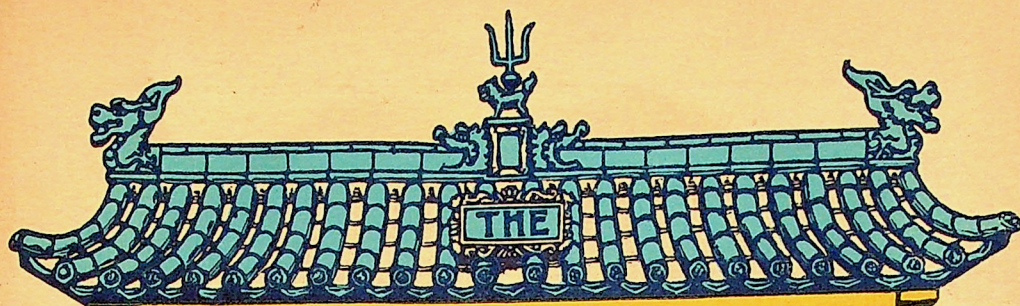
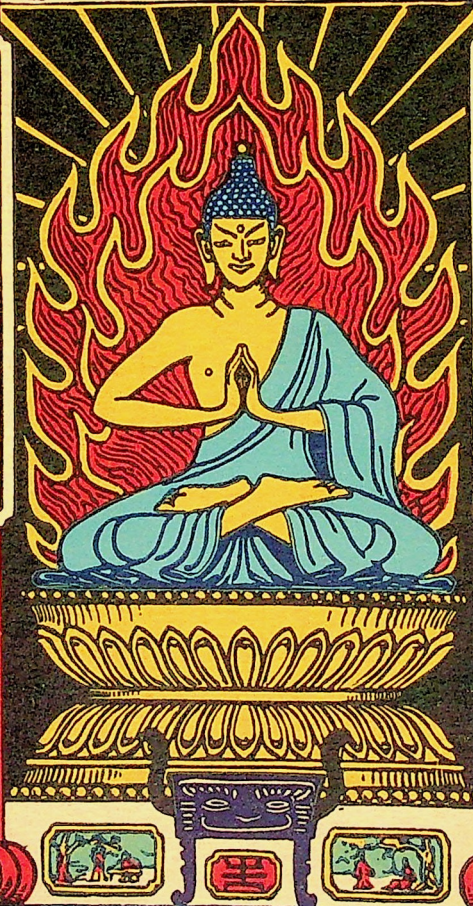




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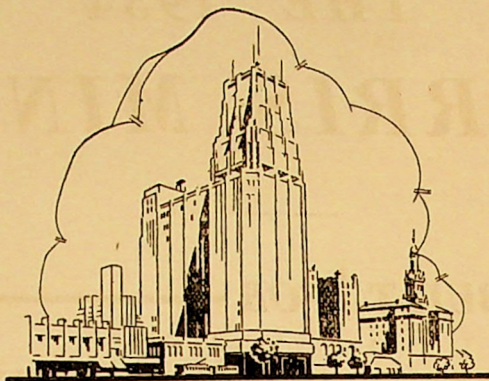
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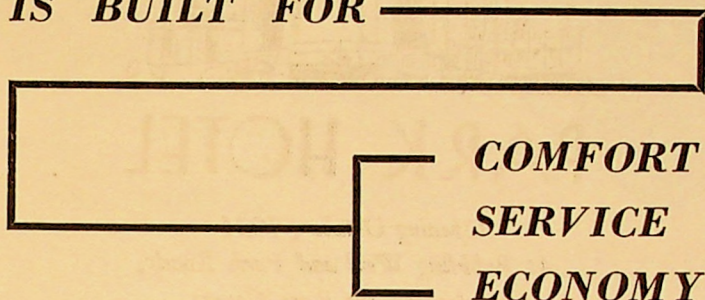


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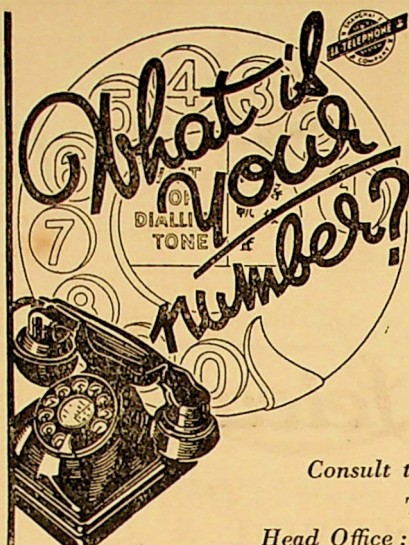
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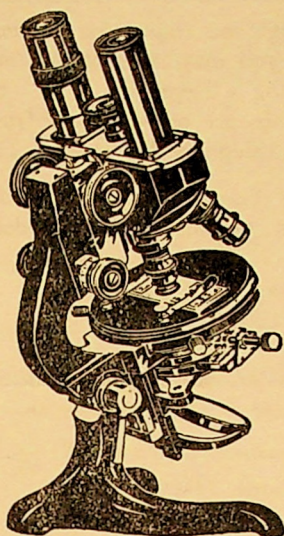
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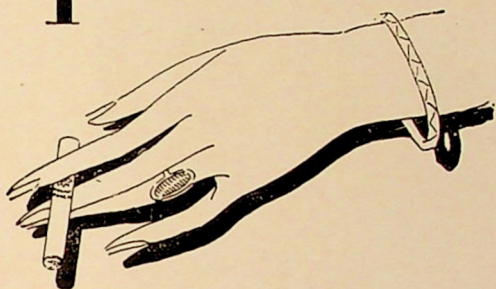
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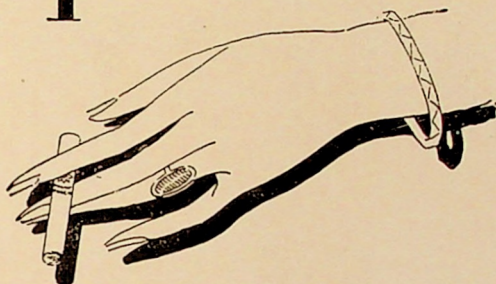
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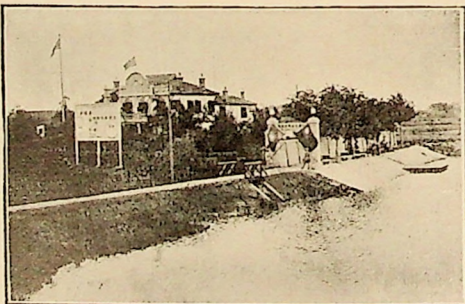
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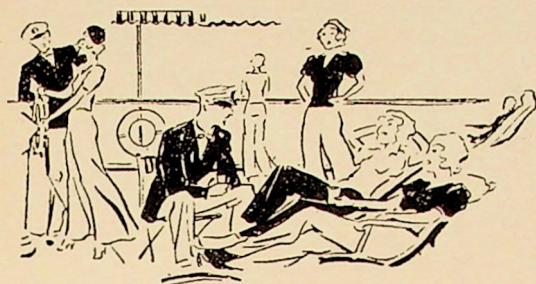
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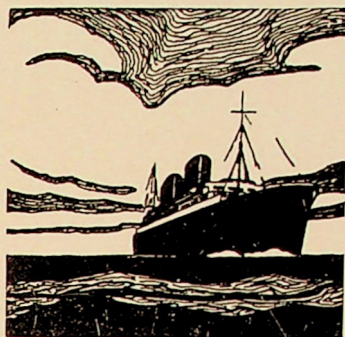
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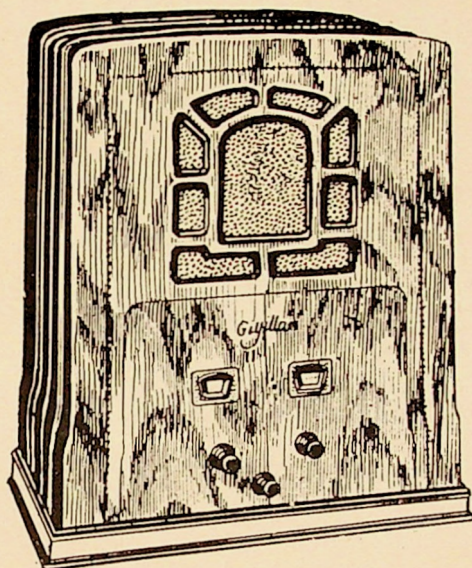
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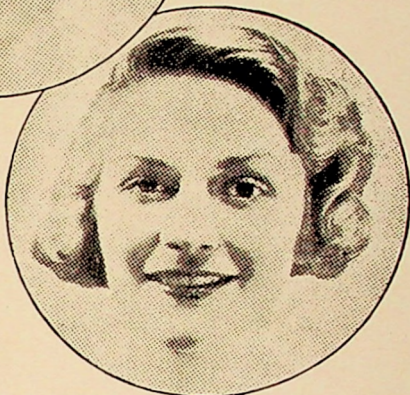


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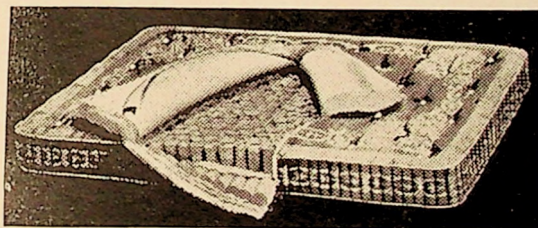
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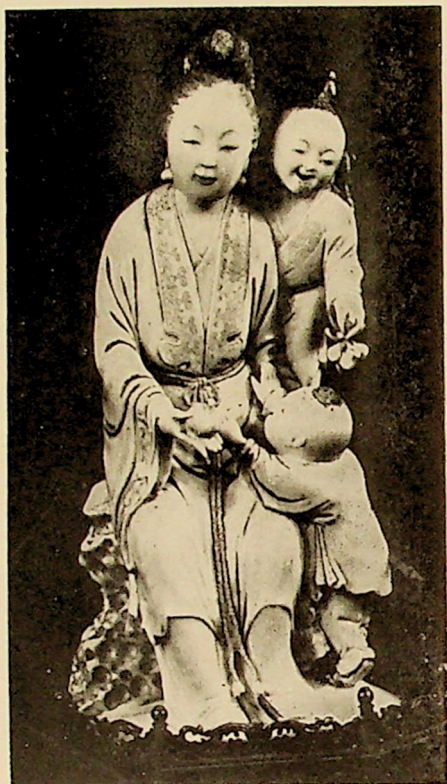
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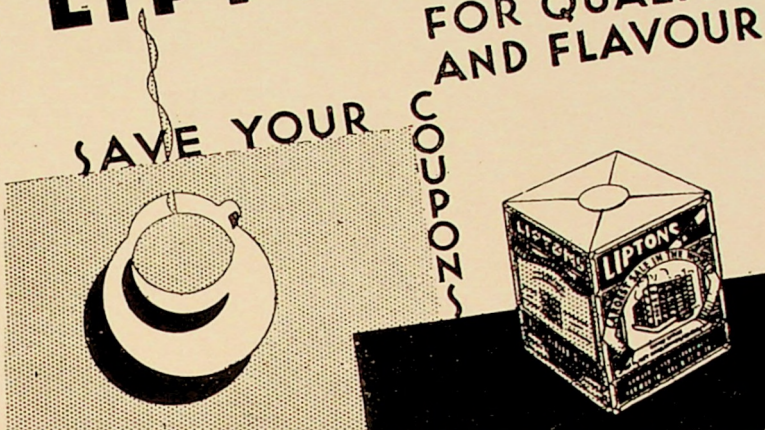
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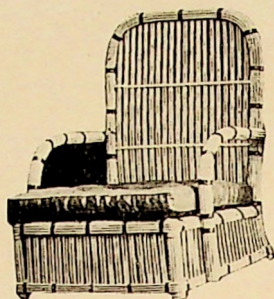
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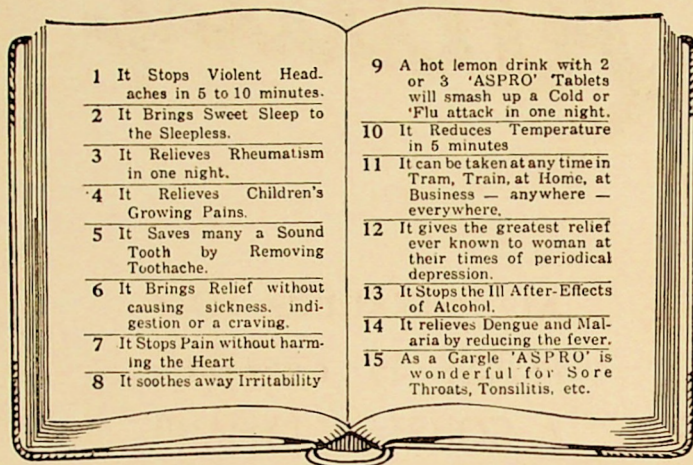
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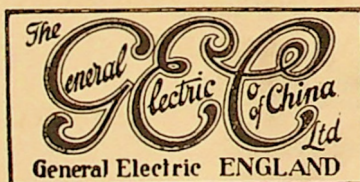
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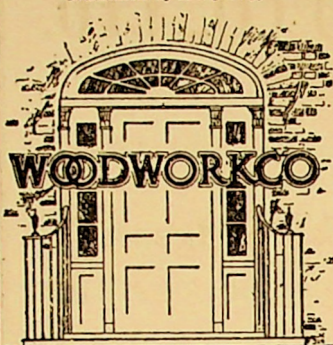
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[ENTERED AT THE CHINESE POST OFFICE AS A NEWSPAPER]

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SEPTEMBER 1934

No. 3

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The subscription for one year (twelve issues) in China is \$12.50, Shanghai currency; in Hongkong \$13.50; in Japan Gold Yen 13; in Indo-China Piastres 13.50; in the Netherlands Indies Fl. 15; in the U.S.A., the Philippines and Canada Gold \$6.00; in Great Britain, British Colonies and Europe £1: 5s., or its equivalent. Postage free.

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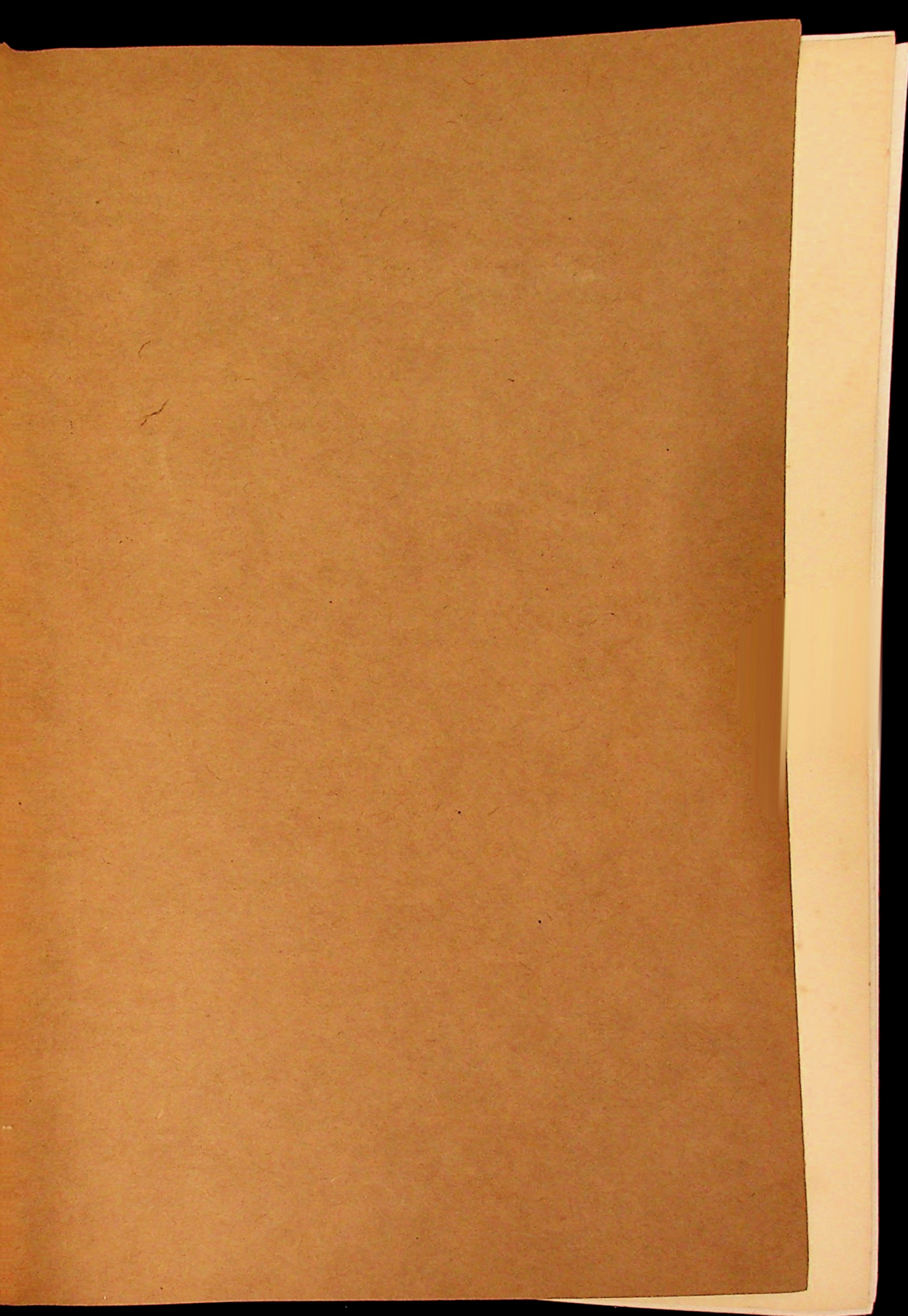
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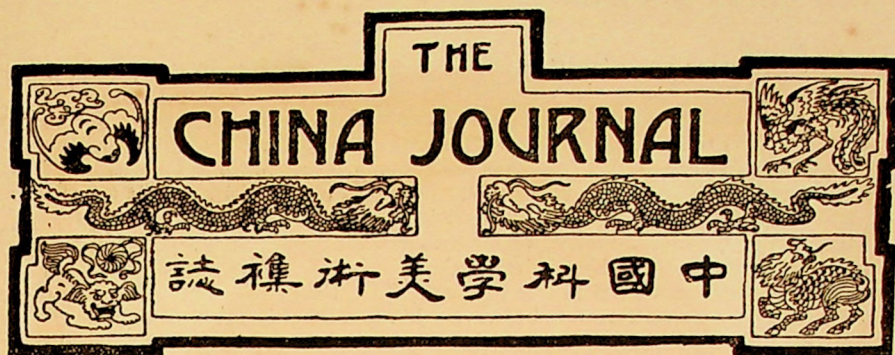
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THE PANCHEN LAMA

Courtesy the "North-China Daily News"



VOL. XXI

SEPTEMBER 1934

No. 3

BACK TO CONFUCIUS

BY

ARTHUR DE C. SOWERBY

The celebration of the birthday of Confucius as a national holiday, and the holding of special commemorative ceremonies at the tomb of the Sage at Chu-fu and at the country's capital by decree of the National Government must be considered as amongst the most significant events in the recent history of the Republic of China. It marks a very definite reactionary trend in the political life of the country and in the ideas of both its leaders and its people.

It is less than five years since the National Government, in December, 1929, issued a mandate ordering that the name of the temples erected in honour of Confucius throughout China should be changed from *Ta Ch'eng Tien* (大成殿) or Hall of Supreme Excellence, to *K'ung Tzu Miao* (孔子廟) or Temple of Confucius. It was also decreed that the names of the *Hsien Ju* (先儒) or Senior Scholars, men of great literary distinction and high repute of the past, altogether numbering ninety-seven, should be cancelled. The Hall of Supreme Excellence was said to have been based on feudalism, and this action on the part of the National Government marked the rising tide of popular feeling in China against old traditions and customs which reached its optimum at about that time.

The New Life Movement, launched early in the present year by Generalissimo Chiang Kai-shek and his associates, is said to be based on the teachings of Confucius, and may be considered as the first outward sign of the return of the Chinese people to the philosophy and ethical code of their forefathers, having as its culmination the ceremonies held on August 27 in commemoration of the birthday of the Great Sage.

A Government delegation of thirty-two prominent officials, headed by Mr. Yeh Cho-tsang, the General Secretary of the Standing Committee of the Central Executive Committee, visited Chu-fu, and there, in the Hall of Supreme Excellence, conducted the grand commemorative ceremonies, subsequently visiting and laying wreaths upon the grave of Confucius; while at Nanking Mr. Wang Ching-wei, President of the Executive Yuan, and other high officials attended a similar commemorative service, when speeches were made extolling the great teacher of the sixth century before the Christian era.

Confucius was born in the year 550 B.C., that is to say, some 2,485 years ago, and won immortal fame by his remarkable life and teachings. He lived in a period of constant internecine warfare between the rulers of many rival states, and noted with sorrow the sufferings of the people, as he journeyed from state to state with his disciples, seeking a ruler who would listen to his doctrines. Failing in his quest, he retired into seclusion, devoting himself to the writing of the Four Classics. Although he made little impression with his teachings during his own lifetime, these subsequently became the guiding principles of Chinese political and social life, helping to build up a great empire that imposed its civilization and culture upon the savage tribes by which it was surrounded.

To-day conditions in China are very similar to those which existed in the Great Philosopher's time: is it too much to say largely as a result of the abandoning of his teachings? It would almost seem that such is the belief of the country's present leaders, and so we see this movement back to Confucius. Let us hope it will have the desired effect of restoring China once more to a state of law and order, peace and plenty, for certainly something is needed if this country is ever to recover the greatness that was hers during such periods as the Han and T'ang Dynasties.

THE PANCHEN LAMA

BY

STUART LILLICO

After an absence of eleven years from his throne at Tashi Lumpo, powerful lama monastery eight days march west of Lhasa, His Serenity the Panchen Lama, Tibetan reincarnation of Boddhisattva Manjusti, is reported to be once more returning to the high plateaux of Tibet to take his place as the supreme spiritual ruler of all the lamas. During his eleven years of exile the pontiff has wandered back and forth over a large part of Eastern Asia, preaching Buddhist doctrines in the monasteries of



The Panchen Lama on board a British Man-of-War during his Visit to Shanghai recently.



Courtesy the "North-China Daily News."

The Panchen Lama being met on his arrival in Shanghai by Mayor Wu Te-chen of Greater Shanghai.



THE PANCHEN LAMA

Mongolia, studying ancient *sutras* in the most famous holy places of China, and ever keeping an eye on the politics of Tibet in hopes of finding an opportunity to return. That opportunity has finally come, the Panchen Lama and the Nanking Government now believe, with the death of the Dalai Lama at Lhasa last December.

Against a background of international intrigue and ambition, the hoped-for return to Tashi Lumpo is important. Not since the fall of the Manchu Dynasty in 1911 has control over Tibet by China been effective. The natural reluctance of the Tibetans to give up their at least nominal independence under the Manchus to enter the newly formed Republic of China was heightened by pressure from India. By 1920 two distinct parties had been formed, one, headed by the Dalai Lama, advocating complete independence from China and better relations with British India, and the other, under the leadership of the Panchen Lama, favouring adherence to China.

Being in the ascendancy, the Dalai Lama was able consistently to harry his colleague until, late in 1923, the Panchen Lama secretly fled from Tibet to Mongolia.

Since his first arrival in Peking on February 22, 1925, the pontiff has moved slowly from place to place in North and Eastern China, waiting for his chance to return. For some time he resided on P'u T'u Shan, near Ningpo, and again he visited Wu T'ai Shan, in Northern Shansi. At both places he occupied his time with studying Buddhism. Between times he preached and instructed both Mongols and Chinese in Lamaism.

During the last five years the Panchen Lama has resided mainly in Mongolia. Always a highly honoured guest and welcomed everywhere by the Mongols, lama and layman alike, he visited one monastery after another, devoting his time to constructive work among the nomads. Last autumn he was invited by the Nanking Government to act as mediator at a congress of Mongol Princes who were agitating for autonomy. He stayed on at Pei-ling Miao for some time after the meeting closed, until news of the Dalai Lama's death brought him to Nanking to confer with Government officials.

His Serenity reached Peking early in January. After a brief stay in the old capital, he and his party continued to Nanking, from where, after meeting the nation's leaders, they proceeded to Hangchow. A gigantic and colourful memorial service was held in Ling Yin Temple for the late Dalai Lama. Visitors from Shanghai thronged to see the event, which was extremely spectacular. When the service closed on May 22, after lasting two weeks, the party came to Shanghai.

During the ensuing five weeks the activities of the Panchen Lama were strenuous and varied. Reception followed reception, with foreigners and Chinese alike vying for an opportunity to entertain him. During his stay he was entertained by Sir Ellis Kadoorie and many Government and social leaders. While in the city he manifested great interest in the modern development of Shanghai, and on numerous occasions he visited large industrial plants and spoke at several universities. A British man-of-war was also honoured by a visit from the lama, and when he went aboard the Lloyd Triestino liner *Conte Rosso* he showed con-

siderable interest in the advancement of modern commercial transportation.

Too much activity, however, brought on indisposition which caused him to cancel all engagements for fortnight. He left his temporary "palace" at the Shanghai office of the Foreign Ministry and went into seclusion until June 26. Then he began a series of farewell calls that lasted until his departure for Nanking on the evening of June 30. In the interim he also had new glasses made, but only after a new eye chart in Tibetan had been devised for him.

The first three days of the ecclesiast's time in Nanking were devoted to praying for rain to relieve the farmers in and around the capital. The supplications were successful, for sufficient rain fell to save a good percentage of the endangered crops. Encouraged by this success, the Panchen Lama announced that after a brief pause he would repeat his supplications.

During the interval in Shanghai the pontiff was joined by a delegation of lamas from Tibet, sent to urge the Panchen Lama's early return to Tashi Lumpo. This fact was made much of by those favouring an early return of the leader to his homeland. Included in the delegation were the Anchin Lama, the Tingchi Lama, the Tuanhu Lama and the Kehchen Lama, the first of whom was declared to be the Panchen Lama's "right hand man." The newcomers joined the already considerable party journeying with the leader.

Despite earlier word that he would spend the remainder of the summer in Nanking, he departed for Peking on July 14. The trip was made in a special plane furnished by the Eurasia Aviation Corporation. It was the Panchen Lama's first long flight, although he had been up for shorter flights on several previous occasions. The rest of the party made the trip by train. Peking welcomed him enthusiastically, and expressed regret that he would be in its midst for so short a time. The period in the old capital was stretched out to nearly a month, however, when floods in Chahar swept away part of the Peiping-Suiyuan Railway, over which the group had to travel. It was August 11 before the departure for Kuei-hua Ch'eng was finally made in a gaily decorated special train.

The presence of the pontiff had at least one interesting repercussion in Peking. The numerous gaily dressed Mongols and Tibetans stalking through the streets inspired one jeweller to design a new "tiara" or "halo" in Mongol colouring, and the result, as seen on the Peking Hotel roof, was declared to be striking.

The special train for the party consisted of fourteen coaches. Four were used for the transportation of the personal effects of the Panchen Lama and his staff, two for food supplies, and several others for motor-cars and buses. Two "White" Russian drivers also accompanied the party to Kuei-hua. After two days in the capital of Suiyuan, the party of more than three hundred persons departed for Pao-tou Chen, the western terminus of the railway.

Plans for the future are uncertain and reports are conflicting. The pontiff will probably make his way slowly through the Ordos toward



Rough Jade stored in the Factory Courtyard, Peking.

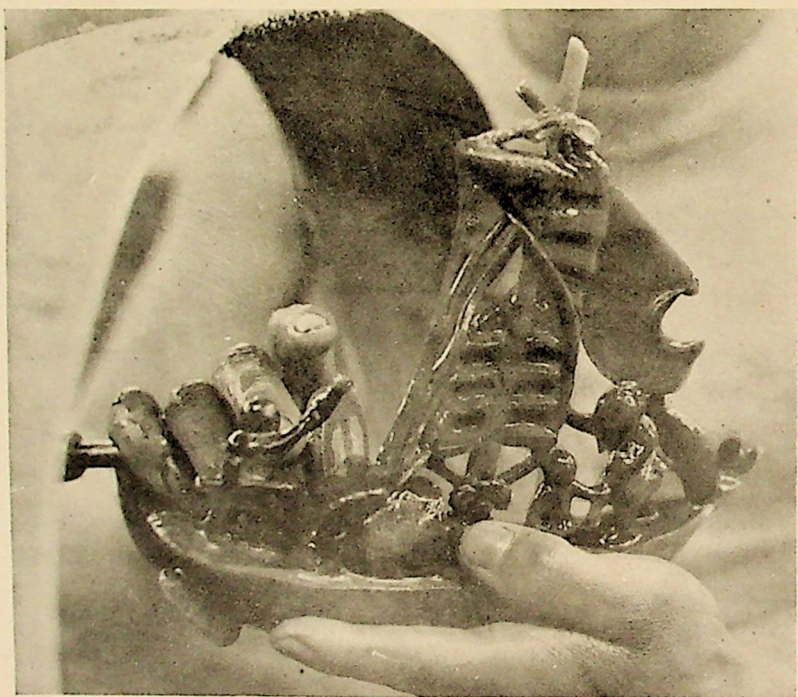


Photos by Lamb Expedition.

Over two thousand Catties in Weight, this huge Block of Jade in the Rough is kept temporarily in the Street outside the Factory.

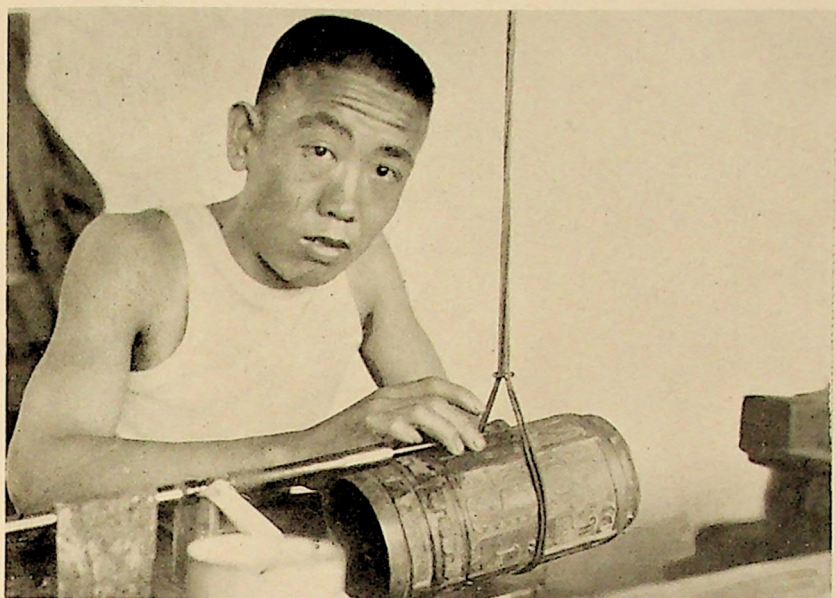


Cutting the Rough Jade into Sizes suitable for Carving.

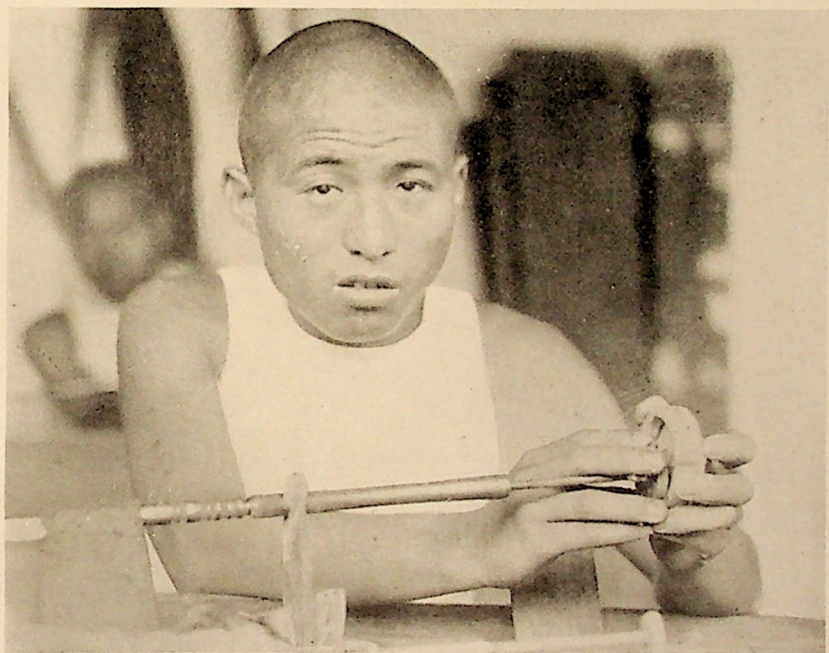


Photos by Lamb Expedition.

Covered with wet Abrasive splashed from the Cutting Wheel, a Jade Junk being carved from the Rough Block.



A Jade Vase being Decorated.

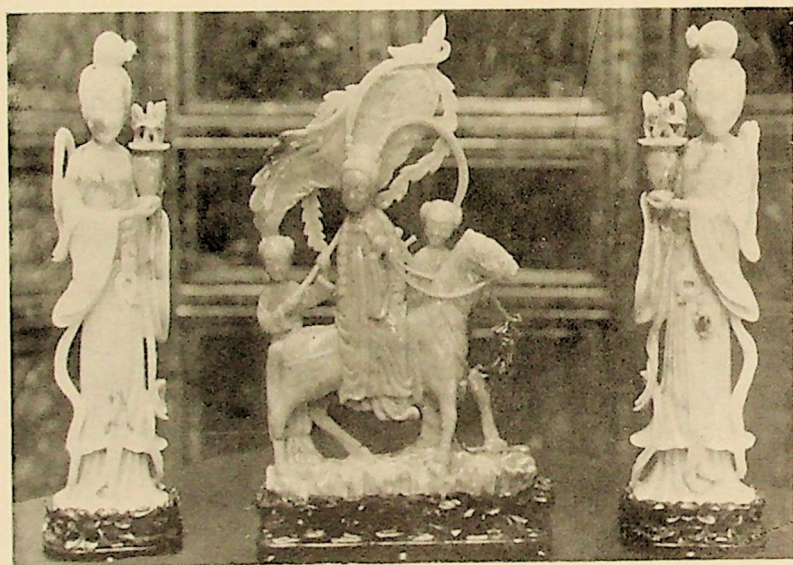


Photos by Lamb Expedition.

Working the Design on a Jade Bracelet. Note the Grinding Wheel in the Workman's right Hand.



Supervisors of the Jade Factory with Rough Blocks and partly worked Pieces of Jade.



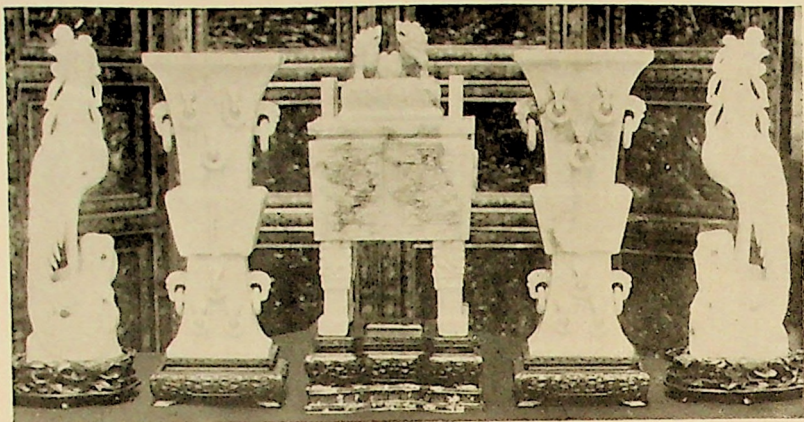
Photos by Lamb Expedition.

Legendry Figures carved in the beautiful Jade known as *Fei T'sui*.

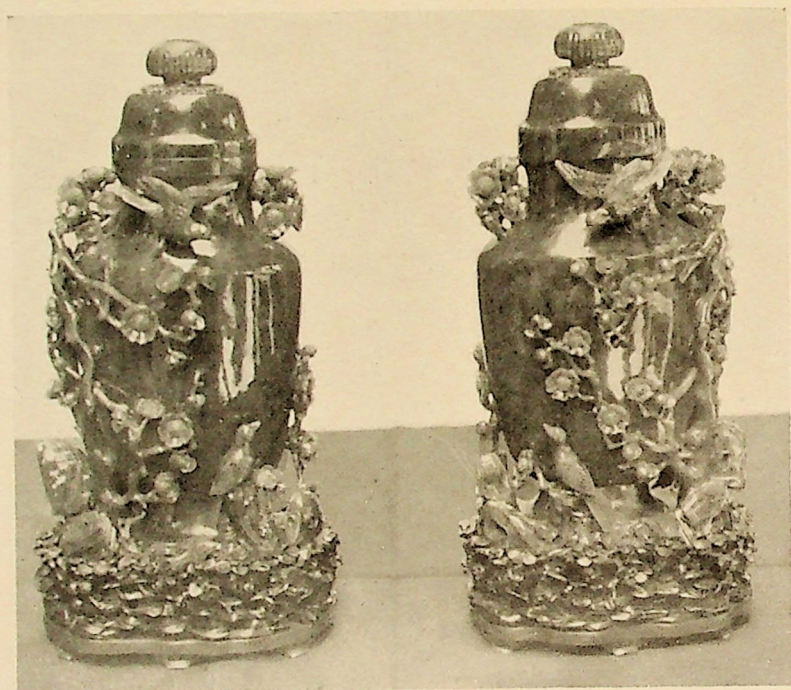


Photos by Lamb Expedition.

Displays of finished Jade Pieces in the Shop in Peking ready for the Purchaser.

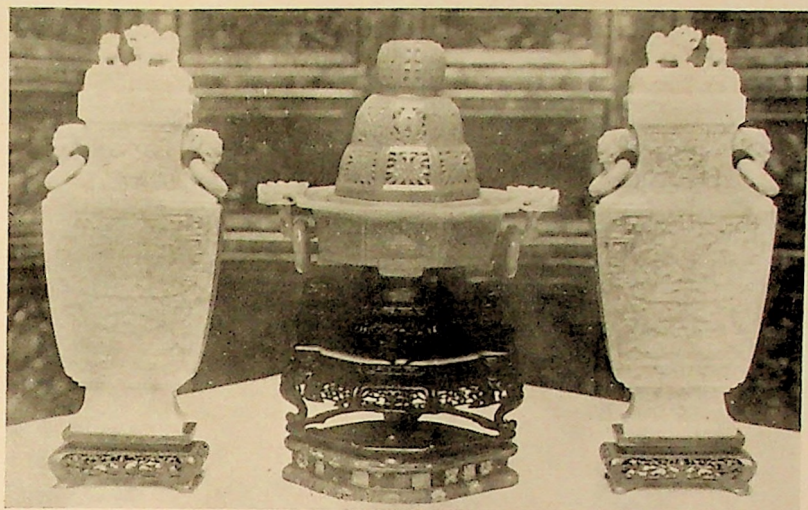


A Group of beautifully carved Jade Pieces.

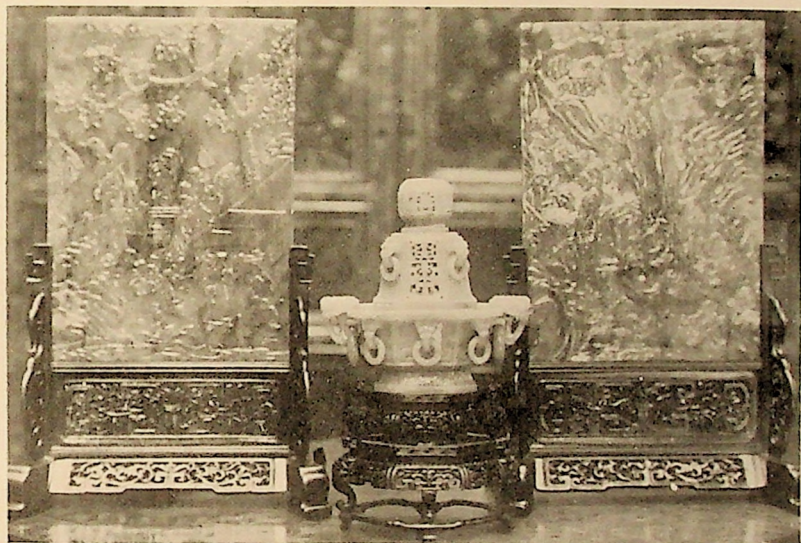


Photos by Lamb Expedition.

Exquisite Vases in Green Jade showing the "Four Birds" Design.

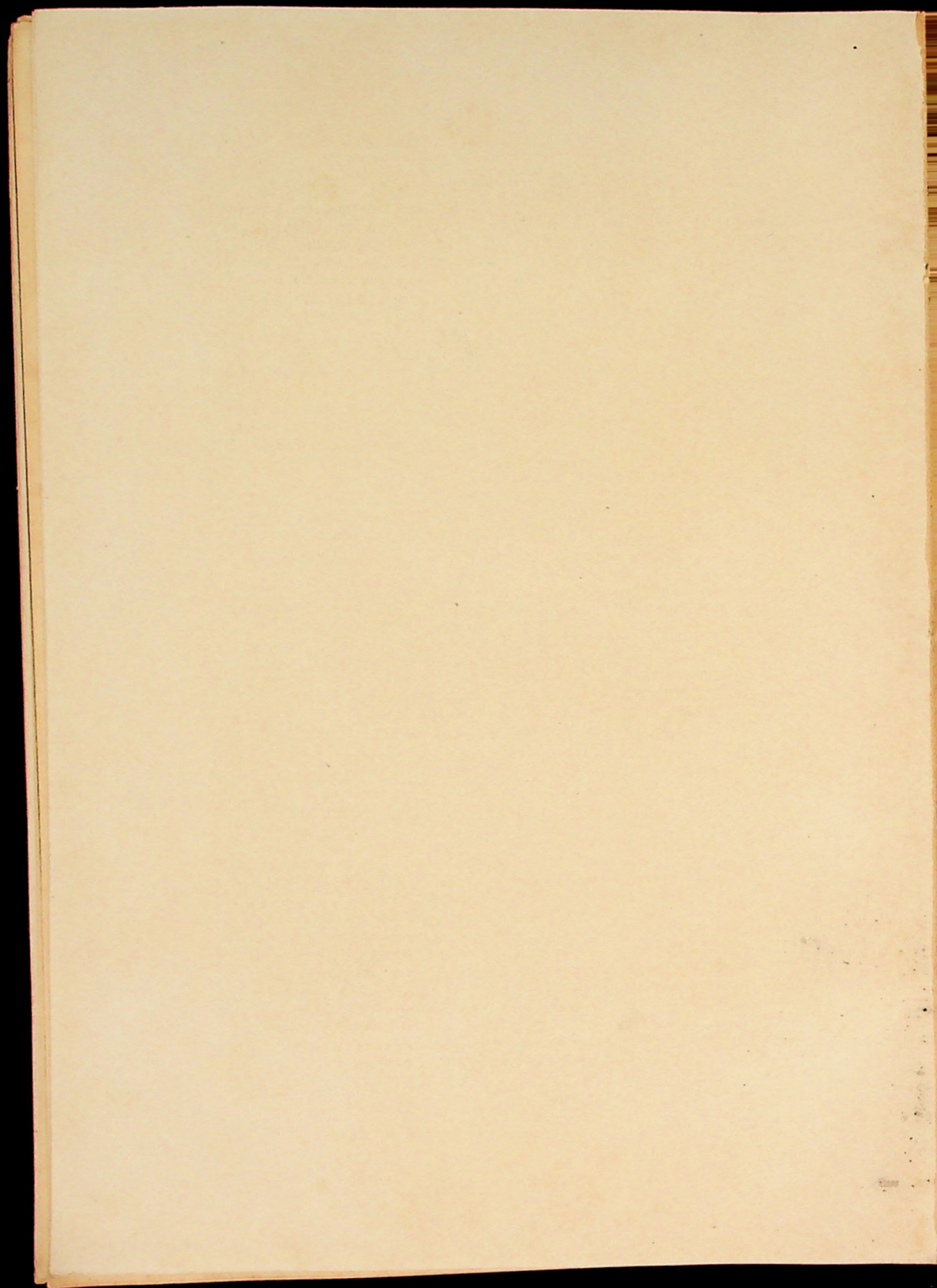


Some magnificent Examples of Carvings in *Ch'ing Yu* or Green Jade.



Photos by Lamb Expedition.

A Kung Hsun (宮簋) flanked by two Plaques or *Ch'a P'ing* (樺瓶) in the Kind of Jade known as *Pi Yu* (碧玉).

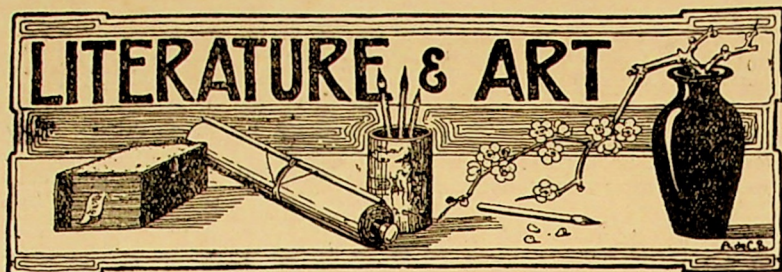


THE PANCHEN LAMA

Kokonor, preaching to his followers along the way. At Hsi-ning, he will probably wait until definite word is received from Lhasa relative to his reception in the Tibetan capital. Rumours were that he might pay another visit to Nanking before his final departure. In the meanwhile the delegation headed by the Anchin Lama is getting ready to return to Tibet by way of India to prepare for the leader's coming.

At the same time that the Panchen Lama has been travelling about China the first Chinese Commissioner to Lhasa in twenty-four years has been making his way to the capital overland from Ta-t sien-lu, on the Szechuan-Tibetan border. Although General Huang Mu-song is ostensibly visiting Lhasa only to act as the Nanking Government's representative at the funeral of the Dalai Lama, his secondary purpose of opening negotiations for the recognition of Chinese sovereignty is so universally recognized that comparatively few know of his official reason for making the trip. General Huang is described by all as being an extremely happy choice for the position, having considerable diplomatic experience in the capitals of the world.

In Lhasa itself, events are moving with true Oriental obscurity. General Lung Shar, former Commander-in-Chief of the Tibetan Army, is reported as having been either executed or murdered some months ago for aspiring to control the "Roof of the World." Meanwhile, the head lama of Reting Monastery, two days north of Lhasa, has been ruling the country, pending the finding of the new reincarnation of the Dalai Lama. On his discovery and confirmation, the Reting Lama will act as regent until the new Dalai Lama reaches eighteen years of age. Fear that the new Chinese Amban, General Huang, will try to usurp the position of regent is said to be haunting the pro-British party of Tibetan leaders. A recent report is to the effect that a new incarnation of the Dalai Lama has been found and taken to Lhasa. If this be the case, it would appear to be the death knell of the Panchen Lama's hopes of returning to Tibet, but so far there is no confirmation of the report.



WHAT PRICE JADE?

BY

GENE LAMB

In this racy age of mass production, when man drives machine and machine retaliates by driving man, it is refreshing to become acquainted with one industry which seems to be in little danger of ever succumbing to the domination of a Henry Ford. "Gently, Brother, gently, pray!" is the watchword of the fascinating technique of jade carving, and its justification is apparent in the marvels which the Peking artisan turns out for the pleasure and treasure of his own countrymen and visitors from foreign lands. Whether you are the proud owner of a pair of jade vases which reduced your bank account to the extent of ten thousand dollars, or whether you are the humble but equally proud possessor of a pair of ear-rings which you acquired for the modest sum of twenty Mex. your appreciation of these worldly wares would increase if you but knew the endless toil and effort which is wrapped up in them. But, like diamonds, if you knew too much your pride might be diverted to some "magnificent" trinket which you purchased during a noonday tour through Woolworths. In this world value, like life, is what you care to make it.

To the inexperienced jade is jade, an emerald-green semi-precious stone. Perhaps it sprouts on trees, is recovered from the ocean's depths, or, like "Topsy," just grows. How it attains its various finished forms and shapes, gains its wondrous lustre and merits the fancy prices which are asked for it is equally a mystery to the great majority. To that kindly Chinese gentleman, Mr. Ch'ang Hsing-yuan, the proprietor of Fu Tê Jung (富德潤) in Peking, I am deeply indebted for much information. Mr. Ch'ang has been associated with the jade industry in all of its various branches for over forty years, and modestly states that he still has much to learn; maybe after another forty years Mr. Ch'ang can be persuaded to favour us with more exhaustive information.

The better qualities of jade are obtained in the remote sections of Chinese Turkestan, referred to in these days of ever-changing names as

Nan Chiang, the southern portion of Hsin Chiang, or Sinkiang, as it is popularly known. The two districts of Ho T'ien (Khotan) and Yü T'ien are celebrated for the superior quality of their jade deposits, and in the hidden ravines of the K'un Lun Mountains native prospectors have for centuries sought the raw materials to satisfy the extravagant demands of their imperial rulers and the desires of the aristocracy whose purses could afford the handiwork of the jade craftsmen.

At the very outset we must disassociate ourselves from the prevalent idea that the emerald-hued jade, which is known to all of us, is the only member of the family. There is the *pai yü* (白玉), or white jade, which to the feel is as soft as a kitten's fur. This is one of the rarest and most highly prized varieties. Then there is the *huang yü* (黃玉), or yellow jade. The depth of colour is the material factor in the estimation of yellow jade, and the most valuable of all is known as the *chi tan huang* (雞蛋黃), so called because of the obvious resemblance to the yolk of an egg. The *ch'ing yü* (青玉), that deep sea-green jade which excites so many ahs and ohs from covetous tourists, is next in importance, and its popularity is vouchsafed by the myriad imitations which a wily race of merchants have fabricated for those whose pocketbooks can open just so wide. *Hei yü* (黑玉) is the black jade, but its sombre colour limits its appeal to the connoisseur. Red jade, or *hung yü* (紅玉), which is really the outer shell of the white jade, completes our list of general classifications.

In Turkestan jade—that is the rough material—is obtained by two different methods. All of us are familiar with modern day oil-sleuths, that peculiar breed of fortune hunters who appear to have a sixth sense for determining the whereabouts of subterranean oil deposits. The jade industry has its human bloodhounds as well, and these men roam the hillsides, make their secret observations and indicate to the workmen where to dig for jade. Nine times out of ten they are right, and the stones and boulders that they unearth you would not give ten cents for after looking at them with your untrained eye. For outwardly they are just stones and boulders, but beneath their unattractive exterior they conceal the colours of the rainbow, the sheen of a tropical sea and the wealth of a Croesus.

The second method also employs the uncanny skill of the veteran prospector; but now he roams the parched river beds of the area. The torrents of the spring and early summer seasons have washed down all manner of rocks and soil from the mountain slopes. During the course of a day these jade-spies look upon thousands of vari-shaped stones. Suddenly they pause, make a more minute inspection and bundle off to their employers a mud covered stone which you or I would not condescend to use for a door weight. What visible features distinguish this from the thousands of others viewed during the day? I admit I do not know. And it will gain you little to ask them, because they will not tell.

Rough jade recovered from the mines in the K'un Lun Mountains is given the general nomenclature of *shan liao* (山料), or, literally, mountain material. That retrieved from the river beds is called *tzu yü* (子玉).

Let us assume that the prospector has wrested from Mother Earth a jade stone about the size of a basket ball. In tracing the various processes involved in its transportation, taxation, appraisal, sale, carving, polishing, finishing and eventual merchandizing one can gain some little idea of why a jade Buddha, if this is its ultimate form, is offered to a prospective purchaser for the "modest" sum of nine thousand dollars—tempered with an unconvincing statement that the vender stands to lose a substantial sum on the transaction.

On production at the buying guilds in the cities of the famous Turkestan jade districts the raw material is taxed according to weight. In the imperial days this initial assessment was approximately twenty taels per thousand catties, but since the days of the Republic there is an uncertain and constantly fluctuating tariff depending largely on the needs of those in power. Added to this there is an export tax. O'er the endless miles of Sinkiang highways the stones are transported either on big carts or on camels to Peking, the seat of the jade industry. The length of the journey, the risks incurred and the weight of the cargo make the transportation of jade an expensive matter. So, by the time a shipment has arrived at the guild in Peking, its value has already soared to many times its original figure. But the fun has just begun.

The actual number of firms engaged in jade manufacturing in Peking is shrouded in mystery, and despite strenuous efforts it seems that "all the king's horses and all the king's men" would be required to find out. The heads of these organizations mainly depend on the market for their raw materials, though several of them actually own their mines in Sinkiang and rely on them and their distant representatives to keep them supplied. Woe be to him whose experience is not up to qualifying him as an expert buyer. What he actually sees on the Peking market is the same rough product which the prospector picked up in distant Turkestan with just one slight difference. A thin slice has been cut from the stone's outer surface and reveals a white quartz-like interior, studded here and there with a few green, grey, blue, black, yellow or red streaks. How deep do they go? How consistent is that colour? How much of it is embedded in that hidden center? Who knows? Certainly the uninitiated could never guess; but the professional buyer has a sixth sense similar to that of the prospector, and he gauges his price accordingly. Five hundred dollars. Two thousand dollars. Perhaps he is sufficiently confident to bid five thousand dollars or even more.

Sold! The rough homely rock is carried off to the factory, and a dozen pairs of eyes are concentrated upon the manufacturing possibilities and the gain to be made from combining this unbeautiful rock with the brains of designers, artisans and shrewd merchants. The first step toward the shaping of the rough stone is the planning of the finished objects. When one buys a piece of raw material for ten thousand dollars one's ideas are not restricted to the ultimate production of a single object, the balance of the material to be thrown to the dogs like a chicken carcass from which the meat has been removed. Every bit of material is appraised, designs are drawn to utilize every bit of raw stock, and on this basis the rough stone is now turned over to the *ta t'o kung Chiang*

(大鉋工匠), the workman who day after day pedals his primitive rotary knife and hues the rough portions which pass from him to the actual carvers. The element of surprise when cutting into an unknown interior must be the same to him as to the eager recipient of an inscrutable Christmas parcel.

When one stands and watches one of these patient workmen tediously rotating his cutting-wheel by means of a crude foot-pedal mechanism one wonders why the worker's daily prayer should not be for an electric motor and a keen steel blade. Each pressure of the foot rotates the soft metal wheel six times, then pressure with the other foot reverses the wheel six more times. With a deft manipulation of the fingers of one hand an abrasive is applied to the cutting surface, the stone being cautiously guided with the other hand. At the end of the working day progress to the extent of a fraction of an inch may be observed. Another six months and the piece will be cut through.

Both the shop managers and the workmen of the largest jade factories in Peking have realized the advantages of motor-driven machinery for many years. A few of them have installed such machinery, and the same number have removed it and re-sold it to other people who were in greater haste. The best explanation of this apparent disdain for up-to-date methods was given to me by Mr. Ch'ang. As he put it, "The movements of the hand and feet of a jade artisan are perfectly synchronized. Liberate his feet and his hands go crazy. Liberate his hands, and his feet go crazy."

To the question what would happen if you liberated his hands and feet at the same time Mr. Ch'ang laughingly affirmed that in all probability he would fall asleep.

From the *ta t'o kung chiang* the cut material is passed on to the *hsiao t'o kung chiang*, the actual carvers. Carefully following the lines which have been sketched indelibly on the surface, these diligent workers manipulate a small metal wheel which revolves against the stone, gradually wearing away its surface with the indispensable aid of an abrasive, which is continually applied to the wheel's cutting edge. Very fine sand is sometimes used as an abrasive, but the more progressive factories have adopted American carborundum for this purpose, due to its quicker action and more facile application. The more intricate processes of carving and drilling are entrusted to the *ta yen kung* (打眼工), men of long experience, whose nimble fingers guide the small diamond drills through the most difficult and inaccessible places. Lastly, there are the polishers. Fiber from the gourd is extensively used in the polishing process, but other agents, some of which are secret, are also used to obtain the lustrous polish which beautifies the finished product.

It is quite understandable that the exercise of strict supervision and control over workmen is essential to the successful operation of a jade establishment. Free board and lodging is provided for all of the craftsmen, and, although the accommodation is far from what one would term palatial, the quarters are clean and comfortable, and the two meals each day are both substantial and appetizing. Realizing the constant eye strain and physical exhaustion attendant upon such precise con-

centration, the factory managers have also provided various forms of outdoor recreation for their workers. They well know that it does not pay to drive a good workman too hard and that fatigue is the main cause of accidents. Referring to accidents and breakage caused by unsuspected flaws in the material, it is interesting to note that such occurrences are charged off to profit and loss. However, it is rare, indeed, that the "old timer" makes a slip.

Speaking of "old-timers," there are workmen in this industry who have plied their lathes for over thirty years, men who in their time have created tens of thousands of dollars' worth of jade objects. They have attained their eminence through the same weary processes which prevail to-day, having served their apprenticeship at an early age, mastered their trade and eventually joined the ranks of skilled artisans. Four years and a half apprenticeship is required of all novices, and during this time no compensation other than food and lodging is offered as an inducement. After this period the aspirant is either accepted or rejected, and in the former case an agreed daily wage is paid. The *ta t'o kung Chiang* receives forty cents per shift of six hours. Ordinarily he works two shifts a day, but this is optional, depending largely on his feelings in the matter, which in turn are influenced by his physical condition, ambitions and monetary needs. The jade carvers receive sixty cents per shift, the polishers the same, and the diamond drillers one dollar. On the whole the worker in jade is a well paid man, as wages in China go.

By the way of a little mental arithmetic let us assume that a finished product requires four years processing before it can be offered to the buying clientele. Four years working time according to the above scale equals 1,460 hours. On the basis of an average processing cost of forty-three cents an hour the actual cost of workmanship alone amounts to \$627.80, to which must be added the various charges against overhead, food, lodging, materials, machinery, advertising, rent and fuel. Well, perhaps those twenty dollar ear-rings you bought were not so expensive after all!

The jade family has international affiliations, however, and little will the buyer in Peking suspect that the agate which he purchases comes from the province of Heilungkiang in North-western Manchuria, the *shan hu* (珊瑚), or coral, from Japan, and the *tsui yü*, kingfisher jade, from Burma. Nor can he know, unless so informed, that *fu jung shih* (芙蓉石) comes from America, *sung shih* (松石), turquoise, from Hupeh, and *pi hsi* (碧璽), blue jade, from Burma also. And little will he care after Chinese workmanship has bestowed upon it the beauty which is everlasting.

But the jade industry has not escaped the slump of recent years, and while the machines in the factories still hum with the same speed and rhythm of the good old days the seekers of jade *objets d'art* have failed to arrive in their usual numbers. The agents of wealthy American collectors now come every two years instead of one. They are ever in search of the finer and more costly pieces. British buyers also favour the larger more expensive types, but Old Man Depression has kept them home and provided them with ample leisure to gaze upon and enjoy their previous

collections. The French go in for the commonplace wares, trinkets, doo-dads, and thing-a-m'-bobbles. Italy is a close second to France. Japan takes its quota of small objects. It is largely left to the Chinese, the true connoisseurs of jade, to bide their time, select with infinite care and circumspection, and become the proud owners of the jade masterpieces which Mother Earth occasionally surrenders after having taken them in custody from the nobility which cherished them centuries ago—priceless burial pieces from the Han Dynasty. Inimitable masterpieces which first saw the light of day during the romantic dynastic days of Chou. But value, like life, is what you care to make it, and with a suiting mental adjustment your twenty dollar ear-rings can give you as much joy as the pair of vases for ten thousand. For the irresistible lure of jade is not reckoned in terms of feet and inches, pounds and ounces. Just jade—that is quite sufficient.

THE DRAGON BOAT FESTIVAL IN WEST JAVA

BY

NIO JOE LAN

Not only in China, but in the Netherlands Indies as well, do the Chinese celebrate the *Tien Chung Chieh*, or Dragon Boat Festival, which was described by Mr. Arthur de C. Sowerby in the June number of *The China Journal*. And, as everywhere, the Chinese look forward to this celebration with keen anticipation, not so much for its historical significance as for the outdoor enjoyment that invariably accompanies it.

Although the *Tuan Yang Chieh*, as the Dragon Boat Festival is also known in West Java, is considered by many a second rate holiday, the Chinese schools and most of the business firms remaining open on that day, it is, nevertheless, always a great moment when the fifth day of the fifth moon of the Chinese Lunar Calendar approaches. In every home the women are busy preparing the traditional rice cakes with pork wrapped in bamboo leaves. So, although the business world generally goes its way as usual, the festival is really celebrated by every one.

For some Chinese, especially those born in China, this day is of such great significance that, while not observing other Chinese holidays or even Sundays, they yet close their shops on this occasion, giving a day off to their employees and to themselves to take part in the celebration

of Ch'ü Yuan's day. For instance, the tinsmiths rest on this day, it being one of the few holidays they allow themselves during the whole year.

At present, however, no dragon boats are to be seen on the fifth day of the fifth moon in Batavia, as was the case fifteen years ago, when the dragon boat races were very much enjoyed, and when there were a great many gaily decorated boats on the river, while Chinese, Western and native music entertained the crowds watching from the banks of the river. That day has passed, perhaps forever.

But the residents of Batavia may yet enjoy the Dragon Boat Festival, for the *Tuan Yang Chieh* is still celebrated every year at Tangerang, a small town less than an hour by motor-car west of the capital and famed for its *pandan* hat industry. Here the festival is held on the sixth day of the fifth moon. This is undoubtedly the result of the fact that many years ago the Batavia Dragon Boat Festival was a great event, so that Tangerang, with its river, the Tji-Sedane, especially suitable for the dragon boat races, gave precedence to the capital in the celebration. And tradition has kept Tangerang to its custom of observing Ch'ü Yuan's day on the sixth of the moon instead of the fifth.

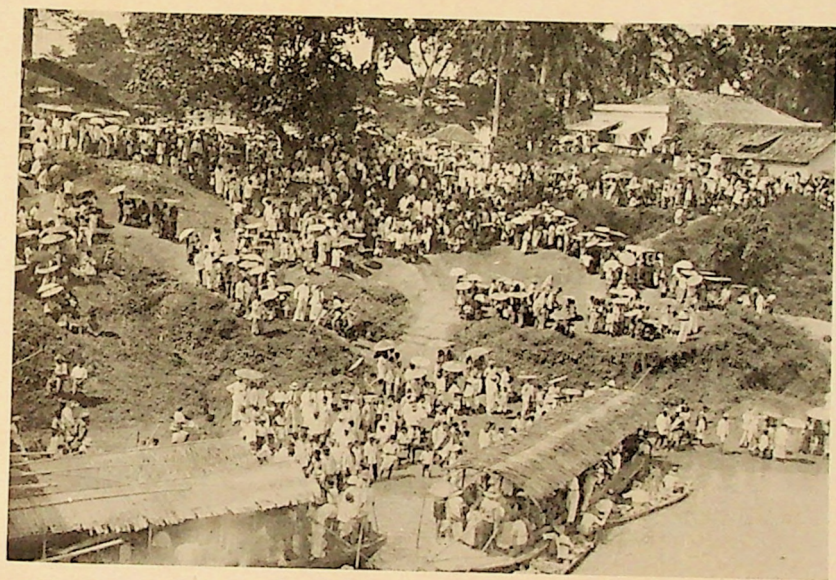
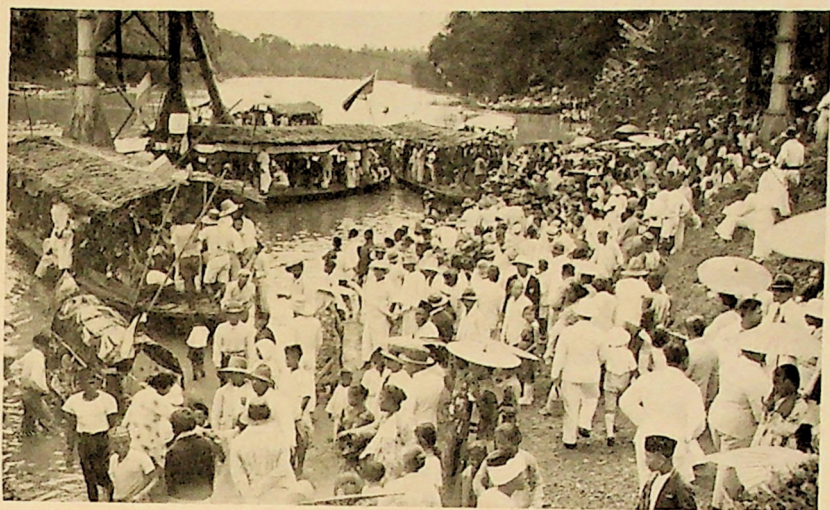
However, the fifth day does not pass in Tangerang without attention being paid to it, so that in this small town the festival actually lasts for two days, attracting many people from Batavia and from other communities in the neighbourhood.

Until a few years ago, the *Tuan Yang Chieh* was also celebrated at Meester Cornelis, another small town in the vicinity of Batavia. Here, however, the festival was not held on so large a scale as in Tangerang, which has acquired a considerable degree of fame in West Java, thanks to its exceptionally suitable river.

Regarding the mention made by Mr. Sowerby of the original long canoe-like shape of the dragon boats, as are still to be seen in Foochow and some other parts of South China, it is interesting to note that the dragon boats used in Tangerang and also in Meester Cornelis are of the same long slender form, the bow bearing a dragon's head and the stern ending in a dragon's tail. A pair of them always race each other to the beating of tambours and cymbals.

In other localities, where there are no suitable rivers, the Chinese residents go to a nearby lake, if there is any, and celebrate the *Tuan Yang Chieh* there without dragon boats. In many such cases the Dragon Boat Festival has been changed in character and has become simply a general water carnival or a pleasant occasion for picnicking at the lake side, to the accompaniment of music and dancing. At Bandoeng, for instance, the beautiful Lake Site Aksan has been chosen for the celebration on Ch'ü Yuan's day.

A curious tradition in connection with the fifth day of the fifth moon is that many Chinese women go out to seek and gather herbs, assigning great medical value to them, not because of themselves, but as a result of their having been taken home on that particular day.



Two Views of the Crowds attending the Present Year's Dragon Boat Festival at Tangerang, West Java.



Dragon Boats racing at Tangerang, Java, during the Present Year's Celebration of this Festival.



Illustration in a Chinese Newspaper of the strange Occurrence of spontaneous Fire in a large Tree at Chen-ju in the Shanghai Area.

ART NOTES

The Iron Pagoda at Kai-feng: One of the several relics still to be found in Kai-feng of the days when the city was capital of China under the Sung Emperors, the "Iron Pagoda" is a beautifully proportioned tower of thirteen storeys. In reality it is not an iron but a brick structure, faced with coloured glazed tiles, and is still in a fair state of preservation. A photograph of the famous structure is here reproduced. Of the numerous idols that once were housed in the pagoda, only the Iron Buddha now remains.

Chinese Artist Acclaimed Abroad: After a year and a half of travel through Europe exhibiting his own paintings and those of other modern Chinese artists, Mr. Ju Peon, head of the Department of Fine Arts of the Central University at Nanking and well known for his paintings, returned to China late in August. In the course of his trip he had given seven exhibitions of his collection and won unreserved commendations from all quarters. He held

his final display in Moscow, and was rewarded by the Moscow Arts Museum with a portrait of Tolstoi painted by the famous Soviet artist Repin, in exchange for one of his own Chinese paintings.

Mr. Ju was commissioned by the Ministry of Education at Nanking to go abroad in January, 1933, and since then has exhibited in five countries. His first stop was Paris, then Milan, Brussels and Berlin. He held a second German showing at Frankfort before continuing to Moscow at the invitation of the People's Commissariat for Education there. Later he went to Leningrad, and in both places his exhibitions were crowded with thousands of visitors. Appreciation was universal.

Mr. Ju is returning to his post at the Central University, following his enthusiastic reception by the art circles of Shanghai. He is a native of I-hsing, Kiangsu, and was a graduate of the National School of Fine Arts of Paris in 1923.

S. L.

CORRESPONDENCE

Fire in Old Trees: The following letter from Captain I. V. Gillis, with the translation of a Chinese magazine item and a reprint of an article from *The China Journal*, speak for themselves:

Dear Sowerby,

Five years ago you published in *The China Journal* an article on "Fire in Trees," and shortly afterwards I came across in an illustrated magazine published at Shanghai in the middle "eighties" a picture of such an occurrence with a descriptive note.

I put it aside with the intention of translating the note and sending the picture and translation to you; but it

passed out of my mind with press of other work, and it was but recently that I ran across it again. Now I am carrying out my original intention.

Herewith I am sending to you the picture with a translation of the brief note that goes with it. I do not think that the reference in Volume XI, page 178, is to the same incident that is covered by the picture and accompanying note; for, as I figure it out, the 29th Day of the 9th Moon of 1921 fell on October 22 and not on December 6; and, as a matter of fact, could never fall in December.

Thinking that the above and the enclosed might interest you I am passing it on to you for what it is worth.

THE CHINA JOURNAL

All good luck to *The China Journal*, and best wishes for its continued success.

Yours very sincerely,
I. V. GILLIS.

Peiping, China.
August 1, 1934.

SPONTANEOUS FIRE IN AN OLD TREE

Old ginkgo trees that have stood for many years are doomed to destruction by fire. Sometimes they are said to have been struck by lightning, and sometimes the fire is of spontaneous origin. Frequently the fire burns continuously day and night without going out, nevertheless the tree is not immediately killed; and, although it may be half destroyed, when spring comes again it revives and puts forth its foliage as in former years. Instances are well known of the same tree having caught fire in this manner several times, but it was quite impossible to discover the cause and to explain the phenomenon.

At Chen-ju (near Shanghai) there is a large ginkgo tree; it is very tall indeed and it shades about a *mou* of ground, and with its bright green foliage it is a beautiful sight. It is thirty some odd feet in circumference and actually several hundred years old. Recently the tree was bearing fruit; and pedlars used to come and pick up what had fallen off and dropped to the ground, sell it, and thus make some trifling gains.

Suddenly on the 29th Day of the 9th Moon this tree caught fire and columns of dense black smoke were seen ascending to the heavens. People saw the smoke from a long distance off and thought that probably a house was on fire, so they went to investigate; but when they arrived at the spot they only smelt a very fragrant odour, and there was nothing known as to the origin and cause of the fire. It burned for two days and then died out. The trunk of the tree is now hollow, but the outside bark is still in its original state and not damaged. Those who witnessed the incident all excitedly exclaimed that it was most extraordinary and marvellous.

It is said that fire* is obtained in the spring from elm and willow trees; in summer from the jujube and apricot;

in mid-summer from the mulberry and hance; in autumn from the oak and *yu* (?); and in winter from the *huai* (*Sophora japonica*) and the hance.

That wood is a source of fire is unquestionably true and cannot be denied; but whether or not the ginkgo tree is outstanding in its liability to spontaneous combustion is something for the authorities to tell us.

FIRE IN TREES†

The following incident was reported in the Shanghai "Hsin Wen Pao" of December 8, 1921, to have occurred during the afternoon of December 6, two days previously.

There is in the garden behind the Wen Ch'ang Tien temple a very tall and ancient *tung ching* tree. At about two o'clock in the afternoon thick black smoke was observed to issue from the crest followed almost at once by fierce flames. All the stalls in and around the temple were soon deserted by the traders and the idle crowd also fled in panic. The native fire brigade reached the scene in due course and laid on their hoses, but the tree was so high that the streams of water fell short of the flames. Before very long the fire died down of its own accord, leaving the tree unharmed save for the burnt foliage and charred small branches near its top.

The Chinese who pointed this out to me "as possibly of interest to a foreigner" showed very little surprise

*For ritualistic purposes. In the *Chou-Li* (周禮), under the heading "Summer Officials" (夏官), will be found the item "*ssu-kuan*" (司燿) and the following explanation:

司燿掌行火之政令四時變國火以救時疾

行猶用也變猶易也鄭司農說以鄧子曰春取榆柳之火夏取棗杏之火季夏取桑柘之火秋取柞櫟之火冬取槐檀之火

It is to be noted that, with the exception of the unimportant transposition of the two characters 季 and 夏, the two statements as to the woods used for the ritualistic fires at the several seasons are identical.

†*The China Journal*, Vol. XI, p. 178. 1929.

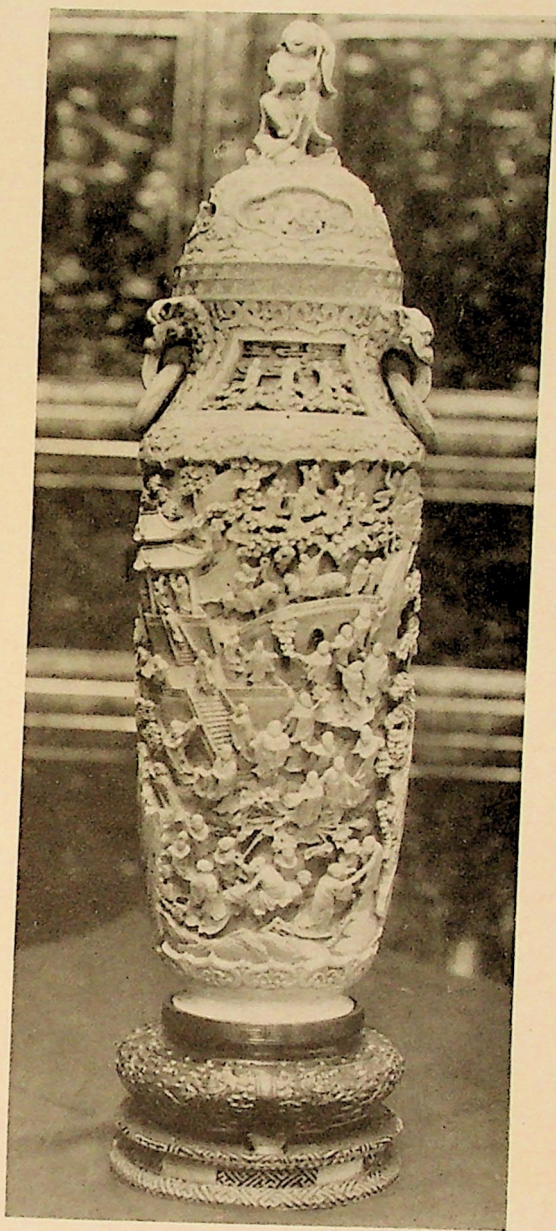
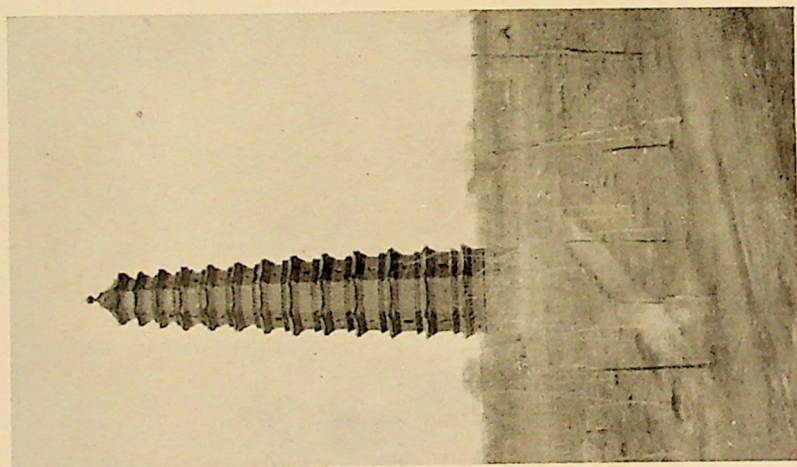
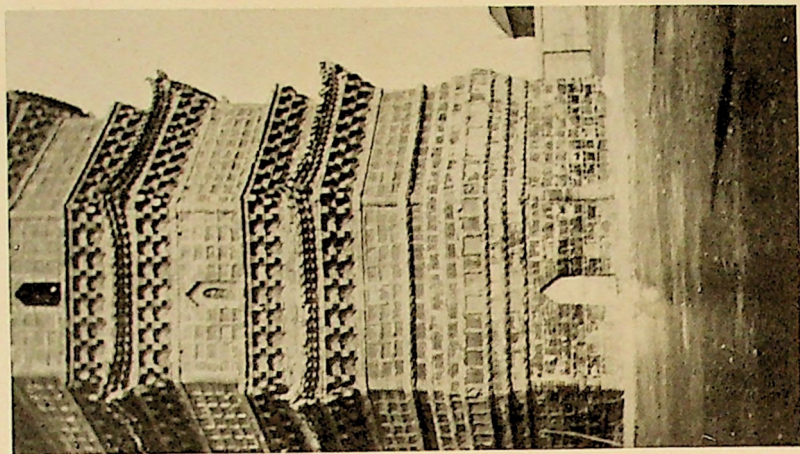


Photo by Lamb Expedition
A Masterpiece of Peking Ivory Carving.



The so-called Iron Pagoda, Ka-feng Fu, Honan. It is in reality a Brick Structure.



Base of the Iron Pagoda, showing Detail of Brick-work.

Photos by S. Eliassen.

CORRESPONDENCE

and no disbelief, though he admitted it was "a little curious." On the contrary, he said this phenomenon was well known in China, and that though he himself had never seen such a thing happen, many of his friends had.

He added that of course trees had fire inherent in them, and volunteered the following remarks by way of explanation.

"Before we had matches our fathers got fire by striking flint on steel, but for many ages before that by rubbing two dry sticks together. But the earliest man, more than five thousand years ago, secured fire by another means. He bored a hole in a living tree with an iron spike and worked the spike round and round in the hole thus made until fire came out of it. The method is called *chuan mu ch'u huo* and the fire thus obtained is called *shui*. In the spring the tree used was an elm, in summer a willow, in the autumn a *sophora* (*huai shu*), and in winter a scrub oak.

"Trees, therefore, contain fire, and when a tree is very old the fire works its own way up and out at the top."

The man who told me this was well educated, a "writer" for many years associated with foreign affairs. His father and grandfather before him were men looked upon as scholars in a small way.

J. H.

The Dog Days: We have been reminded by more than one reader of the real origin of the term Dog Days, but must point out that our leader in the August number was intended to be humorous, and not a contribution to astronomy. It is very humiliating to have to explain one's efforts at humour; but perhaps we may be forgiven this lapse, since the Dog Days synchronize with the "Silly Season," when "Sea Serpents" and "Loch Ness Monsters" come to the fore. This summer's heat is responsible for a lot.

Following is a letter which clears up the matter of the origin of the term Dog Days:

Dear Sowerby,

As to the origin of the term Dog Days, evidently you did not go far afield in your search of or information by which to enlighten your readers on this subject. I find in my "Century Dictionary" the following:

"DOG-DAYS, A part of the year about the time of the heliacal rising of the dog-star. Various dates, from July 3 to August 15, have been assigned for the first dog-day, and various durations from 30 to 54 days. Pliny says they began with the heliacal rising of Procyon, which took place, he says, July 19, N.S.; and this date has been widely accepted. But he also says the sun was then entering Leo, which rule, making the dog-days begin July 23, has also been used. Hippocrates (450 B.C.) says they were in the hottest and most unhealthy part of summer. If the season was of Babylonian origin, it would originally probably have been in early summer. Perhaps they are now most usually reckoned from July 3 to August 11, inclusive."

Another quotation I would give you is from Brewer's "Dictionary of Phrase and Fable," and is as follows:

"DOG-DAYS, Days of great heat. The Romans called the six or eight hottest weeks of the summer *caniculares dies*. According to their theory, the dog-star or Sirius, rising with the sun, added to its heat, and the dog-days bore the combined heat of the dog-star and the sun. (July 3 to August 11.)

Of course, you are familiar with the Chinese *San Fu* (三伏), which are the exact equivalent of our Dog Days, and this thirty-day period is from about the middle of July to the middle of August. This year I believe the period began on July 18 and ended on August 16.

Yours very sincerely,

I. V. GILLIS.

Peiping, China

August 18, 1934.

THE LIBRARY

Science Society Increases Budget:

That the annual expenditure of the Science Society of China on its library in Shanghai should be increased from \$50,000 to \$60,000 was decided at the nineteenth annual meeting of the Society, held at Kuling during the last week of August.

New Year Book Editor Chosen;

Progress toward the publication of an all-Chinese China Year Book was made on August 24, when the promoters of

the enterprise met at the Bankers' Club in Shanghai and invited Mr. Kwei Chung-shu to be Editor-in-Chief. Other officers elected at the meeting included Mr. Shi Liang-tsai, publisher of the *Shun Pao*, as President of the China Year Book Company; Mr. L. T. Chen as General Manager; and Mr. P. W. Kuo as Treasurer.

Chapters of the new Year Book will be written by Chinese experts on the subjects concerned, and the whole is expected to be an excellent additional source of information on China.

REVIEWS

The Mongols of Manchuria, by Owen Lattimore: John Day Co., Inc., New York Price G.\$2.50.

In reality Owen Lattimore's latest work is two books. The first third of "The Mongols of Manchuria" treats with the past and present status of the Mongol tribes in relation to China, Manchoukuo and Russia, and goes on to make some predictions about their interests and sympathies in the event of future hostilities in the North. The second part is a catalogue of the Mongol tribes and banners now included within the limits of Manchoukuo, and is a closely interconnected story of the tribes' histories, affinities and characteristics, as well as an explanation of their names.

It will come as a surprise to many readers to learn that a great deal of what is now Manchuria did not originally belong to the Manchus, but to their Mongol allies instead, and that the term "Eastern Inner Mongolia" includes much more than Jehol. For an exact understanding of the relation between the nomads and the new regime in the North-east, this book, written by a man who has a great deal of experience in that field, is invaluable.

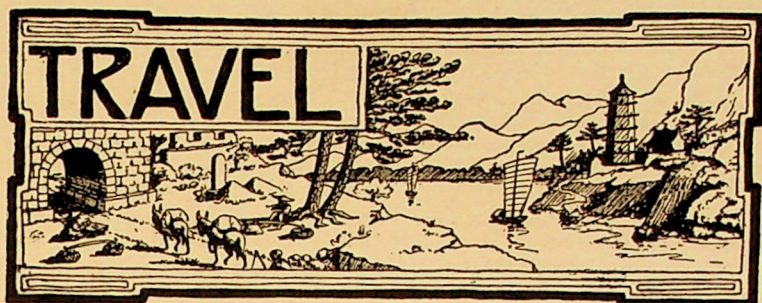
Lattimore's interpretation of the political events in Manchuria is unusual, but certainly logical. He sees Japan's presence there, not as an attempt to

grab land, *per se*, but as an effort to re-establish the old control over China from north of the Great Wall. Viewed in such a light, it is undeniable that recent events take on a sense and meaning that is almost entirely lacking otherwise. The Mongols of Manchuria can be heartily recommended.

Composition Exercises in Elementary English, by A. S. Hornby: Macmillan and Co., London, 1934. Price 2s.

Intended as a handbook and exercise book for somewhat advanced students of English, this volume should find a ready place in the educational systems of the Far East. It gives copious examples of all the points it explains, and is so arranged that the sections can be taken out of their order to suit the teacher's wishes. The volume shows a tendency toward the method of teaching English that is in vogue in Japan, where the author is an instructor in a Foreign Language School, rather than that used in most schools in China. In other words, it requires a good reading knowledge of English before the spoken language is mastered. For such needs the new book is excellent, however, and should fill a definite place in educational circles.

S. L.

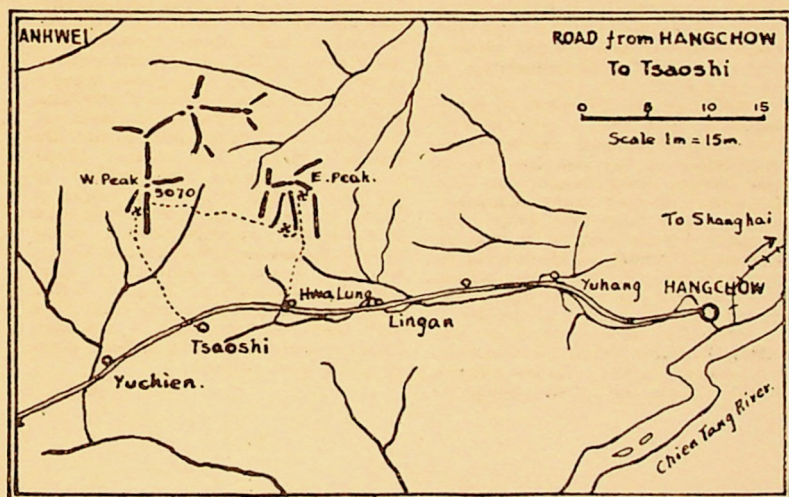


THE EAST AND WEST T'IENT MO SHAN

BY

REWI ALLEY AND E. R. LAPWOOD

The enterprising work in road construction accomplished by the Chekiang Provincial Government has opened up new stretches of country to week end visitors from Shanghai. Possibly the most interesting of these is along the road running west-south-west in almost a direct line to Huei-chou in Anhwei. This road was completed late in 1933, and

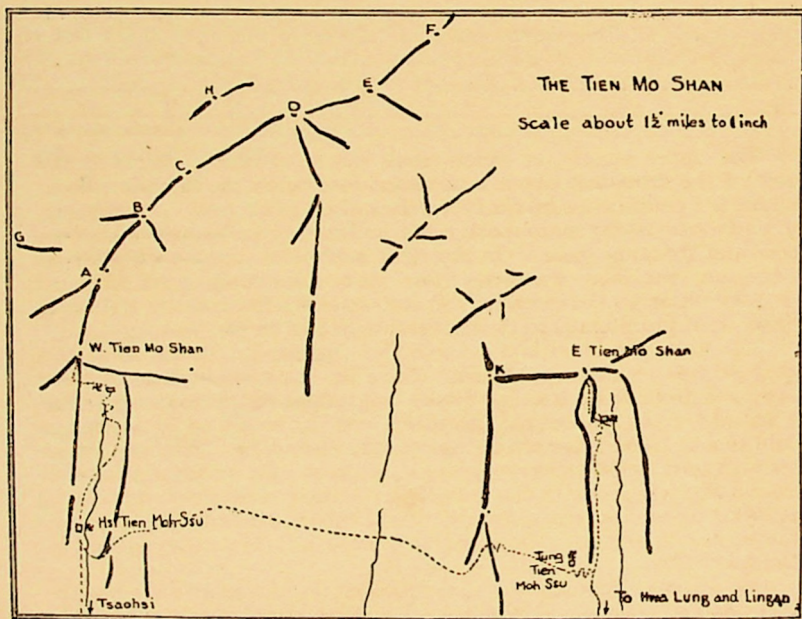


stands as a notable piece of engineering, for it threads the tumbled mass of the North Chekiang hills, which have previously made communication practically impossible except by river.

The following account of a trip to the twin peaks of the T'ien Mo Shan may be useful to intending visitors.

At New Year we left Hangchow by an early 'bus, and soon found ourselves in a country of multitudinous small steep hills, smoothly moulded into graceful ridges and valleys, which fell to an abrupt end on the level alluvial plain. Past Ling-an, where we changed 'buses, T'ien Mo Shan lay on our right, hidden by nearer hills and clouds. The range can be approached from Ling-an (臨安), Hua-lung (化龍) or Tsao-shih (藻溪). We chose the last village as slightly nearer, and, hiring guides without difficulty, set out for the West T'ien Mo Shan (西天目山).

We walked for thirty *li* along a northerly road, which, much to our discomfort, was cobbled all the way as neatly as a Soochow street. Arriving at the huge Hsi T'ien Mo Ssu (西天目寺) well before dusk, we were ushered without delay through the large establishment to the guest apartments, which consisted of four rooms, each with three clean and curtained beds. This venerable establishment of four hundred monks does not disdain to cater to a regular tourist traffic, so that accommodation, meals and guides are easily obtained. We were treated



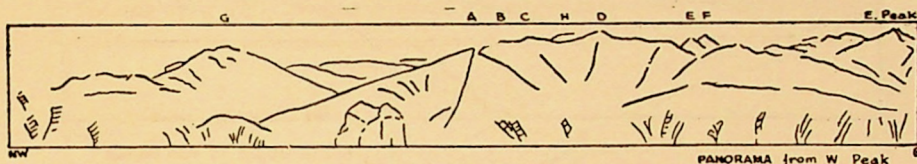
THE EAST AND WEST T'EN MO SHAN

with excessive politeness, but the visitor will find that the charges have been modernized, being about \$3 a day for each person.

We started next morning for the top of the mountain, whose height according to the Chinese atlas is over five thousand feet. This is probably an over-estimate, but the peak certainly tops all its neighbours for many miles around. The path begins to ascend fairly steeply behind the monastery. It is wide and well made.

Mist shrouded the hills, yet, wherever we looked, delicate and graceful views met our eyes. For the trees bore on their leaves and branches the snow still unmelted from an earlier fall. Every line and pattern of branch and twig was etched in black and white. The mountain is famous for its trees and monkeys; we did not see any of the latter, but the bamboos and firs cannot fail to attract and hold the attention. The whole of the southern slope of the West Peak is covered with forest, and we passed many huge fir trees six or more feet in diameter at the base of the trunk. All were beautifully straight and nobly proportioned. One veteran tree, which is over eight feet in diameter, has a special shrine built about it.

As we climbed, the mist lifted. We saw that we were on the side of a deep ravine. Passing through the Lion's Mouth (獅子口), we could look out over a deep precipice to the tree-clad cliffs opposite.



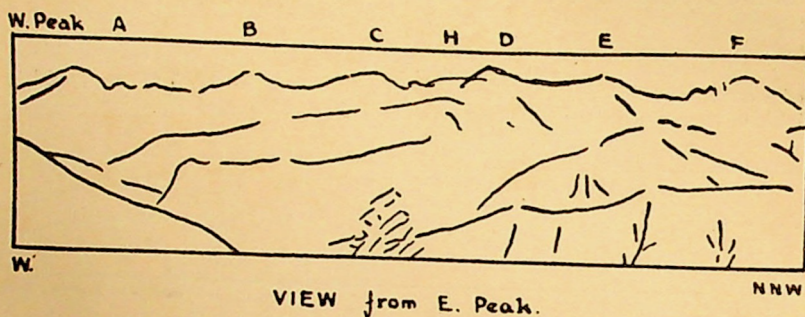
The upper temple, at which meals can be obtained, stands on the brow of the mountain about a thousand feet below the summit. From it there is a gentle slope up the broad back of the peak itself. We continued westwards to the main south ridge, and turned up through ankle deep snow and thinning trees. On the right a graceful snowy peak gleamed in the sun, but there was little clear view. We made good time up the easy slope to the summit. At last we saw a few rocks in a clearing ahead, and, pushing up to them, found ourselves on the peak.

The mist had lifted and a noble view appeared. To the north and east rose great white-capped hills. Snow lay thick across their northern faces, and from their massive flanks long ridges rolled down to plunge at last under the mud of the flat plain. On the south, as far as the eye could reach, stood ridge after ridge of long steep hills. Westward there was still mist, with shadowy promise of great hills within and beyond. Around the few rocks of the summit grew thick brushwood, but not in the usual featureless mass, for every twig carried a frond of ice, three or four inches in width. The common bushes had been transfigured by frost and snow.

As we descended to the upper temple we saw more distinctly the mountains of Anhwei to the west. A long slope of glittering snow

marked Huang Shan (黄山), near Huei-chou. We followed a variant to the east of our ascending route, down many steps on the side of a deep ravine: there was no labour or difficulty.

At seven o'clock next morning we set out for the East T'ien Mo Shan (東天目山). Leaving by the main south gate of the monastery, we soon turned east, and, crossing the near ridge, descended into a wide valley with the huge western outlier of the East Peak towering in front of us. We felt we were among the big hills, and every turn of the road brought exhilaration at the extent and grandeur of the scenes through which we were passing. The delicate and confined views of the previous day had little in common with these immense green thousand-foot slopes. We crossed the main stream by a long and high wooden bridge. The stream was low, but the heavy chains anchoring the timbers and the wide debris of boulders showed what force must be developed at the flood.



We ascended again, and on our road we found frequent small shrines functioning as resthouses. At the top of the third ridge we stopped for a welcome rest. The views in both directions were magnificent. In front stood the delicately chiselled main south ridge of the East Peak bathed in bright sunshine, and slit by black gorges or shadowed ravines. At our feet lay another deep valley to be crossed, wild and narrow. Into this we plunged, losing in a few brisk minutes all the potential energy piled up on the long ascent.

A little way down the valley the Tung T'ien Mo Ssu (東天目寺) nestled in a grove. Its only occupants seemed to be one monk and a policeman. This would make a good base for the ascent of the East Peak, and would without doubt be far less expensive than the West Monastery. After taking tea we began to ascend the steep path which zigzagged up behind the temple, hoping that at last we were really on the mountain, as this was our fourth start from base-level. Hope was justified, for, on gaining the ridge, we found a cobbled road, which, our guide said, was the main way from Ling-an to the mountain.

A few hundred yards further on stood a temple, where we left our guide and burdens. T'ien Mo Shan, we were told, was five *li* ahead. The



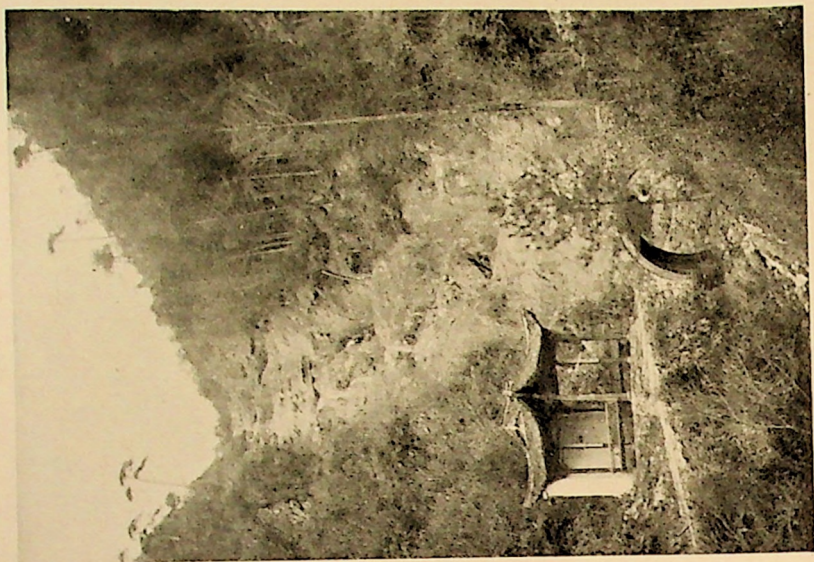
The View to the Southward of T'ien Mo Shan.



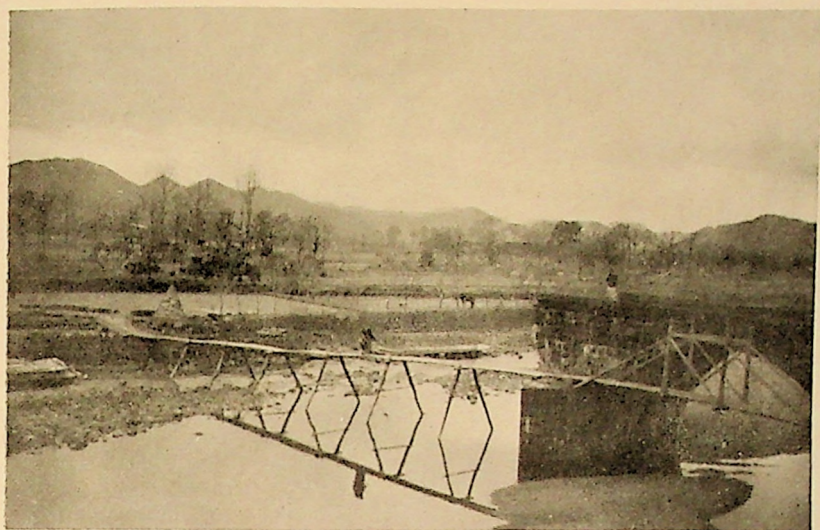
The Old Temple amongst the Clouds near the East Peak of the T'ien Mo Shan.



Rising Mists in the beautifully Wooded Mountains
of the T'ien Mo Shan Region.



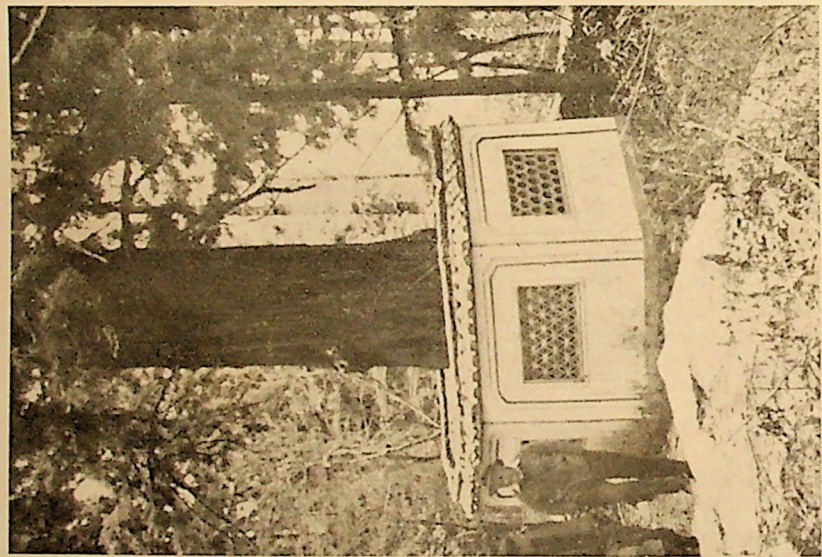
The Bridge of the Flying Jade Sword and the Water-
fall of the Dangling Cliff in the T'ien Mo Shan Region.



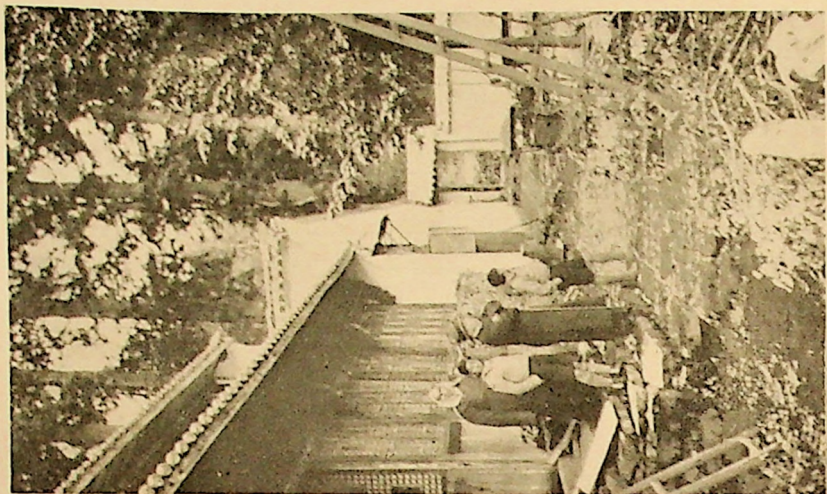
A Scene on the Road from Tsao-shi in Northern Chekiang.



The Trees and Bushes on West Peak, T'ien Mo Shan, covered with Hoar Frost.



The Largest Tree in the T'ien Mo Shan Region, its Trunk protected by an ornamental Wall.



A Temple Court in the T'ien Mo Shan Region, a beautiful Mountain Resort in Chekiang Province.

path ran north, clinging to the western side of a great valley. On the steep eastern wall we could see dark clefts with gorges and waterfalls. A bell chimed sonorously from the Fairy Peak (仙峯遠眺) at a distance which stood perched on a crag above us. Each *li* was marked by a resthouse, and at the fourth we came to the Bridge of the Flying Jade Sword (玉劍飛橋), which spanned a beautiful half-frozen cascade, the Waterfall on the Dangling Cliff (懸崖瀑布). A grove of stately trees led us to the gate of a large and well-kept temple. In this splendidly situated monastery is the Old Hall where Dwell the Clouds (古殿棲雲). Although high up, it is still far from the top of the mountain, and we realized that there was no road beyond. To reach the summit one must scramble by the most feasible route.

We saw several stony gullies running up to the crest of the ridge above, and decided to follow one up, thus avoiding the dense vegetation. Unfortunately we took a false turn in a maze of paths (intending visitors should keep well to the left), and had to fight a steep and strenuous way through briars to the ridge. Once there, the walk to the summit was long and laborious in the extreme. There was no water, and we were glad to eat snow. The bare summit is graced by a tiny shrine and a few cairns, and from it we had an extensive view, similar to that from the West Peak, but on the south the pattern of small ridges looked even more like ripples on a wide green sea.

It was easy to run down the ridge and hurtle down the gully by which we should have ascended, though the latter was dangerously steep. The ascent from the temple took two and a half hours and the descent forty minutes, so that the summit is presumably about 1,500 feet above the temple.

We were very late, and when we got back to our guide at a quarter past four he announced that it was useless to attempt the sixty *li* into Ling-an. He wished to go to some nearby place, but finally we set out for Hualung (化龍), forty *li* distant, although the priest was pessimistic about our chances of getting there.

We hurried off the mountain in half an hour, on to a very indefinite path through scattered hills and villages. The guide set a rapid pace, never faltering as he led us, at first by twilight, but for the last three hours by starlight and a tardy moon, across the paddyfields and ridges to the south-west. At nine o'clock we clattered into Hua-lung. The village was asleep, but enquiries by the guide, who had done a splendid day's work in carrying for us, soon brought us to the inn, where the innkeeper got up from his bed to serve us with a magnificent dish of *mien*. The inn was hardly the last word in cleanliness and the night was bitterly cold, but, getting together all the covering we could find, and sleeping in all our clothes, we spent a perfect night.

TRAVEL AND EXPLORATION NOTES

Tourist Hotel for Forbidden City :

In line with his program for turning Peking into a tourist playground, Colonel Yuan Liang, Mayor of the old capital, is planning to convert part of the old Imperial Palace into a modern hotel, according to a dispatch in the *Shun Pao* on August 14. Whether it will be reserved exclusively for Chinese or foreigners or will cater to both was not stated.

Chinese Party Starts for Tibet :

With the ascent of some of the peaks in the Himalayas as one of their objects, seven Chinese were reported to have left Tientsin early in August on a thirty-month tour of China. Their itinerary, according to a note in the *North-China Daily News*, included Shansi, Shensi, Kansu, Sinkiang, Chinghai, Tibet, Sikong, Yunnan, Kweichow, Kwangtung, Kwangsi, Chekiang, Fukien and Kiangsu Provinces. This probably represents the first attempt by Chinese to conquer the highest peaks in the world, and, if successful, may spur on other Chinese youths to similar accomplishments. The expedition is led by Mr. Lu Shih-ming, Principal of the Tientsin Young Men's Business School.

Kalgan-Urga Trade Route Re-opened : Direct overland communication between Kalgan and Urga, capital of Outer Mongolia, was re-established on August 10 after a lapse of nearly ten years, according to the *Sin Wen Pao*. On that day a caravan of twelve motor trucks left Kalgan for Urga, all fully loaded with trade commodities. The resumption of the old trade is

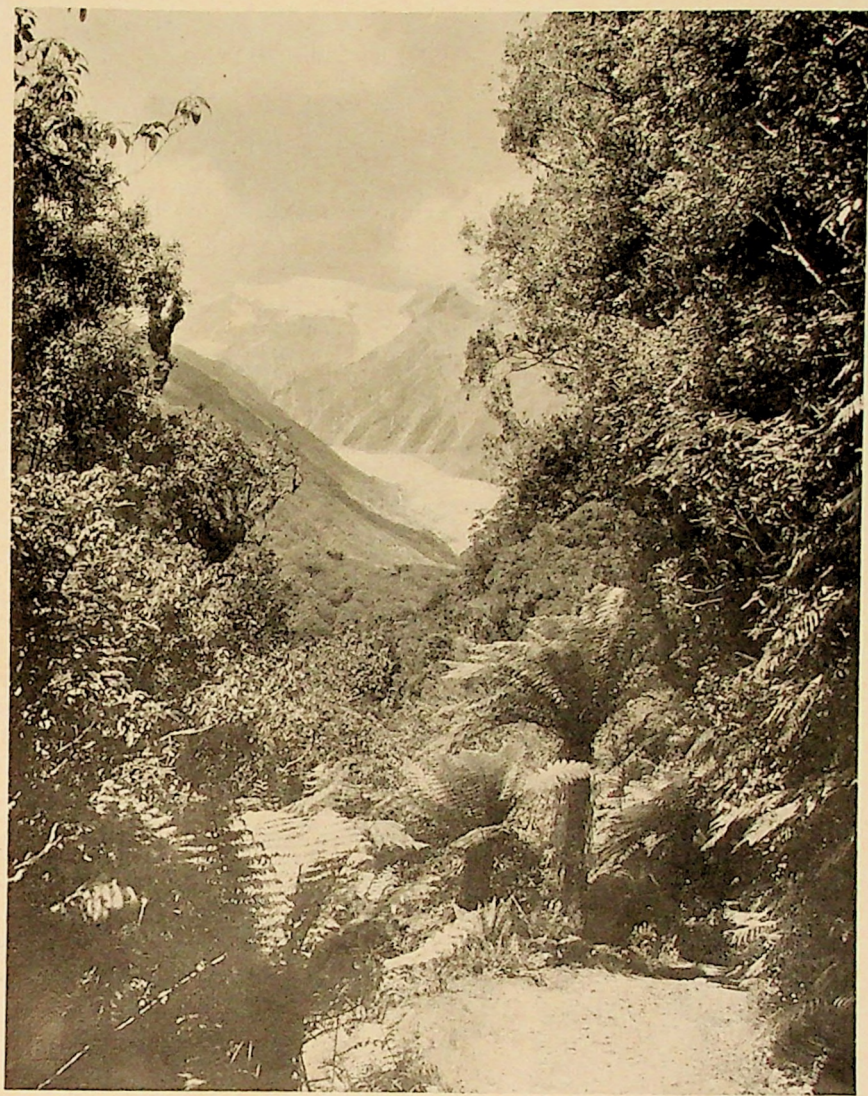
understood to be supported by the Chahar and Suiyuan Provincial Governments.

Ascent of Tai Shan Facilitated :

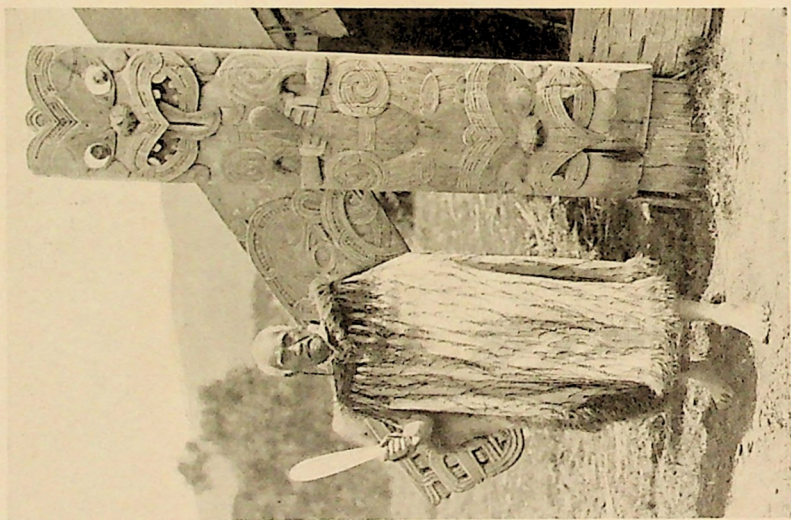
Visitors to Shantung who climb Tai Shan hereafter will find their way made easier by a number of improvements recently instituted by the Provincial Government. In addition to the installation of a new telephone line to the top of the mountain the road itself has been repaired, many of the temples renovated and a small hotel erected about half way up the mountain. The Nanking Government has installed a complete set of meteorological instruments in the highest temple, with a well trained staff in charge, as a link in its chain of weather stations.

New Zealand as a Tourist Resort :

The accompanying illustrations of scenery and aborigines in New Zealand, supplied by the New Zealand Government Publicity Bureau, may stimulate the interest of some of our readers in that country, which has much to offer the visitor. The picturesqueness of the aboriginal natives, who still retain much of their old culture, alone should make New Zealand worth a visit these days, when European civilization is rapidly taking the place of native customs and modes of living in all parts of the world; but to this interest must be added some of the most beautiful scenery in the world. There are not many places where glaciers and tree ferns may be observed in the same scene; while New Zealand's geysers are as famous as those of Iceland and Yellowstone Park.



The Fern Track, Franz Josef Glacier, South Island, New Zealand.



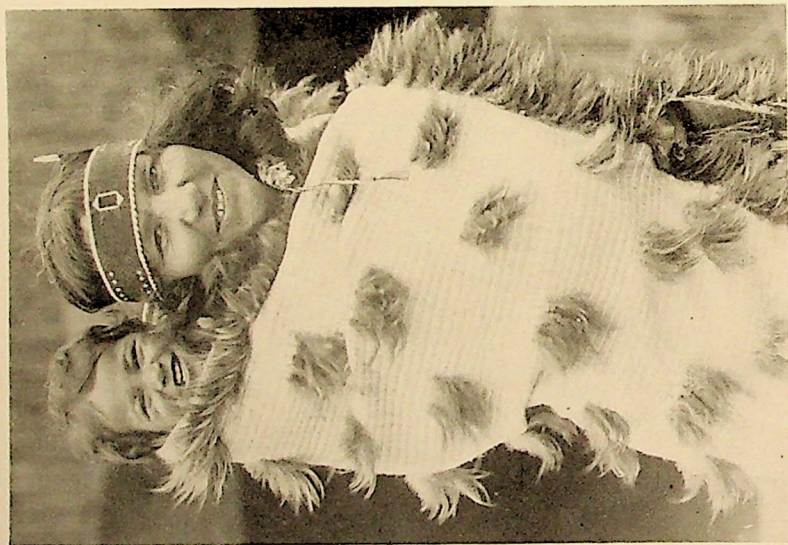
Two Maori Chiefs in their Ceremonial Feather Robes, North Island, New Zealand.



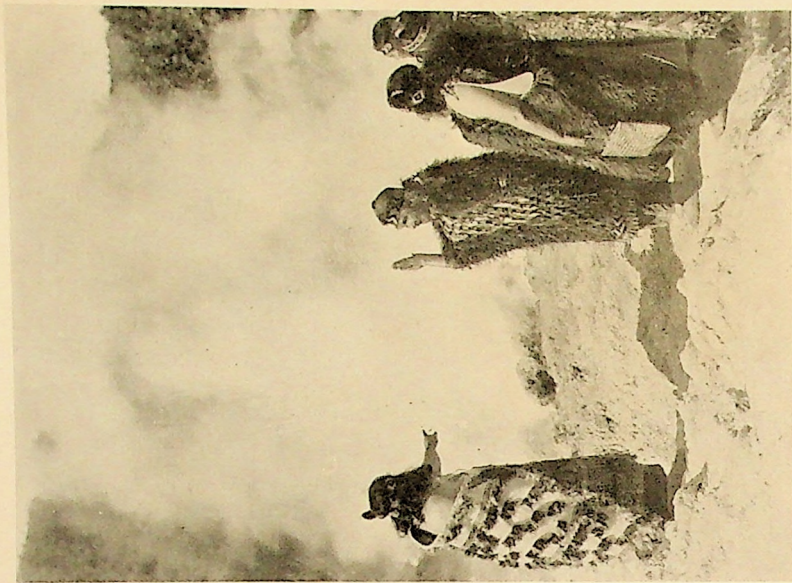
Maori Women weaving a Feather Robe, North Island, New Zealand.



Maori Girls in front of a Store House, North Island, New Zealand.



A Maori Mother and her Child, North Island, New Zealand.



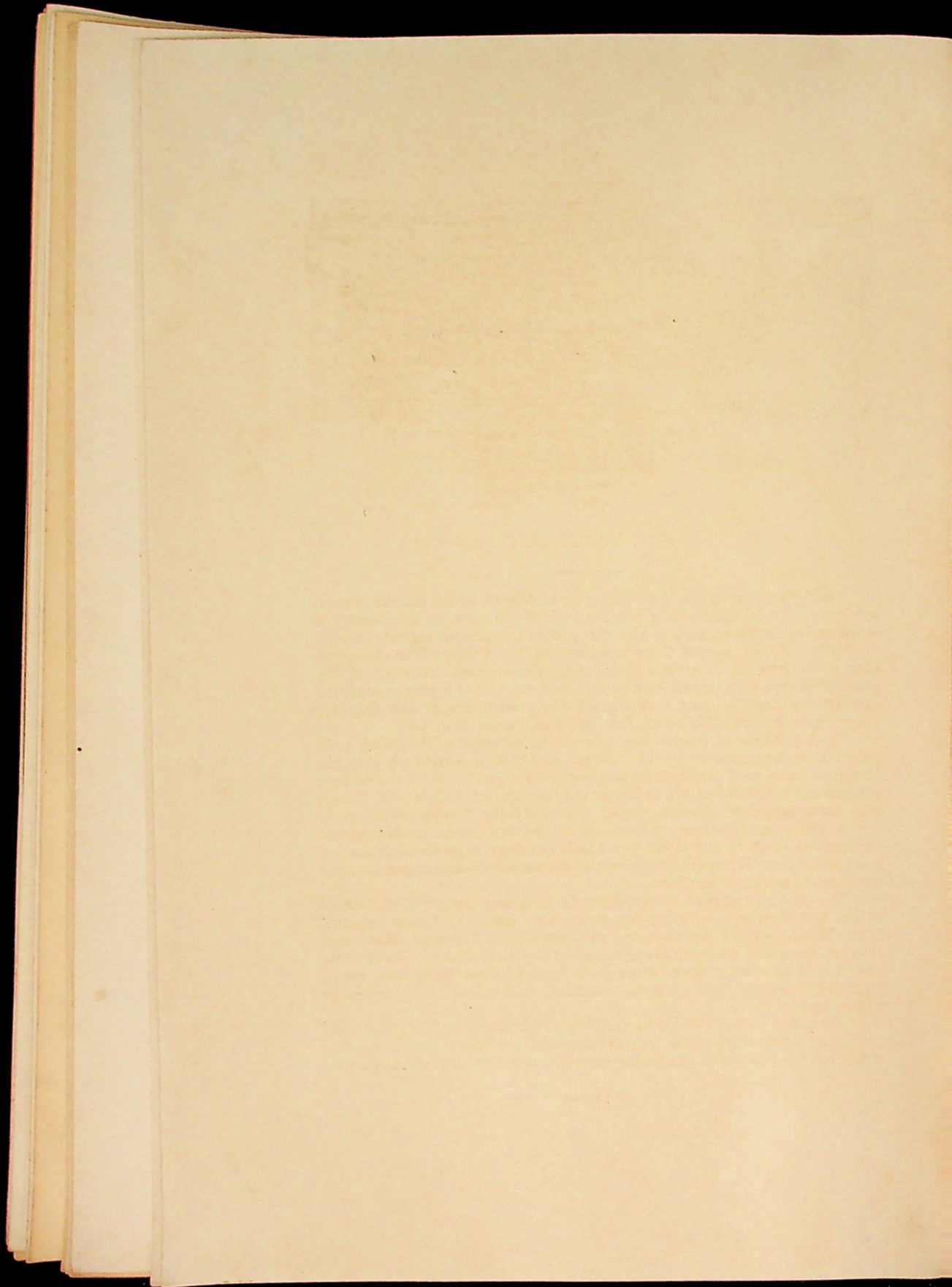
Maori Woman at Walkite Geyser, Rotorua, North Island, New Zealand.

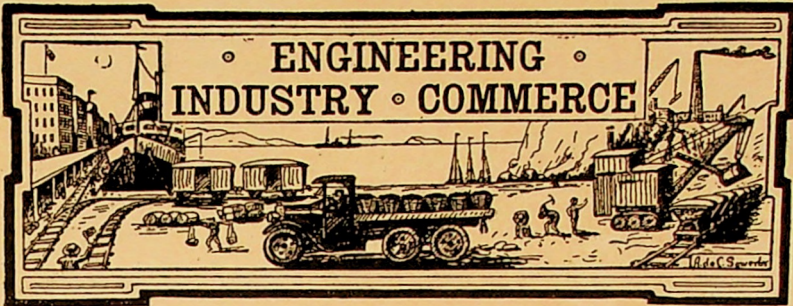


Maori Women cooking Food in a Hot Pool, Rotorua, North Island, New Zealand.



Waikite Geyser, Rotorua, North Island, New Zealand.





MONGOLIAN MILK PRODUCTS

BY

M. I. VOLKONSKY

Dairy farming in the West is merely incidental in the scheme of rural economy. In Mongolia it is the basis of all industry, as the country is more or less self-supporting and the people live almost entirely on milk products. Production of these is enormous, but hitherto it has been felt that it was absurd to expect any export development because of the great distances and imperfect communications. That is why commercial expeditions have seldom investigated the possibilities of any industry other than the trade in skins, furs, wool and sometimes beef.

To-day there is a growing interest in conveying Mongolian milk products to the outside world. As far as China is concerned it is the foreign consumer of butter who is directly concerned. With the Chinese this has not mattered at all, as butter only occurs in the dietary of Chinese who have acquired foreign ways. Formerly the foreign resident in China ate only Siberian butter. Later he imported Australian and Californian butter, but these two kinds are very expensive. Thus, investigation into Mongolian possibilities has received encouragement from the butter consumer in China.

The great steppes of Outer Mongolia feed only three million head of cattle, but there is fodder for ten times that number. Cattle breeding is the Mongol's chief activity, and at present he is fit for no other. His religion, laws and customs are opposed to any kind of agricultural work, and it will be a long time before he is freed of these prejudices. Only encouragement in his present vocation will afford him economic emancipation.

There are two obstacles in the way of popularizing Mongolian milk products; their unhygienic preparation and the belief that Mongolian cattle have a poor milk producing capacity, a prejudice which originated

from the established fact that the Mongolian cow has a short milk producing period. Preliminary investigations by experts after the Great War corrected the latter prejudice by proving that the milk contains a remarkably high percentage of fat.

But present-day Mongolian milk products will probably never be popular in European or American markets. They are not wanted for the reason that they do not meet the requirements of foreign taste. Moreover, they cannot be worked into a product of adequate quality.

As yet Mongolian butter enjoys but a small export to Russia through Kiakhta, the amount being 1,500,000 lbs. yearly and to Harbin through Hailar at the rate of 324,000 lbs. a year. Harbin's consumption is increasing rapidly: last year it was estimated to be 656,000 lbs. But even this butter is not consumed in its original condition. First it is boiled at the point of destination and then clarified by various means, sometimes by adding apples to the boiling substance. All of these means are directed to the removal of the smell of decomposed butter fats and *argol*, the dried cattle dung used as fuel in Mongolia. The butter, after these processes, is sold as low quality export butter, but mostly as kitchen butter. Under this latter name it is sometimes sold in Peking, Tientsin and Shanghai, but only by minor Chinese distributors.

Mongolian milk products may be divided into two groups, milk fat and hard milk products. Then there is another product besides these two which may be called alcohol milk product. This is really milk brandy. Fresh milk is regarded as dangerous to the health by the Mongols. When the methods of preparation are borne in mind, there can be little doubt that the fear is justified.

The Mongols use very little milk in its natural raw state. Their only utensils are iron basins, tubs or skin bags, which go for months without washing. The Mongol separates the milk fats and uses the skimmed milk in the preparation of cheese, brandy and other products.

Let us examine these in their original state and the manner of their preparation.

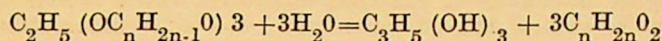
DRY CREAM: In the preparation of dry cream the milk is poured into a cast iron basin which is set upon the fire in the middle of the *yourta*.* The fire is kept up by throwing in bricks of *argal*, raising the temperature of the milk to 70°C. This is maintained for fifty minutes to an hour and a half, the milk being constantly taken out and poured in again by means of a large ladle. Manipulation in such fashion keeps the surface in a constant foam, quickening the process of boiling as well as the separation of the fat. After the milk is sufficiently foamed, it is left in a cool place from five to eight hours. By this time the upper layer of the milk and foam has congealed into a crust, which is carefully removed to prevent breaking. The creamy part is on the inside and this is exposed for drying. The usual European way of fat separation is by a long process of souring, taking from five to twenty days for the cream and fat to turn into a dry cake.

*The Mongolian tent-home.

MONGOLIAN MILK PRODUCTS

Outwardly Mongolian dry cream cakes resemble rice cakes, and, being prepared from fresh milk, afford, to the Mongol, a very tasty eatable, though having a peculiar taste. They are favourite sweetmeats for children, and are eaten after immersion in tea.

This product is susceptible to deterioration, as it is mostly kept in dirty skin bags. The micro-organisms and the suet-decomposing enses worked out by them, known under their common name of lipases or steopsins, splinter suet into glycerine and suety acids according to common formula :



The pure suet of butter is not a good nourishing mass for microbes, but several kinds of the latter, feeding on some other particles which are included in it, decompose the pure suet as well. The original products of decomposition of suet, namely, fatty acids and glycerine, are subject to the influence of different agents (oxygen of the air or acidifying enses), change and second decomposition, being turned into spirits, aethers, aldegids and ketons. These secondary products of the decomposition of suet give to dry cream as well as to the butter itself an odd flavour and unpleasant scent known as rancidness. Fat decomposing agents more frequently met in dry cream and Mongolian butter are *Oidium lactis*, *Penicillium glaucum*, *Streptothrix alba*, *Streptothrix chromogena*, *Bacillus fluorescens*, *Staphylococcus pyogenes* and *Bacillus indicus*.

LIQUID CREAM: Another milk-fat product is the base for butter making. Its differs little from dry cream. It is called *urume* (cream) being the thick liquid produced throughout the milking period. It is stored until the time for butter making.

There are two ways of preparing this product. The first consists of heating the milk in a basin for one or two hours up to 70°C., and, when the milk has gradually cooled, of removing the cream from the surface. The second way differs from the first in two particulars: (1) the cooling process is hastened by plunging the milk jar into cold water, and (2) the subsequent processes of heating, cooling and removing the cream are repeated three or four times. By this second method more cream is obtained from the same amount of milk, but it requires a longer time and the use of more utensils. This latter circumstance is often an obstacle to the Mongol, who, as a rule, is very poor in utensils. Therefore, the first way is more popular.

The cream obtained is put into wooden tubs, leather bags or clay amphors, in which it is kept until the time for butter making. This manner of storing cream in dirty vessels during the summer time results in a free development of acids and rancidity.

The time for butter making is ordinarily after the hot weather, in the autumn. The process of fermentation during storage is no handicap to butter production as it assists in the separation of fat.

Cow BUTTER*: This kind of butter is prepared from liquid and dry cream. It is put in a basin and kept over a fire until it liquifies. A little water is added to assist in the separation of fat from the albuginous capsules formed during storage. The entire substance is energetically intermixed in a temperature of from 22 to 25°C. The layer of fat on the surface is removed after cooling, and put into another basin. The remaining substance is then heated to a higher temperature and filtered, the fat being added to the first portion. This process provides a fat of first separation. This product is again heated up to 110 or 112°C. and kept at this temperature for about twenty minutes, after which the heat is gradually lowered and the basin cooled and left standing for four to five hours. The upper layer is what is called "Mongolian butter," while the substance below this layer is waste and good for nothing.

Mongolian butter is packed for storage in the large intestines and stomachs of sheep and cows and sometimes of horses. It is poured into these skins in liquid form; and so appears on the market. The same packing is used for other milk products and frozen milk. The butter is light yellow in colour and granulated when broken. It contains, of course, a large quantity of albumen and the quantity of water is at a minimum, due to the high temperature of the second heating (110 to 112°C) This latter circumstance prevents the formation of albuginous and fat acid and is not a favourable condition for bacterial life and breeding. It is worthy of note that the quantity of water in Mongolian butter varies from 0.25 per cent. to 1 per cent., while in ordinary butter this quantity is usually from 14 to 16 per cent.

This product satisfies the requirements of the European market in hardly any respect. Moreover, its peculiar and disgusting *argol* aroma makes it unacceptable even for the kitchen.

This butter is first of all used by the Mongol for his own nourishment. Like dry cream it is put into tea, but it is also eaten separately. It is also used for roasting flour or rice, from which the so-called *zaturan* or *turnho* are prepared. Again it is used for burning in temple lamps.

As before mentioned, a small quantity of Mongolian butter is sent to the Russian market. Russian and Chinese colonists purchase the butter in its natural state, but melt it over again before putting it on the market.

Chakintoss is another kind of butter prepared from sheep's milk. The word "butter"† is wrongly applied in this case, as it is actually not a milk fat product but a casein product or cheese. It contains only 22 per cent. fat and over 52 per cent. casein. It is valued on the market at a much higher price than cow butter. This product is classified as a cheese, so its analysis will be given later when discussing the hard products.

*In Mongolian, *shartoss*.

†In Mongolian *toss* is butter.

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ANALYSIS AND GENERAL REMARKS UPON MILK-FAT PRODUCTS.

Below we give an analysis of fat bearing milk products.

Groups		Water	Azot	Casein	Fat	Sugar	Ash
Dry Cream (<i>Hatasun urume</i>)	A	1.705	1.527	9.730	78.587	8.622	1.356
	B	1.395	1.815	11.562	77.949	7.573	1.556
	C	2.920	3.370	21.468	57.884	14.764	2.964
	D	4.876	2.176	13.608	37.198	6.737	1.588
Liquid Cream (<i>Urume</i>)	E	23.240	1.847	11.542	58.046	5.568	1.604
	F	22.940	2.094	13.339	51.466	10.487	1.763
Butter (<i>Shartoss</i>)	A	0.950	0.041	0.262	96.631	2.904	0.113
	B	0.048	0.051	0.324	98.176	1.308	0.144

Groups A and B are typical of the average of dry cream. Groups C and D are exceptional: C shows analysis when boiling and foaming of the milk is lengthy and D shows milk which curdles after boiling. For liquid cream groups E and F are typical. Both groups reveal a surplus of water, due to which the surface of the cream is covered with mould, which principally affects the albumen.

Two groups (A and B) of the analysis of Mongolian butter show a small difference, the greatest fluctuation being displayed by fats varying from 1 per cent. to 1.718 per cent. As a rule the fluctuation in fats leads to a reverse fluctuation in water. In the case of Mongolian butter, however, this reverse fluctuation is more emphatically expressed by sugar. Indeed, the respective figures for sugar are 2.9 per cent. and 1.308 per cent., and this is a typical feature of Mongolian butter, resulting in greater acidity.

Western markets are accustomed to take into consideration three standard factors when qualifying butter: its richness in fat, its water content and its acidity. Many governmental and municipal institutions have even registered these standards in their regulations. In regard to these three standards Mongolian butter differs considerably from Western butter, chiefly in fat and water. Western standards for good butter are 82 to 86 per cent. fat and 12 to 16 per cent. water. In the case of Mongolian butter, we have 12 per cent. more of fat and the same amount less of water. Thus, while the rich fat content of this butter is an advantage to the consumer, it is at the same time a great disadvantage to the producer.

The acidity of Mongolian butter presents another point of difference from Western butter. As a rule there are two kinds of acidity that develop during the process of butter making. The first is a result of natural bacterial life, and is desirable in butter making, in the West or in Mongolia. The second acidity is produced by the development of free fat acids. This is harmful, especially in the case of a long storage period. Now, in Mongolian butter the great sugar content helps the free development of many harmful acids, leading to rapid rancidity. On the other hand, useful acidity is prevented by the high temperature of the second heating of the cream (110°C), which kills all bacteria.

Thus we must conclude that Mongolian butter has only one redeeming quality, its richness in fat, while all other properties of good butter, such as aroma, taste, saltiness and the freshness given by useful acidity, are either lacking or negative.

PRODUCTS OF SKIMMED MILK

SOUR MILK: For these products the Mongols use milk already deprived of fat (skimmed milk). The simplest product of this kind is sour milk or *ayrik* (in Khalha* this name is applied to mare's milk). It is obtained by natural souring and differs only in the time spent in the process. Sour milk exposed to this souring process for seven to ten days, and from time to time intermixed during this period, is considered a tasty and nourishing food. *Ayrik* is prepared mostly in the summer. There is another kind of sour milk prepared in winter called *torak*. In this case, before being exposed to souring, the milk is heated up to from 18° to 28°C.

The whey is removed during the process, and then the sour milk is again heated to the same temperature and the whey again removed. The time between the two heatings is ordinarily one or two days. This sour milk, or *torak*, is consumed mostly in a frozen state, when travelling. There is another kind of sour milk called *arya* or *arja*, prepared by evaporating the sour milk for a longer time than in the case of *torak*. Heated to a temperature of 70°C., the casein hardens and the whey is then removed. The curd obtained in this way remains hard.

More complicated methods are used in producing cheese and brandy.

A cheese called *bislik* or *oyik* is prepared mostly in summer. For this purpose either fresh or skimmed milk is used, and this is first exposed to natural souring. The natural process is hastened by putting some sour curds into fresh milk. The souring process is maintained one or two days, depending on the state of the weather, and it turns the milk into a compact mass with a porous fat-layer on the surface and whey at the bottom.

As soon as the casein thickens, the curdled milk is emptied into willow-baskets and heated gently, making the water evaporate and leaving the mass more compact. After this operation, which is continued for about forty minutes or longer, the mass is taken out of the basket and pressed into small wooden cases. Holes in these cases allow the water to escape. A plank bearing Mongol written characters is pressed into the mass. This operation produces a cake, which is further dried slowly.

There are two simpler ways of preparing cheese. The sour milk may be heated until the casein curdles, which, after having been separated from the whey, is shaped in cases. Secondly, the Mongol woman who is heating the sour milk simply fishes out the flakes of curds, presses them in her hand, and then pats them into shape. This kind of cheese is called *bochliga*. On being dried it loses from 20 to 25 per cent. of its weight.

Mongolian cheese prepared in the above way from fresh milk has a fresh and agreeable taste and a white creamy colour. It reminds one of

*Northern Mongolia.

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ordinary curd, although it is deprived of any milk aroma and has no acidity. This, however, is only when it is fresh. After being kept for a time in the *yourta*, it takes on a peculiar and specific smell. After three or four weeks it represents a well pressed self-fermented casein in the shape of a hard cake. A person with good teeth is hardly able to bite it, and it can only be chewed after being well softened in tea.

As compared with Western cheese, Mongolian cheese is not only lacking in taste and aroma, but is also deprived of bacterial acidity, inasmuch as the bacteria are killed by heating. Besides this capital defect, there is another, due to lack of water—its hardness. It is very nourishing, and this, with its portableness, makes it handy for consumption.

Chakintoss, or sheep cheese, has previously been mentioned among the butters. This kind of cheese is produced from a mixture of sheep and cow milk. Sheep milk is heated up to 60°C. Cream, representing 80 per cent. of the whole substance, is removed, and four parts of this cream are mixed with one part of cow's cream (*urume*). The skimmed sheep milk remaining after this operation is used by the Mongols as food. The mixture of both creams is poured into a cotton bag, which is suspended to allow of filtering, and is only slightly pressed. This bag remains suspended for about twenty days, being filled every day with a new portion of cream. The souring of the mixture is then complete, and the cheese obtained afterwards has an acute acid smell. After about twenty days the bag is taken down, when the mixture is found to be very sour and covered with mould (which is removed). It is placed in a sheep's stomach skin turned inside out. Acidity then develops.

This kind of cheese is considered of better taste and higher quality than cow cheese; and the absence of good milking sheep in some districts affords it a ready sale in the native market. This product is especially liked in winter because it contains nourishing albumens and fats (see the following table of analysis). The production of this kind of cheese is carried on principally in the Ordos and Southern Inner Mongolia, as well as in Eastern Inner Mongolia along the slopes of the Greater Hinghan Mountains and in the region of Si-lin Ho.* The same product under the name of sheep cheese (not sheep butter) or *chakintoss* is met with only on the borderland:

ANALYSIS OF SHEEP CHEESE AND REMARKS THEREON.

Groups		Water	Azot	Casein	Fat	Sugar	Ash
Cheeses of cow milk (various kinds little different from one another)	A	5.413	8.699	55.416	25.510	7.761	3.900
	B	5.424	8.579	54.653	21.203	15.741	2.930
	C	6.444	9.570	60.982	16.400	13.094	3.033
	D	6.430	9.967	63.488	15.926	11.236	2.920
	E	3.484	5.460	34.792	36.946	22.750	2.030
	F	7.336	9.112	58.046	26.012	6.217	2.389
	G	7.335	9.292	59.156	22.300	8.108	3.096
	H	7.720	8.417	53.617	29.883	6.172	2.608
	I	7.250	9.699	61.780	20.056	7.906	3.008
Cheese of sheepmilk (<i>chakintoss</i>)		7.273	8.254	52.579	22.507	11.266	6.380

*Si-lin Ho, a river in Mukden Province, Manchuria.

The above analysis shows no considerable difference between the properties of the various kinds of cheese, all of them representing a nourishing product with a remarkable richness in fat.

Compared with Western dairying there is a striking and most uneconomic waste of the base material, milk, which does not seem justified in any way. The greater part of Mongolian milk products are consumed by the natives and milk is always super-abundant. Economy, therefore, being dictated by demand and competition, is little appreciated.

BRANDIES : A considerable quantity of milk is used by the Mongols to produce milk brandy, which is differently called in different localities. Thus we meet the names of *araki*, *ayrik*, *hochih*, *sunelekh*—all applied to the same product. A similar product of mare's-milk bears the name of *chig'oh*.

Milk brandy is justly considered an alcoholic drink and not as nourishment, though, besides alcohol and water, it contains a certain quantity of milk albumen, which makes the beverage nourishing.

The process of brandy production is based on fermentation and alcohol formation, and represents a simple way of rectification of the milk substance after it is kneaded. This brandy can be prepared from all kinds of milk : fresh, skimmed, whey and sour milk. The Mongol uses all these varieties except fresh milk.

The production begins by putting the milk in a clay jar or some other basin for a process of fermentation or slow souring, in summer in the shade and in winter in a warm bath, keeping a temperature of from 15 to 25°C. On the second day of this slow process something to aid fermentation is added, this being usually naturally soured milk or mare's milk. For five or six days this is repeatedly added to the substance, and twice a day the whole mass is well mixed. The proportion of the ferment is ordinarily 1 to 20. At the end of the period the whole mass begins to foam, and is then deposited in a basin constructed of the same material as the utensils used for boiling milk. All holes are filled with clay to make the container airtight. It is covered with a lid, and has a pipe leading out of it.

The can is slowly heated so that the temperature inside gradually rises to 100°C. The milk evaporates and is distilled, the steam passing in the pipe through water, which is kept cold by constant changing. Then it is cooled down.

The product of this distillation is a liquid not entirely transparent and containing about 10 per cent. of alcohol. This liquid, if subjected to a double treatment, gives an entirely transparent strong liquor containing from 50 to 60 per cent. of alcohol, but still retaining the smell of fresh milk. The Mongols, however, use liquid of only one brew, drinking it warm.

Besides alcohol, this beverage contains albumen, about .012 per cent. of fat and some mineral ingredients. Micro-organisms help very little in the alcoholization of the product. Twelve parts of milk produce one part of brandy.

Finally, there are milk by-products ; various kinds of sweet milk used as sweetmeats. These are generally given to guests, and are mostly made

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out of curds (hard milk) before this is used for cheese making. Flour and sugar are sometimes added. The mass is pressed in various forms and worked into dry cakes.

GENERAL CONCLUSIONS ABOUT MONGOLIAN MILK PRODUCTS.

We may now draw some general conclusions as to the quality and value of Mongolian milk products from the point of view of a Western market. Our conclusions are entirely negative. We have already seen that the varieties of Mongolian products are few and the ways of preparing them very similar. Most of these products are of such a nature and quality that there seems no hope of their adaptation to Western requirements. Mongolian butter might probably prove the exception, and this only as kitchen butter of low quality.

It must be emphasized that the Mongols neglect the cultivation of those bacteria which result in the development of acidity and hence in the development of the positive qualities of the Western product. All negative properties of the Mongolian product are due to this neglect or lack of proper knowledge. The Mongol tries to kill at once all possible bacterial life, but even this is not due to his desire to get rid of the microbes, but to the simple reason that heating enables an easier separation of fats. After the first destruction of bacteria the effect is not mitigated by the work of later bacteria.

But, having admitted all this, we must not forget the raw product, which is both plentiful and of high quality.

MILK: The richness of milk in fat is one of the chief properties required in the butter making industry. There is reason to believe that milk of low bred cattle is richer in fat than that of highly bred cattle. It is well known that Mongolian cattle are of small size (except the *sarlik**) with a small milk capacity and a short period of lactation. The average figure for fat in Western milk is about 3.5 per cent. The figure for the Mongolian cow is a little higher, but this figure shows considerable fluctuation during lactation. Thus at the beginning of the milking period, after calving, this figure is as low as from 2.4 to 3.1 per cent, but in the autumn it rises to 9.2 or 10.5 per cent.

The following table shows the analysis of the milk of various breeds in different regions of Mongolia in November, the time of highest fat production. For Khalha the analyses were done in 1920; for other regions in 1923 and 1926.

This table shows that the fluctuations in the ingredients of the milk of various breeds of Mongolian cattle is so insignificant that they afford no distinguishing feature. From both the viewpoint of richness in milk and in that of beef, the cattle throughout Mongolia show just the same features and type. We would say that in general the Mongolian cow is rather of a beef type than of milking type. This could be applied to all other live stock, except, probably, the white fleece sheep of the Ordos, which is of a definitely milking type.

**Sarlik*, the Mongolian yak.

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Breed or locality	No. of analysis	Water	Fat	Casein	Lactoprotein, albumen	Sugar	Ash
1. Cultural races ..	standard	87.50	3.50	4.00	0.75	3.75	0.50
2. Hai-niks* (Kossoghol lake) ..	7	82.50	9.20	2.98	0.71	3.80	0.81
3. Mongols in the same districts† ..	18	83.79	6.90	3.82	0.74	4.90	0.75
4. Mongols in Oulyasutai ..	4	85.40	6.15	3.20	0.65	3.70	0.90
5. Mongols in Tsain-shabi ..	44	85.91	6.16	3.10	0.70	3.64	0.59
6. Mongols on the meadows on river banks of Tola and Orkhon‡ ..	35	85.68	5.91	3.18	0.72	3.90	0.61
7. Mongols individual analysis ..	—	80.30	11.34	3.57	0.68	3.30	0.81
8. In Chahar : § Boron-Kor ..	40	82.44	9.18	3.06	0.70	3.60	1.03
9. Oukhurchin ..	22	81.94	9.48	3.26	0.75	3.64	0.93
10. Tsagan-Tyrs ..	39	82.00	9.30	3.38	0.69	3.72	0.91
11. Tai-Bai-Su ..	190	83.01	8.40	3.33	0.42	3.42	0.88
12. Eastern part of Hinghan	108	—	6.93	—	—	—	—

The fluctuations in fat for a particular season are explained by the influence of free pasture conditions in various districts. If we compare the figures for fat obtained in November with those obtained in July we shall see a considerable decrease in fats, this difference growing as early spring approaches. These fluctuations must be explained by the general condition of pastures and the calving period.

Calving falls in general in the months of February, March and April, which is the worst time of pasturing. The cattle at that time feed on the remnants of dry grass of last season, which is scarce and not nourishing. This circumstance, not only weakens the cow, but is often fatal to the calf, which is badly fed during this most delicate period of its life. In early spring severe snowstorms occur, and the snow prevents the cattle from getting even the poor food they could get before. Hence deaths from hunger often occur.

Owing to these conditions the cow after the calving period is most exhausted; hence the poor milking portion in the spring and the decreased fat in the milk.

It is only towards the end of May or in June that pasture conditions are restored on the grasslands. As a rule late calving gives much stronger calves than early calving.

Fresh grass produces more fat in the milk. This is often 0.28 per cent. Beginning with June the fat grows every month by from 0.45 to 0.70 per cent. The second half of September and the month of October

*Hai-nik, hybrid of Mongol bull with *sartik* cow.

†Mongols, typical Mongolian cattle.

‡Tola Orkhon and Selengha are the largest rivers in Mongolia.

§Chahar or Charharia, the southern part of Inner Mongolia.

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give the highest figures for this monthly increase—about 1.60 per cent., but at the same time the milking portion of the cows of early calving falls to nothing. The fat of the milk at that time is explained by the nourishing properties of the grass.

Besides other ingredients Mongolian cow's milk contains from 0.725 to 0.825 per cent. of minerals (sheep's milk 0.925 per cent.), which is a higher figure than that for Western cow's milk. This surplus of minerals may be explained by a greater quantity of mineral elements in the grass.

But perhaps the condition of milking is also one of the reasons for this. All kinds of mineral parts are added to the milk by the hands of the milkmaid and the other insanitary conditions of the milking process.

Mongolian milk gives from 7 to 8 per cent. acidity according to the Soxlet-Heikel scale.

The milk of the Mongolian big-horned cattle is good for the production of all kinds of sour and sweet creamy butter as well as of all kinds of cheese. The absence of papilionaceous plants, especially of clover, and the lack of sub-feeding with malt grain and other fermenting kinds, makes the milk very suitable for cheese production at any time of the year. The quality of milk allows the production of all kinds of cheese, including Swiss cheese.

POSSIBILITIES OF A WESTERN TYPE MILK INDUSTRY IN MONGOLIA

If fresh milk is the only product of Mongolian cattle farming that can be successfully utilized in the preparation of products of a Western type, then the possibilities of the organization of a Western type milk industry in Mongolia are of great interest.

If Siberia as a milk producing country itself is not interested in the development of such an industry in Mongolia, then foreign consumers of butter in China, Korea and Japan, where dairy farming is either entirely absent or in a very backward state, may eventually be persuaded to encourage a nearer producing market.

Chinese Maritime Customs figures show that China alone imports yearly from California and Australia milk products averaging seven million pounds (mostly condensed and evaporated milk, but also butter and cheese). All three countries together import not less than fifteen million pounds, yearly, and this fact affords a hopeful prospect for the competition of Mongolian butter.

Present experiments favour the development of such an industry. One experiment in the Chahar district has developed in the last three or four years into a profitable business, proving, not only the possibility of such an undertaking, but also the growing interest of the Mongols in selling their milk. In our view the possibility of establishing a milk industry under the local conditions of Mongolia depends principally upon the following factors:

- (1) A sufficient quantity of fresh milk.
- (2) A convenient local purchasing market.
- (3) Satisfactory facilities of communication and transportation.
- (4) The cooperation of the Mongols.

QUANTITY OF MILK: There are two negative points in Mongolian conditions: the small milk capacity of a Mongolian cow and the short period of lactation. The average milk capacity of a Mongolian cow is from 6 to 6.5 pounds a day, with fluctuations below and above this figure of about three pounds, depending on locality and pasture conditions. These figures are small indeed, and much below the capacity of the Western cow. But, considering the multitude of milking units in a herd, and the great number of herds in general, we see that this point does not seriously affect the total quantity of milk produced.

As to the shortness of the lactation period, which is about five months, this is also of no importance, because the industrial period, that is, the period for producing butter and cheese, is only four months. Thus, the first point is seemingly disposed of. But there is one objection. The Mongols never keep milk in storage, using it all for their own needs, mostly in the form of various milk products. In view of this fact, *where is the surplus for the prospective milk industry?*

The following data obtained in 1927 for a particular region, Eastern Inner Mongolia bordering Kirin Province of Manchuria, will help to form a proper judgment upon this matter.

	Produced	Sold on market	Consumed by the natives
Fresh milk	100%	—	100%
Sour milk	390,500 <i>chin</i> *	—	100% or 390,500
Dry cream	630,000 "	5% or 31,500	95% or 598,500
Butter	1,232,000 "	6% or 73,930	94% or 1,158,070
Cheese	3,664,000 "	4% or 146,560	96% or 3,517,440
Brandy	346,500 "	—	100%

From this table we see that no fresh milk, sour milk or brandy appears on the market. All is consumed by the natives themselves. And yet the data are obtained from a producing region adjacent to such markets as Tao-nan and Liao-yang.† This table would seem to confirm the belief that there is no milk for purposes other than the needs of the Mongols themselves. This is an erroneous assumption.

The fact that all fresh milk is consumed by the Mongols is a direct result of the absence of purchasing markets and a demand for fresh milk. As soon as such a market appears, the Mongols will find milk for sale. Part of this milk will be released by limitations placed upon some of the Mongol's own milk products consumption. Experience shows that this economy in milk is obtained at the expense of Mongolian butter. Cheese and brandy are not sacrificed for this purpose. Lack of economy in the production and the expenditure of milk products is prevalent in every Mongol household. All products are produced in quantities far exceeding needs. Much is, therefore, spoiled and thrown away. A great many cows are not milked at all. Such waste is due to an over-abundance

**Chin*, a Chinese measure of from 1½ to 1¾-lb.

†Chinese towns in Mukden Province, Manchuria.

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of milk. If the milk advances in demand, the Mongol will find a way to be more economical in production. As I shall try to show further, a still greater economy in milk can be attained by a proper organization of a milk purchasing market.

MILK MARKETS: The organization of purchasing milk markets in Mongolia must be based upon the following considerations: (a) a suitably located central factory; (b) properly chosen paying units; (c) properly chosen goods for barter trade; and (d) means of encouraging the Mongol to bring his milk to the market.

The place for the central factory must be chosen in a locality where 80 to 400 cows can be gathered for the evening milking. Such a number of cows very often belongs to one Mongol, and, therefore, this problem is solved easily enough. The central factory must be connected with a number of sub-milking stations or cream purchasing stations, located at such a distance as to make regular communication possible. Such a central factory with substations would be able to produce during the season from 10,000 to 18,000 pounds of butter and from 5,000 to 9,000 pounds of cheese or casein.

Chinese silver, be it specie or ingots, is popular in Mongolia. Once the Mongol knows that he can get this kind of money in exchange for his milk, which now gives him nothing, he would willingly bring his milk for exchange. Regularity in payment is one of the important points to bear in mind when dealing with the Mongol.

Besides purchasing for cash, milk may also be exchanged for other goods. A bartering market could be organized. In this case the selection of goods for barter should be a matter of careful consideration. It is desirable to select such food products as would be substitutes for milk in the Mongol diet. The Mongol will willingly exchange milk for flour, rice, millet, *pai-tsai** and various other cereals. This exchange would add some new food elements to his customary diet, enabling him to use less milk, which could go to the market.

Now for the means of attracting milk to the market. These consist chiefly in studying local conditions and requirements. We have already mentioned the tendency of the Mongols to keep all their sour milk and curds, for which reason the proprietors of substations introduced the practice of returning all milk refuse to the Mongols after the milk had been through the separator. This pleased the Mongols exceedingly, because they got back the material they needed for their own peculiar milk products. They accordingly lowered their prices for milk. On substations very often milk fat was obtained instead of milk. The fresh milk required for cheese making was purchased from rich Mongols who always had milk in surplus. Such steps, resulting from practical adaptation to the needs of the Mongols, not only attract milk to the market, but also awaken the interest of the Mongols to the industry.

COMMUNICATIONS: Nothing can be done with regard to this matter at the present time, the only means of communication in Mongolia being

*Chinese cabbage.

caravan roads. The bad state of communications is a handicap to regular transportation of supplies and equipment to the factories. This side of the question is a negative one, without any early solution.

THE ATTITUDE OF THE POPULATION : Religious customs and inborn conservatism are negative points in this discussion. Great difficulties are in the way of a change in these traditional prejudices, and can only be overcome gradually and with great care. We have mentioned some innovations already admitted by the Mongol : these will gradually break down conservatism. An interest in the new business has already awakened in those regions where experiments have been undertaken.

Existing experiments and an estimate of all the conditions of this business prove conclusively that the establishment of a milk industry in Mongolia along Western lines is quite feasible. It would be able to prepare butter and cheese of good quality for consumption on the markets of China and Japan. It would be beneficial to the Mongols themselves, and would greatly help them out of their present darkness to the light of culture and to communication with the rest of the world.

ENGINEERING, INDUSTRIAL AND COMMERCIAL NOTES

AVIATION

Chungking - Yunnan Aeroplane Service Nearer: Inauguration early in 1935 of the China National Aviation Corporation's new aeroplane line connecting Chungking, Szechuan, with Yun-nan Fu, capital of Yunnan Province, was presaged by approval of the scheme on August 8 by the Executive Yuan of the Nanking Government. The plan now awaits similar approval by the Central Political Council.

According to a statement made by Mr. Dai En-kin, managing director of the company, to the *Shanghai Evening Post*, new fast Lockheed Electra 'planes will be used, making it possible to cover the 500 miles from Chungking to Yun-nan Fu, by way of Kwei-yang, in two hours and a half. Strikes in America, however, may delay delivery of the new craft. This air line will be

the first direct connection between Yun-nan and the rest of China by modern transport, as the present railway runs by way of French Indo-China. In view of the mountainous country to be traversed, the use of multi-motored aeroplanes seemed advisable. Consequently the new Electras, with a cruising speed of close on 200 miles an hour, have two engines.

Canton Plans Airline to Hainan and Nanning: Preparations for the establishment of the Canton-Hainan-Nanning aeroplane service by the South-west Aviation Company are now in progress, according to reports from Canton. Trial flights have been successfully completed and service is expected to commence early in the autumn.

RAILWAYS

Central Station in Nanking Planned: Establishment of a union depot in Nanking, where the Shanghai-Nanking, Tientsin-Pukow, and Nanking-Wuhu Railway lines can meet, is being planned by the Ministry of Railways of the Nanking Government. The plans are being drawn up by experts of the Shanghai-Nanking and the Shanghai-Hangchow-Ningpo Railways. The cost, as yet unannounced, will be borne by the Ministry of Railways, while the two railways will be responsible for the construction work. Pending completion of the huge project, a provisional station is to be constructed immediately, to be completed in five months.

Harbin-Seishin Through Service to Start: Through train service between Harbin and Seishin, newly opened port on the north-eastern coast of Korea, will start October 1, according to a recent *Rengo* report. The trains will run over the new Lafa-Harbin cut-off, which was completed early in 1934. Previous to the opening of the line, it was necessary for goods from Harbin to be shipped to Hsinking and there transhipped to the Kirin line.

Construction Activity in the South: New railway lines radiating in three directions from Canton are in process of survey or construction at present, recent news reports indicate. Work on the southern section of the Canton-Hankow Railway is now being

pushed among the rugged mountains of the Hunan-Kwangtung border. The forty kilometer stretch between Lok-chang and Lokiatiao is expected to be completed sometime in October, leaving about 350 kilometers still unfinished. Approximately 30,000 men are at work along the uncompleted part of the line.

Survey work on a railway to connect Canton with Swatow has been completed, the Reconstruction Department of the Kwangtung Provincial Government announced on August 21. Totalling about 280 miles, the railway will start from Sha-ho, the north-eastern suburb of Canton, and pass through Pok-lo, Wei-yang, Niem-shan-shu, Hai-foong, Luk-foong, Wei-loi, Poo-ning, Chik-yang and terminate at Cha-oon, where it will link with the already completed Chao-chou to Swatow line. The whole project will be done in five years at an estimated cost of \$42,000,000, of which two-fifths will be furnished by the Kwangtung Government and the remainder by public subscription.

The third radiating line, the Canton-Hoyuan (Hohsien) Railway, is of about the same length and will require \$10,000,000 for construction. It will be a common concern of the Kwangtung and Kwangsi Provincial Governments. A *Reuter* dispatch from Canton on August 14 declared that foreign banks were being approached to grant the necessary \$10,000,000, the loan to be secured by the receipts of the new railway.

ROADS

New Fuels For Motor Cars Announced: Four ways of driving a motor car were mentioned in recent dispatches to Shanghai papers. Hard on the heels of the announcement that a French inventor had perfected a process for turning salt water into gasoline by an as yet undisclosed reagent, the Central Laboratory of the South Manchuria Railway in Dairen has applied for a patent covering a process for extracting petrol from soya bean oil by electrolysis. The oil, says a *Rengo* message dated August 10, is first treated with a nickel colloid and then subjected to a three thousand volt electric current.

On August 17 Liang Chun-nien, Cantonese, is reported to have succeeded in driving a car from the Shanghai Bund to the Civic Centre at Kiangwan and back, using as his only fuel a vegetable oil. Exactly 918 experiments, covering a period of sixteen years, were necessary to bring the process to perfection. Earlier demonstrations have been carried out in Nanking and Canton, winning the support of many prominent men in both cities.

Meanwhile, Canton continues to be completely satisfied with its charcoal gas-burning motor buses, which went into action some months ago. Machinery for making more charcoal con-

verters has arrived in Canton and a full sized manufacturing plant is being erected. The plan for making extensive use of the charcoal gas system to cut down motor fuel costs is being pushed ahead enthusiastically. Further tests by the Department of Reconstruction have convinced Kwangtung officials that the new system will save the province millions of dollars annually, according to *Reuters*.

Shanghai-Soochow Highway Opened:

The steady improvement of highway facilities in the immediate neighbourhood of Shanghai continued all through August, the most important innovation being the opening of a new road to connect the port with Soochow on August 7. The route is *via* the Hangchow highway to a point just beyond Cha-pu, where the new road turns off. It passes through Ping-hu and Ka-hsing *en route*. The road surface is reported to be good and the entire trip of 131 miles can be made in four hours.

In the same vicinity, the Shanghai-Wusih highway is to be completed before October 10, according to an order the Kiangsu Provincial Government issued recently. The road will touch Chen-ju, Nan-ziang, Ka-ting, Tai-chong and Chang-shu *en route*, and will open a more direct Shanghai-to-

Nanking highway than the present one by way of Hangchow.

In Chekiang two 'bus lines have been inaugurated to help travellers. One is from Tze-ki to Lo-to Chiao, west of Ningpo, which began operation on August 3, and the other connects Feng-hua and Hsin-chong, scheduled to open some time in August. This last road, running south-west from Ningpo, is roughly parallel to, but some distance from, the Chekiang-Kiangsi Railway, and opens up considerable new territory in the centre of the province.

Official Motor Aid on Hangchow Highway:

An ambulance service for the roads leading from Hangchow has been established by the National Good Roads Association, and will be available for and equipped to handle all emergency cases. Telephones are being installed in 'bus stations along the roads to be served, so that aid may be called with a minimum of lost time. The new service is being established with funds provided by the National Economic Council.

At the same time a fleet of service trucks, maintained by the Good Roads Association and the Transportation Committee for Kiangsu, Chekiang and Anhwei Provinces and the Municipalities of Nanking and Shanghai, started operation along the Shanghai-Hangchow highway on August 11.

TELEPHONES

Shanghai Telephone Company

Expands: Telephones in use in the International Settlement and the French Concession of Shanghai totalled 50,588 on March 1, 1934, according to a report recently issued by the Shanghai Telephone Company. The total showed an increase of 15,188 telephones in forty-two months. In August, 1930, the figure stood at 34,700. In the same period, in addition to the increased number of instruments in use, six new buildings were opened, automatic equipment installed for 41,400 lines, and all subscribers in the International Settlement and the French Concession converted to the use of the dial. The entire work was done in about five-sixths of the time allowed by the franchise, while the capital required amounted to nearly \$27,000,000.

Although the normal annual growth of installed telephones is from five to eight per cent. in most cities, Shanghai registered yearly increase of slightly more than ten per cent. during the period under review, and the demand continues. Last year it was necessary to place 800 new lines in the exchanges, and many thousands of feet of cable, both overhead and underground, of sizes containing from fourteen to 1,200 pairs of wires.

Tai Shan To Have Telephone

Service: Modern telephone service linking the summit of Tai Shan, sacred mountain near Tai-an, Shantung, with the cities of the plains may soon be possible. General Han Fu-chu, Governor of Shantung, has issued orders for the work to be done immediately.

AGRICULTURE

Improvement of Manchurian Stock Sought: In an effort to improve on the present grade of pork to be found in Manchuria, the Department of Industry of the Manchoukuo Government has decided to import five hundred Yorkshire pigs from Korea and the Kwantung Leased Territory, *Rengo* stated on August 2. They will be distributed throughout the country. Manchu pigs are similar to those found throughout North China and rank as the most valuable domestic animals in the country. Farming families raise large numbers for local consumption. Some time ago the Experimental Farm of the South Manchuria Railway at Kung-chu Ling produced an improved type of pig, but adoption by the farmers has been slow, supposedly because the animal was white.

At the same time steps are being taken to improve the grade of sheep being raised in the parts of Eastern Mongolia located within the borders of Manchoukuo. Seven hundred Merino sheep for breeding purposes will be imported from the United States early next spring, and two new experimental stations will be stocked. One is to be at Chao-yang, Jehol, and the other at Wang-yeh Maio, in southern Hsingan Province. Both are to be established this autumn. There are at present about three million sheep in Manchuria and Eastern Mongolia, according to *Rengo*, most of them belonging to the fat variety of long tailed sheep. The wool is scarce and of poor quality, being low in tensile strength and elasticity, and containing much coarse and dead hair.

By crossing Merino stock with Mongol sheep, and again crossing the product with a Merino, a stable breed of sheep having greatly improved wool producing qualities is obtained. At present sheep are raised for food rather than for wool, so that the latter phase has been largely neglected by the Mongols.

Sericulturists Experiment in Shantung: The Sericulture Improvement Committee of the National Economic Council is at present carrying out a series of experiments in I-tu, Central Shantung, in an effort to improve the silk industry of that province. Several new species of silk worms are being sent there from Hangchow.

Revival of the Tea Industry: As part of its scheme to revive the Chinese tea industry, the Ministry of Industry of the Nanking Government has ordered its testing bureaux to raise the standard of quality of Chinese tea for export. Special efforts will be made to prevent the adulteration of tea by unscrupulous merchants. Neither black nor green tea will be allowed to contain more than 8.5 per cent. of water, while other foreign ingredients must not exceed seven per cent.

Proposals that arrangements should be made whereby Chinese tea can be bartered for Russian oil and that a state monopoly of the tea industry be established are at present being studied at Nanking.

MINING

Copper Found on Anhwei-Kiangsu Border: Discovery of rich copper deposits in the vicinity of Huang Shan, along the Kiangsu-Anhui border not far from Shanghai, was reported on August 6 by *Kuo Min*.

Canton Experiences Gold Rush: After the reported removal of over 10,000 taels of gold by amateur miners, the Kwangtung Provincial Govern-

ment recently banned further unauthorized exploitation of the gold deposits near Ta Tu Po Shan, in the Yen-ping district of Kwangtung. Another "strike" has since been reported in the same neighbourhood. The Canton authorities claim that the mines are on Government land, and exploitation by individuals without permission from the authorities will not be permitted. Troops have been dispatched to see that the orders are carried out.

CONSERVANCY WORK

Dredging to Link Tsi-nan Fu with Sea: Dredging to permit the entry of 600 ton steamers into the

heart of the Shantung plain is at present being carried on under the energetic leadership of General Han Fu-chu,

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Shanghai newspapermen were told by Mr. T. V. Soong when the Chairman of the National Economic Council returned from Tsingtao recently. The Siao-tsing Ho is being deepened so that 600 ton vessels may navigate the lower part of the river and 200 ton craft may reach Tsi-nan Fu, the capital of Shantung. The provincial government has already spent between \$700,000 and \$800,000 on the scheme, and is now in need of an additional \$2,000,000 to complete it. The National Economic Council may be called upon to make up the deficit.

Giant Dredger For Yang-tze Nears Completion : Bringing nearer the day when ocean going vessels may enter and leave the Yang-tze Kiang irrespective of tidal conditions, the new giant suction-dredger of the most modern and efficient type for the Whangpoo Conservancy Board is scheduled to be launched at Danzig on September 8. Her engines will be installed immediately afterward and the ship will be ready to sail for the Far East some time in

December. It is anticipated that actual dredging work on the Yang-tze mouth will commence early in 1925.

The dredger, which is being built at a cost of approximately \$2,000,000, is designed to remove and discharge 30,000 tons of mud in ten hours. A special feature concerning the design is that the ship is not anchored, but travels forward at a speed of two knots under its own power. Upon completion of its work, the Yang-tze Bar will have been lowered about nine feet, permitting larger vessels to enter and allowing others to come in even at low tide.

A Central Water Conservancy Body being Formed : Conservancy boards all over China are to come under the direction of a national administrative organ, to be established soon, if a recent decision of the Central Political Council of the Nanking Government is carried out. This body will have control of any conservancy work affecting two or more provinces. It will also control finances.

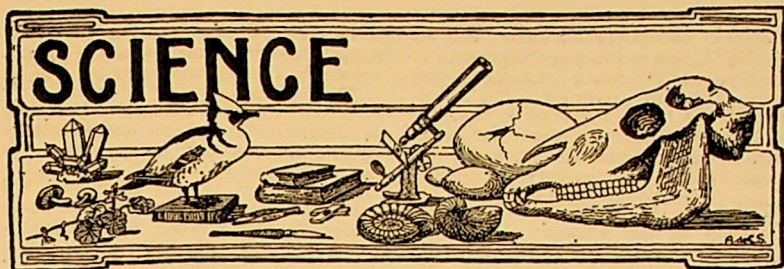
BUILDING

Valuable Compendium Appears : The 1934 edition of "The China Architects and Builders Compendium," by J. T. W. Brooke and R. W. Davis, published by the North China Daily News & Herald, Ltd., at Mex. \$5.00, which provides an excellent source of accurate information on the building situation and industry in Shanghai, has recently made its appearance. Particularly informing this year are two resumes of land and building prices and trends in the treaty port. One appears in the preface and the other as an article entitled "Land and Buildings in Shanghai." Special mention is made in the latter of the increasing use being made by small manufacturing concerns

of the residential terraces which fill the city. The danger to surrounding families is obvious, besides which the buildings are not at all suitable for housing machinery. The suggestion is made that the terrace idea be applied to small safe and adaptable factory buildings.

A new section of the Compendium is a listing of the provisional building rules announced late last year by the City Government of Greater Shanghai. Since these rules are enforced in all construction outside the limits of the International Settlement and the French Concession, it is extremely useful to have a copy of them available.

S. L.



MIGRATION NOTES*

BY

G. D. WILDER

Just a week ago I recorded what is probably my "last seen" date for the arctic willow warbler, marking the end of the spring migration northwards, so that it is now time that the noteworthy events for this season were gathered together for publication. Mr. La Touche has remarked that "on the China coast the birds are on the move from February to mid-November north of the Yangtse, and later than that in south China, practically without interruption." Here in the interior, however, there is scarcely any movement of the birds observable from the middle of June, when the last belated warblers pass north, to the middle of August, when they begin to return; the Peking swifts leave us; the swallows that have nested in numbers in the city of Peking betake themselves to the reed beds for their vast congregations and practice flights in preparation for the southward journey; and the waders begin to appear where water conditions permit. So there are about two months in the summer when migration is scarcely noticeable.

My last "Migration Notes," appearing in the June number of *The China Journal* and dated in April, purposely omitted spring arrivals from the south, being confined, rather, to the winter visitors. So we now take up the noteworthy features of the spring migration of transients and summer residents.

The least bittern, which usually becomes common only after the reeds are well up, was seen first on April 10 before the latter had more than begun to sprout.

Late in March and early in April greater spotted eagles (*Aquila clanga* Pallas) were numerous in passage. On the morning of March 30 a group of tall poplars in the Martyr's Cemetery a half mile south of our compound appeared as a huge black pyramid. Mr. Wang Pao Ch'uan took his gun and went to investigate. On firing into the bunch he brought down three spotted eagles. He did not notice any other kinds, and

*Tunghsien, Hopei, June 23, 1934.

it is to be supposed that they all belonged to the one species. He estimated that there were two hundred in this flock, which seemed to be resting while on their long migration flight. There was no carcass to attract them. Père David reported three specimens of the lesser spotted eagle (*Aquila pomarina*), which he called *A. naevia*, during his studies in this region, and I have found some of the marks that Suschkin and Hartert mention as characteristic of this eagle in some specimens that otherwise agree with the greater spotted eagle. The seventh primary being more than six centimeters shorter than the longest, and its outer vane much less noticeably if at all scalloped out or notched, and the bill not so high, that is, more slender than in the greater spotted eagle, are given as three distinctive characteristics of the lesser spotted. I have specimens in which the bill is more slender and the seventh primary is more than six centimeters shorter than the longest, as in the lesser spotted eagle; but the outer vane is distinctly scalloped, as in the greater spotted eagle. Such mingling of distinctive characteristics of two species in one specimen is disconcerting. I have had the chance to take measurements of some seven specimens of these spotted eagles this season, but more study, or submission to museum experts, is necessary before saying definitely whether or not any of them are to be considered the lesser spotted eagle.

On April 2 we were able to secure a specimen and to verify the identification of the white-naped crane, which we had tentatively reported from Pei-tai-ho in October, 1923, as seen in large flocks, flying, over and identified only with field glasses, but, with the knowledge that Mr. La Touche had obtained a fine male specimen at Chin-wang Tao on October 10, 1918. Cranes are always a rare sight for us who cannot be to the seashore in the spring and autumn. They seem to have one line of migration along the coast and another from Mongolia down the Yellow River valley between Shansi and Shensi or farther west,* leaving this region between their two routes almost entirely deserted. Both black and white storks are occasionally seen here, the former breeding in the mountains, but the cranes have not been seen by us. On April 2 a beautiful female wounded specimen of *Grus vipio* Pallas was brought in by a local hunter from a sandy river region six miles east. It was a solitary bird that he had tried in vain to stalk, but, observing that it was not afraid of boats he succeeded in getting close by walking along behind a boatload of fishermen who were skirting the shore opposite the bird. His iron shot only wounded it, so that it still was able to make short flights, and not until the next day were four men able to run it down. When brought in it was still able to make a dog that attacked it keep a respectful distance from the thrusts of its long beak.

Another interesting occurrence was the offer of a dead pelican for sale at the Peking taxidermist shop for five dollars. The clerk in charge dared offer no more than two, so it was lost to science. When we followed it up a few hours later we learned that it had already been dismantled

*They pass down the valley of the Fen Ho in Shansi, also from the Ordos Desert southward to the Si-an Fu plain.—A. DE C. S.

after sale to a fan maker, and that it was a solitary bird brought down by an American marine near Lu Kou Ch'iao fifteen miles south-west of Peking, only slightly wounded and kept in captivity for some days. It was almost certainly the Dalmatian pelican (*Pelecanus crispus*, Bruch). Two specimens of that bird were brought to the same shop on June 10, 1924, shot in the same vicinity.

The eastern dotterel (*Charadrius asiaticus veredus* Gould), occasionally occurs in the spring migration here, arriving early in April and passing all through the month to May 21, according to my records of the six years in which I have noted it, among some twenty eight years of observation. It is to be noted that I have no records for autumn migration at all. These spring records are all during the last seven years excepting my first, which was before 1900, in a three inch fall of snow on April 9, when I collected three out of a small party of eight or ten.

This year on May 2 Mr. Wang Pao Ch'uan reported a flight of dotterel, which he said was the greatest congregation of birds he had ever seen, and that means a good deal. They flew and fed in loose flocks covering the country for miles. He failed to get a specimen, remarking that the more there were the harder it was to get a shot and they were extremely wild. In Shantung near Te-chou on April 4 and 18, 1931, I had exactly the same experience. Countless small flocks would be seen for miles when travelling by bicycle without a gun, feeding in scattered ranks in the plowed fields as far as the eye could reach on both sides of the road. All moved against the wind, which was pretty strong, running and taking short flights, and there were also newly arrived migrants coming down from great heights in the sky. They rarely flew within gunshot range, and when I dismounted and walked off at right angles among them they opened a lane before me, so that it was difficult to get within a hundred yards where I could see the brilliant dark red breast band that marked the adult males, though the lighter grey almost white heads of the old birds were easily distinguishable from the larger numbers of dull coloured birds. It would seem as though they had passed the winter among hunters, and had learned wisdom. At any rate they exhibited the advantage of great numbers in cooperating to feed and travel in safety.

For several days after June 15 we kept hearing that there was a colony of black storks, or grey herons, or both, nesting in large poplars fifty li north-east from Tung-hsien. On June 19 Mr. Wang Pao Ch'uan and his wife rode out on bicycles to investigate, but found only a few nests and the remains of, perhaps, forty that had been rifled and torn down by the boys of the neighbourhood, who sold the eggs for hens eggs. A day or two later two eggs were brought to us. They are a fourth of an inch too short for the average measurements of either species, which is only the allowable ten per cent. variation, but they seem to me to be not green enough for the heron's egg and not chalky white enough for that of the black stork. Another trip to the place by Mr. Wang showed four or five nests still there, and he saw one black stork and four or five grey herons flying near by. He is thoroughly familiar with both species, but the problem is not definitely solved as to what big wader is trying to

establish a colony there. The black stork elsewhere builds both on cliffs and in big trees. It is not often seen on the plain.

This morning a flight of thirty white egret herons passed over Tung-hsien, and a colony is reported to be re-establishing itself in the Forbidden City in Peking, but I have not had leisure to verify it. It is well known to the caretakers as the *pai¹ chiu²*. Forty years ago the nesting colonies were fairly common, often being in the trees around and over the offices of district city magistrates. Marshes were sometimes whitened by the birds, but it is many years since more than three or four of these birds together have been recorded in my notes. The high prices offered for the nuptial plumes by the milliners in the markets of the world accounts for this atrocious near-extirpation of a beautiful bird. Fortunately the traffic is now forbidden by leading nations.

One of the thrills of the season was the sight of four specimens of the eastern velvet scoter (*Oidemia fusca stejnegeri* Ridgway), brought in on May 23 by Mr. Wang. A flock of five were feeding in the river, and he sent a friend around to drive them towards him where he was hidden in a pocket in the perpendicular bank of the river. The drake came ahead, and, when only some twenty yards away and just as Mr. Wang was drawing a bead on him, began to slow up and almost hover in the air waiting for his harem of four females to catch up. So Mr. Wang held his fire until they had arrived and were in perfect alignment. His big charge of iron shot brought down the male and three females. The one female that escaped soon returned, but, having no second barrel, he was unable to collect her. This scoter is a sea-coast duck, which retires to interior fresh water lakes to breed. The lateness of the season would seem to indicate that this family may have been going to breed in some nearby body of fresh water, though Madame Kozlova reports the bird as an uncommon breeder in South-west Transbaikalia, and others give its common breeding grounds as north of Lake Baikal. Our only other record at Peking is October, 1926, of a similar small party with golden eye ducks. At any rate the present spring record is good evidence of the polygamous habit of the velvet scoter.

One more special feature of this spring migration was the passing of three male short-billed minivets, resplendent in their scarlet and black coats. They appeared feeding among the green seeds of the elm trees in our compound. This is only my fifth record of seeing this bird in twenty years, and it was the first time that I have heard its note. It was a plaintive but sweet soft whistle, beginning about on F sharp and making a slide downwards of something less than a musical minor third.

In closing let me give the routine records of the early spring arrivals of summer residents and transients, placing the "last seen" dates in parenthesis after the names of the latter. February 26, pintail and mallard duck (no "last seen" date) February 28, grey-headed lapwing (May 2), hoopoe and pintail snipe ? (March 5 and later); March 4, garganey teal (April 20) and Baikal or spectacled teal (only date); March 6, laughing gull (March 24); March 11, a thousand black jackdaws from the south; March 14, falcated teal, ruddy sheldrake (only date); March 16, white-faced pied wagtail (April 6); March 18, little ringed plover

(May 2) and Eastern turtle dove (April 30); March 22, dusky thrush (March 30); April 2, red-flanked blue tail (April 21), house swallow; April 4, grey starling (April 23) and turquoise kingfisher; April 6, golden-rumped swallow and yellow-rumped willow warbler (April 17); April 12, woodcock (April 18); April 16, Besra sparrow hawk (May 15); April 20, grey-faced buzzard eagle (May 15) (these two are the first definite records from Tung-hsien for this bird) and black drongo; April 23, Peking swift; May 2 yellow-browed willow warbler (May 22), red-breasted flycatcher (May 24), red-bellied blue rock thrush (only record); May 7, Indian cuckoo (May 10) and stonechat (only record); May 9, brown bush warbler (June 6); May 14, common cuckoo; May 15, dark cuckoo, Schrenck's little bittern, Swinhoe's snipe and bay woodpecker (sole records of the spring for these four birds); May 17, Arctic willow warbler (June 16); and thick-billed warbler (June 6); May 19, paradise flycatcher (white form twice, red form three or four times) up to June 6, singing their summer song "*wheatery wheat, wheatery wheat*".

In addition to those in the above list noted as the "only records" for this season the following are rare transients that have been recorded but once. The eastern nightjar on April 8, the ruddy turtle dove on April 29, the purple heron on May 3, the broad-billed roller on May 23, Hodgson's rose finch on May 26 and the starlet on June 4. Most of these breed not far away, but are rarely seen in passage.

SCIENTIFIC NOTES AND REVIEWS

BIOLOGY

Fishes of the Yangtze Basin: In the last issue of this Journal under "Fishing Notes" we mentioned an account of fishes collected in the Yangtze by the late Dr. K. Kishinouye and his party during the years 1927 to 1929, the account being published in *The Journal of the Shanghai Science Institute*, Section III, Volume I, pages 11 to 247, June, 1934, and written by Dr. Shigeru Kimura. Fishes belonging to twenty-eight families and sixty-three genera are carefully described, amongst them the following new species, *Hucho bleekeri*, *Zacco chengtui*, *Zacco macrophthalmus*, *Xenocypris suifuensis*, *Chanodichthys kurematsui*, *Hemibarbus longianalis*, *Labeo (Varicorhinus) rendahli*, *Aoria amemiyae*, *Barbus (Labeobarbus) longirostrum*, *Misgurnus elongatus* and *Euchiloglanis kishinouyei*. In our previous note we called attention

to the extreme interest attaching to the discovery of a species of *Hucho* in Szechuan, which, as far as we know, is the first salmonoid fish to have been reported from the inland waters of China. The monograph, which is entitled "Description of the Fishes Collected from the Yangtze-kiang, China, by late Dr. K. Kishinouye and his Party in 1927-1929," is an extremely useful contribution to the ichthyology of China, covering, as it does, a wide stretch of country in Mid-China, from Shanghai to Western Szechuan.

The Shells of Hongkong: We have received from the authors reprints of a paper entitled "The Molluscan Shells of Hongkong," which appeared in three parts in *The Hong Kong Naturalist*. Detailed descriptions and careful drawings of each species are given. Pre-

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sumably the paper is not completed, since only a part of the gastropods known to occur in Hongkong are dealt with and none of the pelecypods, or bivalves. The paper is written by the

well known authorities Dr. Sohtsu G. King and Dr. Chi Ping, the former, we believe, being responsible for the drawings. We shall look forward to further installments of this excellent paper.

SEISMOLOGY

Monthly Record of Earthquakes :
On August 10 an earthquake occurred in the vicinity of the city of Panama, no casualties being recorded. A slight shock was felt in Scotland on August 16, covering an area from Dornoch to Pitlochry, roughly a hundred miles. The shock was most severe at Dinkwall, but nowhere was any serious damage done. A rather severe earthquake was

recorded in Japan on August 18, being felt at Nagoya, Kyoto and Osaka. In the last named place it was sufficiently severe to stop clocks. No casualties were reported. A shock lasting several seconds occurred in the Carfagna district of Northern Italy on August 25, the epicentre being seventy miles from Florence. There were no casualties.

VOLCANOLOGY

Stromboli Threatening Eruption :
A dispatch from Rome dated August 22 was to the effect that severe rumblings coming from the direction of Stromboli were heard in Tropea, Calabria, at about

seven o'clock in the morning of the previous day. No news of any actual eruption has since been received, however.

METEOROLOGY

The Weather in China During August : In the Lower Yangtze region the relief which the typhoon of August 8 brought from the long period of intense heat and drought that characterized the month of July was of very short duration, August 10 being the first day of a second long spell of hot dry weather which lasted until August 26. Thereafter till the end of the month clouds and rain prevailed, the month ending up cool and pleasant. Once more temperatures during the month reached heights beating all records for previous years, the maximum on August 25 being 104.0° F. at Siccawei Observatory.

In other parts of the country excessive heat continued during the greater part of the month, though heavy rains have been reported as having fallen in the North and North-west, causing severe flooding in many districts. Thus China is suffering from the effects of both famines and floods at one and the same time. The comparative absence of typhoons during the summer has been a marked feature. So far only two, both of minor importance, have occurred in the China Seas area, where they usually occur at frequent intervals from July to September.

MEDICINE

Plague Reported Near Harbin :
A message from Harbin dated August 30 says that pneumonic and bubonic plagues have broken out in the town of Podunei, on the Sungari River, eighty miles south-west of Harbin. Captains of passing steamers reported that a black flag was flying over the main building, and that there were no signs of life in the streets. The fields were empty of workers, and doors and windows were all boarded up. Travelers are strictly avoiding the community. In Harbin it was reported that more than fifty people had already died in Podunei of the plague.

North Manchuria Hit by Anthrax :
Anthrax was reported prevalent in North Manchuria early in August, when over a hundred deaths occurred. A *Reuter* dispatch told of forty-four deaths in Nungan and sixty-six in Paiyintala. Both railway horses and human workers were being stricken. Railway construction work has been stopped as the result. Aeroplanes were hurried to the affected district bearing doctors and serum. Doctor Inoda and two guards were later reported to have been killed by bandits while engaged in relief work near Paiyintala.
A. DE C. S.

SHOOTING AND FISHING NOTES

SHOOTING

Exterminating China's Fur-bearing Animals: The following very interesting note on a subject of considerable importance has been received from the well known Fukien missionary of Blue Tiger fame, the Reverend Harry R. Caldwell:

"Walking the streets of Shanghai in May I met a couple of Fukienese carrying large bundles of skins of civets of various kinds, which I readily recognized as animals common to the hill country of Fukien Province. A hurried examination of these skins verified what for the past few years I have feared was coming. The head of the animal from which every pelt in these several bales was taken had been blown open by the so-called Wild Cat Torpedo.

"For many years I have witnessed with very great alarm the destruction of tigers, leopards and certain of the larger denizens of the wilds through the use of the cross-bow and poisoned dart. The loss of human life through the indiscriminate use of the poisoned arrows along the trails and paths adjacent to the habitations of man has seemed to fail to arouse any very great protest against this dangerous practice. To one who is familiar with the wild life of the semi-barren coastal ranges of hills there has been through the past decade or so a noticeable decrease in the number of tigers abroad. This is almost entirely due to the use of poisoned arrows.

"The smaller carnivores have escaped the deadly darts to a very great degree on account of their not using the ridge trails to any great extent. And, too, as a rule the set-off string is placed so high above the ground that the smaller animals pass under it. During recent years, however, there has been installed among the peasant people a much more deadly method of taking wild game. No flesh eater is immune from this new danger, which is so simple as to become an instrument of death in almost every community. At the present rate of destruction of the carnivores it will be but a comparatively short time until many species will become almost extinct.

"The native nimrod has learned to make a small torpedo through com-

pounding chlorate of potash with one other element. This deadly little bomb is incased in a film of fat from the goat, or other oily or fleshy substance, and the little infernal machine is then attached to a grass stem or bamboo beside the animal trail. The unsuspecting traveller along this trail is attracted by the smell of the grease or meat covering the torpedo and takes it into the mouth. The larger civets, foxes and even, leopards and tigers will immediately take the bomb far back into the mouth to bring to bear upon it the molars, whereupon it immediately explodes with terrific force, usually killing the animal in its tracks. The smaller animals which nibble on the torpedo receive wounds on the outer jaws from which they eventually die, although they often succeed in getting away a considerable distance.

"In May of this year one of the hunters making a round of the bombs set out the night before came upon a huge tiger which had been severely injured. The big cat sat seemingly helpless with its head hanging low. One jaw had been almost entirely blown away. The hunter hurried to his village for a gun and for bearers to carry the animal out, only to find upon his return that it had moved away into the dense cover of a nearby ravine. The hunters dare not follow it. It doubtless died in its lair to become a total loss.

"Unless the Chinese Government begins to pay some attention to the ruthless destruction of the wild life both in season and out of season, by fair means and foul, the time is not very distant when the fur bearers will be killed off to far beyond the danger point. This situation in Fukien Province is one of the greatest challenges China faces to-day in connection with the protection of its wild life."

* * *

The Chinese Government most certainly ought to look into this matter of wholesale destruction of fur-bearing animals. In our special "China Economic Development Number," issued last May, we published an article entitled "China's Fur Trade and Fur-

THE CHINA JOURNAL

bearing Animals" by Arthur de C. Sowerby, giving data and statistics showing the great value of this country's fur trade, which is from thirty to forty million dollars annually. It called attention to the fact that in recent years this trade had diminished considerably, due in part to the extermination of the fur-bearing animals. If

China does not want to lose this important trade altogether, her officials had better get busy and enforce the country's game laws, by which a considerable amount of protection would be afforded the fur-bearing animals. Incidentally, we believe we are correct in saying that the use of explosives, as described by Mr. Caldwell in taking game, is illegal.

FISHING

Destructive Method of Fishing: Mr. Caldwell, whose note above calls attention to the destructive methods of hunting fur-bearing animals employed in Fukien, might also have mentioned a very destructive method of fishing prevalent in the same province. We refer to the use of poison. The natives of Fukien have several kinds of poison which they put into streams, causing the death of practically every living thing in the water for some distance below the point where the poison is put

in. The dead fish and other creatures float down stream and are gathered in at some convenient point. This method completely exterminates the fish as well as the fish-food where it is used, not even leaving the small fry to restock. It will readily be seen what a pernicious system this is. Here, again, we believe that the use of poison in fishing is against the law, and it seems to us that the Chinese Government would do well to enforce the laws that it creates.

A. DE C. S.

THE GARDEN

THE SEPTEMBER CALENDAR

The Care of Lawns: The intense heat of the July and August seems almost to have ruined the lawns. Huge patches of burnt grass, burnt brown almost to the naked sod, bear silent evidence of the sun's altogether too warm rays. Much sprinkling, with a little ammonia added to each can once a week, have preserved what might otherwise have been only bare earth. And to prevent the roots being exposed too freely to the sun the grass was mown less this season than ever before, while the cut grass allowed to lie to give some shade and protection to the roots.

Few things in nature are more beautiful than a lovely velvety lawn, a lawn well cultivated, free from weeds and unsightly rough grass. A neglected lawn spoils the beauty of an otherwise pretty garden. It shows carelessness or lack of interest on the part of the owner.

In early spring the lawns should have been thoroughly weeded, de-wormed and artificial fertilizer given according to directions, about three times in spring (once every four or five weeks, during a rainy spell) and after the grass was growing well a dressing of sulphate of ammonia given (a tablespoonful to a full gallon of water) sufficient to enrich the colour and aid growth. All lawns, so cultivated, were in splendid condition until this terrific heat threatened to leave them a burnt mass. Fortunately a typhoon with its long hoped for rain broke the spell, and the parched earth drank in the delicious refreshing life-giving showers. And not only plants but animals and all humans began to live again.

It has been a difficult season for the gardeners. After watering early and late they have been almost too exhausted even to cut away the faded blooms or

sweep all the cobwebs off the bushes. However, work must be attended to.

Autumn Preparations : Seeds ordered will soon be arriving. Sowing boxes and seedling beds must be prepared as late August, all of September and part of October form a busy seed-sowing period. In October and November we plant bulbs and sweet-peas, while by the end of October the conservatories must be cleaned, if necessary, painted, and all repairs made, so that tender seedlings may have their shelter ready for them.

Chrysanthemums and dahlias will need feeding. Chrysanthemums can be given liquid dressings of sulphate of ammonia from now on, but care must be taken to avoid burning the leaves. Once a week is not too often, and, later when the plants are full grown, oftener.

For the touch of blue in the spring garden few flowers are lovelier than the various blue tinted larkspur. The chief colours in nature we find are green, red and yellow. Blue is rare, doubtless because the heavens in summer spread so much azure blue over the green earth. Blue flowers, according to legend, carry a bit of the blue of the sky within themselves. The magic flowers of the Fairy Tales are of a heavenly supernatural blue colour.

The Larkspur : Among the most beautiful and favourite garden flowers is the larkspur (*Delphinium*). Unfortunately too many of the old varieties are often mixed with the more desirable ones. The colours of such are mixed and faded, and the plants wilt easily, their stems being too light to bear the weight of the flowerlets. But, due to the perseverance of the horticulturist, there are to-day a number of varieties of a clear blue colour which are proof against mould and ordinary heat, wind and rain. They bloom from the lowest blossom to the highest on the upright stalks. With care and much cultivation and a rich soil ordinary larkspur seedlings develop rapidly into beautiful plants. And, if the faded blooms are cut off, they will bloom for several months. In May their bright blue forms a beautiful compliment to the delicate pink of climbing roses, or

amongst Easter lilies or sweet alyssum. Many beautiful combinations can be thought out.

Botanist claims that larkspur will thrive with care for forty or fifty years. Its full beauty is developed between its third and fourth year. The hardy perennial larkspur is the delphinium, some of which attain five feet in height and are glorious for massing in the background. Their lovely hues, ranging from soft rosy blues to pale lavenders and indigo, have been selected and reselected until such almost perfect specimens have been found in the "Blackmore" and "Langdon Hybrids." The white varieties, if planted among the blue, enhance the beauty of the latter. Rich earth, well cultivated and fertilized occasionally, should produce beautiful rows of heavenly blue larkspurs and delphiniums. They are hardy. The seeds should not be covered too thickly. Softly sifted earth, well firmed and well drained, is all the seedlings require.

The dwarf larkspur is an ornament in the rock garden. The dwarf blue Chinese variety, if kept cut, will produce many short stalks and remain in bloom over a longer period. The larkspur is the blue flower of romance, a symbol of heaven's beauty.

Seed Sowing : From the end of August to well into September many flower seeds can be sown. Have the beds or seed boxes prepared, the soil well cultivated and enriched. The soil must be finely sifted else seeds have difficulty in establishing themselves. Among flower seeds sown now for next spring blooming we have anchusa, antirrhinum, aquilegia, autrotia, canterbury bells, cornflowers, coreopsis, cheiranthus, clarkia, summer chrysanthemums, daisies, shasta daisies, dicanthus pinks, delphiniums, digitalis, godetia, gypsophila, gaillardia, hollyhocks, eschscholtzia, larkspur, lupins, linum, myosotis, nicotine, nemophila, nigella, penstemon, poppies, pansies, phlox, sweetpeas, stocks, salpiglossis, violas, verbenas and sweet williams.

For the kitchen garden the following vegetables may be sown : early carrots, French and kidney beans, beetroot, leeks, early green peas, lettuce, endive, radishes, potatoes, Swiss chard, parsnips, turnips and spinach.

L. L.

Out in the Fields with God.

The little cares that fretted me
I lost them yesterday,
Among the fields above the sea,
Among the winds at play;
Among the lowing of the herds,
The rustling of the trees
Among the singing of the birds,
The humming of the bees.

The foolish fears of what may pass,
I cast them all away
Among the clover scented grass,
Among the new-mown hay;
Among the rustling of the corn,
Where drowsy poppies nod,
Where ill thoughts die and good are born,
Out in the fields with God.

Author Unknown.

SOCIETIES AND INSTITUTIONS

THE CHINESE CHEMICAL SOCIETY

Second Annual Meeting: More than one hundred and twenty representatives from a majority of the cities and provinces of China attended the second annual meeting of the Chinese Chemical Society at the Chaotung University, Shanghai, on August 10 and 11. Mr. Zao Chia-ling, Chairman of the preparatory committee, spoke on the objects of the meeting, and Mr. Chen Yu-kwang, Chief Director of the Society, read the body's report for the past year. One of the points he stressed was that during the two years the Society has been in existence a Physics Society and

an Astronomical Society have also been organized. Mr. Chen expressed the belief that such activity augured well for China.

Considerable time was spent by the delegates in visiting industrial plant in and around Shanghai, including the China Chemical Industrial Institute, the Tien Yuan Electrical Plant and numerous factories. The main session held on the second day was devoted to a discussion of problems of national defence, and the nomenclature of chemical apparatus in Chinese.

THE SCIENCE SOCIETY OF CHINA

Meeting Held at Kuling: A total of one hundred and twenty papers on a wide variety of scientific subjects were read at the nineteenth annual meeting of the Science Society of China, which was held at Kuling, Kiangsi, from August 22 to 29. Two hundred members from all over China attended. The gathering was presided over by Mr. Hsiao Shun-ching, Chairman of the Nanchang Branch of the National Economic Commission.

The opening speaker, General Hsiung Shih-hui, Provincial Chairman of Kiangsi, told the members that they could play an important part in the reconstruction of the areas in Central China recently recovered from the Communists. General Hsiung declared that

it is imperative that the best brains of the whole country be marshalled for the task. Later reports were read, including the annual recapitulation by the Chairmen of the Science Society and of its three constituent bodies, the Botanical Society of China, the Geographical Society of China, and the Zoological Society of China.

Among the business transacted was the election of Mr. Fan Shu-tung, noted for his researches in industrial chemistry, as a special member of the Society. Two Generals, Liu Hsiang and Yang Sen, and Mr. Kan Shu-yung, who have made generous donations to the Society, were elected patrons. The next annual meeting, the twentieth, will be held in Wuchow, Kuangsi, the delegates decided.

SOCIETIES AND INSTITUTIONS

INTERNATIONAL CONGRESS OF GEOGRAPHY

Forty Nations Represented at Warsaw: With Germany represented for the first time in twenty years, the International Congress of Geography opened in Warsaw on August 24 to last for a week. The United States, China, India, Japan, Persia, the Philippine Islands, Syria, and all the countries of Europe except Lithuania and Albania were represented. Seven

hundred delegates in all took part. Besides purely geographical and ethnographic questions, the Congress deliberated on problems concerning communications, aerial navigation and similar subjects. Later the delegates visited some of the more interesting parts of Poland.

S. L.

EDUCATIONAL NOTES AND INTELLIGENCE

Student Parties go Abroad: The largest number of Chinese students since 1931 left for higher studies in the universities of the United States and Europe during August and early September. The total was well over two hundred, more than fifty per cent. above the average for the last three years. It was notable that a considerable number of girl students were included.

A party of a hundred and three, including ten girls, left Shanghai on the *President Hoover* on August 14. Included in the group were two sons of Mayor Wu Teh-chen of Greater Shanghai, one of whom was going to the Massachusetts Institute of Technology and the other to the University of Pennsylvania. This year's group includes a high percentage of technical students and comparatively few who are taking up political science. The most popular subjects are agriculture, biology, medicine, mining, aviation, economics and engineering. Among the girls, music is still the favourite.

Besides those who departed on the *President Hoover* on August 14, a second group of twenty-six sailed for England, August 21, on the *Ranpura*, and forty-four more the same day for Seattle on the *President Grant*. Two days later, twenty more sailed for Canada on the *Empress of Canada*, while a further group of unannounced strength left for America on the *Persident Taft* on September 1.

The twenty-six students who left for England on the *Ranpura* are being

sent by the Board of Trustees for the Administration of the Boxer Indemnity Fund, and are the successful candidates out of several hundred students from throughout China who took part in a very stiff competitive examination. While in England they are to undergo a three years' educational course in special schools and universities. The group included two women.

With the exception of a few who had won scholarships, the remainder of the departing students are paying their own way, the lower value of the American dollar probably playing a part in the increased number going to the United States this year. Out of the total Chaotung University of Shanghai was best represented, sending off more than thirty students. At the other end the University of Michigan in the United States is drawing the biggest allotment of Chinese scholars.

Nanking will Subsidize Universities: Thirty-two institutions of higher learning throughout China will be benefited by a subsidy of \$720,000 in favour of which the Executive Yuan at Nanking voted on August 7. The largest sum is to go to the University of Amoy, which will receive \$90,000. This institution was founded by Mr. Tan Ka-kee, Chinese rubber magnate of Singapore, and has been faced with serious difficulties since the collapse of the rubber market. With its support withdrawn, the school was faced with closing. Other universities getting aid were the University of Nanking, \$30,000;

THE CHINA JOURNAL

Ginling College for girls, \$12,000; Soochow University, \$10,000; Nan-tung College at Nan-tung-chou, \$35,000; Tatung University of Shanghai, \$35,000; Fudan University of Shanghai, \$15,000; Kwang Hwa University of Shanghai, \$15,000; Great China University of Shanghai, \$15,000; the University of Shanghai, \$20,000; the Franco-Chinese College of Shanghai, \$10,000; Tung Ya Physical Culture College \$5,000; School of Fine Arts in Soochow, \$6,000; and Hangchow Christian College, \$8,000.

Four New Professors for Medical College: Supplementing the staff of the National Medical College of Shang-

hai for the ensuing year, four new professors arrived in China during August. They were Drs. Edward H. Hume, Tso-chin Chu and Stephen H. Chang, and Professor Dr. Julius Tandler. The first three arrived from America, while Professor Tandler came from Europe. Dr. Hume was formerly president of Yale-in-China University in Changsha and was also Dean of the Yale-Hunan Medical College. Dr. Chu is a graduate of Lingnan University in Canton and received his Master's degree at Yenching. He has been studying for some time at the Johns Hopkins University in Baltimore, and will be assistant professor of parasitology.

PUBLICATIONS RECEIVED

Books:

The New Art of Love, by George Ryley Scott: John Bale, Sons & Daniels, Ltd., London.

Manual of Vertebrate Animals, by Cora D. Reeves: Chung Hwa Book Co., Ltd., Shanghai.

Tombs of Old Lo-Yang, by William Charles White: Kelly & Walsh, Ltd., Shanghai.

The China Architects and Builders Compendium, 1934: North-China Daily News & Herald, Ltd., Shanghai.

Description of the Fishes Collected from the Yangtze-kiang, China, by the late Dr. K. Kishinouye and his Party in 1927-1929, by Shigeru Kimura: the Shanghai Science Institute, Shanghai.

Darwin: the Evil Genius of Science and his Nordic Religion, by H. Reinheimer, 8 The Avenue, Surbiton, England.

Shall Cancer Conquer Unopposed? by H. Reinheimer, 8 The Avenue, Surbiton, England.

Tents in Mongolia, by Henning Haslund: Kegan Paul, Trench, Turbner & Co., Ltd., London.

Children of the Yellow Earth, by J. Gunnar Andersson: Kegan Paul, Trench, Turbner & Co., Ltd., London.

Composition Exercises in Elementary English, by A. S. Hornby: Macmillan & Co., Ltd., London.

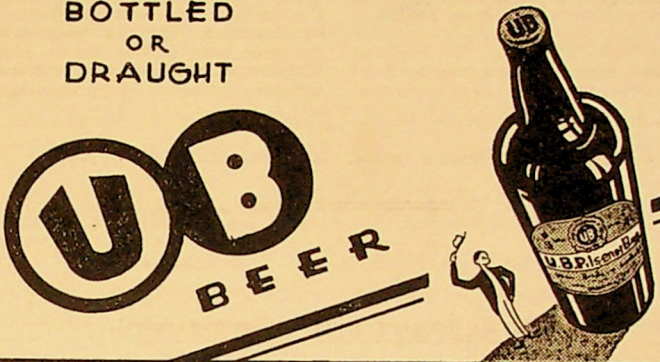
Periodicals:

Sinica—Discovery—Science—Smithsonian Miscellaneous Collections—International Affairs—Natural History—Tourism—Ostasiatische Zeitschrift—Oriental Affairs—Geographical Review—Chinese Economic Bulletin—The Far Eastern Review—Extreme-Asie—The Shipping Review—Game and Gun—L'Asie Nouvelle—World Unity—The China Periodical—The Fishing and Shooting Gazette—The Metropolitan Vickers Gazette—The Journal of the Society of Chemical Industry, Japan—Manchuria Monitor—Economic Bulletin—The Science Journal—The Mid-Pacific Magazine—The Chinese Economic Journal—La Revue Nationale Chinoise—Man—The Travel Bulletin—The People's Tribune.

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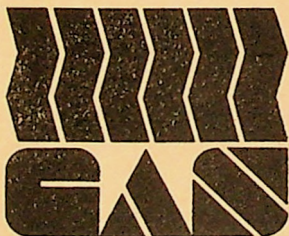
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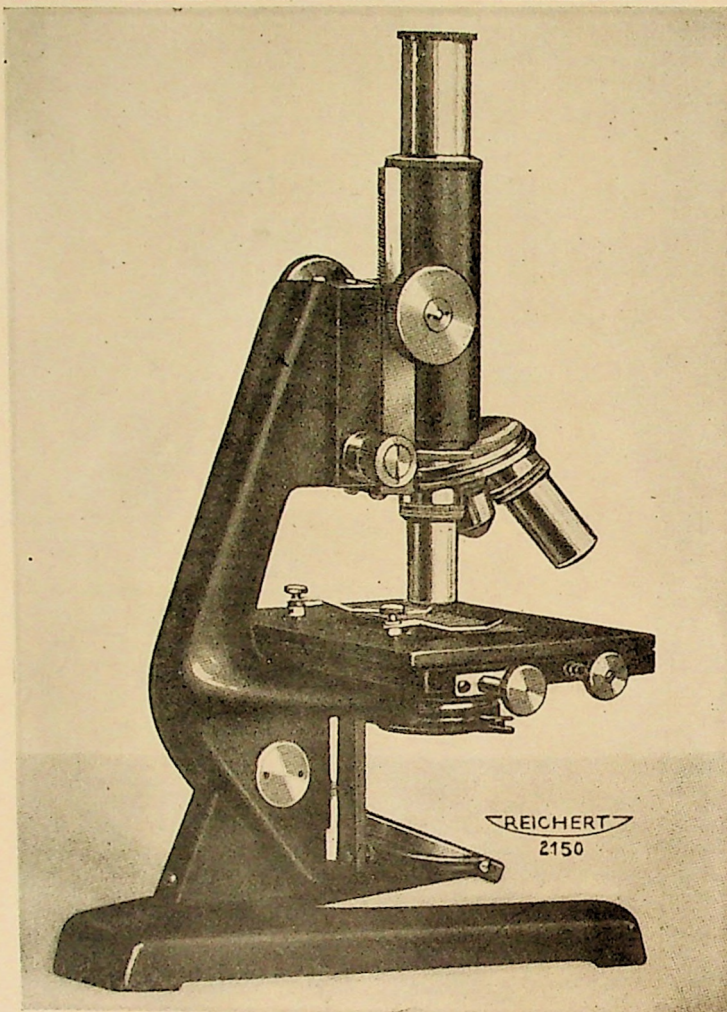
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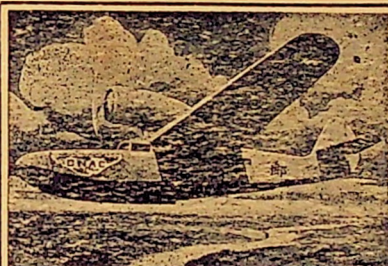
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