei Dynasty of the Three Kingdoms period, which lasted from 200 to 264 A.D., nor yet with the later Western and Eastern Wei Dynasties into which it divided, and which lasted from 535 to 554 A.D. and 534 to 543 A.D., respectively, being overcome by the Northern Ch'i and the Northern Chou.

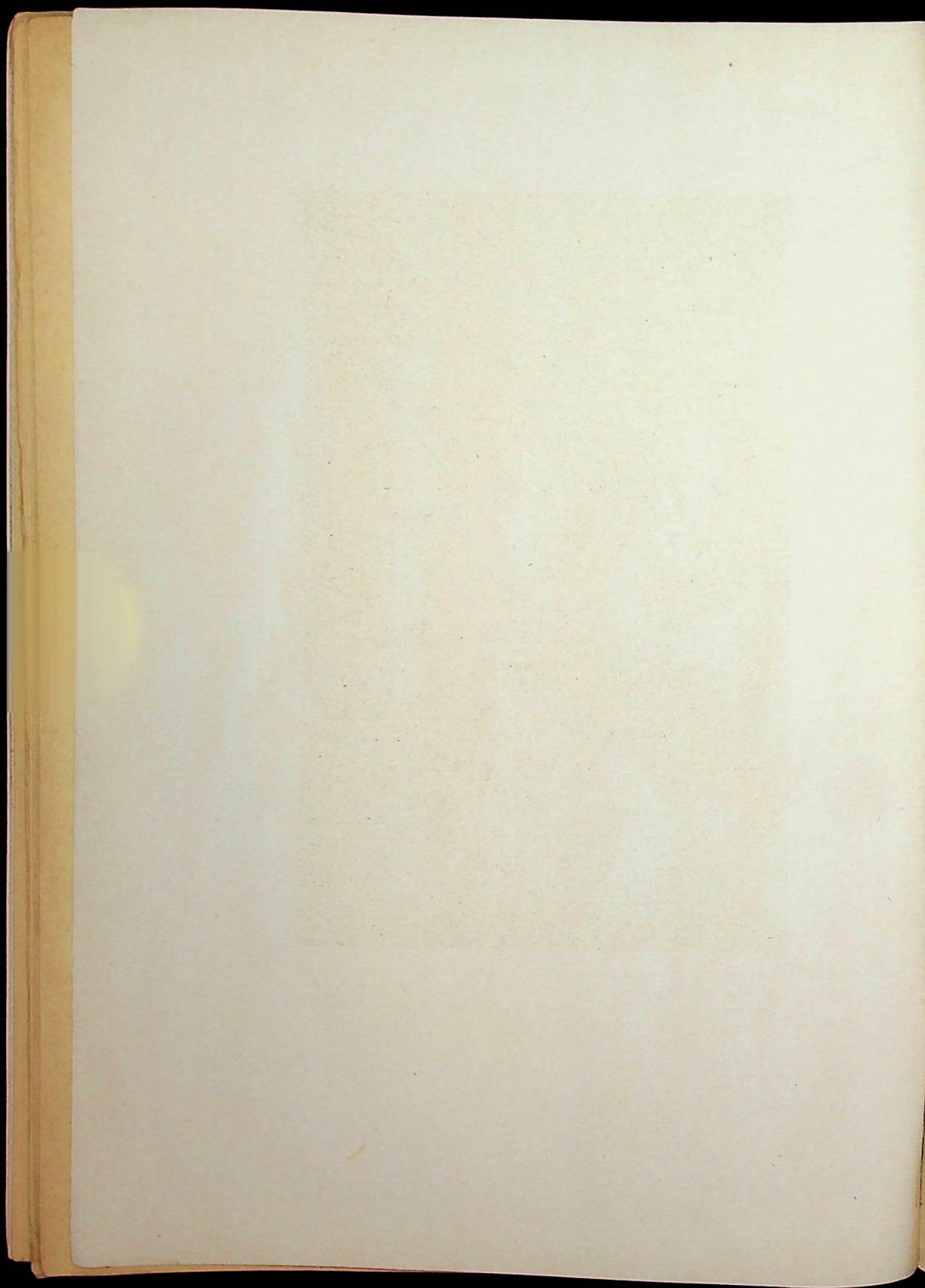
The Emperors of the Northern Wei were strong adherents to Buddhism, and they appear to have been the originators, as far as China is concerned, of the idea of excavating great cave temples and leaving images of Buddha and others carved in the solid rock. In fact these Yün Kang sculptures are the oldest examples of Buddhist art so far found in China. Besides those occurring at Yün Kang, some Northern Wei cave temples and stone colossi are to be found at Lung Men, or the Dragon Gate, a deep gorge in the mountains about ten miles south of Lo-yang (Ho-nan Fu) in the province of Honan. Subsequently, during the T'ang Dynasty (613-905 A.D.), further cave temples and stone Buddhas were excavated and carved at Lung Men, being followed in the Sung Dynasty (960-1126) by cave temples at such places as Yen-an Fu in North Shensi containing exquisitely carved figures.

Another place where similar beautiful stone carvings are found is T'ien-lung Shan in the mountains to the south-west of T'ai-yuan Fu in Shansi. The temples and sculptures of this locality date from 560 A.D. in the Northern Chou Dynasty well into the T'ang Dynasty. Yet other temples with these great sculptures of Buddha and his associates occur at Kung Hsien, T'o Shan and Yün Men Shan in Shantung.

The Emperors and Kings of these early dynasties ruling over various parts of what is now China have left behind them a wonderful heritage in stone, striking carvings of the Buddha and his attendants, telling subsequent generations of their magnificence and supplying the modern archaeologist and scholar with the key to the spread of the influence of Buddhist and Hindu art through China to Japan.

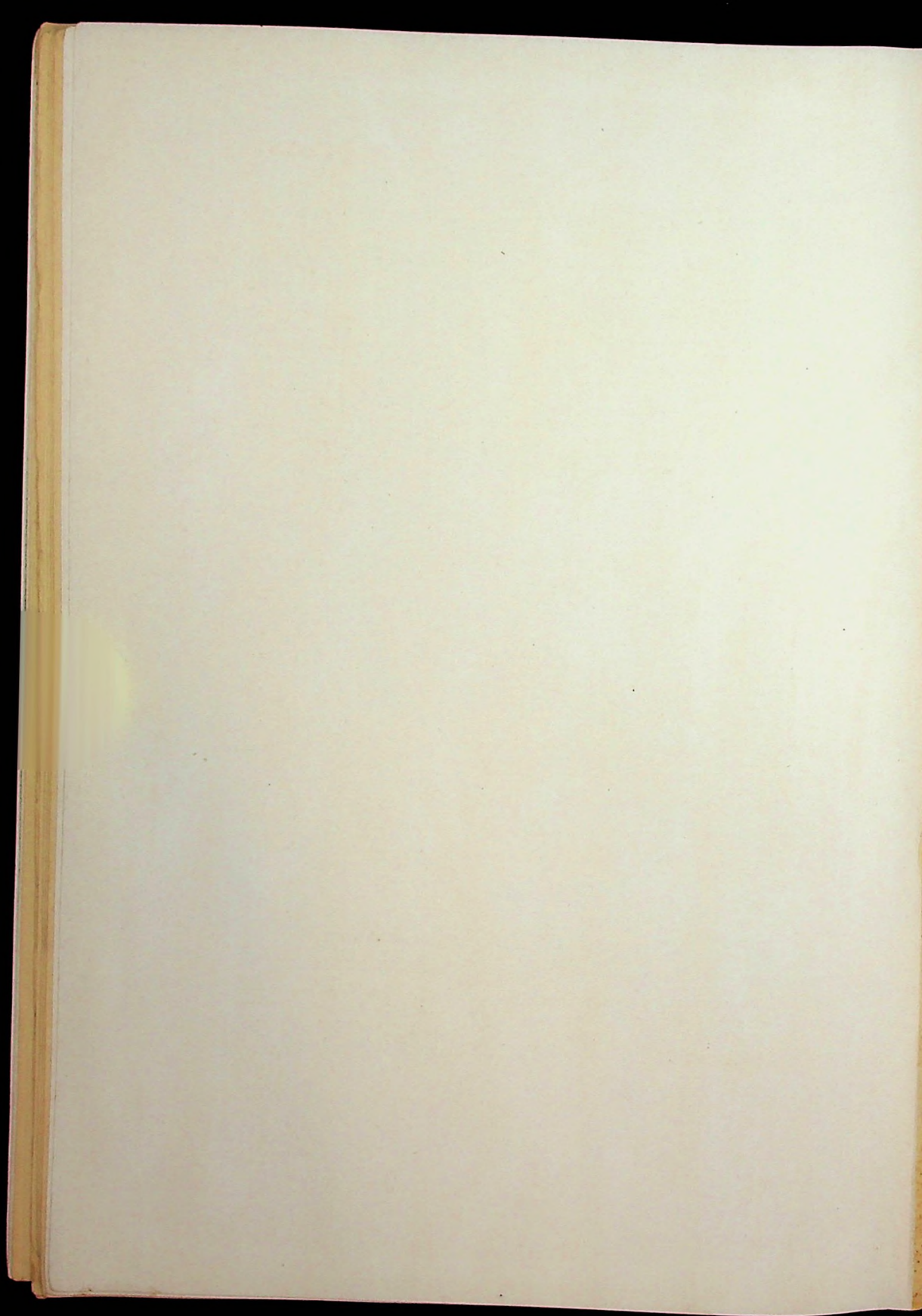


A Stately High-relief Stone Carving in one of the Cave Temples at Yun Kang near Ta-t'ung Fu in North Shansi that date from the Northern Wei Dynasty. From the Tempora Colour Painting by Mary A. Mullikin exhibited last December in Shanghai.





One of the many Exquisite Stone Carvings in the Cave Temples at Yun Kang near Ta-t'ung Fu in North Shansi dating from the Northern Wei Dynasty. From the Tempora Colour Painting by Anna M. Hotchkis exhibited in Shanghai last December.



Strange though it may seem, it was not till comparatively recent times that the cave temples of Lung Men, Yün Kang and elsewhere became known to the outside world; while Chinese scholarship appeared to have forgotten their existence. We believe it was Chavannes who first called attention to the significance of the Lung Men caves and carvings in his "Mission Archeologique dans la Chine Septentrionale," the other places mentioned above being "discovered" later. Of course, all were known to missionaries and some few travellers, but these appear to have failed to appreciate their archaeological importance.

As far as can be gathered the stone figures were either carved with a coating of mud and painted with bright colours or the rock surface itself was painted. To-day, in some cases, the mud and paint is still adhering. This, however, may have been a renewal and not the original coat.

We are fortunate in being able to give reproductions of two tempera colour paintings of figures in the Yün Kang cave temples by the well known artists Mary A. Mullikin and Anna M. Hotchkis, as well as a water colour sketch by the latter of the village of Yün Kang. From the figures shown in these pictures the high standard of excellence attained by the sculptors of the Northern Wei Dynasty can be gathered. It was during this period also that some of the most exquisite of the clay tomb figures that have been excavated during recent years in Central China were made.

A. DE C. S.

ANCIENT CHINESE BRONZE VESSELS: Amongst the most fascinating of Chinese antiques are the many bronze vessels that have been unearthed and from time to time have found their way on to the market, only to be snapped up at fancy prices by wealthy collectors in Europe and America. There is a considerable collection of these art treasures in the National Museum in Peking which originally formed part of the old imperial collection of the Manchus and were housed in the Palace in that city. These have now been gone over carefully and catalogued, and may be seen by visitors to the museum. The finest of the Chinese bronze vessels date from the Chou Dynasty. Many of them have derived their form from clay vessels of the Shang Dynasty and even earlier periods, and, interestingly enough, have themselves formed the basis of the shapes of pottery and porcelain vessels of later periods, as well, of course, as being copied and re-copied in bronze and brass.

Genuine early pieces are now exceedingly rare, but occasionally an example claimed to be genuine makes its appearance and is offered at a fabulous price on the market. Such an one is shown in the accompanying illustration supplied us by the Jade Pagoda in Peking, the price asked being \$30,000. This is an ancient jar with cover, believed to be of the Chou Dynasty.

Those interested in early Chinese bronzes cannot do better than consult the magnificent volume by Dr. Percival Yetts on the famous Eumorfopoulos Collection, in which occur the most beautiful coloured plates of these objects it has been our good fortune to see. Mr. Eumorfopoulos was one of the first Westerners to appreciate the significance of these ancient Chinese bronze vessels and to pay high prices for them. His collection is now second to none in the world.

JANET FITCH'S WORK: Last December a very interesting and attractive exhibition of paintings and drawings was given in Shanghai by three women artists resident in China. These were Mary A. Mullikin, Miss Anna M. Hotchkis and Miss Janet Fitch. We devoted some space to a discussion of this exhibition in our January number, reproducing some of the work of Miss Mullikin and Miss Hotchkis. We were unable, however, to reproduce any of Miss Fitch's work. We are now glad to be able to do this, and our readers will be able to judge for themselves the quality of this young and promising artist's work from the reproduction in the accompanying plate.

A. DE C. S.

THE CHINA JOURNAL

INTERNATIONAL CONGRESS FOR HISTORY OF ART TO BE HELD IN STOCKHOLM: An International Congress for Art Historians will be held in Stockholm from September 3 to 5 in 1933, as decided at the 12th Congress held in Brussels in 1930.

On this occasion scholars are expected to come to Stockholm from many parts of the world, and elaborate arrangements will be made to receive them. The work of the Congress will be carried on in eight sections, dealing separately with the various epochs of art and subjects of special interest, such as northern art, the study of art collections and museums in Stockholm, and lectures.

Amongst the collections to be demonstrated to the participants in the Congress are the objects of the Royal Palace, the National Museum, the State Historical Museum, the Northern Museum and Skansen, the East Asiatic collections and others. A special display of the Cyprus excavations will be arranged. A number of visits and excursions to places of historical interest or scenic beauty will be organized by the Swedish Congress Committee. Thus the ancient cathedral of Lund in the south of Sweden will be shown to the visitors, while a trip by sea to Visby, the famous "town of ruins and roses," forms part of the programme.

Circulars giving details of the Congress plans will be sent to the different National Committees for the History of Art Congress in the near future.

REVIEWS

POLITICAL STATUS OF MONGOLIA, by Tennyson Tan, B.A.: The Mercury Press, Shanghai, 1932. Price \$8.50 (Mex.).

The political status of Mongolia is a subject that has been lost sight of to a considerable extent of late years, mainly owing to lack of news from that country. While Manchuria has been in the limelight, Mongolia seems to have slipped into the limbo of forgotten things. Yet the future status of Mongolia is of vital importance to at least three great countries of the world, Russia, Japan and China; and beneath the seemingly calm surface a titanic struggle is actually taking place between these three countries for ascendancy in the deserts and grasslands of the home of Genghis Khan.

Mr. Tan's book, therefore, comes opportunely, for very soon now the struggle for Mongolia must make itself felt, and it is as well to have the viewpoint of at least one of the protagonists in the fight.

China claims suzerainty over Mongolia, and always has done, since she became a republic in 1912. This claim appears to be based upon a conquest of Mongolia by the Chinese during the Ming Dynasty and the further fact that during the Manchu Dynasty that country was included in the Chinese Empire. There is another claim, at least to considerable areas in Inner Mongolia, namely, that arising out of the fact that the Chinese have settled in and are cultivating the land there, having ousted the nomadic Mongols. This is exactly the same claim that China has to Manchuria: conquest by peaceful penetration.

The question arises, is this an adequate reason for claiming possession of a country? Undoubtedly the Mongols do not think so; and it is also certain that the aboriginal Tartars, the Goldis, Gilyaks and the like, of Manchuria, what few there are left of them, would prefer not to be governed by the Chinese, but by their own chiefs.

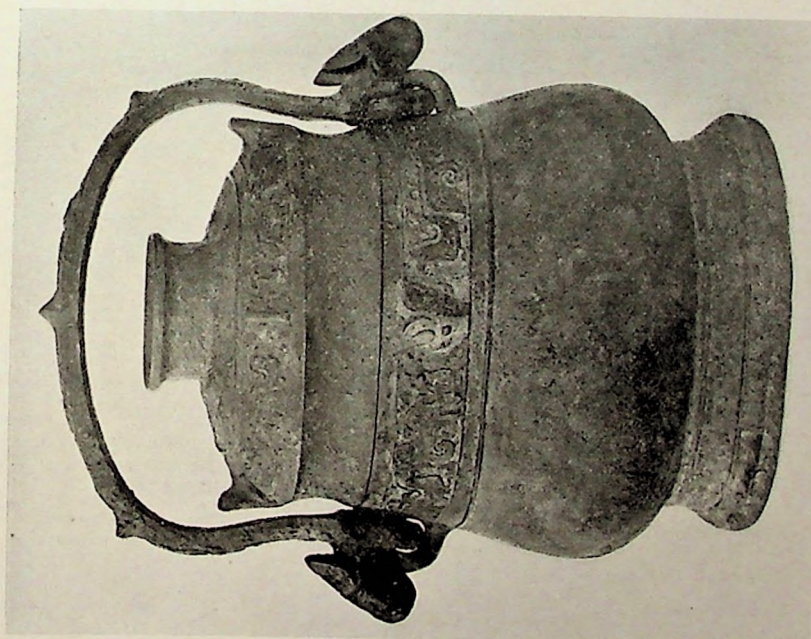
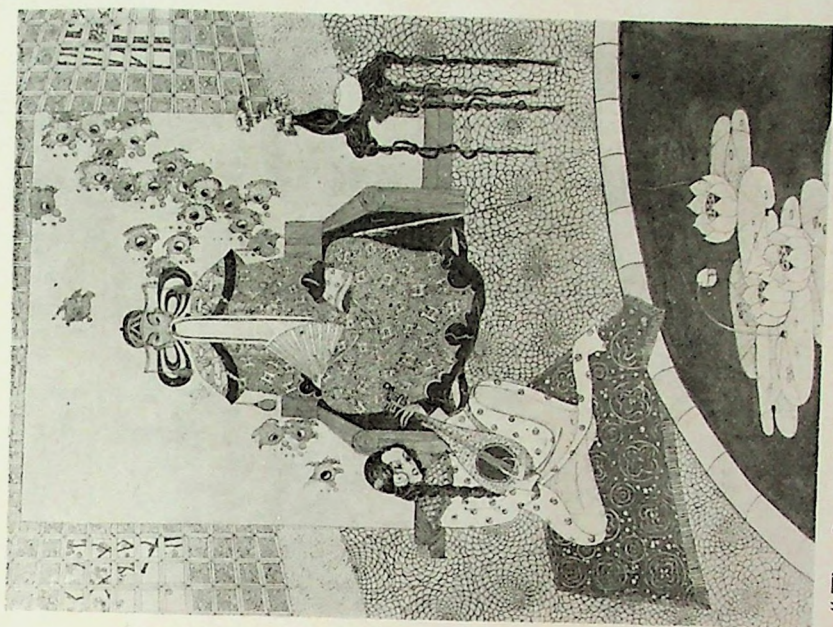


Photo by Jade Pagoda, Peking.
An Ancient Bronze Wine Jar of the Chou Dynasty.



"The Song of Peace." A Pen and Ink Drawing by
Miss Janet Fitch exhibited in Shanghai last December.

REVIEWS

Soviet Russia has already absorbed Outer Mongolia, and Mr. Tan points out that Japan is aiming at dominance in Inner Mongolia. The Mongols, themselves, seem to have little to say in the matter; but unquestionably the large number of Chinese settlers and farmers in Inner Mongolia will resent Japanese intrusion if they do not openly oppose it with force.

Mr. Tan's book is beautifully printed and got up, while its subject matter is interesting.

A. DE C. S.

THE HISTORY OF FIRE AND FLAME, by Oliver C. de C. Ellis: Simpkin, Marshall Ltd., London, 1932. Price 15s. nett.

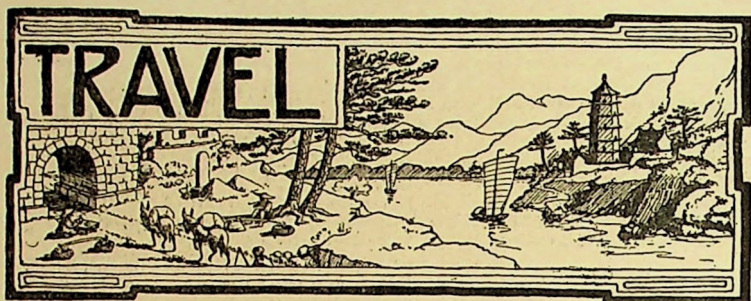
Published for the Poetry Lovers' Fellowship by Messrs. Simpkin, Marshall Ltd., this excellent treatise on a subject of the utmost interest to man is something that has long been needed. From earliest times man has known of fire, and his reactions to it, his speculations as to its causes, the use to which he has put it and finally his scientific experiments with it and accurate diagnosis of its nature, have all been left behind him in innumerable records. Dr. Ellis in his book summarizes all this information for us. At the same time he introduces a lot of mysticism, thus giving play to the poet within him; for, "This history is the work of one who is both scientist and poet." "Here we exist, and with us in this world exists Fire. Wonder, speculation, symbolism, experiment—these are the different faces of the mystery that we dwell here side by side with, Fire. Fact and feeling, knowledge and imagination—Dr. Ellis has written the history of them all: for all equally unite in man's experience of Fire." Thus Lascelles Abercrombie in the Preface to a book that every student of nature, lover of philosophy or plain scientist should own and read.

A. DE C. S.

SELMA LAGERLOF, HER LIFE AND WORK, by Walter A. Berendsohn. Adapted from the German by George F. Timpson: Ivor Nicholson & Watson Ltd. London, 1931. Price, 7s. 6d.

This is a plain story of the life of one of Sweden's most famous writers and an account of her work. Selma Lagerlöf, the first woman to win the Noble Prize, and the only woman ever to be elected to the Swedish Academy that awards that prize, may well be envied by all who take to the pen, for we are told in a short note that almost all of her works have been translated into English, French, Russian, German, Danish, Norwegian, Finnish, Dutch, Polish and Japanese, while a considerable number have been rendered into Spanish, Portuguese, Italian and Hungarian. A few have been translated into Estonian, Lettish, Yiddish, Czech, Slovakian, Roumanian, Croatian, Serbian, Bulgarian, Modern Greek, Faroian, Icelandic, Greenlandic, Bengali, Armenian, Turkish and Arabic. There are also versions of her works in Ido, Esperanto and Braille. These facts speak more than we can say for the intrinsic worth of her work, and justify beyond question the writing and publication of the book under notice. It is a book that all lovers of this noted writer's work should read. It is well written and full of interest—not the dry stuff that many biographical studies are.

A. DE C. S.



ARCTIC DAYS

BY

MARTIN LINDSAY

II.—THE WEATHER

In the two previous articles by Lieutenant Martin Lindsay, appearing in the January and March issues of this journal, life amongst the Eskimos of Greenland and the meteorological work of the British Arctic Air-route Expedition of 1930-31 were discussed. In the following article the same author, who was a member of this expedition, discusses the weather experienced in Greenland.

The following scientific data secured on the expedition may be of interest to our readers :

The lowest temperature actually recorded on the expedition was -66°F . This was recorded in February, 1931, by Mr. Courtauld at the Ice-cap Station established by him where he was marooned for six months finally being rescued in dramatic circumstances by other members of the expedition.

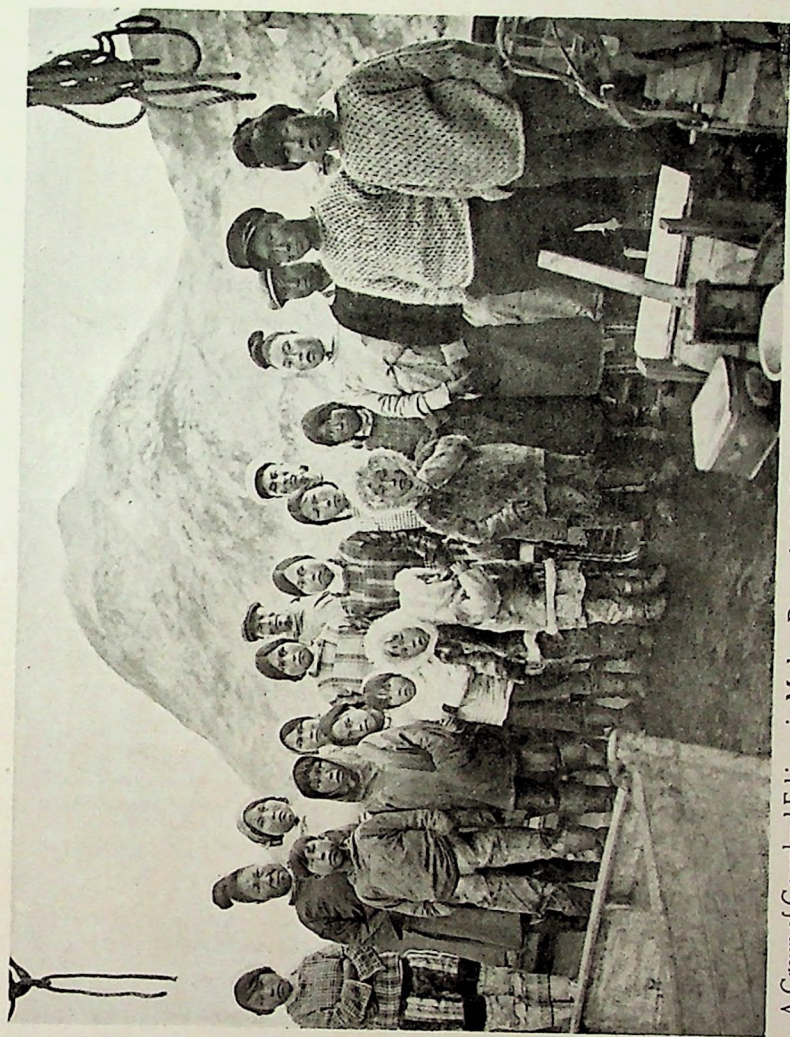
The greatest wind velocity registered was 129 miles per hour. The anemometer, or wind gauge, was blown away so that the wind velocity in gales of even greater strength that were experienced subsequently could not be ascertained. It is believed that in some of these the wind attained a velocity of somewhere about 200 miles per hour.

There was absolutely no animal life encountered on the ice-cap. White foxes were found on the pack-ice round the shore following the polar bears for their leavings of seal.

The plant life on the edges of the ice-cap and along the shores was found to consist of various kinds of mosses, lichens and Alpine flowers. There was nothing large enough to be called a shrub.—EDITOR.

* * *

All the world is interested in the weather, but no one is more utterly dependant upon it than the seaman or the polar explorer. In the land of the policeman-round-the-corner, except to the farmer who needs,



A Group of Greenland Eskimos in Modern Dress obtained by bartering Seal Skins with the Danish Traders at their Post on the East Coast of that Island. The three Children in the Middle of the Group are in regular Native Dress.

according to the season, rain for his roots or fine weather for the harvest, and to the merchant in his office who sells these things before they are grown, a shower of rain or all the furies of a thunderstorm mean usually no more than the unfurling of an umbrella or the postponement of a pleasure. But the sailor who wrests a hard living from the rough grasp of the sea and the explorer are sometimes put into a position of desperate jeopardy by a caprice of the weather, which ever plays carelessly with their lives and fortunes.

The man who would exploit arctic regions must first cross one of the stormiest oceans in the world to get there. And, however tolerable a sailor he may be, he is certain of a fearful "dusting." It would be bad enough in an ocean-going liner, but is simply appalling in the round-bottomed ship that is the best type of ice vessel, which rolls like hell in an earthquake—and just goes on rolling.

The sea is an awful thing. This accomplice of human restlessness has always been hostile to man. Writers (on land) and poets in their attics pay ceaseless tribute to its glory. And so, too, does many a seafaring man, but the love he so readily professes for the sea is a complex sentiment born of necessity and pride—pride of responsibility, pride of skill, pride of courage and endurance—in which his love for his ship plays the only genuine part. At all events that is what Conrad said, and Conrad knew about such things. Faithful to none, indifferent to the merits of human suffering and devotion, without generosity or compassion, the sea has always been the irreconcilable enemy of men and fleets, and it is only by dauntless resolution and ceaseless vigilance that it can be faced at all. For the sea can never be tamed like the earth at the cost of human toil and sacrifice, and its immensity will never be loved as vast mountain ranges and deserts are loved for themselves. Ever since man had the temerity to thrust himself on the deep, it has gone on wrecking the lives of men and ships, swallowing them up with an appetite that will never be satiated by the number of its victims.

In due course the ship reaches the edge of the pack-ice that drifts along polar shores, and here one is at least fairly certain of calm waters. Ice conditions vary enormously each year, but one may be sure of taking several days working one's way through the pack-ice, while gradually the panorama of the coast unfolds before one. The mountains are only barely tinged with snow on their topmost peaks, and look as if they have been just touched with the brush of a goddess, white drops from whose palette speckle the vivid blue sea all round. It is a blue that can be seen nowhere else, and which cannot be reproduced by any art of word-painters, nor in any pigment made by man. In sharp contrast to it are the glaring white bits of floating ice, fragments no bigger than a child's hand, or giant bergs drifting away to become the awed delight of Atlantic tourists. It is late summer and the weather is warm. At least once one will stay late on deck under the midnight sun, watching the lovely death of yet another day. And one will elope—if only with nature.

Like all similar expeditions, ours had a very strenuous beginning. This is always bound to be so, since one's ship cannot penetrate the

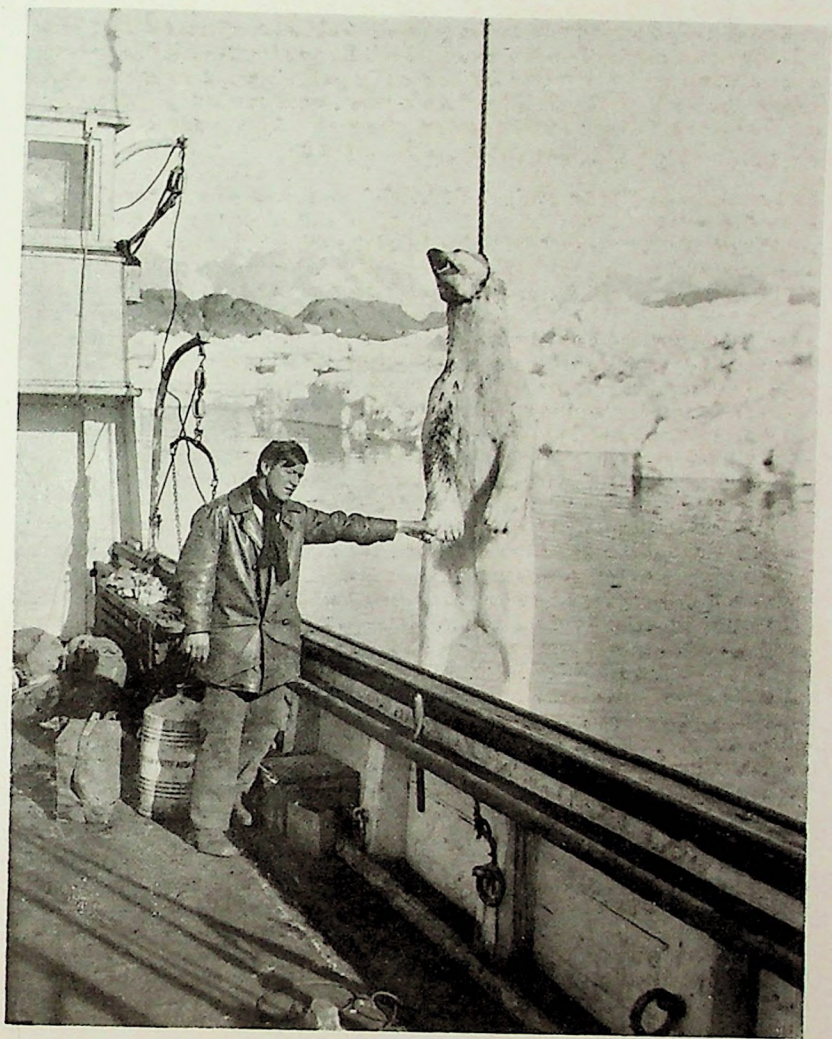
pack-ice until late in the summer, and there is much to be done in the few remaining weeks. For three weeks we worked day and night in two shifts at unloading the "*Quest*" and building the base hut. The weather was kind to us. Latterly, the sun sank below the horizon at midnight, or rather it would dip behind one side of a mountain and then half-an-hour later reappear the other side of it. Days were so warm that at the end of a shift we would take a piece of soap and a towel to a pool above the fjord, and there rid ourselves of a layer of coal grime with a very pleasant bath.

Then one day in September we awoke to find the sky clouding over. It was the autumn, and it only lasted about ten minutes. For, almost at once, snow was upon us, and from then on the weather never looked back. Winter had come.

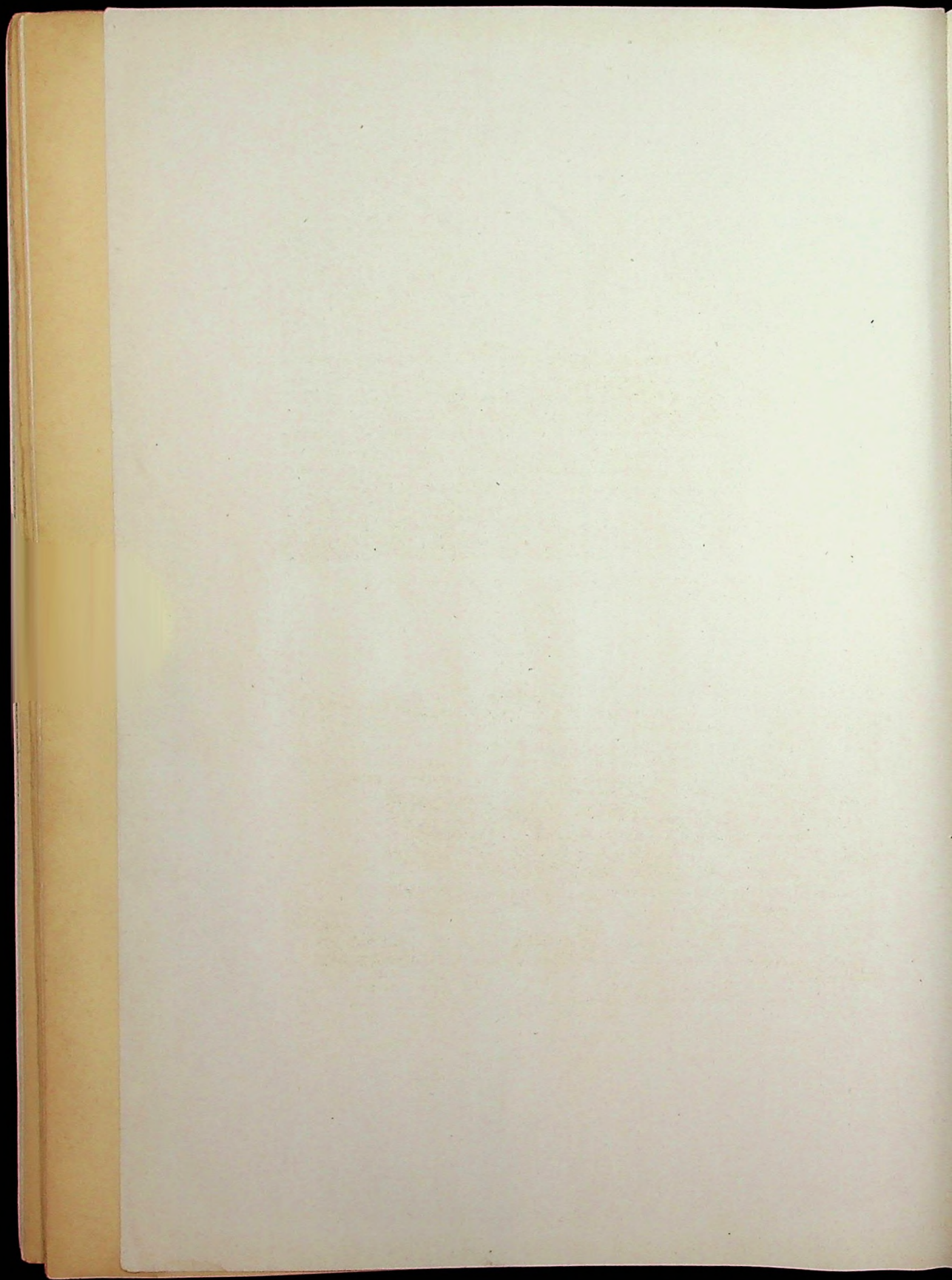
Very soon afterwards we got the shock of our lives. It was a hurricane such as none of us had ever seen before, or had ever dreamed of, for that matter, in any nightmare. Without giving us any courteous warning it descended upon us suddenly from out of the night. It brought down a seventy-foot wireless mast and blew away the anemometer, which had registered a wind velocity of 129 miles an hour some hours before the gale had reached its maximum force. Our hut had been securely wired to the ground, and all day long it was straining at the leashes. Some valuable possessions left outside were confiscated by the arbitrary decree of that wild north wind. From the end of October we had thirty-four of these gales, all lasting between twenty-four and thirty-six hours and all over a 100 miles an hour in velocity.

We had heard nothing about these days of wrath before we reached Greenland. Every authority told us that we should be unable to sledge on the ice-cap before April, though none of them gave us the right reason, which is the occurrence of these gales, and not, as they said, the intense cold. The gales raised great drifts of hard snow which constantly overturned the sledges on the few days that it was possible to travel at all. As they were so unexpected they caught unprepared the last two sledging parties of the year, which had the greatest difficulty in getting back to our base camp again.

It is just this sort of unexpected bad weather that has been the cause of so many polar disasters. Before a sledging party leaves the base the leader goes about preparing for the future in a business-like way, knowing full well that the days in front of him will refuse to be shorn and parcelled. He calculates the distance he has to travel and the time he thinks it will take him to do it, to which he adds a reasonable number of days to allow for lying-up in bad weather. But in any case for any respectable journey he will have his sledges fully loaded, so that he can carry only barely enough food for the outward and return journeys. And as long as the weather plays fair and the days of lying-up do not exceed the expected number all goes well. But as soon as the party finds that it is unable to average the daily distance required, then the members know that trouble is ahead of them. The leader can do nothing but reduce rations and hope for the best.

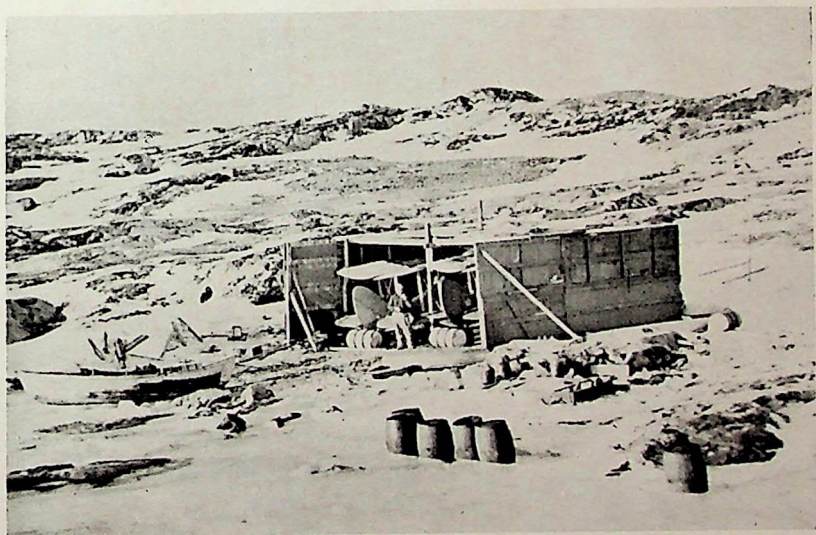


A Polar Bear shot from the Deck of the "Quest," the Ship that carried the British Arctic Air-route Expedition to Greenland. Captain Scheldoupp, the Master of the Ship, directing the Operation of hoisting the huge Beast on Board.





One of the "Moth" Aeroplanes used by the British Arctic Air-route Expedition to Greenland in 1930 and 1931.



The Hangar for the "Moth" Aeroplanes used by the British Arctic Air-route Expedition to Greenland. It was constructed out of old Packing Cases.

Nothing is more dispiriting than lying-up and eating the food that should be taking one further on one's way. One soon finishes one's little stock of reading material, and then is reduced to studying the manuals of surveying and navigation. From these it is a short step to the wrappers on the food tins, and it is amazing how soon one knows them by heart. Years and years afterwards one will be able to tell a student of nutrition and dietetics the precise percentage of "pure protein and phosphorus in a highly assimilable form" that there is in plasmon powder, and exactly how to make a delicious snow white cream at trifling cost, or a dish of rich nourishing soup with the peaflour in one minute without boiling at an equally small cost. Being confined to a tent in a blizzard is not too unpleasant, for with snow falling the temperature is comparatively high, and in a fur bag, wearing gloves or mittens and with a coat over the shoulders one does not suffer undue discomfort from the cold.

To travel! To travel! That is the perpetual cry of a sledging party. To travel in low temperatures, which means fine weather, big distances and a speedy return to the base. When the weather permits us to move, we travel as hard as it is possible to do so. Reveille is called at 4 a.m., and the cook in each tent lights the "Primus" stove with sore finger-tips, caused by the bite of metal in very cold weather. He does it deftly, too, as every fumble means another bite. Meanwhile his companion snatches another half-hour's sleep. Four hours later we have lashed up the sledges and are under way, slogging on and on until sunset. Cold does not matter to us as long as the wind is negligible. On this journey we had to travel into a mild wind with an average temperature of 65° F. below freezing-point, and it did not worry us unduly. We could travel, so we were perfectly happy, and every night could add another ten miles or so on to the distance we had covered.

However, almost every other day there was a strong wind from the north, and we would be confined to our tents. As I have said, lying-up in a snowstorm is not unpleasant, but for days we lay up in these northerly winds with temperatures only about ten degrees warmer when we were travelling. Paraffin can only be used for cooking and drying clothes, so that on these days it was very cold. The only time a temperature was taken inside a tent the thermometer registered -7° F. Thirty-nine degrees of frost is not a pleasant tent companion. It was too cold to read with any enjoyment; hands were better kept inside the sleeping-bag. We just dozed and talked—talked of everything from the League of Nations to the price of supper at the Cafe de Paris, and in particular we discussed the days that had gone, those placid old days which seemed almost sacred among the uncertainties of the formidable young ones.

Travelling in a high wind, even in warm weather is impossible. The dogs will not face into drifting snow, which is often so thick that the visibility is no more than the length of a whip lash. These gales may be simply terrific, and the greatest care has to be taken in the pitching of a tent. One puts every load from the sledges on to the skirting of the tent, sometimes the sledges themselves, and then with a spade piles on snow, more snow and yet more snow. And even then in the

height of a gale one may be justifiably afraid that one may lose one's tent eventually. For what is the array of the strongest canvas and the stoutest bamboos against the mighty breath of the infinite but cobweb, thistle down and gossamer?

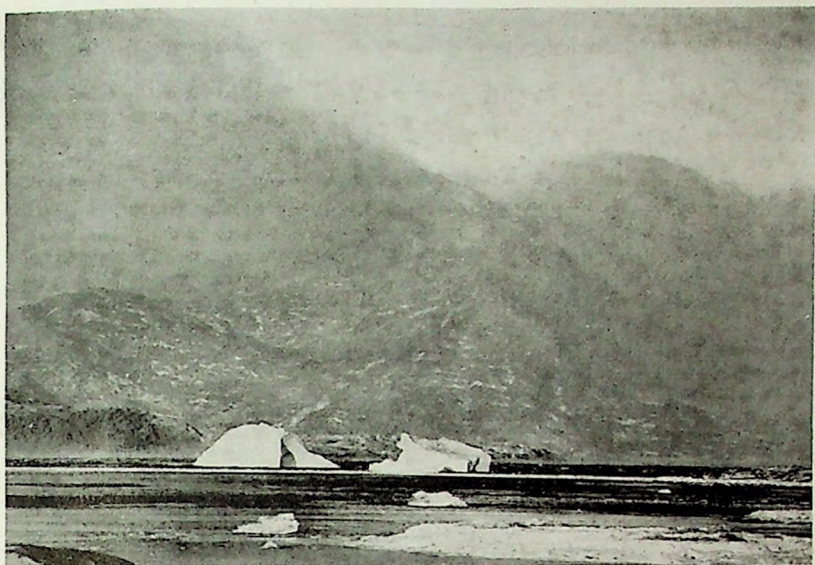
On our coldest day we remarked that the temperature had only to drop another 25° F. for us to experience temperatures lower than have ever before been recorded on any expedition. And we should have got those temperatures, too, had that spell of clear weather lasted only a few days longer. For we were then 5,000-ft. above sea-level; the month was March, and our destination was about 3,500-ft. higher. But the temperature rose from the healthy minus forties and thirties until it nearly reached zero. Thick blanket clouds stole over the horizon all round, slowly, almost furtively, but only too surely. They brought with them the much dreaded blizzards, and for six days we were unable to travel. Every day, we told each other, was bound to be the last of it; and every evening when we had fed the dogs, we dug out our sledges ready for the morrow. At last conditions changed and we were able to reach our destination; but that was certainly a taste of weather in the Arctic.

TRAVEL AND EXPLORATION NOTES

THE HAARDT-CITROEN TRANS-ASIAN EXPEDITION TO BE ABANDONED: After it has reached Saigon, the Haardt-Citroen Trans-Asian Expedition will be abandoned, states a message from Hongkong appearing in the *North-China Daily News* of March 29. This decision has been arrived at by the sponsors in Paris apparently as a result of the tragic death from pneumonia or some kindred illness of the leader, Mr. G. M. Haardt, at Hongkong on his way to Saigon from Shanghai. It was originally intended that the Expedition, which had completed a wonderful 5,000 mile trek from Beyruth to Peking, should continue from Saigon through India and Persia back to its starting point.

This is a truly tragic ending to a gallant achievement. It is understood that Mr. Haardt's remains are being transported to Paris, where they will be accorded a public funeral in honour of the splendid accomplishment of the explorer.

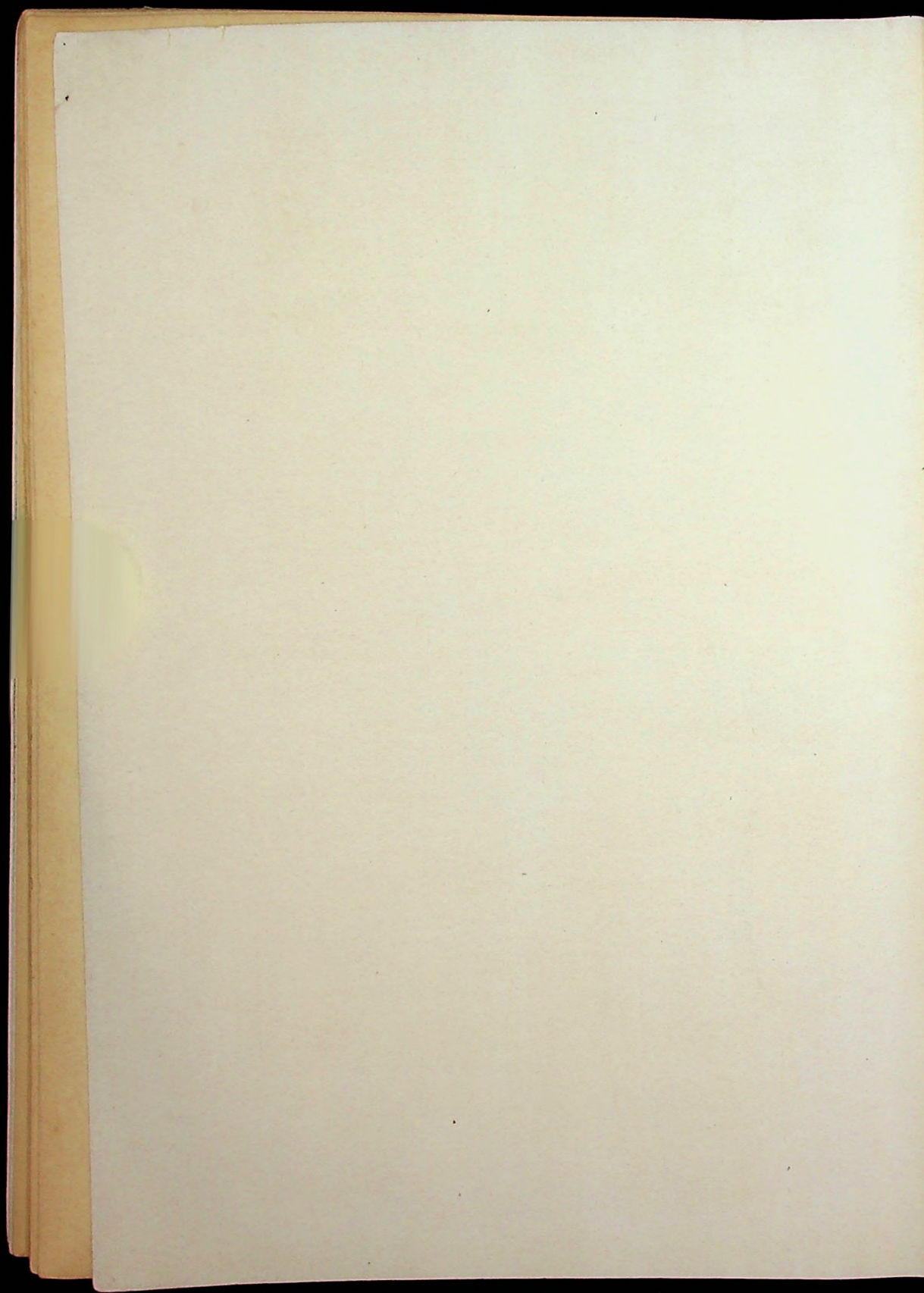
ROY CHAPMAN ANDREWS RETURNING TO PEKING: Word has been received in Peking to the effect that Dr. Roy Chapman Andrews, leader of the American Museum of Natural History's Expeditions into Mongolia during the past ten years, is returning to that city where he expects to spend the summer. Nothing is said about the purpose of his visit, or whether it has anything to do with further work in Mongolia. It will be remembered that Dr. Andrews' last application for permission to carry on further explorations in Mongolia was refused by the National Government, which stated that the Chinese National Research Institution was organizing its own expedition for such work in that country.

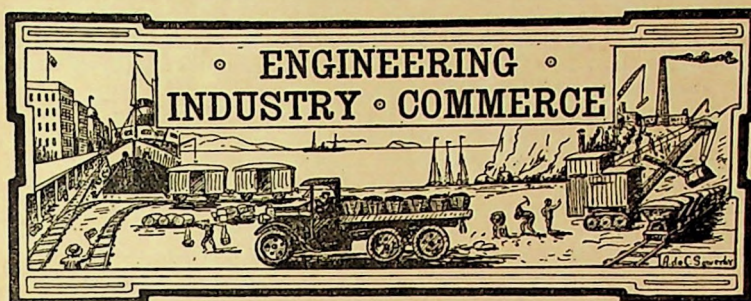


Snow being blown off the Mountain Tops on the East Coast of Greenland in a 129 Mile per Hour Gale. The two Ice-bergs in the Foreground were being blown out to Sea when this Photograph was taken by a Member of the British Arctic Air-route Expedition.



Feeding the Sledge Dogs used on the British Arctic Air-route Expedition to Greenland. Great Slabs of Frozen Fish constituted the Food, which was always eagerly fought over by the hungry Brutes.





FAMINE RELIEF WORK IN CHINA

The events which have been taking place in Manchuria and the Shanghai area during the past few months have somewhat eclipsed other happenings in the interior of China which may in the end prove of far greater importance to this country. We refer to the work being done in the way of bringing relief to China's starving millions, the victims of such natural catastrophes as famine and floods, much of which is going on almost unnoticed by people of the outer world, whose attention is concentrated on the military struggle between this country and Japan.

Puny man busies himself with various means of extinguishing his neighbour, sometimes succeeding with his death-dealing implements in wiping out a few hundreds, or a few thousands, or it may be a few tens of thousands, whereupon he proclaims himself a victor and proceeds to exact penalties or indemnities from his victim, while the rest of the world stands by and gasps with horror.

Meanwhile inexorable Nature makes a single move and hundreds of thousands of human beings pass out of existence. Her weapons are varied, but all are deadly. Floods, famine, earthquakes, tornadoes and pestilence—any one of these can and often does make man's mightiest efforts at destruction look utterly futile by comparison. And yet man, for all his weakness, can, if he so wills it, actually control and counteract the death-dealing power of each of these destructive forces of nature, except earthquakes and tornadoes, and even these he can to a considerable extent guarded against by erecting the right kind of building.

China, with her immense territories and mighty rivers, is particularly subject to famine and floods, the one being caused by long periods of drought over widespread areas, the other by protracted periods of excessive rain. In other words, the two types of calamity, taken together, are the results of unstable or fluctuating climatic conditions, which, in turn, are certainly aggravated by, if not to a considerable extent actually due to, the action of man himself in the destruction of forests and other vegetation—a vicious circle, so to speak.

Both floods and famine can, however, be prevented, or, if they occur, the mortality resulting from them can be greatly reduced by man's own

efforts, and it is the thought of what is being done in China at the present moment by those who have the welfare of this country's people at heart that prompts the writing of these lines.

The mere doling out of food, money and clothes to the destitute at such times as the present, when hundreds of thousands if not millions are suffering from the results of last summer's floods throughout the country and the previous two or three year's drought in the north-west, while necessary as an emergency measure, is not the correct way of tackling the problem of flood and famine relief in China ; and we are glad to be able to report to the world at large that far more is being done.

Recent advices from Peking state that a huge irrigation scheme, which will ensure an adequate water supply over a wide area in Shensi and Kansu where famine conditions have prevailed for several years, will be completed some time next month. The China International Famine Relief Commission, working in conjunction with the Shensi Provincial Government, is responsible for this undertaking, which not only will bring abundance of water to a thirsty land when complete, but has during the past many months afforded the necessities of life to a vast number of workers who otherwise must have starved. This, we may say, is ideal famine relief, helping, as it does, those in immediate need, and at the same time providing against a recurrence of the catastrophe that has rendered that help necessary.

We believe that the irrigation work being carried out consists in the main of the reconditioning of an ancient system of canals excavated and employed by the Chinese in times past, but which was rendered useless by the changes that took place in the courses of certain rivers in the general area. Also, it is reported, a huge body of water has been created by the building of an immense dam at Wei-pei, the dam being known as the Honolulu Dam on account of the fact that the greater part of the money used for its construction was raised amongst the Chinese residents in the Hawaiian Islands.

According to the same reports further prevention work has been carried on in the way of afforestation and river conservancy in the area ; while the construction of highways suitable for motor vehicular traffic has been pushed on apace, so that, in the event of further famine occurring, food may be rushed to the stricken area in the shortest possible time. Afforestation, conservancy work and road-building all afford work for the destitute, to help whom is the chief object of the Famine Relief Commission. A great highway from Si-an Fu, the capital of Shensi, to Lan-chou Fu, the capital of Kansu, is under construction, while special work in proper grading is being undertaken where this road crosses the 10,000 ft. pass over the mighty mountain range known as the Lu-p'an Shan a few miles west of P'ing-liang Fu. Incidentally, the Si-an to Lan-chou road may ultimately be continued clear through the north-western section of Kansu into Sinkiang, or Chinese Turkestan, where it will link up many important cities and centres, whose trade at present is deflected into Soviet territory. We may thus soon see the once famous overland trade routes of China's "Great North-west" reopened and a vast volume of commerce pouring along these important arteries.

FAMINE RELIEF WORK IN CHINA

With Shensi and Kansu safeguarded from the evil effects of protracted drought and a good system of motor roads throughout this wide area opening a way for trade with Central Asia, we may expect to see these provinces develop in a very short time into two of the most important and flourishing in the whole of China, and one of the darkest chapters in the history of this country will have been closed forever.

A. DE C. S.

ENGINEERING, INDUSTRIAL AND COMMERCIAL NOTES

BUILDING

SHANGHAI BUILDING ACTIVITIES RESUMED IN MARCH: From January 28 until almost the middle of March building operations in Shanghai were at a complete standstill in most instances, due to the military operations in Chapei. Buildings in course of construction were boarded up and practically deserted except for watchmen or guards. In a meeting held by the Shanghai Builders' Association on February 10 a resolution was passed to stop all building operations by members, while responsibility for delay in contracts, which had been undertaken for completion within a specified time, was repudiated, with the assurance that work would be resumed and contracts completed at the earliest possible moment. One of the greatest obstacles encountered was the fact that many of the building material factories were located in Chapei and therefore have been inaccessible. Within a week or ten days after the cessation of hostilities on March 3, however, work on the uncompleted structures in Shanghai was being resumed, and building operations are now practically on a normal basis.

ENGINEERING

HONGKONG TO HAVE VEHICULAR FERRY: The island of Hongkong is to be connected with Kowloon by a vehicular ferry service when the new project, for which the Government has just let the contract, is completed. Present expectations are that the service will commence functioning on January 1, 1933.

RAILWAYS

RAILWAYS STILL ENCOUNTERING DIFFICULTIES: The occupation of the North Station in Shanghai by Chinese soldiers in January, its subsequent destruction, and the continuous fighting in this district for over a month, resulted in considerable interruption to the service of the Shanghai-Nanking Railway's train schedules between these two cities. It has not been completely resumed at the time of going to press. An extra daily trip by aeroplane to Nanking and back to Shanghai was inaugurated on March 8, and mail for Soochow, Wusih and other

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cities along the railway line in the area of military occupation is being transported to Nanking by air and thence by rail to its destination. On the Shanghai-Hangchow line the trains have been running, not only on the regular time table, but extra special schedules have been in force. Thousands of refugees have been transported from Shanghai to Hangchow. This was also the case on the Hangchow-Ningpo section of the line. With an occasional exception, such as occurred on March 4, when the railway officials halted all trains from Hangchow to Shanghai at Sungkiang, due to the fear of a bombing attack on the line, these branches of the railway have given excellent service to the public throughout the state of emergency in the Shanghai district.

NANKING-PUKOW TRAIN FERRY CONTRACTED FOR: That the crossing of the Yangtze River at Nanking will be accomplished within the next year by the Nanking-Pukow train ferry, for which the contract was let last month to Messrs. Malcolm & Co., Ltd., was officially confirmed by the Ministry of Railways March 23, according to a *Reuter* message of the same date. The new ferry will be the first of its kind in China and will eliminate delays in crossing the Yangtze River, thus making a much closer connection between North and South China cities than has heretofore been possible. A most careful survey has been made by the engineers to allow for the extreme variation of the water level, in which there is a difference of twenty-four feet during the year, with a daily tide variation of from one to three feet. The building of the piers has been commenced. There will be three 150 foot span bridges with adjustable ends, to be raised or lowered according to the height of the water, and these as well as the 2,400 ton boat will provide three railway tracks of standard gauge for transporting trains and railway stock across the river. The boat will be completely equipped, including living quarters on board for officers and crew, and is expected to reach China about next December. The bridge materials are due in Nanking next October, and, as the work of assembling is estimated to take about four months, it is hoped to have the ferry commence functioning by March of next year. The Shanghai-Nanking and Tientsin-Pukow lines have been instructed by the Ministry of Railways to have the construction of their connecting branch lines to the ferry completed by the end of this year. The entire project will cost \$3,000,000, and is to be paid for from Boxer Indemnity Funds, for which all necessary arrangements have been made.

RIVER CONSERVANCY

LEAGUE OF NATIONS' TECHNICAL ADVISERS COMPLETE RIVER STUDY: Having completed their study of the Hwai, Whangpoo and Pei Rivers and tributaries, the three technical experts which the League of Nations sent to China, Mr. L. Perrier (French), Mr. A. T. Coope (British) and Mr. W. Sieveking (German), left for Europe early in March. This commission was sent here at the National Government's request to study ways and means for developing rivers and harbours in China. Particular attention was paid to the inspection of the Hwai River, not only in regard to its development, but also in connection with flood control; to the Pei Ho and its tributaries; and to the Whangpoo, the last being considered especially in the light of harbour development at Shanghai. Before leaving, a brief summary was promised by the Commission to be forthcoming shortly, is expected to a detailed report to follow later on.

INDUSTRY

PEKING RUG INDUSTRY: We have been asked by the Shoemaker Art Looms of Peking to correct a mistake appearing in our article "The Peking Rug Industry," which was published in our February issue, and we hereby do so with apologies to all concerned for the mistake.

ENGINEERING, INDUSTRIAL AND COMMERCIAL NOTES

The management of the Shoemaker Art Looms state that they do not draw their supply of rugs from a common source with the E. A. Punnett Company, as stated in the article (page 87), but are manufacturers and exporters of their own make of Chinese rugs.

The Shoemaker Art Looms organization is an independent one dating its inception back to the summer of 1917, when the idea was conceived of using the splendid traditional Chinese art designs, which have reached such a high degree of excellence, and adapting them to meet the needs of modern Western interior decoration. During 1917 and 1918 several shipments of this new type of Chinese rug were sent to the United States and these resulted in many orders. At that time it was impossible to buy in the market an attractive Chinese rug that would fit in with modern interiors and harmonize with the various colour arrangements of Western decoration. The Shoemaker Art Looms, therefore, claim to be the originators of this modern-antique Chinese rug, and the first to establish its commercial popularity.

Although competition soon arose and several other firms dealing in rugs were formed, the Shoemaker Art Looms retained control of their factory, soon deciding upon a programme of increased production and the introduction of modern improvements. A new \$60,000 factory building was designed and built, which provided for one hundred looms, wood floors, electricity, steam heat, improved window lighting and good ventilation. The capacity output of this plant is 9,000 square feet a month. The factory was continued under the management of Mr. Kao Shou Shan, one of the ablest and longest established rug manufacturers in Peking. The Shoemaker organization provided the capital for the new building and for the running expenses, all of which has since been repaid to them by Mr. Kao, who now owns the factory. This factory was the first practical effort towards improving the bad sanitary and unhygienic conditions prevailing in all Chinese rug factories. The Shoemaker Art Looms still retain control of this factory and have since added to their organization six other separate and distinct factories, having from twenty to sixty looms each. All of these seven factories manufacture exclusively for the Shoemaker Art Looms, and are financed and controlled by that organization. It has also established and installed a separate central steam dyeing plant where the wool is dyed for all of the factories. Special arrangements have been made with large wool dealers for the regular supply of a very fine grade of raw sheep's wool, and careful supervision is given to washing and sorting the raw wool and spinning it into an even grade of yarn ready for dyeing at the central plant.

We understand from the E. A. Punnett Company that the factory mentioned in the article as being owned and managed by Mr. Chin supplies its rugs to and is supervised by that Company.

INDUSTRY IN SHANGHAI SUFFERS SETBACK: Owing to the war operations in Shanghai and the anti-Japanese boycott which commenced last September industry in the Shanghai area has suffered severely during the past seven months. Many factories in the war zone, which were forced to close down for more than six weeks, have gradually resumed work since the cessation of hostilities early in March. Approximately sixty-seven factories, including some flour mills and the Japanese cotton mills, are still closed. Consequently about 90,000 millworkers and factory hands in Shanghai are unemployed, and, while it is too soon to give anything like accurate figures, the losses sustained by both capital and labour during this period is expected to run into huge figures.

COMMERCE

FINANCIAL DIFFICULTIES ENCOUNTERED DURING SHANGHAI STATE OF EMERGENCY: When the native banks in Shanghai simultaneously closed their doors to business on January 30 as an expression of indignation at the bombing of Chapei merchants as well as individuals experienced considerable difficulty in regard to money matters, and the exchange shops reaped a rich harvest on the heavy discounts at which they exchanged paper money for silver, this being

the only currency accepted in payment for goods for several days. The Municipal Council of the International Settlement furnished adequate police protection to those native banks which responded to its request to open their doors, and a good many did so, allowing depositors to withdraw a limited sum of money. Foreign soldiers on guard with drawn bayonets at the banks became a usual sight, particularly on the Bund, where thirteen such guards were counted between Avenue Edward VII and Peking Road one morning in February. While some of the foreign style Chinese banks were partially open for business on February 4, the native style banks reopened only on a decidedly restricted basis. Of all the restrictions imposed the one decided upon by these banks in not cashing "native orders" placed the greatest obstacle in the way of business, especially among the importers. The latter are accustomed to releasing goods to Chinese merchants and accepting orders on the native banks payable in about ten days' time, and, with this procedure blocked, the godowns in the city became filled to overflowing with merchandise that had been ordered but could not be paid for unless the importer was willing to pay his bank seven per cent. interest on native orders. Insurance rates increased with war at Shanghai's very doorstep, and, adding to this the unforeseen storage charges on merchandise, prospective profits quickly changed into certain losses. In the beginning foreign banks, which were operating as usual, gave generous assistance until they became loaded with "frozen" cheques and orders and were forced to call a halt. Remittances to Shanghai from outports were also hindered, as they could only be made through an actual transfer of cash. On February 6, banks and shops that had been partially open suspended business again for three days on account of the China New Year, now called the "Spring Holiday." The native banks would accept no business which necessitated the withdrawal of cash, and transferred no credits to banks outside their circle. Foreign banks helped to stabilize the financial situation by agreeing not to accept accounts which depositors of native banks might wish to transfer to them.

The Chinese Government bond market was closed, and at a meeting held on February 10 by the China Merchants Stock Exchange, it was decided to suspend operations indefinitely, although the funds for payment on domestic loans were said to be available early in February.

Banking conditions in Shanghai have gradually been returning to normal, although at the time of going to press crossed cheques on some native banks are not being accepted for deposit by other banks, as the former will not cash them.

HEAVY BUSINESS LOSSES IN SHANGHAI DURING STATE OF EMERGENCY: Friday, January 29, saw the cessation of practically all business in Shanghai, except that of moving the belongings of residents who were evacuating from Chapei and the Hongkew district. The Chinese post office made no mail deliveries for five days, but commenced on February 3 to deliver registered letters, followed shortly by regular deliveries of all classes of mail matter.

While there was a good supply of food on hand in both the International Settlement and the French Concession all through the emergency, a shortage of certain kinds of meats and vegetables occurred at various times, and prices increased from 40% to 100% on some items. The price of rice rose from \$12 to \$19 a picul for the best quality. The Municipal Council of the International Settlement as well as that of the French Concession did everything possible to protect the merchants and to assist in the early resumption of business. However, it was not until the end of March that, with the exception of the Hongkew district, most of the local Chinese shops and commercial institutions in the International Settlement and French Concession took down their iron grills and wooden shutters and opened wide their doors for the resumption of business as formerly. In Nantao (the native city) only about 60% of the shops reopened for business. The first quarterly settlement day of the year for Chinese merchants which fell in March was postponed to the end of May.

Partially completed buildings, such as the Continental Bank building and others, were given over by the owners to the Citizens Emergency Committee and some sixty-five refugee camps housing approximately 10,000 persons were opened in the International Settlement and French Concession. These were supported

ENGINEERING, INDUSTRIAL AND COMMERCIAL NOTES

principally by private donations, with some assistance from the Municipalities. Nearly every office building and godown in the central district had its quota of refugees encamped in corridors, stairs and odd corners. Getting to the office during the emergency period was a problem in itself, with trams and buses so crowded that there was not an inch of standing room to spare, rickshaw coolies doubling their fares, and hire motor-cars (at the usual rates with placards displayed such as the Taylor Garage put up in its place of business on Rue Cardinal Mercier, requesting customers to report any cases of extortion) in great demand.

The curfew law was put into effect on February 1, from 10.00 p.m. to 4.00 a.m., temporarily putting an end to the night club and cabaret business, except on Saturday nights, when these were open until 4.00 a.m., the doors being locked at 10.00 p.m. to keep everyone indoors in compliance with the law. On March 12 curfew was extended to 11 p.m. and on March 31 it was lifted entirely, having been in effect for over six weeks.

River boats did a tremendous business in transporting refugees of all classes from Shanghai to outports, and in a few instances native boats increased their passage rates as much as 500%, furnishing only deck space to many of the passengers. Ocean liners had all available accommodation to Hongkong and Manila booked.

Recommendations by the Committee of the Shanghai Property Owners' Association for an allowance to be made by its members to tenants in the disturbed areas on rentals during February and March, the amount to depend upon circumstances in each case, were being made at the time of going to press. While it will naturally require several months for business to recover, Shanghai residents are doing their best to carry on as usual. The result must inevitably be a triumphant emergence of business to the point where it can again be conducted with something on the profit side of the ledger.

FARMERS BANK TO BE OPENED IN HANGCHOW BY CHEKIANG PROVINCIAL GOVERNMENT: Arrangements by several departments of the Chekiang Provincial Government are being made for establishing a semi-official bank in Hangchow to give assistance to the peasants, according to a recent *Kuo Min News Agency* message. The bank is to have a capital of \$3,000,000. Its main office is to be in Hangchow and it will have branches in various districts of the province.



CONTRIBUTIONS TO THE ICHTHYOLOGY OF CHINA

BY

YUANTING T. CHU, 朱元鼎

(Continued from page 136)

PART 9.

Family *SERRANIDAE*.

Body oblong, more or less compressed, covered with adherent scales of moderate or small size, which are usually but not always ctenoid; dorsal and ventral outlines usually not perfectly corresponding. Mouth moderate or large, not very oblique, the premaxillary protractile and the broad maxillary usually not slipping for its whole length into a sheath formed by the preorbital, which is usually narrow. Supplemental maxillary present or absent. Teeth all conical or pointed, in bands, present on jaws, vomer and palatines. Gill rakers long or short, usually stiff, armed with teeth. Gills 4, a slit behind the fourth. Pseudobranchiae present, usually large. Lower pharyngeals rather narrow, with pointed teeth, separate (except in *Centrogenys*). Gill membranes separate, free from the isthmus. Branchiostegals normally 7 (occasionally 6). Cheeks and opercles always scaly; preopercle with its margin more or less serrate, rarely entire; the opercles usually ending in one or two flat spine-like points. Nostrils double. Lateral line single, not extending on the caudal fin. Skull without cranial spines and usually without well-developed cavernous structure. No suborbital stay. Post-temporal normal. Second suborbital with an internal lamina supporting the globe of the eye; entopterygoid present; all or most of the ribs inserted on the transverse processes when these are developed; anterior vertebrae without transverse processes. Dorsal spines usually stiff, 2 to 15 in number; soft dorsal with 10 to 30 rays; anal rather short, its soft rays 7 to 12, its spines, if present, always 3, in certain genera (*Grammistinae*, *Rypti-*

CONTRIBUTIONS TO THE ICHTHYOLOGY OF CHINA

cinae) altogether wanting. Ventrals thoracic, usually I, 5 (I, 4, in *Plesiopinae*), normally developed, without distinct axillary scale. Pectorals well developed, with narrow base, the rays branched. Caudal peduncle stout, the fin variously formed. Vertebrae typically $10+14=24$, the number sometimes increased, never more than 35. Air bladder present, usually small, and adherent to the wall of the abdomen. Stomach caecal, with few or many pyloric appendages; intestines short, as is usual in carnivorous fishes. Chiefly marine fishes and found in all warm seas; several genera found in fresh waters. (From Jordan and Evermann, 1896.)

Genus SINIPERCA Gill.

Siniperca Gill, Proc. Acad. Sci. Philad., 1862, p. 16; orthotype *Perca chuatsi* Basilewsky.

Plectroperca Peters, Mon. Ber. Akad. Wiss. Berlin, 1865, p. 121; orthotype *Plectroperca berendti* Peters.

Actenolepis Dybowski, Verh. Zool.-Bot. Ges. Wien, 1872, p. 210; orthotype *Actenolepis ditmarii* Dybowski.

Body compressed; scales very small, cycloid, concentrically striated. Lateral line complete, the tube straight and extending along the whole length of the scale. Mouth large, protractile; maxillary exposed, with a supplemental bone; villiform teeth in jaws and on vomer and palatines; teeth in jaws not depressible and hinged, some of them are more or less enlarged and canine-like; tongue smooth. Head partly naked. Preopercle serrated, with a few strong antrorse spines on the lower border; opercle usually ending in one spine, sometimes in two spines.* Gill-membranes separated; seven branchiostegals; pseudobranchiae present; gill-rakers moderate or rather short. Dorsal fins confluent, with 12-13 spines and 11-15 rays, the spinous portion much longer than the soft. Anal short, with 3 spines and 9-10 rays. Pectorals symmetrical or subsymmetrical,† with 16-17 rays. Caudal rounded. Ventrals below or slightly behind pectorals, close together, with 1 strong spine and 5 rays. Posterior processes of premaxillaries not extending to frontals; posterior part of cranium smooth and convex; parietal and supraoccipital bones extending to between post-frontal processes; supraoccipital crest short, not extending on upper surface of cranium. Vertebrae 28 (13+15). (Boulenger, 1895; revised.)

33. SINIPERCA CHUATSI (Basilewsky).

(Figure 33.)

Perca chuatsi Balisewsky, N. Mem. Soc. Nat. Moscou, X, 1855, p. 218, pl. 1, fig. 1 (North China).

Siniperca chuatsi Gill, Proc. Acad. Sci. Philad., 1862, p. 16.—Günther, Zool. Rec., 1864, p. 150.—Kner, 1865, Novara, Fische, p. 15, pl. 1, fig. 3 (Shanghai).—Dabry de Thiersant, 1872, Pisc. en Chine, Nouvelles Especes de Poissons de

* In some specimens of *S. scherzeri*, there are 2 opercular spines, although the upper one is not so sharp as the lower.

† In some specimens of *S. chuatsi*, as the one here figured, the pectorals are only subsymmetrical, the lower rays being shorter than the upper ones.

- China, p. 18, pl. XXXVI, fig. 4 (Yangtsekiang).—Bleeker, Neder. Tijds. Dierk., IV, Pts. 4-7, 1872, p. 137 (Shanghai).—Günther, Ann. Mag. Nat. Hist., Ser. 4, Vol. 12, 1873, p. 239 (Shanghai).—Martens, Preuss. Exp. Ost-Asien, Zool. Abth., Vol. 1, Pt. 2, 1875, 385 (Shanghai).—Mollendorff, Journ. Roy. Asi. Soc., North China Branch, New Ser. XI, 1877, p. 105 (Chihli).—Bleeker, Verh. Akad. Amsterd., Vol. XVIII, 1879, p. 2 (Shanghai).—Herzenstein and Warpachowski, Trud. St. Petersburg. Nat. Vol. XVIII, 1887, p. 16 (Amur Basin).—Günther, Ann. Mag. Nat. Hist. (6), Vol. 4, No. 21, 1889, p. 219 (Ichang).—Boulenger, Cat. Fish., Vol. 1, 1895, p. 136 (Rivers of China and Manchuria, from the Amour to the Yangtsekiang; Japan).—Popta, Zool. Anz., Bd. XXXII, 1907, p. 251 (Shantung).—Pappenheim, Exp. Filchner, Bd. X, Tiel. 1, 1908, p. 109 (Maliang, River Han).—Garman, Mem. Mus. Comp. Zool., Vol. XL, 1912, No. 4, p. 112 (Ichang).—Berg, Acad. Sci. St. Petersburg., Ser. 8, Vol. XXIV, No. 9, 1909, p. 204 and p. 221 (Middle Amur, Sungari, Ussuri, Lower Amur, N. China, S. China).—Fowler and Bean, Proc. U. S. Nat. Mus., Vol. 58, 1920, p. 314 (Soochow).—Fowler, Mem. Asi. Soc. Bengal, Vol. 6, 1924, p. 516 (Tai-Hu).—Evermann and Shaw, Proc. Calif. Acad. Sci., (4), Vol. XVI, No. 4, 1927, p. 116 (Hanchow, Nanking, Shanghai).—Mori, Journ. Chosen Nat. Hist. Soc., No. 5 別冊, 1927, p. 10 (Kirin); Jap. Journ. Zool., Vol. 2, 1928, p. 62 (Tsinan).—Nichols, Bull. Amer. Mus. Nat. Hist., Vol. LVIII, Art. 1, 1928, p. 51, fig. 44 (Anhwei; Tungting Lake, Hunan, Fukien).—Tchang, Cont. Bio. Lab., Sci. Soc. China, Vol. IV, No. 4, 1928, p. 35, fig. 40 (Nanking).—Fowler, Acad. Nat. Sci. Philad., Vol. LXXXI, 1929, p. 607 (Hongkong).—Shaw, Bull. Fan Mem. Inst., Vol. 1, No. 7, 1930, p. 120 (Ka-Shing); i.e. No. 10, p. 193, fig. 31 (Soochow).—Wu, Sinensia, Vol. 1, No. 6, 1930, p. 86 (Chungking).—Nichols, Amer. Mus. Novit. No. 431, 1930, p. 4 (Tungting Lake; Ningkwu, Anhwei; Kianning and near Yenping, Fukien).
- Siniperca matsaki* (Guichenot) Dabry de Thiersant, i.e. fig. 5 (Kiangsi); Ann. Sc. Nat. (6) 1, 1874, Art. 5, p. 1.
- Plectroperca berendti* Peters, Mon. Berl. Akad. Wiss. Berlin, 1865, p. 121.
- Actenolepis ditmarii* Dybowski, Verh. Zool.-Bot. Ges. Wien, Vol. XXII, 1872, p. 210 (Lower and Middle Amur, Ussuri, Chanka).
- Siniperca mutasi* Bleeker, Verh. Akad. Amsterd., Vol. XVIII, 1879, p. 4 (Shanghai).
- Siniperca kneri* Garman, Mem. Mus. Comp. Zool., Harv. Coll., Vol. XL, No. 4, 1912, p. 112 (Hupeh; Ichang).
- Depth in length 3.2 to 3, head 2.7 to 2.4. Eye in head 6.8 to 6.4, snout 5.3 to 5, interorbital 9.2 to 9, maxillary 2.5 to 2.4, depth of caudal peduncle 3.5 to 3.3, longest dorsal spine 3.3 to 3, longest dorsal ray 2.8 to 2.6, longest anal spine 4 to 3.7, longest anal ray 2.7 to 2.6, ventrals and pectorals 2.3 to 2.2.

Body compressed, upper profile of head concave, back elevated. triangular, large at base, tapering and pointed anteriorly. Eye rather small, its diameter less than length of snout, but greater than interorbital width; nostrils close together, in front of eye. Mouth large, oblique; maxillary with a small, long supplemental bone, the width of its distal extremity equal $\frac{3}{4}$ the diameter of eye, reaching beyond vertical from posterior margin of eye; lower jaw strongly projecting. Teeth small, villiform, in jaws and on vomer and palatines; some of the teeth in jaws more or less enlarged and caniniform. Preopercle serrated, with 2 or 3 enlarged spines at angle and 2 at lower border; opercle ending in a single, flat, bluntly-pointed spine. Gill-membranes broad, entirely free from isthmus; gill-rakers 6 or 7 in the first arch, the longest about as long as gill-filaments. Scales small, cycloid, covering body and side of head, about 150 in longitudinal series. Lateral line continuous, following general contour of back, extending along the middle of tail.

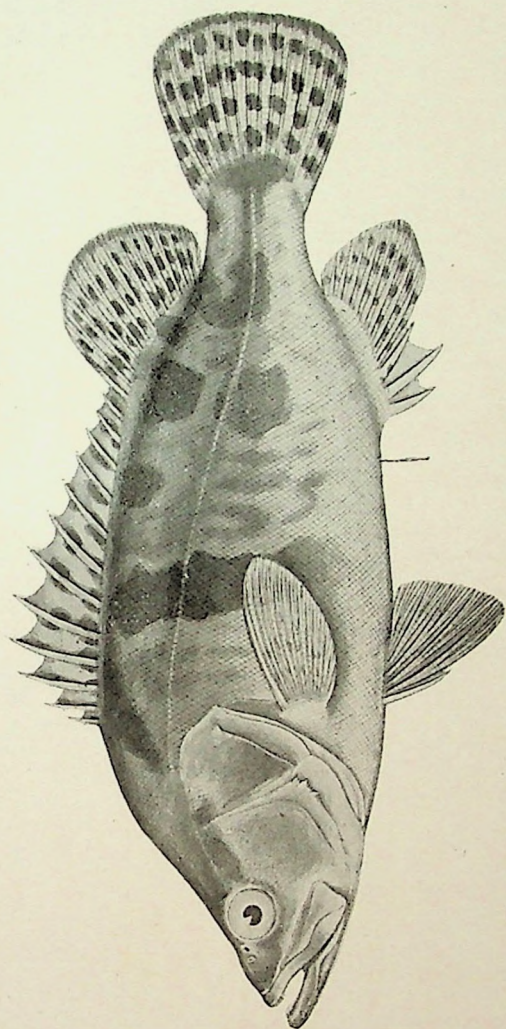


Figure 33. *Siniperca chuatsi* (Basilewsky). Length to Base of Caudal 222 mm.

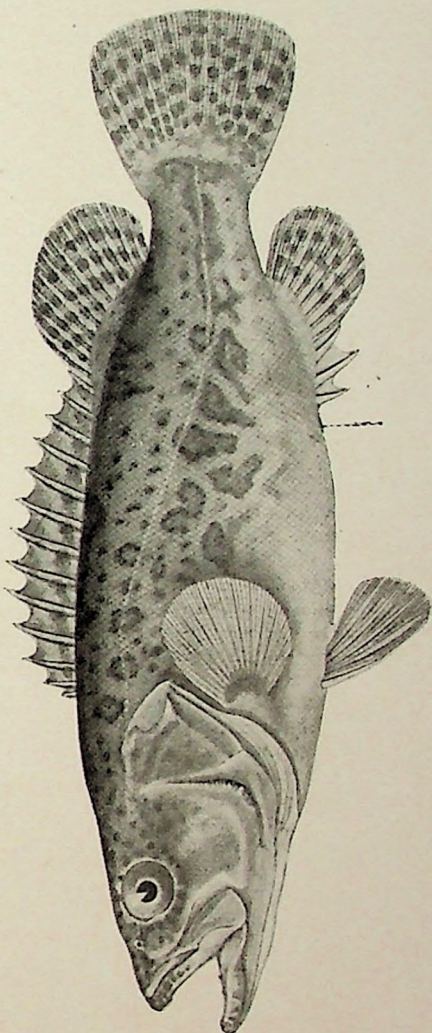


Figure 34. *Siniperca scherzeri* Steindachner. Length to Base of Caudal 210 mm.



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Dorsal originating above base of pectorals, with an anterior portion of 12 spines and a posterior portion of 14-15 rays, the spine increasing in length to the 5th, which is shorter than the longest soft ray. Anal originating below last spine of dorsal, with 3 spines and 9-10 soft rays, the 2nd spine the longest and strongest. Ventrals inserted below the base of pectorals and opposite to the 1st spine of dorsal, with 1 spine and 5 soft rays. Pectorals subsymmetrical. Caudal rounded.

Yellowish, with irregular dark brown spots and blotches; a broad vertical dark brown band below the 6th and 7th dorsal spines, an oblique band from side of snout, passing through eye, to base of the anterior part of the spinous dorsal, a roundish blotch below 9th and 10th dorsal spines, 2 blotches below anterior part of soft dorsal, 1 below posterior part of the same, 1 at base of caudal. Dorsal, caudal and anal with dark brownish spots, forming several cross streaks. Ventrals yellowish; pectorals dusky.

Described from 3 specimens from the Shanghai fish market, 208, 214 and 222 mm. long to base of caudal. The fish may reach a length of rove 500 mm.

34. *SINIPERCA SCHERZERI* Steindachner.

(Figure 34).

Siniperca chuatsi Günther (non Basil.), Ann. Mag. Nat. Hist. (4), Vol. XII, 1873, p. 240 (Shanghai).

Siniperca scherzeri Steindachner, Anz. Akad. Wien, 1892, p. 130; Denkschr. Akad. Wiss. Wien, Bd. LIX, 1892, p. 357, pl. 1, fig. 1 (Shanghai).—Boulenger, Cat. Fish., Vol. 1, 1895, p. 137 (Mouth of Yangtsekiang).—Kreyenberg and Pappenheim, Sitz. Ber. Ges. Natf. Freunde, Nr. 4, 1908, p. 108 (Tungting Lake).—Kreyenberg, Abh. Mus. Nat. Heimatk. Magdeburg, Bd. 2, 1909, p. 22 (Tungting Lake).—Garman, Mem. Mus. Comp. Zool., Harv. Coll., Vol. XL, 1912, p. 113 (Ichang).—Nichols, Bull. Amer. Mus. Nat. Hist., Vol. LVIII, Art. 1, 1928, p. 51 (Tungting Lake, Hunan); Amer. Mus. Novit. No. 431, 1930, p. 4 (Tungting Lake; Hokou, Kiangsi; Kienyang, Fukien).—Wu, Sinensia, Vol. 1, No. 6, 1930, p. 86 (Kianting, Szechuan).

Depth in length 3.7 to 3.6, head 2.7 to 2.6. Eye in head 5.4 to 5.2, snout 3.7 to 3.6, interorbital 6.2 to 5.2, maxillary 2.4, depth of caudal peduncle 3.6 to 3.4, longest dorsal spine 4.4 to 4.3, longest dorsal ray 3 to 2.8, longest anal spine 4.6 to 4.4, longest anal ray 2.7 to 2.5, ventrals 2.4 to 2.3, pectoral 2.5 to 2.3.

Body compressed; upper profile of head and back smoothly curved, not elevated. Head elongate, not broadened at base and tapering in front as in *S. chuatsi*. Diameter of eye less than length of snout, greater than or equal to the interorbital width; nostrils close together, in front of eye. Mouth large, oblique; maxillary with a small, long supplemental bone, the width of its distal extremity equal $\frac{2}{3}$ the diameter of eye, not quite reaching posterior margin of eye; lower jaw projecting, but not so strongly projecting as in *S. chuatsi*. Teeth villiform, in jaws and on vomer and palatines; some of the teeth in jaws, especially the lower, are enlarged and canine-like. Preopercle serrated, with 2 or 3 enlarged spines at angle and 2 at lower border. Gill-membranes broad, entirely free from isthmus; gill-rakers 4 or 5, the longest much shorter than gill-

filaments. Scales small, cycloid, covering body and side of head, about 120-130 in the lateral line to base of caudal. Lateral line continuous, more or less following the general contour of back or curved down rather steeply above the end of pectorals to below base of soft dorsal, extending along median line of tail.

Dorsal originating above base of pectorals, with 13 spines and 12 soft rays, the spines increasing in length to the 6th, which is shorter than soft rays. Anal originating below last spine of dorsal, with 3 spines and 9 soft rays, the 2nd spine the longest and strongest. Ventrals inserted below the base of pectorals, with 1 spine and 5 soft rays, the spine about half as long as soft rays. Pectorals broad, rounded, symmetrical. Caudal rounded.

Yellowish brown, with dark spots and annuli. Dorsal, caudal and anal with black spots, forming several cross streaks. Pectorals and ventrals dusky or whitish; the base of the former may have a semi-circular blackish spot.

Described from 2 specimens from the Shanghai fish market, 210 and 198 mm. long without caudal.

Genus COREOPERCA Herzenstein.

Coreoperca Herzenstein, Ann. Mus. Zool. St. Petersb., 1896, p. 11; orthotype *Coreoperca herzi* Herzenstein.—Boulenger, Proc. Zool. Soc. London, 1899, p. 959.

Body compressed; scales small, cycloid, concentrically striated. Lateral line complete; tubes straight, occupying the greater length of the scale. Mouth large, protractile; maxillary exposed, with supplemental bone; villiform teeth in jaws and on vomer and palatines; no canines; tongue smooth; head partly naked; preopercle serrated, with a few antrorse spines on the lower border; opercle with two spines. Gill-membranes separate; seven branchiostegals; pseudobranchiae present. Dorsal fins confluent, with 15-15 spines and 11-14 rays, the spinous portion much longer than the soft; anal short, with 3 spines and 7-11 rays; caudal rounded. Pectorals symmetrical, rounded, with 16 rays. Ventrals below the pectorals, close together, with 1 strong spine and 5 branched rays, the last of which is connected with the belly by a membrane. (Boulenger, 1899.)

Remarks. This genus is probably inseparable from *Siniperca* Gill.

35. COREOPERCA WHITEHEADI Boulenger.

(Figure 35.)

Coreoperca whiteheadi Boulenger, Proc. Zool. Soc. London, 1899, p. 960 (Hainan).—Nichols, Bull. Amer. Mus. Nat. Hist., Vol. LIV, Art. 2, 1927, p. 383, fig. 44 (Hainan).

Depth in length 3, head to tip of lower jaw 2.7. Eye in head 5.5, snout 5, interorbital 5, maxillary 2.1, depth of caudal peduncle 3.2, longest dorsal spine 4, longest dorsal ray 2.5, longest anal spine 4.5, longest anal ray 2.7, ventrals 2.4, pectorals 2.3.

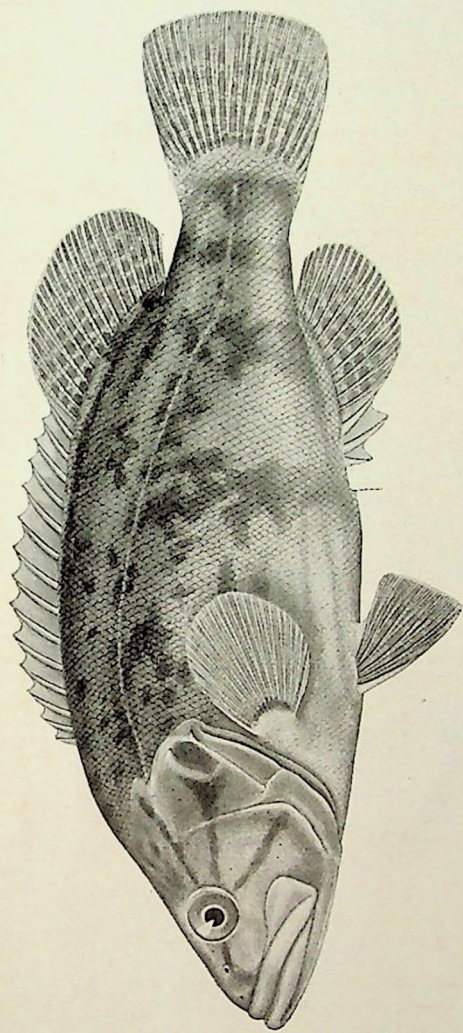


Figure 35. *Coreoperca whiteheadi* Boulenger. Length to Base of Caudal 122 mm.

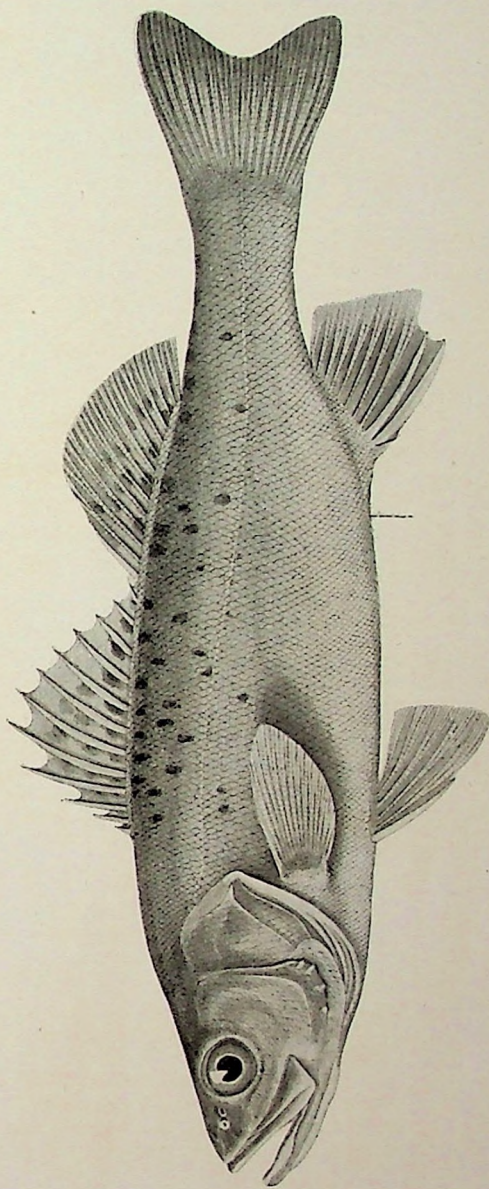
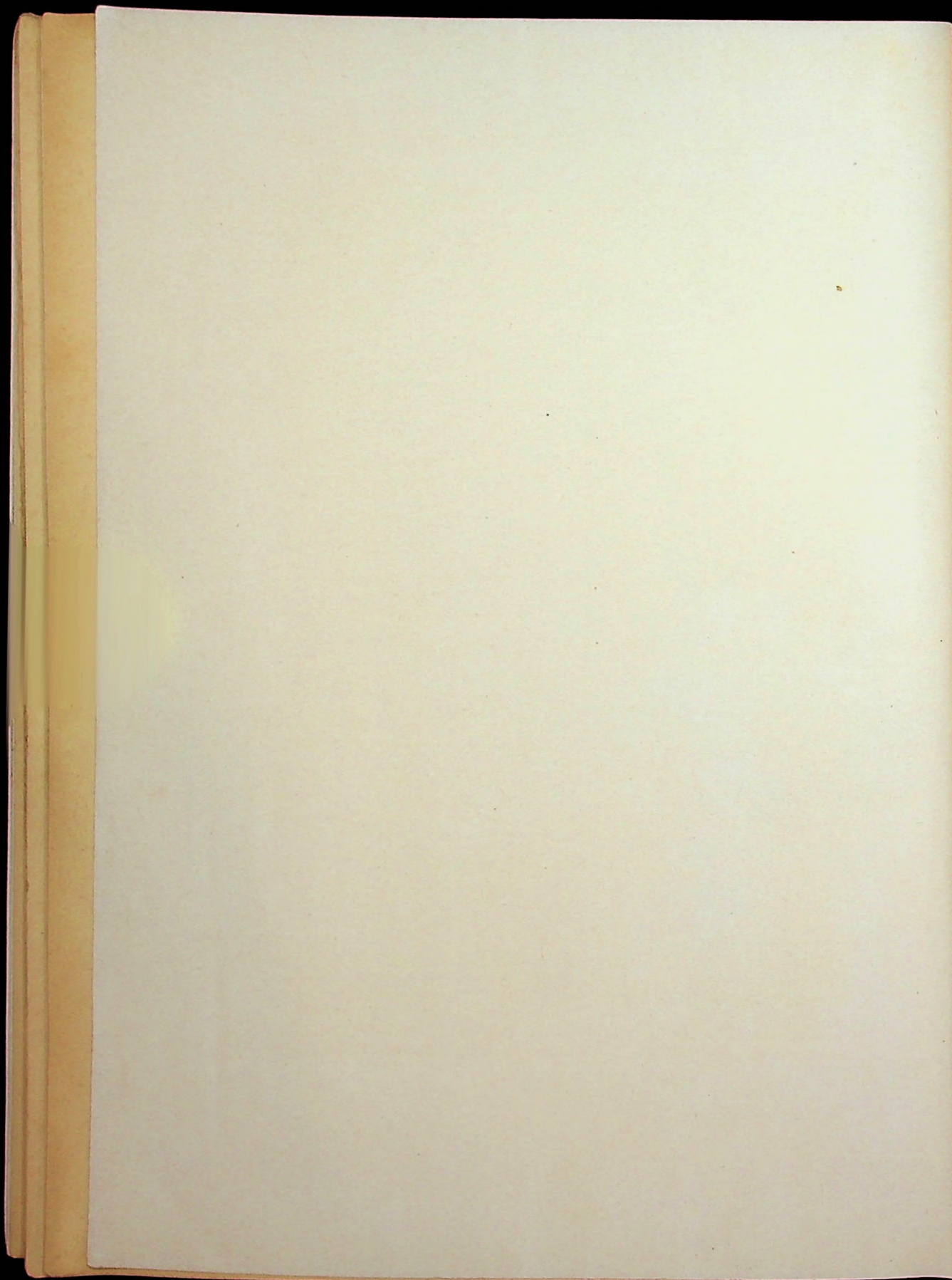


Figure 36. *Lateolabrax japonicus* (Cuvier and Valenciennes). Length to Base of Caudal 190 mm.



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Body compressed, rather high; dorsal contour smoothly arched; head large, pointed. Snout $1\frac{1}{2}$ diameter of eye, which is slightly less than interorbital width; nostrils well separated, the anterior smaller, near the tip of the snout, the posterior separated from the eye by a distance half of diameter of the latter. Mouth large, oblique; maxillary extending a little beyond vertical of posterior border of the eye, with a small supplemental bone at its upper edge; lower jaw projecting; villiform teeth in jaws and on vomer and palatines, no canines; tongue smooth, pointed at tip, broadened at base. Preopercle finely serrated, without enlarged spines; opercle with two flat sharp spines. Gill-membranes very broad, entirely free from isthmus; gill-rakers few and rudimentary. Scales cycloid, small, covering body and side of head. Lateral line continuous, running subparallelly with the dorsal contour of body to below end of soft dorsal, thence extending to middle of tail.

Dorsal originating above base of pectorals, with 14 spine and 15 soft rays, spines increasing in length to the 6th, the soft rays about twice as long as spines. Anal originating below 13th spine of dorsal, with 3 spines and 11 soft rays, the 2nd spine the longest and strongest. Ventrals originating behind base of pectorals, with 1 spine and 5 soft rays, the spine strong, about half as long as the 1st soft ray, the last ray connected with the belly by a membrane. Pectorals symmetrical, rounded, with 16 rays. Caudal rounded, subtruncate.

Brownish, with dark marblings tending to form broad transverse bands, the two bands on the caudal peduncle are fairly distinct, the one below the posterior part of soft dorsal and that below the posterior part of spinous dorsal are appreciable. Soft dorsal, caudal and anal with numerous dark spots on fin membranes, forming a number of cross streaks; spinous dorsal and ventrals dusky, without spots; pectorals whitish, with a dusky band at base. Three dark stripes radiating backward from eye, the lower one to the angle of preopercle, the upper one to the upper corner of gill-opening, the middle one to a large, black, white-edged ocellar spot at the end of opercle; 1 short black stripe from anterior margin of eye to nostrils.

Described from a specimen of 122 mm. long, collected by Mr. Y. M. Tung of the West Lake Museum, Hangchow, at a brook in Tien-mu-san, Chekiang. The specimen is preserved in the West Lake Museum, Hangchow.

Genus LATEOLABRAX Bleeker.

Labrax, part, Cuvier and Valenciennes, Hist. Nat. Pois., II, 1828, p. 55.

Lateolabrax Bleeker, Ichth. Jap., Verh. Batav. Gen., XXVI, 1857, p. 53.

Percalabrax Gunther, Cat. Fish., Vol. 1, 1859, p. 70.

Body compressed; scales small, smooth, ciliated. Lateral line complete, the tube straight and occupying nearly the whole length of the scale. Mouth large, protractile; maxillary exposed, with supplemental bone; villiform teeth in jaws and on vomer and palatines; tongue smooth; head scaly; preopercle serrated, with a few strong antrorse spines on the lower border; opercle ending in a spine. Gill-

membranes separate; seven branchiostegals; pseudobranchiae present; gill-rakers long and slender. Two dorsals, connected at base, with XI-XII, I-II 12-14 rays, the spinous portion longer than the soft; anal short, with III 8-9 rays. Caudal emarginate. Pectorals asymmetrical, obtusely pointed, rays 16-18, upper longest. Ventrals behind the base of the pectorals, close together, with a strong spine. Posterior processes of premaxillaries not extending to the frontals; parietals and supraoccipital bones not extending to between postfrontal processes; supraoccipital and parietal crests strong, not produced on the frontal. Vertebrae 35 (17+18). Coasts of China and Japan. (Boulenger, 1895.)

36. LATEOLABRAX JAPONICUS (Cuvier and Valenciennes).

(Figure 36.)

Labrax japonicus Cuvier and Valenciennes, Hist. Nat. Poiss., Vol. 2, 1828, p. 85 (Sea of Japan).—Richardson, Ichth. China, 1846, p. 222 (Seas of China and Japan; Hongkong, Canton, Peiho, Chusan, etc.).

Perca-labrax japonicus Temminck and Schlegel, Faun. Japan., Pisc., 1842, p. 2, pl. 2, fig. 1 (Nagasaki). (The name *Perca-labrax* was used by Temminck and Schlegel as the equivalent of *Perca (labrax)* suggested by Cuvier and Valenciennes; it was never intended by them to denote a new genus.)

Holocentrum maculatum McClelland, Calcutta Journ. Nat. Hist., Vol. IV, 1844, p. 395, pl. 21, fig. 1 (Ningpo; Chusan).

Labrax lyuy Basilevsky, Nouv. Mem. Soc. Nat. Moscou, X, 1855, p. 219 (Rivers in Eastern China).

Labrax luyu Mollendorff, Journ. Roy. Asi. Soc., N.-China Branch, New Ser. XI, 1877, p. 106 (Pei-ho).

Percalabrax poecilonotus and *spilonotus* Dabry de Thiersant, Pisc. en Chine, 1872, pl. XXXVI, figs. 2 and 3 (Yangtsekiang).

Percalabrax japonicus Günther, Cat. Fish., Vol. 1, 1859, p. 71 (China; Japan).—Kner, Novara, Fische, 1865, p. 13 (Shanghai).—Martens, Archiv Naturgeschichte, Berlin, 1868, p. 5 (China).—Günther, Ann. Mag. Nat. Hist. (4) XII, 1873, p. 240 (Shanghai).—Martens, Preuss. Exp. Ost-Asi., Zool. Abth., 1875, p. 385 (Shanghai; Japan).—Peters, Monasber. Akad. Wiss. Berlin, Vol. 45, 1880, p. 921 (Ningpo).—Steindachner, Denkschr. Akad. Wiss. Wien, Vol. LIX, 1892, p. 359 (Shanghai).

Lateolabrax japonicus Bleeker, Verh. Batav. Gen., XXVI, 1857, Ichth. Jap., p. 53 (Japan).—Bleeker, Neder. Tijd. Dierk., Vol. IV, Pts. 4-7, 1872, p. 137 (Canton, Hongkong, Chusan, Shanghai, Pei-ho).—Boulenger, Cat. Fish., Vol. 1, 1895, p. 123 (Japan; China; Chefoo, Shanghai, Hae-yoe, Amoy, Chusan; Formosa).—Rutter, Proc. Acad. Sci. Philad., 1897, p. 73 (Swatow).—Günther, Ann. Mag. Nat. Hist., (7) I, 1898, p. 257 (Newchwang).—Jordan and Seale, Proc. U. S. Nat. Mus., Vol. 29, 1905, p. 521 (Shanghai).—Jordan and Starks, Proc. U. S. Nat. Mus. Vol. 31, 1906, p. 517 (Port Arthur).—Evermann and Shaw, Proc. Calif. Ac. Sci., Ser. 4, Vol. XVI, 1927, p. 115 (Woosung; Hangchow).—Mori, Journ. Chos. Nat. Hist. Soc., No. 6, 1928, p. 24 (N. China; Liao River; W. Korea); Jap. Journ. Zool., Vol. II, No. 1, 1928, p. 70 (Tsinan).—Nichols, Bull. Amer. Mus. Nat. Hist., Vol. LVIII, Art. 1, 1928, p. 51 (Fukien).—Tchang, Cont. Bio. Lab., Sci. Soc. China, Vol. IV, No. 4, 1928, p. 36, fig. 41 (Nanking).—Shaw, Bull. Fan Mem. Inst., Vol. 1, No. 10, 1930, p. 193 (Soochow).

Head in length 3.5 to 3.3, depth 4.2 to 4. Eye in head 5.2, snout 4.7, interorbital 6 to 5.7, maxillary 2.3 to 2.2, length of caudal peduncle

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1.7 to 1.6, depth of caudal peduncle 3.3 to 3.2, longest dorsal spine 2.2 to 2, longest dorsal ray 2.3 to 2, longest anal spine 2.2 to 2.1, longest anal ray 2, ventrals and pectorals 1.9 to 1.8.

Body elongate, compressed; dorsal and ventral contours smoothly and similarly curved; head moderately long, pointed; caudal peduncle rather slender. Interorbital space slightly convex, less than the diameter of eye, which is not quite equal to the length of snout. Mouth large, oblique, protractile; maxillary with a small supplemental bone, the width of its distal end about $\frac{3}{4}$ of diameter of eye, extending to nearly posterior border of eye when the mouth is closed; lower jaw strongly projecting; narrow bands of villiform teeth in jaws and on vomer and palatines. Preopercle serrated, with a few strong antrorse spines at the angle and lower border; opercle ending in a single strong spine. Gill-membranes entirely free from isthmus; gill-rakers longer than gill-filaments, about 16-18 in the first arch. Scales small, covering body and side of head, about 85 along lateral line, a scale sheath at base of dorsal and anal. Lateral line slightly decurved below base of soft dorsal, extending along median line of tail.

Dorsal originating behind base of pectorals, divided by a low membrane into an anterior and a posterior portion; the former with 11-12 spines, the 5th the longest; the latter with 1-2 spines and 12-14 rays. Anal short, with 3 spines and 8-9 rays, the 1st spine short, the 2nd the longest and strongest, the 3rd subequal to the 2nd in length but weaker, the first few rays longer than the spines. Ventrals with 1 spine and 5 rays, the spine much shorter than the 1st soft ray; origin slightly in advance of that of dorsal. Pectorals obtusely pointed at tips, reaching below 7th spine of dorsal. Caudal emarginate.

Silvery, back grey, with black spots on upper sides of body and dorsal fin.

Described from three specimens, two from Chusan and one from Foochow.

(To be continued)

LAWN AND ROADSIDE PLANTS OF SHANGHAI

BY

W. M. PORTERFIELD.

(Continued from page 144)

Feeling that there must be many people in China who are sufficiently interested in the botany of this country to wish to know at least the common wild plants of the garden and road-side, the author of this article sets out to describe a series of twenty-five species commonly met with in the Shanghai

area, illustrating each description with a pen-and-ink drawing of the plant in question. Besides the names and works of the authorities quoted, a classified list of the species to be described is given in the first installment of this article appearing in the January number of this journal, as well as descriptions and drawings of the first six species. Twelve more species are described in the February and March issues, while the last seven are described below.—EDITOR.

* *

Figure 19. *Paederia foetida* Linn. 牛皮凍
(*P. tomentosa* Blume.)

a, The leaf—many are longer than this giving a more slender appearance to the leaf. b, A dichotomous cyme with fruits and flowers. c, Views of the flower. d, The fruit as a whole and sectioned to show the two seeds.

An herbaceous twining vine with opposite ovate to oblong-ovate leaves and axillary dichotomous or trichotomous cymes of small bell-like flowers. Leaves with rounded or mostly cordate base and acuminate apex. An odour of carbon bisulphide emanates from the leaves even though uncrushed. Flowers white to pale purple outside, mealy-tomentose; the throat hairy, pink in colour making a star-like spot in the centre of every flower. Fruit a small berry, globular, with one seed in each of the two divisions.

A common vine twining up over hedges and fences, and sometimes growing along the ground. Its presence can often be detected by the foetid odour even before the plant itself has been discovered. Flowers and fruits appear to be sessile along the branches of the cyme. Blooming takes place in August. (Collected September 10, 1931, nearly the last one.)

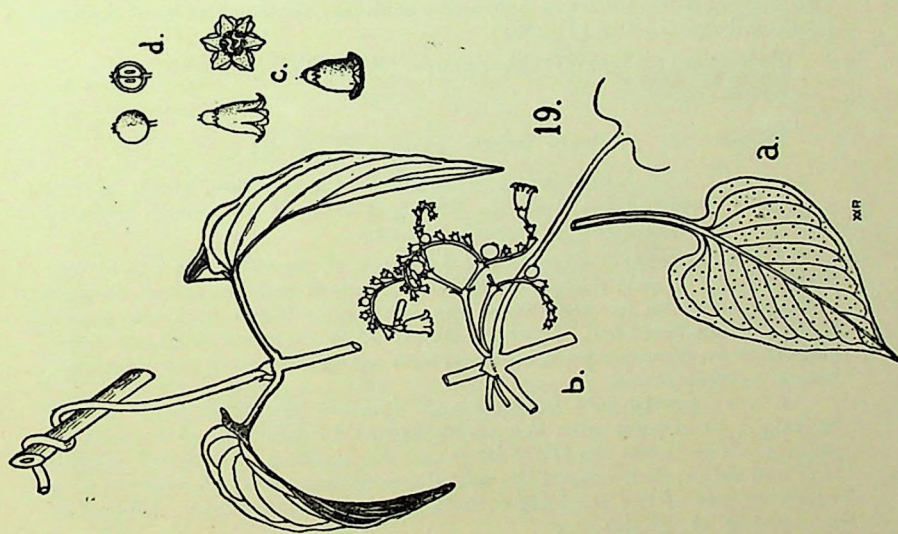
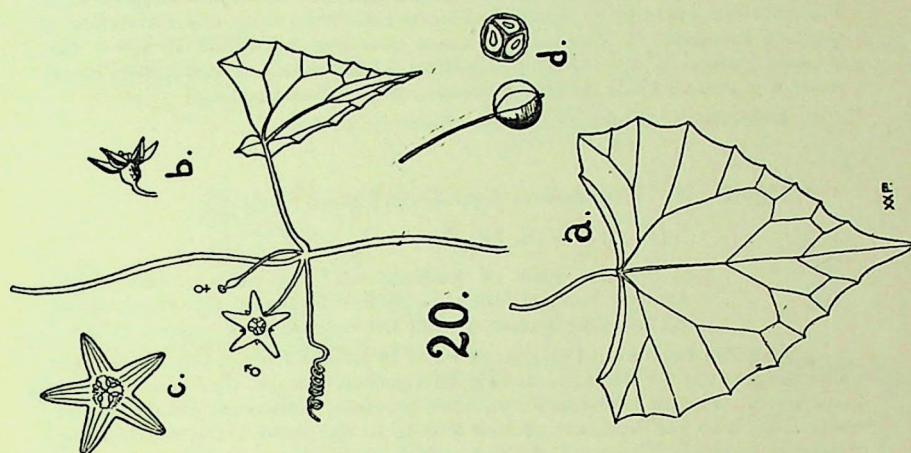
References: *Flora Hongkongensis* (Bentham), p. 161.

Flora of Manila (Merrill), p. 454-5.

Figure 20. *Melothria indica* Lour. 印度馬蛟

a, Surface view of leaf. b, Side view of staminate flower. c, Full view of same enlarged. d, Fruit as a whole and sectioned to show the three divisions and parietal attachment of the seeds. The pistillate flower in the sketch is one which is beyond the stage of blooming (all that could be obtained at the time the drawing was made), so that only the ellipsoid calyx tube carrying the ovary to which it is adnate is shown.

Slender climbing herbs with deltoid-ovate leaves, long simple tendrils, and small monoecious straw-coloured flowers. Leaf base hastate-cordate, margin sinuate toothed, apex acuminate. Male and female flowers solitary on long slender pedicels, both kinds occurring in the same axil. Fruit globose, beaked, with seeds attached to the outer wall of each of the three cells.



A very delicate little vine which climbs by tendrils over bushes and hedges situated in more or less exposed places. After the neglect of a summer one is quite likely to find upon returning from one's vacation a perfect network of these little vines covering a trimmed shrub, the mosaic formed by the leaves blanketing it completely in spots. (Collected near the end of their flowering season, September 8, 1931.)

References : Flora of Manila (Merrill), p. 456.

Figure 21. *Eupatorium japonicum* Thunb. 山 蘭

(*E. Wallichii* DC.)

a, Surface view of average leaf to show venation. b, A single head of four tubular florets. c, A single floret showing the simple character of the pappus (hair-like calyx).

An erect herb about 60 cm. or more in height from a perennial rootstock. Leaves ovate-lanceolate with toothed margin and narrowed at the base. Flower heads in corymbose clusters, individual heads cylindrical, pink in the bud, about four florets to the head. Florets tubular, pappus a single series of slender capillary bristles. Achenes smooth, five-angled.

A rather tall erect weed occurring on uncultivated land along the shaded borders of groves. The clusters of heads while in bud can easily be mistaken by the passer-by for clusters of unopened pink flowers. The leaf characteristics are significant in differentiating the local species. (Collected September 17, 1931.)

References : Flora Hongkongensis (Bentham), p. 172.

Figure 22. *Boltonia indica* Benth. 雞 兒 腸

a, A basal leaf showing the coarse marginal teeth. b, Full view of a head. c, Enlarged view of an achene showing setose scales around the top.

A stoloniferous herb with showy heads of lavender ray florets and yellow disk. Heads solitary at the ends of stem and branches. Leaves oblong-lanceolate, mostly entire, the lower ones larger with few coarse teeth. Stem branched, scabrous, about 30 or more cm. high. Achene stiff-hairy on its upper part, crowned with a ring of more or less connected setose pappus scales.

A very pretty late summer and autumn blooming wild flower. It might be classed with the asters except for the lack of a capillary pappus. The heads are fairly large and are striking with their lavender rays and yellow disk against the varied greens of grasses and weeds among which as one of the roadside community this plant ranks. (Collected September 21, 1931.)

References : Flora Hongkongensis (Bentham), p. 173.

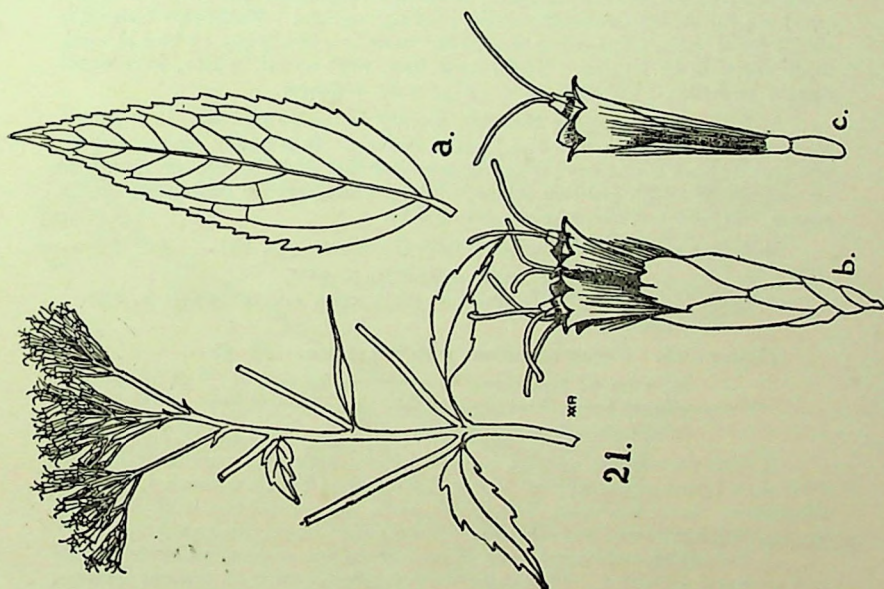
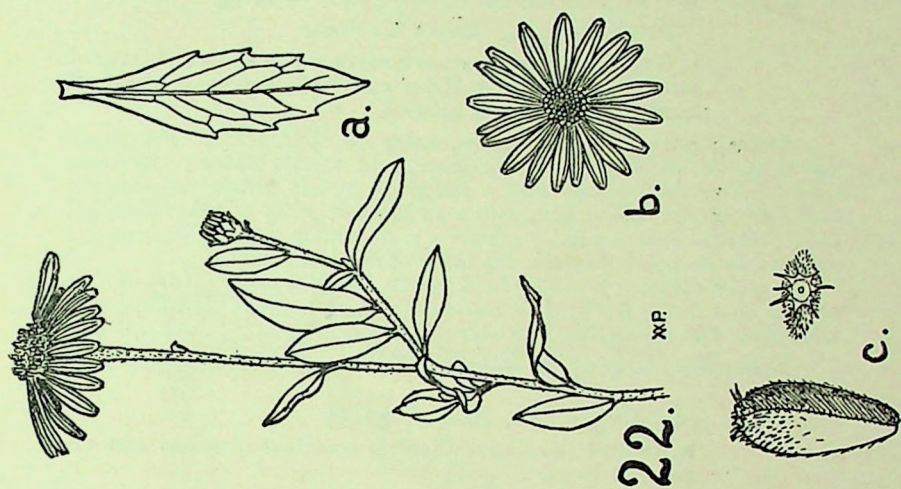


Figure 23. *Erigeron annuus* (Linn.) Pers. 一年蓬

Daisy Fleabane. Sweet Scabious.

a, Upper and lower leaves showing coarse teeth and broader form of the latter. b, Hairy achene with double pappus of tooth-like scales and bristles.

Annuals with tall stout stems, hairy all over, leafy. The upper leaves sessile, oblong-lanceolate, acute, and mostly entire; the lower ones tapering at the base into a margined petiole, ovate and coarsely toothed. Heads in corymbs, rays very narrow, white to pale lavender; disk, yellow. Achenes hairy crowned with double pappus, the outer a row of minute pointed scales, the inner of delicate bristles.

A very common weed in both North America and East China. It blooms all summer frequenting roadsides and open waste places together with other tall weeds like *Melilotus officinalis*. (Collected July 3, 1931.)

References: Gray's New Manual (Robinson and Fernald), p. 817-18.

Figure 24. *Eclipta alba*, Haenk. 鱧腸

a, One of the leaves showing marginal serration and appressed hairs.

A rough branching annual with opposite leaves and ascending stems. Stem sometimes reddish, covered with stiff appressed hairs. Leaves 5-7 cm. long, lanceolate, mostly sessile, slightly serrate. Peduncles bearing a single head each, thickening somewhat near the head, one or two in each axil, variable in length. The heads flat, rays small, white, involucre bracts leaf-like. Pappus none or greatly reduced.

A common composite thriving locally in moist places. It is found also in the eastern part of the United States. It is easily recognized by the small short white rays fringing a rather flat disk, by the procumbent or ascending rough reddish stems, and by the opposite lanceolate entire leaves. (Collected September 26, 1931).

References: Flora Hongkongensis (Bentham), p. 181.

Flora of Manila (Merrill), p. 476.

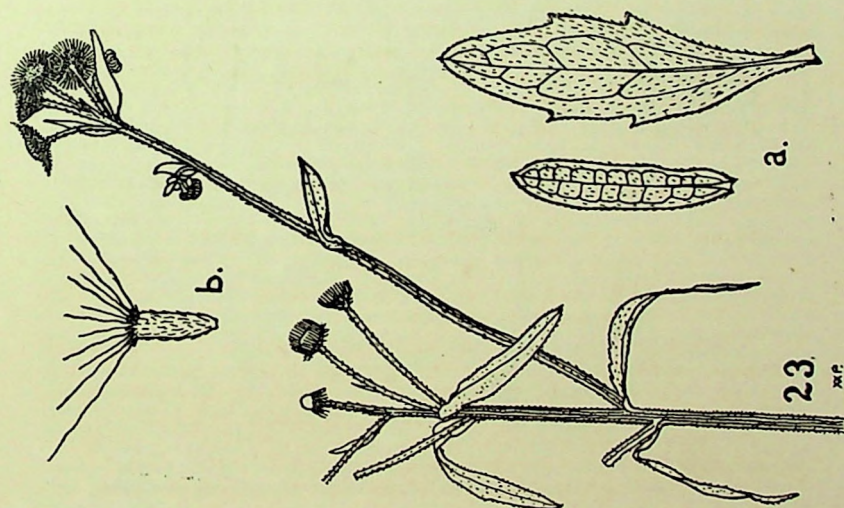
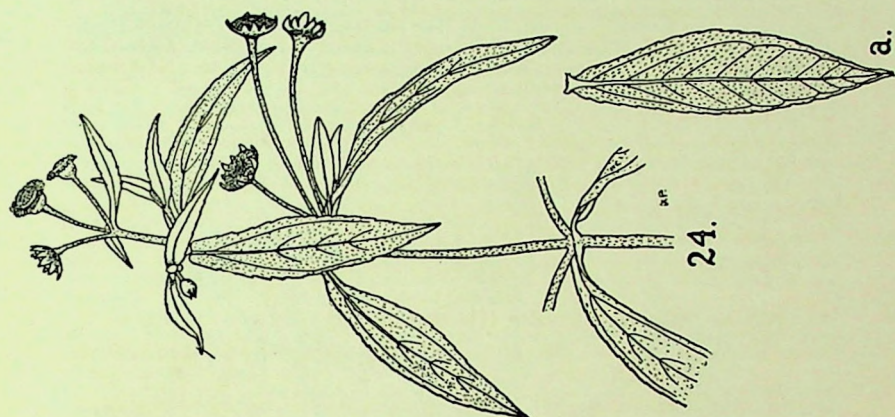
Gray's New Manual (Robinson and Fernald), p. 830.

Figure 25. *Chrysanthemum indicum* Linn. 野菊

a, One of the large lower stem leaves. b, Full view of a single head showing a single row of ray florets. c, A section through a head enlarged.

A fibrous, almost woody, autumnal plant up to a meter in height, branches terminating in few-flowered corymbs of yellow heads 12 mm. in diameter. Leaves ovate, five lobed, cleft almost to the midrib, lower surface with cottony pubescence. Rays pale yellow, disk yellow.

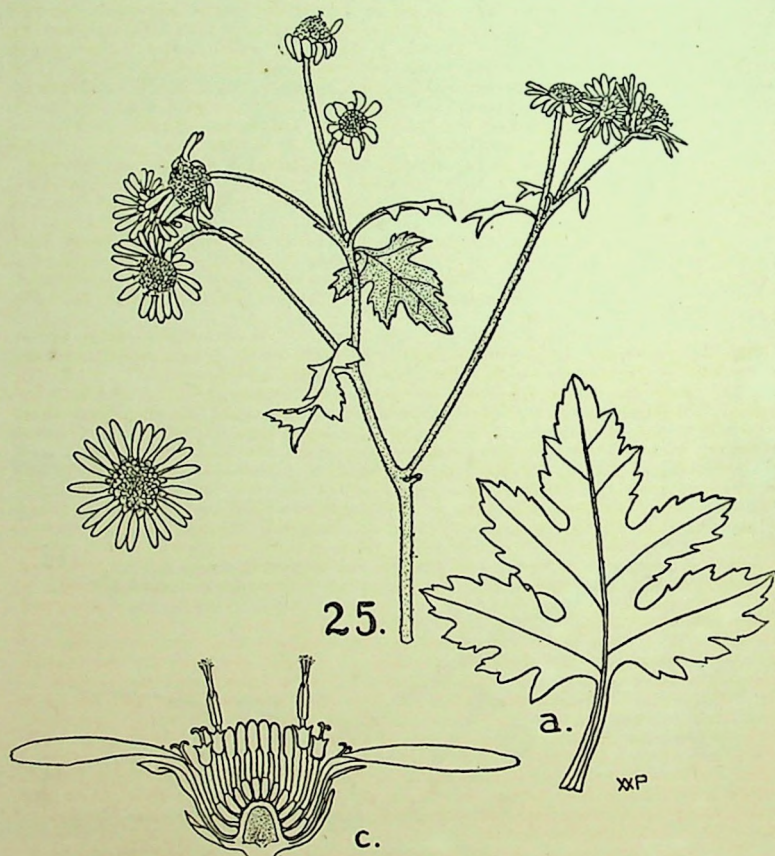
A beautiful autumnal spot of colour where several of these plants are grouped together. It is sometimes confused with *C. sinense* Sabine, but can be distinguished from it by the corymbed clusters of smaller



flowers, by the larger and more extensively cleft stem-leaves, and by the paler sparse tomentum on the lower face of the leaves. (Collected November 9, 1931).

References : Flora Hongkongensis (Bentham) p. 184-5.

Contributions from the Herbarium of the Shantung Christian University (Jacot): *Journ. N. Chin. Br. R.A.S.*, Vol. 59 (1928), p. 216.



SCIENTIFIC NOTES AND REVIEWS

BIOLOGY

THE EAST CHINA BIRDS: We have recently received Part II of the second volume of Mr. J. D. D. La Touche's "A Handbook of the Birds of Eastern China." This excellent work was begun some years ago and may be looked upon as the culmination of a lifetime of observations made by the author upon the ornithology of China. Mr. La Touche was employed in the Chinese Imperial Customs Service from the time he was a young man till he retired a few years ago after having held the position of Commissioner or Deputy Commissioner in various ports in China, both along the coast and up the Yangtze Valley. Wherever he resided he studied the bird life of the neighbouring country as well as the immediate vicinity, at the same time making collections of the different species of local birds. Thus when he retired he took with him to England one of the finest collections of Chinese birds that has ever been made, probably the finest made by any one individual.

As far as we know his interest in China's ornithology began in Fukien Province, when he was stationed at Foochow. He visited the wonderful type locality of the famous missionary-naturalist Armand David known as Kuatun, and is responsible for much of our knowledge of the bird life of that area.

Many years later, when he was Deputy Commissioner of Customs at Chin-wang Tao in North-eastern Chihli, he continued the extensive observations on bird migration that he had previously commenced at Sha-wei-shan, an island at the mouth of the Yangtze River.

One way and another ornithologists in China owe Mr. La Touche a great debt of gratitude. This debt is being further increased by his present publication of a complete survey of the birds of East China, in which he includes the provinces of Chihli (Hopei), Shantung, Kiangsu, Anhwei, Kiangsi, Chekiang, Fukien (he calls it Fohkien) and Kwangtung.

The part just received deals with the families *Caprimulgidae* (goatsuckers or nightjars), *Tytonidae* (grass-owls), *Asionidae* (other owls), *Pandionidae* (ospreys), *Aegypiidae* (vultures) and *Falconidae* (falcons, eagles and hawks).

The only new form described is the North China eagle owl (*Bubo bubo inexpectus*), habitat Chihli and Shansi (resident), whose chief distinguishing characteristic is its pale colouring. It is highly probable that the eagle owl of Inner Mongolia, in which area this bird is common, belongs to this species.

Speaking of Shansi, Mr. La Touche appears to have but little data at his disposal concerning the birds of this province. We notice, for instance, that the Chinese bearded vulture or lammergeyer (*Gypaetus barbatus grandis* Storr) is given as occurring in Chihli, Mongolia, Tibet, the Kokonor, Kansu, Alashan border, Hupeh and the Szechuan-Tibetan border. Shansi is not mentioned. As a matter of fact this handsome vulture is very common in the mountains of North and North-western Shansi. The only reason why we failed to secure specimens when hunting in this area was because the birds we saw were too wary to allow us to approach within shooting distance. The range ascribed to the cinereous vulture (*Aegypius monachus*, Linn.) also leaves out Shansi and Shensi, in both of which provinces we have seen this bird. We stuffed and mounted a huge specimen for the mission museum in Tai-yuan Fu that was shot locally. We have mentioned this specimen in our "Naturalist in Manchuria," Vol. II. Gee, Moffett and Wilder also record it from Shansi. Yet another bird whose range into Shansi is not given is the Amur redfooted falcon (*Erythropus amurensis*, Radde). This species breeds commonly in the large trees in such cities as Tai-yuan Fu. Neither the lammergeyer nor the Amur red-footed falcon are recorded from Shansi by Gee, Moffett and Wilder, and it seems more than likely that there are no such records. If so, it is high time a list of the birds of this province were forthcoming. In any case we cannot blame Mr. La Touche for leaving it out.

We look forward with great interest to the further parts of this valuable handbook. Meanwhile the parts already published can be obtained for 7s. 6d. net each. The publishers are Messrs. Taylor and Francis, Red Lion Court, Fleet Street, London, E.C. 4.

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THE BIRDS OF NEW ZEALAND: It is a far cry from East China to New Zealand, but not so far that some of our migrant birds are not able to find their way from one place to the other. For this reason, if for no other, a book on the birds of New Zealand will prove of interest to China's ornithologists. It is interesting to think that the curlew we hear passing overhead here in Shanghai on a windy autumn night may fetch up in that far off island in the Southern Pacific. Yet one of our curlews, the species known to science as *Numenius cyanopus* does just this, as also does the closely related whimbrel (*N. phaeopus*) and the little whimbrel (*N. minutus*). The same may be said of many other of the waders that pass through China during the migration periods.

Thus the new book, "New Zealand Birds," by W. R. B. Oliver, M.Sc., published by Fine Arts (N. Z.) Ltd. of Wellington, New Zealand, comes with especial interest to us. The ornithology of New Zealand has some peculiar features, including, as it does, such remarkable flightless types as the kiwi (*Apteryx*) and the penguins, not to mention the extinct monster birds of the past such as moas (including five genera).

According to the publishers note this is the only important contribution to the literature of New Zealand bird life since Buller's work on this subject published nearly fifty years ago, and it is the first complete reference book on the birds of this region that has appeared. The author, who is the Director of the Dominion Museum, is well qualified for the task of compiling such a book.

The book is well got up and profusely illustrated mainly from photographs. Six coloured plates brighten its pages. Each species is dealt with in detail, only binomial names being used, which simplifies matters for the ordinary nature student. We regret we are unable to state the price, but it does not look like a very expensive publication. The book is certainly worthy of a place in one's library.

SOME STRANGE BIRDS IN SHANGHAI: While on the subject of New Zealand birds we may draw our readers' attention to the two birds shown in the accompanying illustrations. These are both members of groups of birds belonging to the great Australasian sub-region, the different species being scattered throughout the Papuan Islands and the continent of Australia itself. One is a Victoria crowned pigeon (*Goura victoria*) and the other is a cassowary (*Casuarus*), both specimens now being in the Municipal "Zoo" at Jessfield Park, where they appear to be doing well.

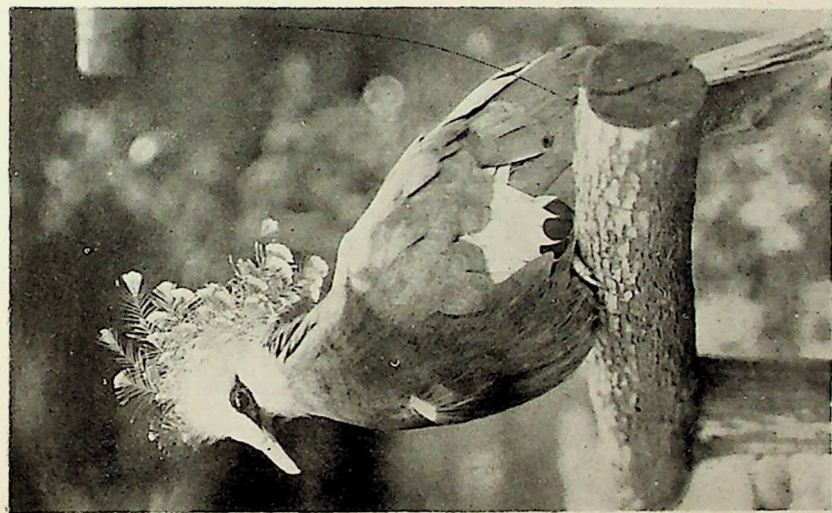
The avi-fauna of Australia, New Guinea and neighbouring islands is every bit as interesting and remarkable as is that of New Zealand, dealt with in the book reviewed above. In some ways it is even more interesting, for, whereas in New Zealand all the representatives of the group of great flightless birds known as the moas have become extinct, the great flightless birds of Australia and the Papuan Islands, as exemplified by the cassowaries and emeus, have persisted into modern times. The cassowaries are distributed throughout Australia and New Guinea and are found on some of the neighbouring islands, while the emeus are confined to Australia.

The crowned pigeons, which are the largest living representatives of the pigeon family, are confined to New Guinea and the Papuan Islands. There are a number of species recognized, that to which our specimen belongs being characterized by the spatulate form of the tips of the long feathers that form the crown. Unquestionably these are the handsomest members of the whole pigeon family.

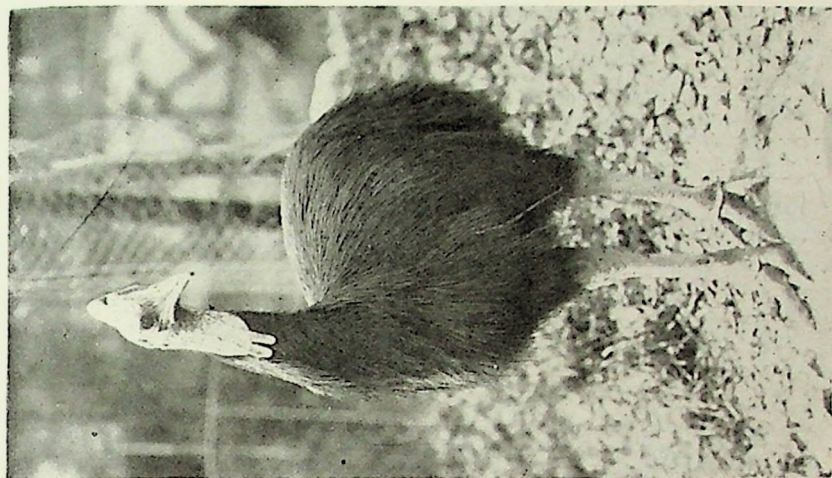
GEOLOGY

RECENT INVESTIGATIONS ON CHINESE COAL AND BAUXITE DEPOSITS: In Number 18 (February, 1932) of the *Geological Bulletin*, which is the present continuation of the *Bulletin of the Geological Survey of China*, four useful papers are published as follows:—

- The Chiawang Coal Field of Tungshan District, Kiangsu Province, by C. Y. Hsieh
- The Liehshan and Luichiakou Coal Field of Suhsien, Northern Anhui, By W. H. Wong and Y. S. Chi



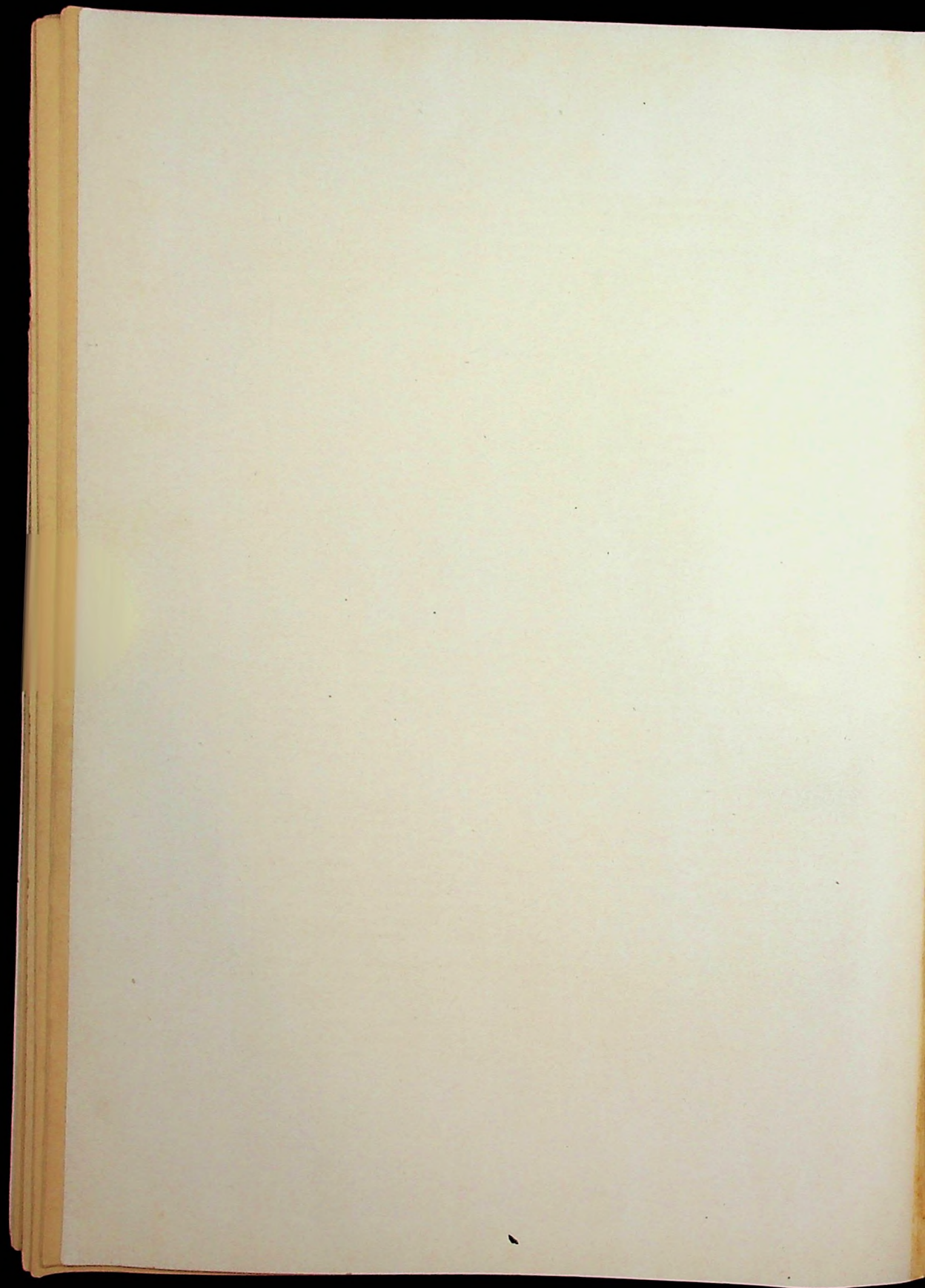
The Crowned Pigeon (*Goura*), a Member of a Group of large Pigeons found in the Papuan Islands.



By Courtesy of the North-China Sunday News.

The Cassowary (*Casuarus*), another Type of strange Bird belonging to the Papuan Islands and Australia.

The two Specimens reproduced on this Plate are in the Municipal Zoo at Jessfield Park, Shanghai.



SCIENTIFIC NOTES AND REVIEWS

The Coking Property of the Poshan Coal of Shantung, by C. C. Wang

The Bauxite Deposits of Poshan and Tzechuan Districts, Shantung, by C. C. Wang.

Scattered throughout various comparatively wide areas in China many outcrops of good quality coal are to be found, which, while not extensive enough to form really great coal fields, are sufficiently valuable to work at least for local purposes. To this category, apparently, belong the coal fields described in the first two of the above listed papers. Both are close to the Tientsin-Pukow Railway, that of Chiawang being actually connected therewith by a light gauge line. The stratigraphy and geological structure of the fields are described, borings examined and quality of coal discussed.

The Chiawang coal is described as bituminous containing perhaps a little excess of ash, and usable in steamers, locomotives, machine shops and for coking, the coke, however, being of fair grade only. Only two workable seams have been found, the total available coal being calculated at about 130,000,000 tons, of which at least 100,000,000 tons could be profitably extracted.

The Liehshan coal is a good anthracite, while that of Luichiaikou is bituminous and of excellent coking quality. The latter coal field is estimated to contain some 34,632,000 tons of available coal.

In the paper by Dr. C. C. Wang on the coking qualities of the Poshan coal of Shantung the author discusses the geology of this coal field, correcting in some particulars the survey published by Mr. H. C. Tan in the *Bulletin of the Geological Survey of China*, No. 4, October, 1922. He also lists the seams of this important coal field giving the reserves of coal. The latter total something over 200,000,000 tons. Chemical analyses of the coal and the coke made therefrom of the different seams are given. The greater part of the coal appears to be unsuitable for making into metallurgical coke, the reserve suitable for this purpose amounting to about 15,000,000 tons. It is pointed out that the Poshan coal field is favourably situated in relation to the Tsinan-Tsingtao Railway, with which it is connected by a branch line.

The paper by the same author on the bauxite deposits of the same area, Poshan, describes in some detail the general geology of the region, the bauxite bed, hand specimens of the bauxite shale and their analyses, the economic significance of the bauxite deposits and their probable origin. From the analyses it would appear that these bauxite shale deposits of Shantung are of considerable value and are worthy of further investigation. As pointed out bauxite ores, from which the metal aluminium is derived, should contain from 52 to 65 per cent. of alumina. The Poshan bauxite contains from 39.79 to 59.23 per cent. of alumina, according to the locality. With regard to the origin of the bauxite deposits the author considers they are sedimentary, having been deposited in lakes and lagoons.

METEOROLOGY

WEATHER CONDITIONS IN MARCH: As far as the Lower Yangtze region is concerned the past month has been notable for its excessive dryness. The precipitation, either in the form of rain or snow, has been only a very small percentage of what is normal for this month in these parts.

Snow began to fall in the Shanghai area on the afternoon of March 13, but had stopped by 7.00 p.m. This was heralded by a cold snap in North China, 22°F. being recorded in Peking and 20°F. in Tientsin, where the Hai Ho froze over in places. This sudden cold spell resulted in a considerable number of deaths from freezing in North Shansi. The coldest weather for fifty years was reported from Si-an Fu and other places in Shensi, where -3°F. was registered during a severe blow from the north-west.

The season in the Shanghai area is noticeably late in regard to the blooming of flowers and the arrival of migrant birds. This is probably due more to the dryness than to cold.

SEISMOLOGY

CEPHALONIA ISLAND ROCKED: The only earthquake of any seeming importance recorded during March was one which rocked the Island of Cephalonia

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on the night of the 11th, destroying telephonic and telegraphic communications and doing considerable damage to property. A wireless message received at Athens stated that hundreds of houses had collapsed in the town of Argostoli.

NINE THOUSAND EARTHQUAKES ANNUALLY: Of the nine thousand earthquakes which take place annually, according to Dr. Robert Cuyler of the Bureau of Economic Geology, U. S. A., only five thousand are actually felt, and only one hundred and seven prove destructive.

MEDICINE

SHANGHAI NARROWLY ESCAPES SMALLPOX EPIDEMIC: That the International Settlement of Shanghai narrowly escaped an epidemic of smallpox during the period of hostilities in February is shown by the statistics of cases and deaths reported by the Health Department. There were 19 cases amongst the foreigners notified, with eight deaths, and 70 cases amongst the Chinese, with 53 deaths. An intensive vaccination campaign was immediately undertaken, some 40,097 free vaccinations being performed. These measures appear to have checked the outbreak, though even in March there were many cases reported with a corresponding proportionate number of deaths.

A. DE C. S.

SHOOTING AND FISHING NOTES

SHOOTING

BIG GAME HUNTING FROM SEISHIN, NORTH-EASTERN KOREA: In our last issue we gave some information regarding the big game shooting to be had in the Seishin district of North-eastern Korea, publishing a letter from Mr. George M. Yankovsky, who has settled there and is willing to arrange for shooting parties from Shanghai and other places.

We are now able to give further details, which have been supplied by Mr. Brooke Dolan, leader of the recent Dolan Expedition into Western China, who paid a short visit to Seishin during March.

Mr. Dolan's object in visiting this place was to secure some bear shooting, but he found on arrival there that he was a few weeks too early. The bears, which are said to be plentiful in the district, had not yet left their winter holes, where they sleep away the coldest months of the year. He was able, however, to form a good idea of the country and its possibilities, which he informs us are good. His party had seven days' hunting altogether, during which time they secured eight roedeer and one wild pig. They were hampered in their operations by the lack of snow, which rendered tracking game impossible. As far as we can ascertain, the country immediately round Seishin contains plenty of roedeer, wild pig and bear, with a few sika, or spotted deer, and smaller game.

To get wapiti it is necessary to go some days' journey northward into Manchuria, where, also tigers may be had, and where wild boars are very abundant, running in herds of as many as fifty individuals.

The best time for all this hunting is in the late autumn and winter, when there is plenty of snow and the whereabouts of the game can be easily detected.

Bears appear to be most numerous and easily hunted during the late summer, but at this period, of course, their coats are not at their best. This occurs when they first leave their holes in the spring, when, also, they are easily hunted.

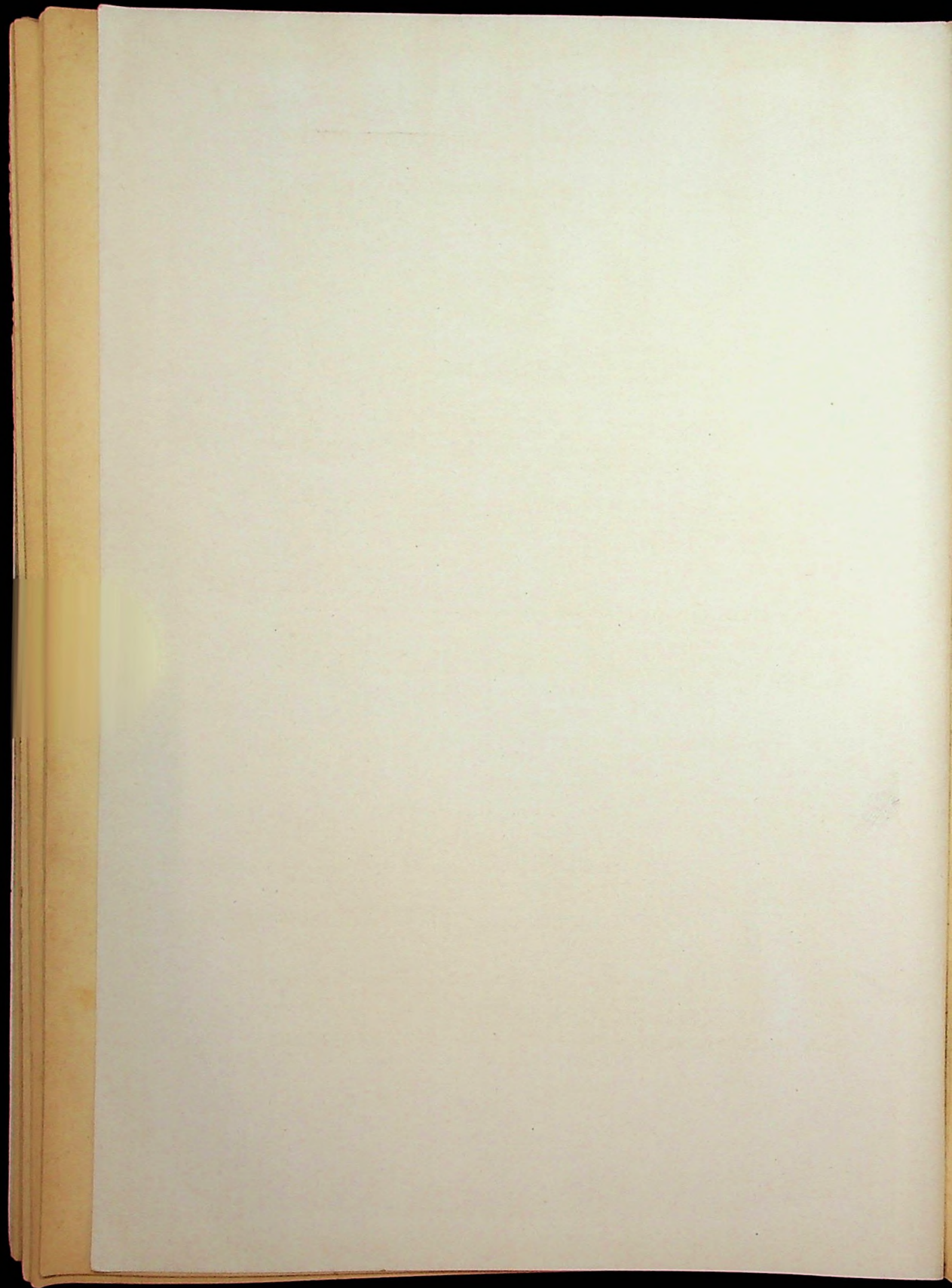
Mr. Yankovsky and his family are willing to arrange for shooting trips, supplying everything necessary, from accommodation to guides and beaters, for G. Yen 10.00 per capita per diem. We are informed, however, that for a successful hunt a full month should be allowed.



A Bag of Wild Boars and Roedeer made last December by Mr. George M. Yankovsky and Party in the Seishin Country of North-eastern Korea.



Mr. George M. Yankovsky of Seishin, North-eastern Korea, with his fine Pack of Hunting Dogs.



SHOOTING AND FISHING NOTES

GHASTLY CRIME IN THE MANCHURIAN FOREST : News has reached us of a ghastly crime committed by persons unknown upon three Russian hunters in the forest of Northern Kirin. These were residents of a small town named Shih-towhotze (meaning Stoney River) on the Eastern Section of the Chinese Eastern Railway not far from Imienpo, where hostilities have recently been taking place. The oldest of the three was named Konovoff, and he, his son and his nephew, named Kislizsky, left their home on February 26 on a hunting trip. As they did not return when expected, other professional hunters of the district organized a search, discovering the bodies of the three missing Russians hanging from trees in the forest. There was evidence that before being shot the wretched victims had been tortured by their murderers.

The theory that these murders were the work of local *hunghutze*, or bandits, is scouted, because the three hunters were well known to and on friendly terms with the latter. It is believed that the murders have a political background, though what that might be is not indicated.

This kind of thing is not very encouraging to sportsmen who might wish to hunt in the wonderful forest country of North Manchuria, and we deem it only right, after we have so often advocated a hunting trip in this area, which we ourselves visited in 1914 and 1915, to publish this grizzly story and to warn those who have intended to go there of the danger that might threaten them.

SHOVELLER DUCK ON THE WHANGPOO : Mr. H. Brian Bates, who is well known amongst shooting men of this district, reports that he shot three shoveller ducks and a Mandarin teal on the Whangpoo on March 20 between the Settlement and Woosung. We give this report because shovellers are far from common in these parts, and their occurrence here may be of interest to some of our sporting readers.

POOR SNIPE SHOOTING THIS YEAR : Owing, presumably, to the excessively dry weather so far experienced this season snipe shooting, we have been informed by parties who have been up country, has been very poor. Unless a decided change takes place and we get plenty of rain during the next few weeks, it may safely be predicted that the Spring Snipe shooting this year will also be a failure.

FISHING

NO SALMON IN CHINA PROPER : In a letter received recently a correspondent refers to a statement regarding the legend of Lung Men, the deep defile in the mountains south of Loyang (Ho-nan Fu) in Honan, famous for its cave temples and colossal stone figures. This says that, according to old legends, when the salmon ascend the stream in the third moon of each year, any that succeed in passing through the precipitous rapids at this point become transformed into dragons.

Our correspondent asks us if there are, or ever have been, any salmon in China. Our answer is that so far no salmon or related species has been found in the waters of China Proper, except the *Plecoglossus altivelis*, which ascends the small mountain streams only in coastal regions, and a species of trout occurring in the streams in the Tung Ling area of North-eastern Chihli. Various members of the carp family, however, ascend streams and rivers to breed, and it is evidently these to which the legend refers.

The fish depicted in Chinese paintings and on porcelain ware as trying to jump into the air and so turn into a dragon is invariably a common carp (*Cyprinus carpio*, L.), which occurs all over China and is greatly esteemed by the Chinese as a food fish.

We have caught specimens of this species in the act of ascending streams from big rivers, presumably to breed. It is probable that it was the reference to the ascending of the rapids by this fish that led to its being called a salmon, since this is so well known and characteristic a habit of this group of fishes.

As regards the occurrence of salmon in China in the past, we believe there is no evidence of this.

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Several species of Pacific salmon of the genus *Oncorhynchus* ascend the rivers of Manchuria that flow into the sea to the east of the Korean Peninsula, but none of these has ever been taken in the rivers of that country flowing into the Liao-tung Gulf.

THE KENNEL

MORE DOG-POISONING CASES IN SHANGHAI: Dog owners in the Western District of the Shanghai International Settlement have been warned by the Municipal police to look out for their dogs.

On March 23 and 24 no fewer than four valuable dogs were poisoned by some person or persons unknown operating in the Edinburgh and Great Western Roads area. Of the four dogs poisoned two were Great Danes, one was an Alsatian and one a setter. All have died but one of the Great Danes. This is the second time within a year that this kind of thing has taken place. So far no clue to the identity of the perpetrator of these mean and cruel crimes has been discovered. We suggest that all dog owners keep a sharp look out for any suspicious persons loafing in the neighbourhood of their gardens or houses in order, if possible, to detect the culprits.

THE DOG SHOW THIS YEAR: While we have heard nothing definite so far on the subject, we presume that the annual Dog Show in Shanghai will take place this year as usual. We see no reason why it should not, although, of course, with what took place in Hongkew and Chapai, when so many people evacuated their homes, there may be a falling off in the number of entries, especially of Chinese owned dogs.

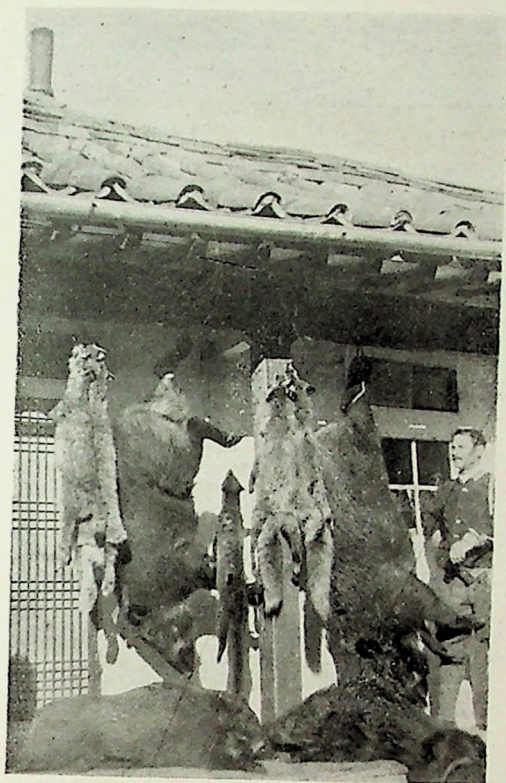
Nevertheless we feel that in the interests of all concerned an effort should be made to put on a successful show. Shanghai does not as a rule take water.

A. DE C. S.

THE GARDEN

THE VEGETABLE GARDEN

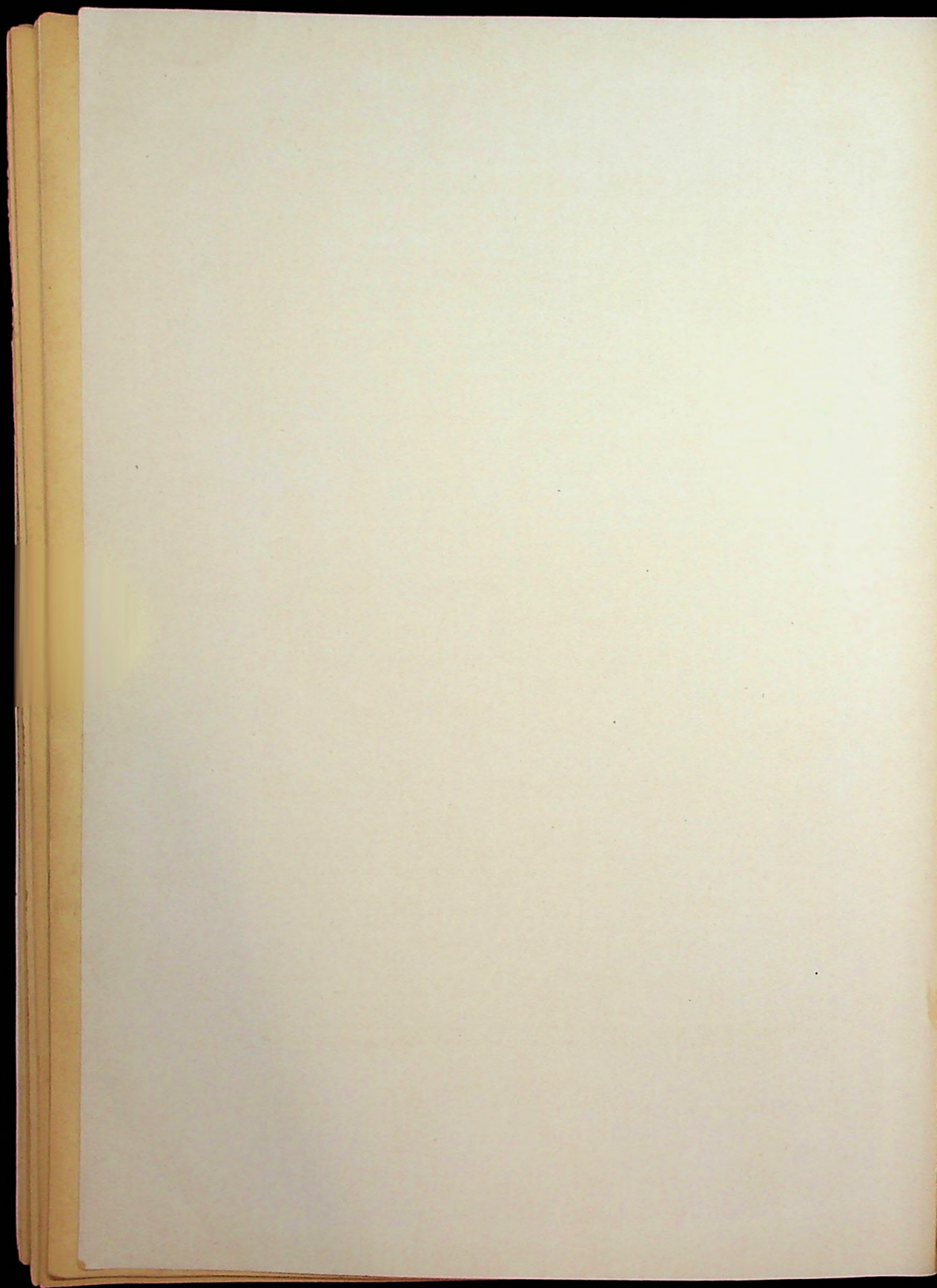
ONE'S OWN VEGETABLES: There is joy in the heart of every housewife when she proudly informs her guests, "These vegetables grew in my own garden." No imagination is needed to appreciate the freshness and crispness of home grown vegetables. Lettuce, peas, beans, beets, cucumbers, radishes, sweet corn and even onions and potatoes have a far better flavour when picked just before cooking, and we all know the joy of picking ripe red tomatoes washed in nature's dew: bought fruits and vegetables are never as good! A well planned garden with vegetables and fruits can greatly assist in keeping household expenses within bounds. Beauty and utility can be combined. If desired, a hedge of evergreens or a trellis of roses can divide the kitchen garden from the other parts and give it more privacy, although neat beds of growing vegetables are not unattractive. A walk through the country round Shanghai will give us more pleasure if we appreciate the really neat well cultivated beds of the Chinese farmer. His cabbages, beans, spinach, winter wheat, rape, cotton, and occasionally rye and buckwheat are all neatly planted and cultivated.



A Bag of Lynx, Fox, Marten
and Wild Boar made by Mr.
George M. Yankovsky in
the splendid Game Country
accessible from Seishin in
North-eastern Korea.



In the Mountains to the North of Seishin, North-eastern Korea, where Big
Game of many kinds is plentiful. Mr. George M. Yankovsky and his Hunting
Dogs.



THE CHINESE FARMER'S CALENDAR: The Chinese farmer's almanac, noting special days and seasons in the Lunar calendar, is the result of the observations of generations of naturalists. Every Chinese farmer and gardener follows these dates and plants accordingly. The 6th of January is the *Hsiao-han* or lesser cold; the 21st of January the *Ta-han* or greater cold; the 5th of February the *Li-ch'un* or beginning of spring; the 20th of February the *Yü-shui* or rain water; the 6th of March the *Ching-che* or excited insects; the 21st of March the *Ch'un-fen* or spring equinox; the 5th of April the *Ch'ing-ming* or pure brightness; the 20th of April the *Ku-yü* or corn rain; the 6th of May the *Li-hsia* or beginning of summer; the 21st of May the *Hsiao-man* or lesser fullness; the 6th of June the *Mang-chung* or sprouting seeds; the 22nd of June the *Hsia-chih* or the summer solstice; the 7th of July the *Hsiao-shu* or lesser heat; the 23rd of July the *Ta-shu* or great heat; the 8th of August the *Li-ch'iu* or beginning of autumn; the 23rd of August the *Ch'u-shu* or the end of the heat; the 8th of September the *Pai-lu* or white dew; the 23rd of September the *Ch'iu-fen* or the autumn equinox; the 9th of October the *Han-lu* or the cold dew; the 24th of October the *Shuang-chiang* or the frost's descent; the 8th of November the *Li-tung* or beginning of winter; the 23rd of November the *Hsiao-hsueh* or the lesser snow; the 7th of December the *Ta-hsueh* or the greater snow; and the 22nd of December the *Tung-chih* or winter solstice.

The above is not only of great interest in the picturesqueness of its wording, but is a great help to the amateur when making plans for the garden.

THE PREPARATION OF SOIL: But before we commence planting we must attend to the soil. It must be well dug, well fertilized and well drained before the seed is sown. If possible leave the beds rough during the winter months, applying old cow or horse manure to them. From a specialist we have the good advice that wood ashes, if stored dry, are rich in potash and lime, and two pounds applied in the spring and raked in make a good dressing for 100 square feet. The Chinese never waste their wood ashes, but apply them around the roots of their plants. Chemically speaking, soils are acid, alkaline or neutral. The acid soil is of a tonic nature, rendering the soil sour; the alkaline has relatively little such acid and an overbalancing percentage of lime; while the neutral soil is a happy medium between the two extremes. A few plants require the first condition, many more thrive under the second and the great majority do best where neutrality exists. Any plant given conditions foreign to its tastes will fail more or less completely.

It is essential, therefore, to determine this matter of chemical character in advance of actual gardening time in order that the plants may have the food they like. We are fortunate in having chemists who have made a thorough study of our soil, and we need only apply their fertilizers according to instructions, and all should go well!

A MID-CHINA CALENDAR: The following vegetable calendar has been applied to the Yangtze area. Gardeners living in the dry north or damper south will have to make some adjustments:

January: In order to have an advanced crop certain seeds can be sown in seed boxes or in hotbeds and gradually hardened and planted into the beds when the frost is over. An advantage of several weeks can thus be gained. Such vegetables include early cabbage, cauliflower, red cabbage, cress, lettuce, Brussels sprouts, capsicum and kidney beans. Towards the end of January (the 5th of February marks the Beginning of Spring) early peas can be sown in the open bed, about two inches deep and given a light covering to prevent frost penetrating. The Chinese use wood ashes as covering. Early peas can be planted until March 20. Cress and lettuce should be sown in small quantities every two weeks until May and again in the autumn.

February: Sow during the first two weeks: tomatoes, egg-plants and peppers in boxes or cold frames as also Chinese cabbage, the *pai kan tsai*; peas, beets and beans in the open; and during the fourth week potatoes and radishes.

March: Artichokes, Jerusalem and Globe, egg-plants, broccoli, carrots, peas, Swiss chard, kohlrabi, turnips, parsnips, spinach, and Chinese cucumbers. The

THE CHINA JOURNAL

last can be bought from the farmers and are more suitable to our climate here than the imported cucumber seeds.

April : Sweet corn as soon as the earth is warm, Lima beans, vegetable marrow, salsify or vegetable oyster, squash, pumpkin, more beans, tomatoes, spinach and lettuce.

May : Last sowing of lettuce until autumn, of salsify too. Beets, carrots, corn.

June : Last sowing of sweet corn, as corn takes 90 days to ripen. Golden Bantam and Country Gentleman do well here. A trial can be made by planting corn in the first week of September.

July : Cabbage sown about July 15, also cauliflower, broccoli, kohlrabi, rutabaga, shaded during the heat of the day and transplanted on a cloudy day into beds, will give a fine supply of vegetables during the winter months.

August : Broadcast Chinese carrots for winter use, also beets. Sow cucumbers. Towards the end of the month, and if the season is not too hot, the winter supply of lettuce (Iceberg and Big Boston), turnips, potatoes, Swiss chard, leeks, parsnips and Shantung cabbage.

September : Broadcast spinach (New Zealand is a great favourite) and carrots. Sow lettuce (Iceberg) for winter use and Chinese black cabbage, *piao erh ts'ai*. Onion seeds are difficult and germinate slowly, so young seedlings can be bought and will be very satisfactory if given rich earth. Leeks and cauliflower may be sown in the open until the middle of September, beets and radishes (the White Icicle) up to the end of this month.

October : The very last sowing of lettuce in the open, also peas, beans and cabbages for spring. These will all need some protection during the winter.

November : All winter seedlings will need protection. Rice or wheat straw, old crumbly cow or horse manure and leaves spread lightly over the beds will provide sufficient protection. A framework of bamboos on which reed mats can be spread on cold nights is also desirable, as during the noon hours the mats can be rolled back. Lettuce seedlings transplanted into hotbeds will give the family salads all winter.

December : Dig and manure all beds not in use and leave in rough state.

OTHER VEGETABLES : The above mentioned vegetables are easily grown. Some special rarer types might be tried as an experiment, such as artichoke, asparagus, cardoon, celery, chicory, horseradish, mustard, okra, onion and rhubarb. Artichoke seeds can be sown under cover in October. In spring, when large enough to transplant, set in rows four feet apart and two feet apart in the row. They need winter protection and during the second spring buds will appear. The "Green Globe" artichoke grows well here and propagation by suckers is simpler than the planting of seeds. Tubers of Jerusalem artichokes can be procured at a nursery and should be planted in October or March.

Asparagus can be grown from seed or from roots, but most gardeners prefer to purchase two to three year old roots. These roots should be planted in soil that has been thoroughly cultivated and enriched. Plant in trenches about four inches deep and six inches wide. Spread the roots out and cover with fine earth, covering the crowns with half an inch to a inch of soil. The trench rows should be four feet apart and the roots two feet apart in the trenches. Between the rows spread old manure which can be forked in every spring. A seed catalogue advises the application, early in the spring, of two pounds of nitrate of soda or ammonium sulphate to the square rod. This will make the shoots more rounded and tender. The tops that grow each summer should be cut off and burned. None of the roots should be allowed to go to seed. Such a bed of asparagus can be a great treat to the family.

Brussels sprouts require the same method of culture as is necessary for late cabbage. Cardoon is related to the Globe artichoke, but it is grown for the leaf stems which are served like asparagus. A rich soil is necessary. Celery is difficult to grow in our heavy clay soil. It requires rather a rich, light, sandy soil and needs much

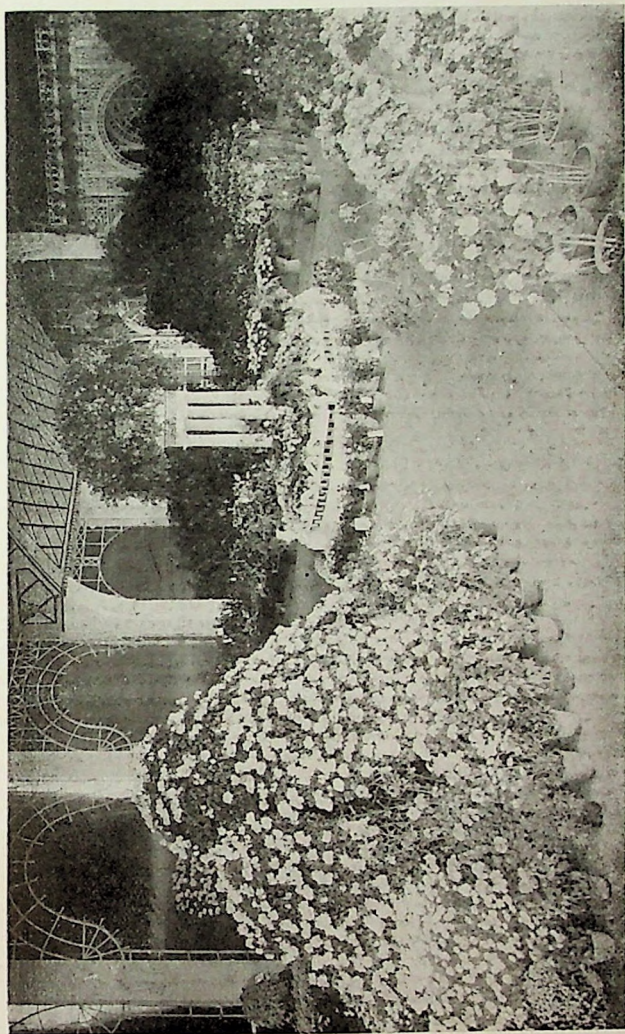
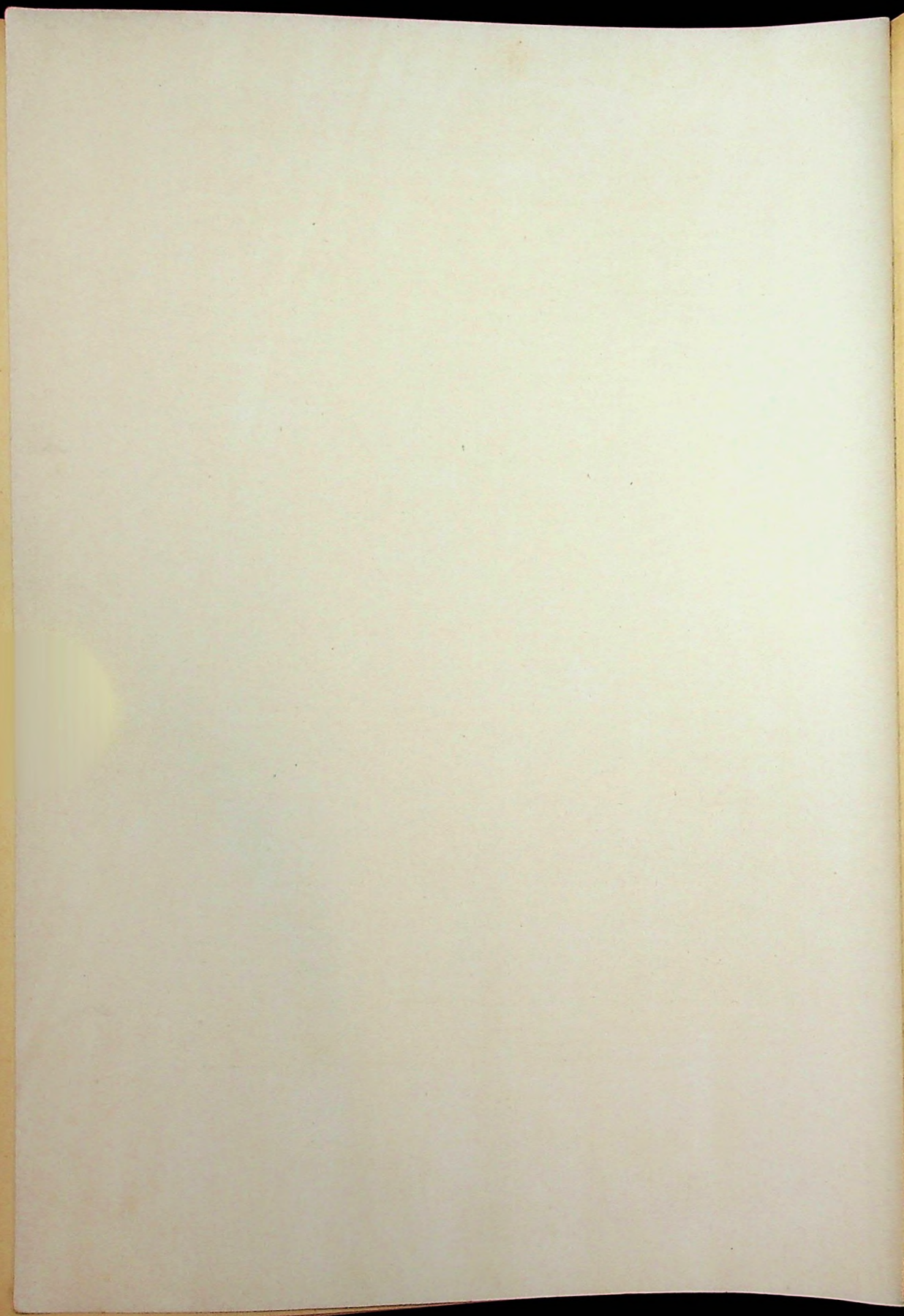


Photo by Ah Fong.

Masses of lovely Blooms at one of the many Flower Shows of the Shanghai Horticultural Society, indicating what the Gardens and Hot-houses of this City can produce.



THE GARDEN

moisture. Celery seeds germinate very slowly. Plant in seed boxes, keep moist, thin out and when seedlings are about two and a half months old transplant to open ground in rows a foot apart. If sown in early September, transplanted in December into trenches and gradually blanched, the celery plants will be more successful than if sown in early spring, as the warm weather is apt to rot the stalks. If table celery is too difficult, soup celery can be of use.

Chicory is little known except as a coffee substitute, but the leaves make a delicious salad and are said to be valuable as a chicken tonic. Sow seed very early in spring in light rich soil and cultivate as lettuce. Fennel seedlings transplanted in rows and earthed up as celery will have white, crisp stems. The bulb may be sliced raw or cooked. The dense feathery foliage is fragrant (sweet anise).

Garlic is not to be despised. The bulbs are planted in rows ten inches apart and five inches apart in the row.

Horseradish is grown from roots, and is a necessity in every garden. The roots are set vertically, small end down, with the tops of the roots about two inches below the surface. Cultivate thoroughly. Roots take about two years to grow large and thick.

Mustard greens are as healthful and nourishing as spinach. Sow early in rows, thin out and when about eight inches high they can be used. The Chinese mustard has round unfrilled leaves, rough in texture and of a very dark green colour. Mustard goes quickly to seed.

Mushrooms can be grown in hotbeds or cellars where they have uniform heat and moisture. The nursery men give special instructions regarding the culture of mushrooms. Spawn bricks can be bought at the Yokohama Nursery here in Shanghai.

Rhubarb plants must be bought. Set the roots so that the crowns are two inches under the surface. Set three feet apart and give liberal dressing of manure in the early spring. Cut away the blossom stalks. If possible choose a place where the soil will be continuously moist.

If space permits the temptation to try watermelons, muskmelons, squash and pumpkins is very great. The "Connecticut Field" pumpkin grows well here. Sow seeds early in April in well manured hills about four feet apart each way. Allow three plants to one hill.

The early summer squash seeds are planted in the middle of April one inch deep in hills four feet apart. The well known Hubbard squash is a winter variety and keeps well all winter.

Muskmelons can be started in the hotbed and transplanted to hills set three feet apart. Add well rotted manure at the bottom of each hole as this will keep the roots cool and moist in summer. The winter cassabas (Honey Dews) need a long summer season. Watermelons require the same cultivation necessary for muskmelons, only watermelons need more space. If hills are liberally manured and well cultivated a good crop of these melons should be the reward.

And the husbandman will gather friends and neighbours to enjoy with him the Feast of Heavenly Gifts.

L. L.

EDUCATIONAL NOTES AND INTELLIGENCE

EDUCATIONAL INSTITUTIONS GRADUALLY RETURN TO NORMALCY IN SHANGHAI AREA: While conditions in the schools and colleges of the Shanghai area are not yet entirely back to their status of last January, a good beginning towards a return to normal conditions has been made. St. John's University resumes work on April 1; the Municipal Council opened most of its schools early in March, including the Thomas Hanbury School for Boys (opened March 21), which is located in the former war zone on North Szechuen Road, and which was found only very slightly damaged by a few bullet holes. The Besant

THE CHINA JOURNAL

School for Girls and McTyeire's School resumed work last month and St. Mary's Hall opened on March 28. The Dean of the Shanghai University has stated that as soon as the problem of easy access to the University's premises has been solved, the opening date for the spring semester will be announced, as that institution's buildings have not been damaged although located very near the newly opened Japanese aerodrome. In the meantime President Herman C. E. Liu has established his offices at 29 Yuen Ming Yuen Road, the university's downtown business college. On March 27, however, announcement was made that, owing to the prevailing unsettled conditions, the University would resume classes in its School of Commerce on Yuen Ming Yuen Road and in the Chinese Y.M.C.A. on Szechuen Road commencing April 7, until such time as it should be deemed advisable to move back to the main buildings in Yangtszepoo.

Most of these schools reopened with an attendance considerably below that of last autumn. The Municipal schools did not accept enrollments for new pupils until March 14, however, allowing all former students time to return, as many of them had left Shanghai during the recent state of emergency. Chi Tze University, formerly on Kiangwan Road, opened its classes on March 14 at the Kung Sze Middle School on Avenue Foch, with temporary offices at 40 Ningpo Road. Owing to the absence of a number of its teachers the curriculum for the time being will consist only of Chinese literature, law, political science and economics.

At Woosung no resumption of classes has as yet taken place, although upon inspection the Shanghai Citizens Emergency Committee found only the main building of the National Central University's College of Medicine partly damaged, the dormitories and other buildings being intact. The Tun-chi University buildings, however, were reported as being considerably damaged.

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The Port of Shanghai, Seventh Edition: Whangpoo Conservancy Board, Shanghai.

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The Political Philosophy of Confucianism, by Leonard Shihlien Hsü, M.A., LL.B., PH.D.: George Routledge & Sons, Ltd., London.

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The Coking Property of the Poshan Coal of Shantung, by C. C. Wang: Contributions from the Sin Yuan Fuel Laboratory, Geological Survey of China.

PERIODICALS:

Geological Bulletin—Shipping Review—American Journal of Science—Sinica—The Journal of the Bombay Natural History Society—The Philippine Journal of Science—Journal of the Pan-Pacific Research Institution—Philippine Magazine—Manchuria Monitor—Bulletin of the Pan-Pacific Union—La Revue Nationale Chinoise—Tourism—The Annals and Magazine of Natural History—Game & Gun—The New Zealand Journal of Science and Technology—The Naturalist—The Journal of the Society of Chemical Industry, Japan—Man—The Metropolitan Vickers Gazette—Science—Mid-Pacific Magazine—Third Annual Report of the Fan Memorial Institute of Biology—Bulletin of the Fan Memorial Institute of Biology—Psyche—Discovery—The Modern Review—Bulletin of the Geological Society of China.

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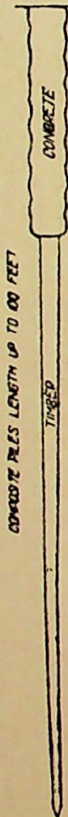
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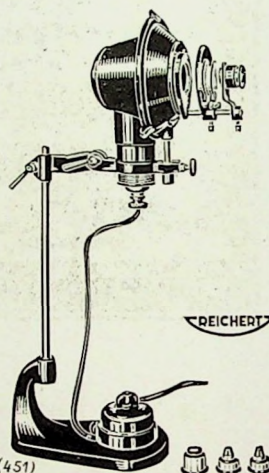
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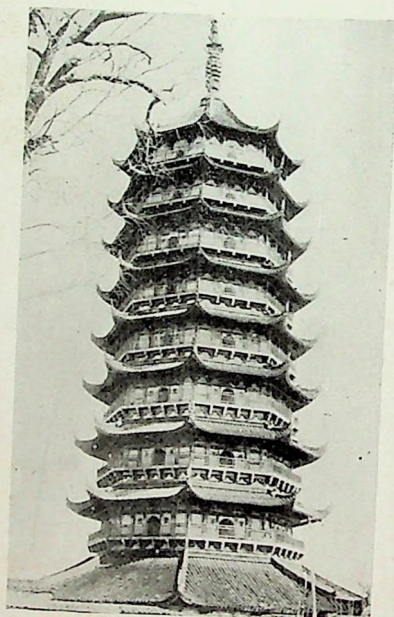
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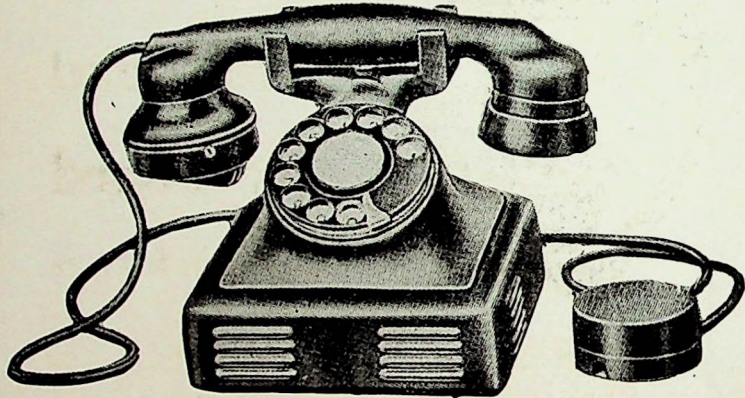
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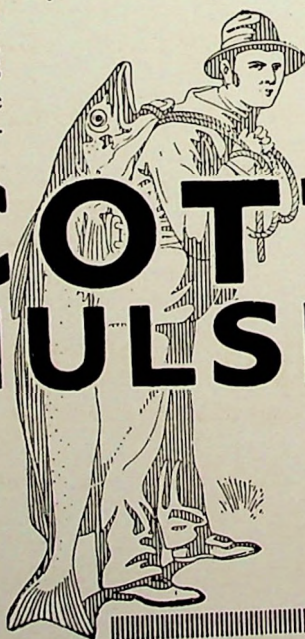
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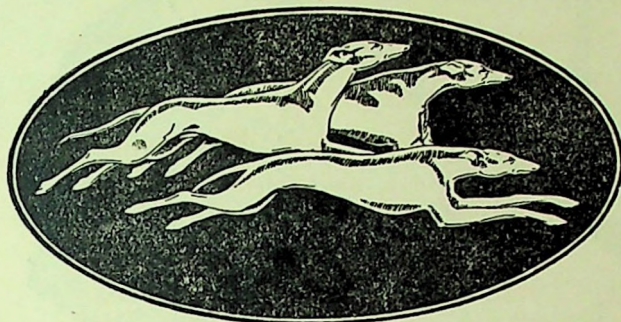
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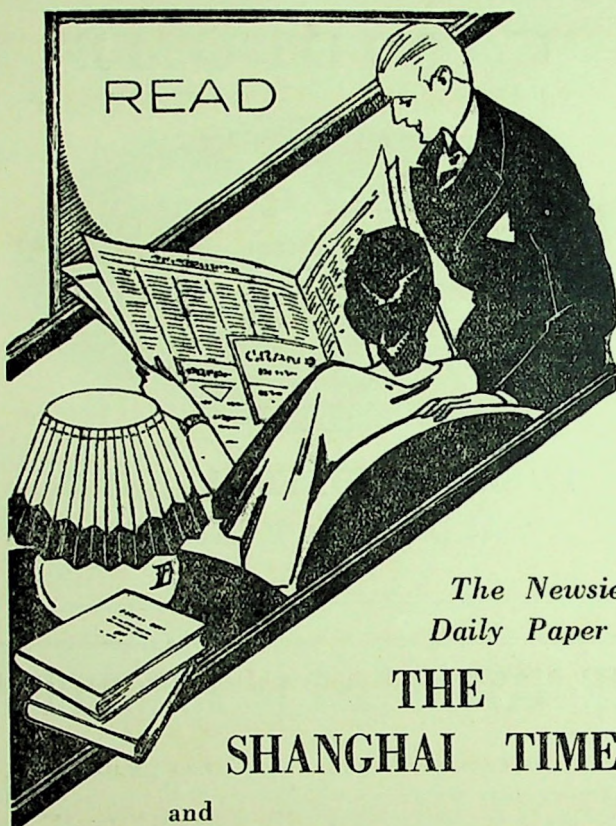
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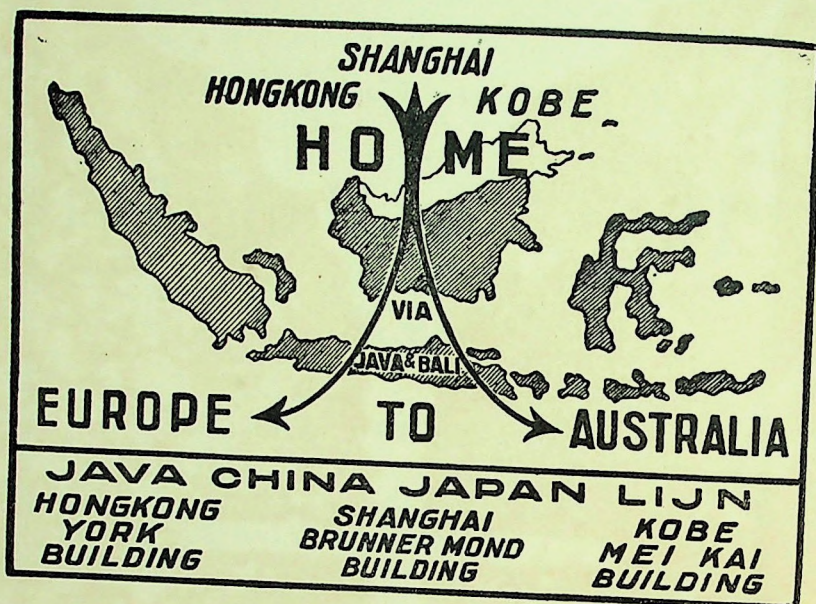
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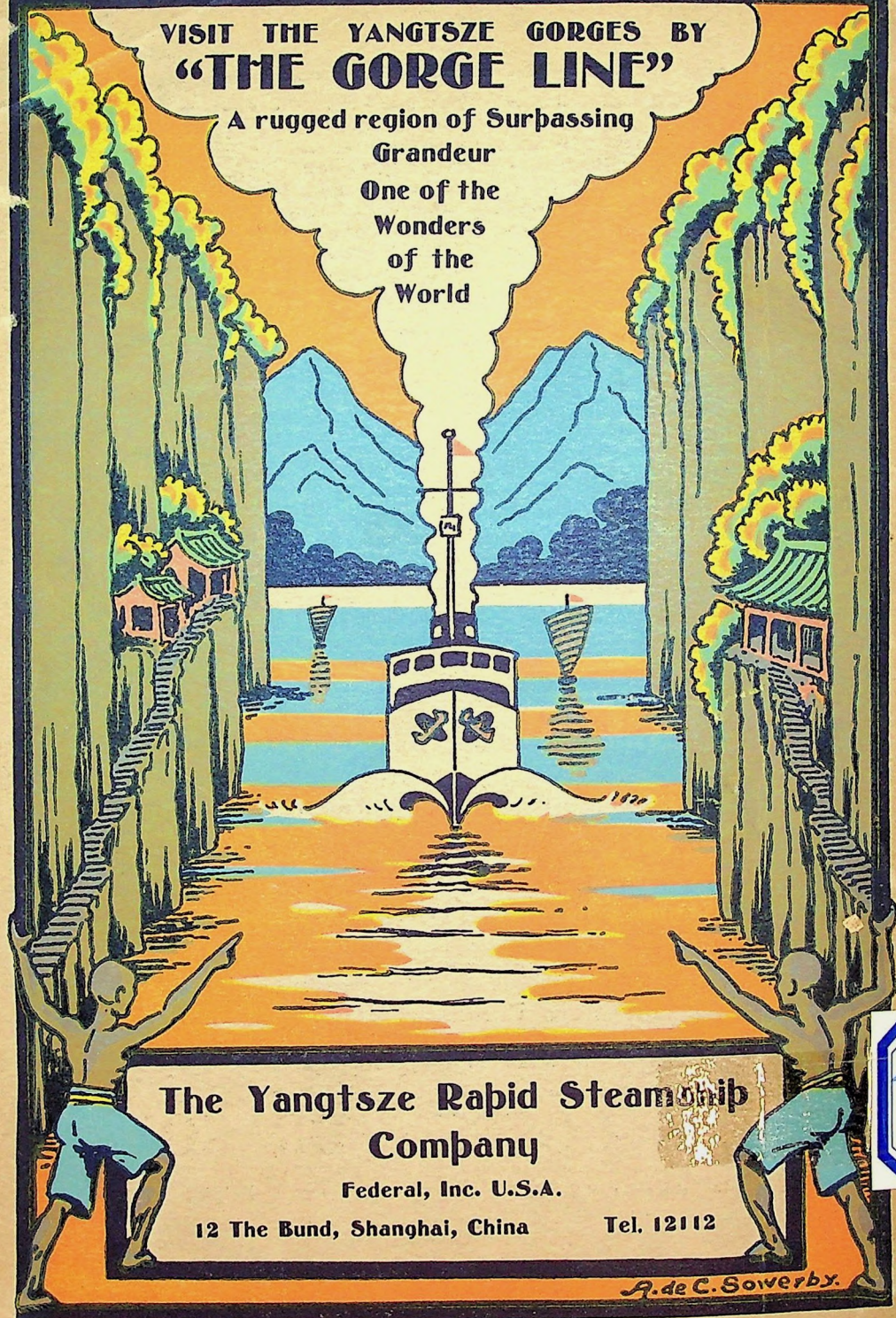
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