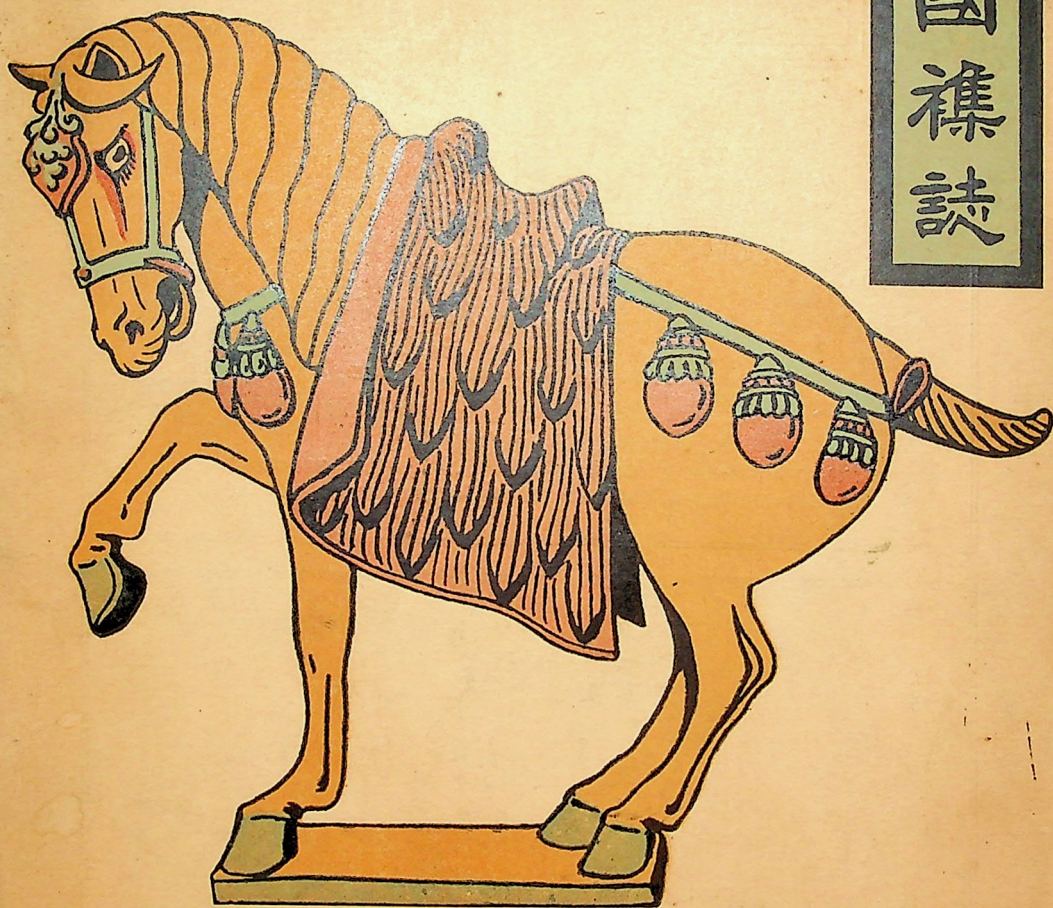


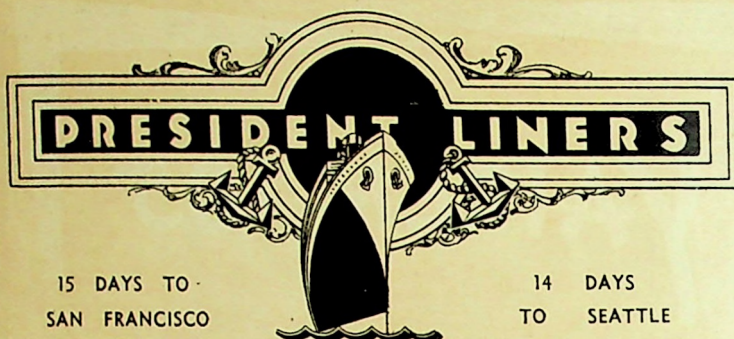
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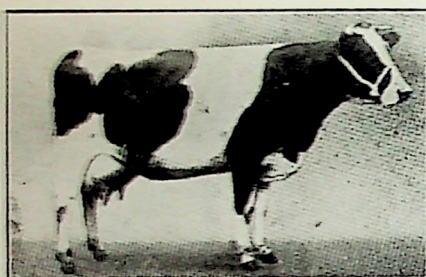
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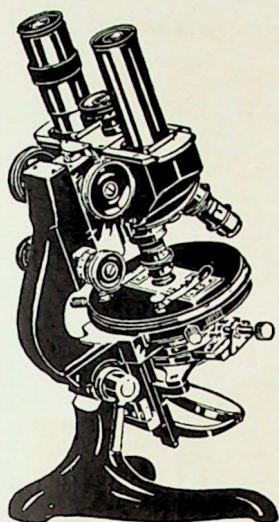
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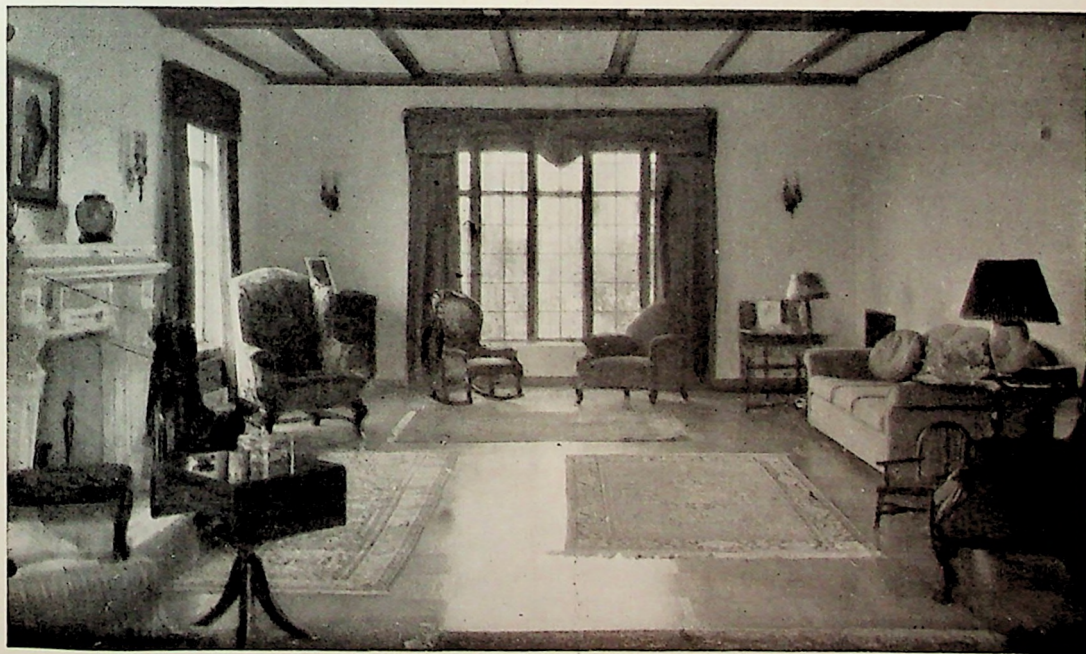
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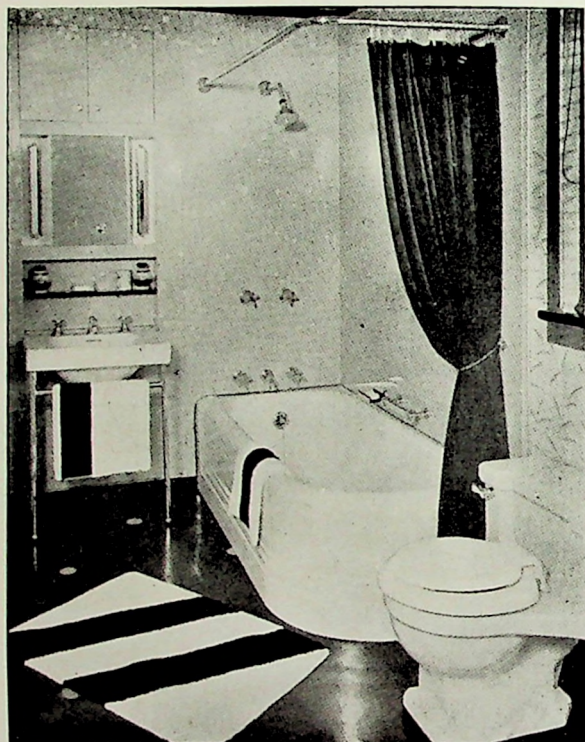
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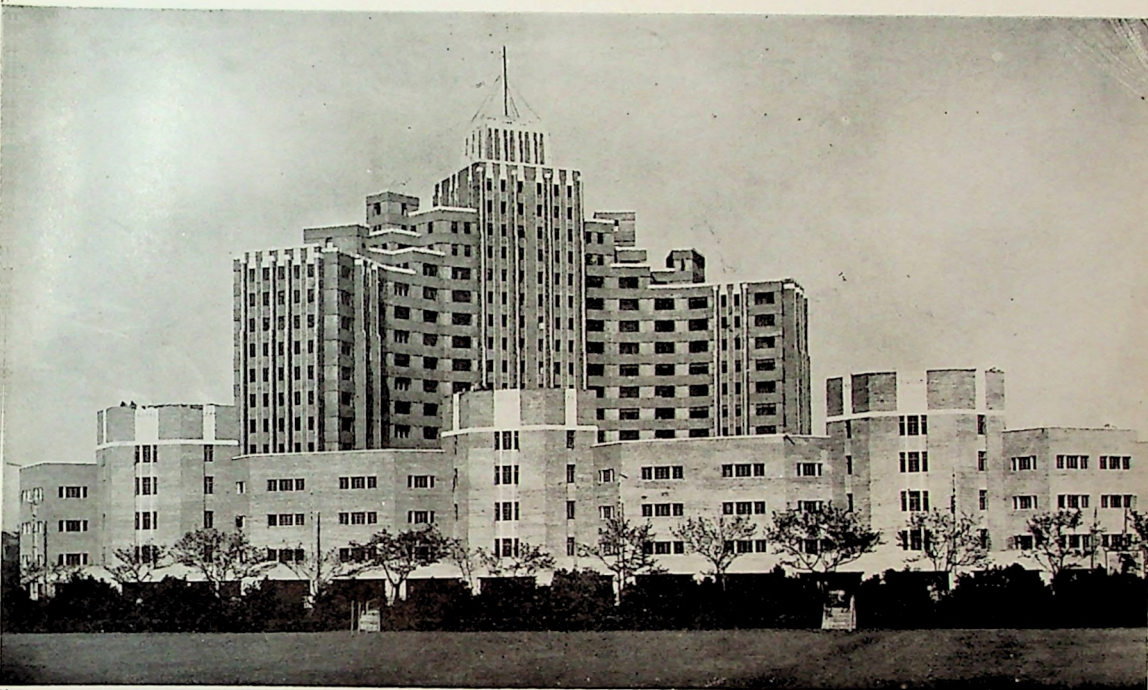


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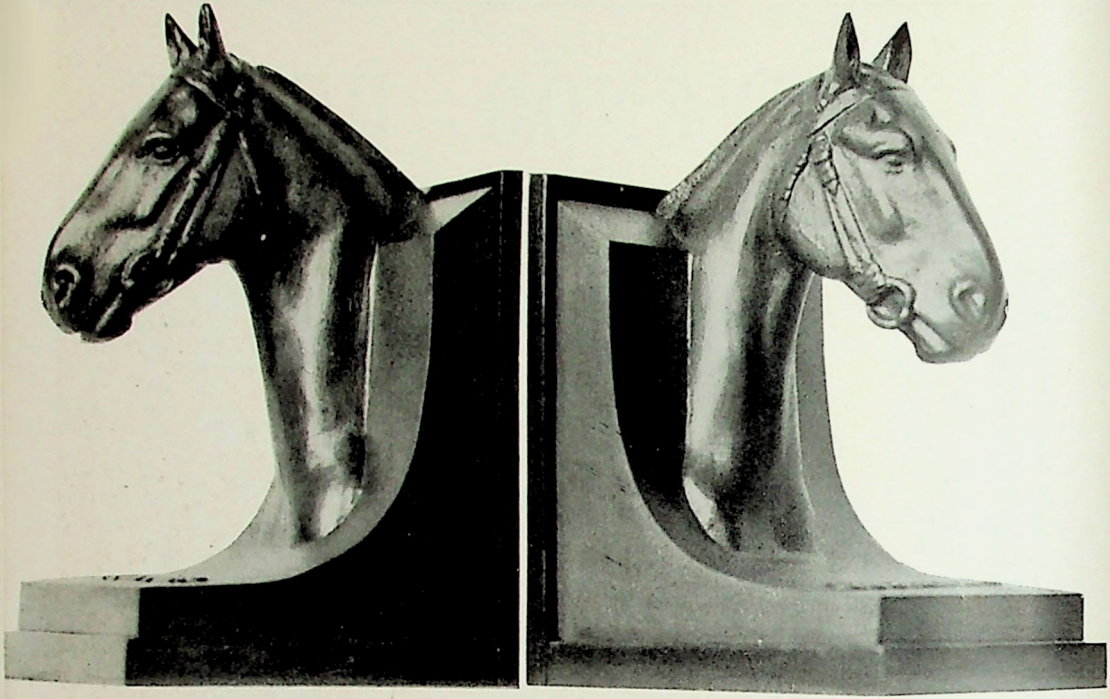
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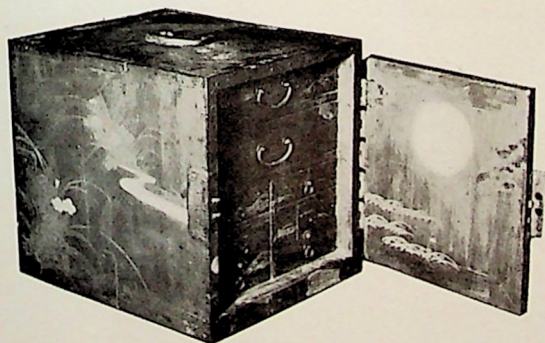
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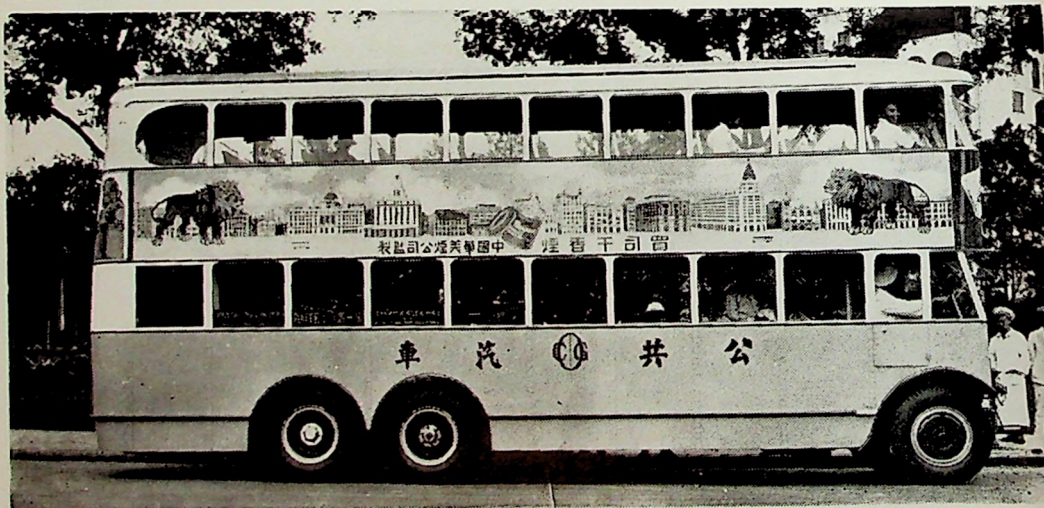
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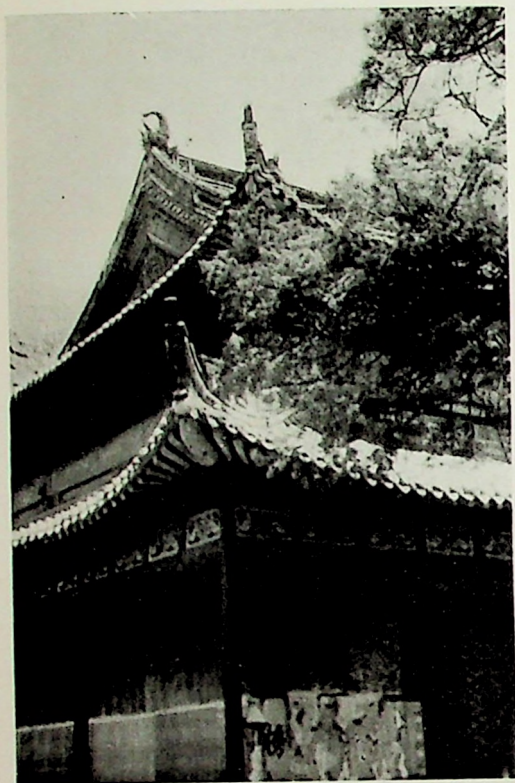
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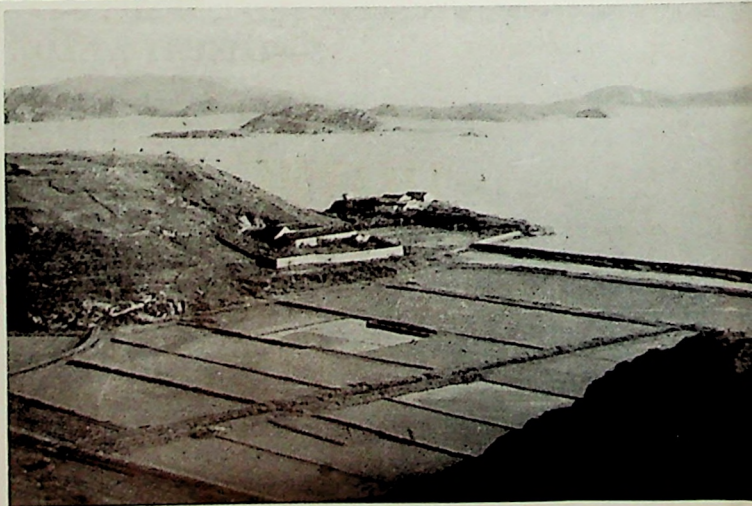
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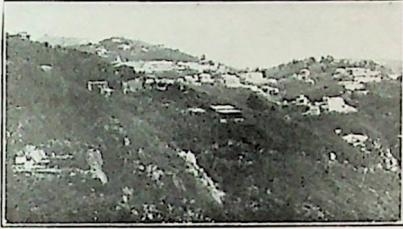


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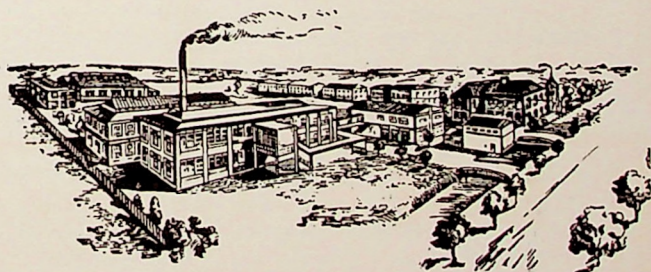
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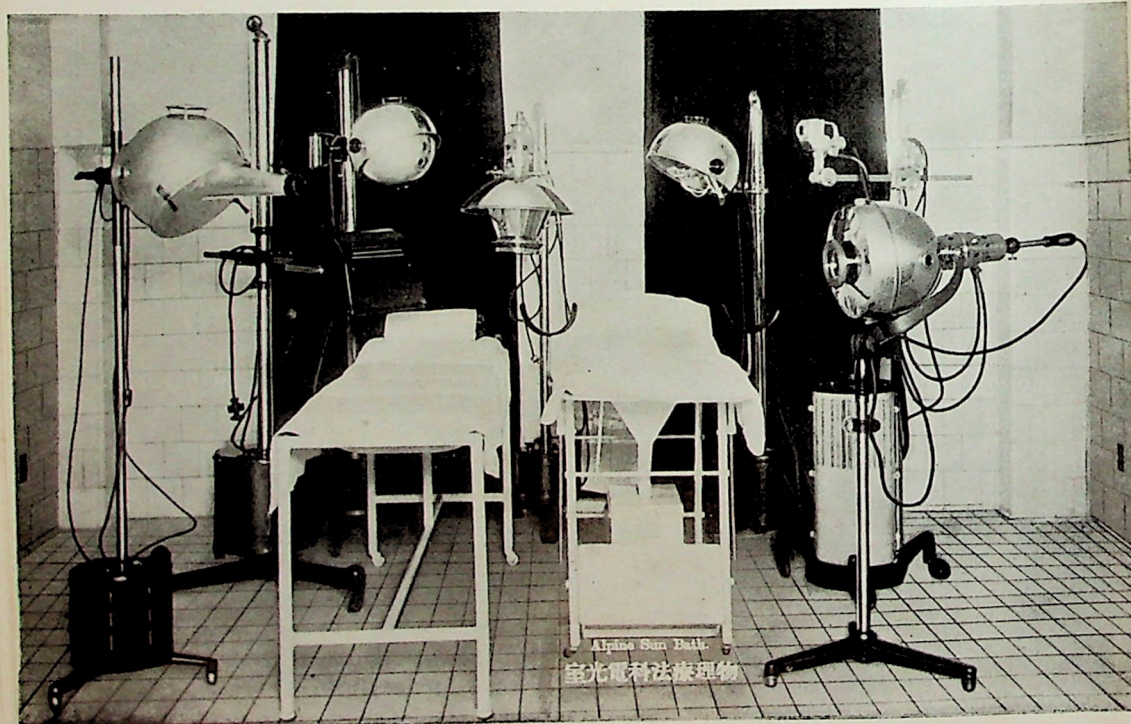
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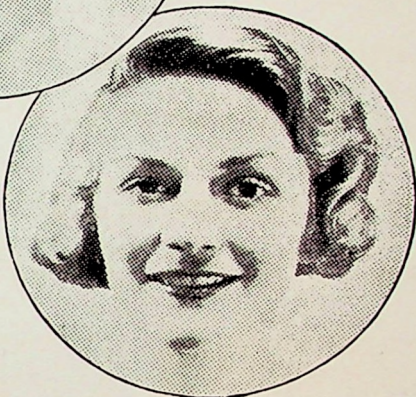


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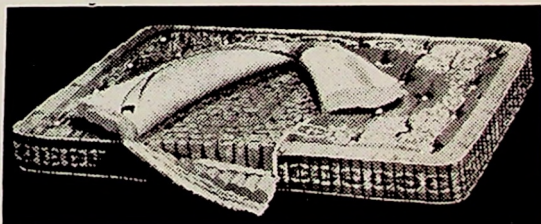
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THE CHINA JOURNAL

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[ENTERED AT THE CHINESE POST OFFICE AS A NEWSPAPER]

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AUGUST, 1935

No. 2

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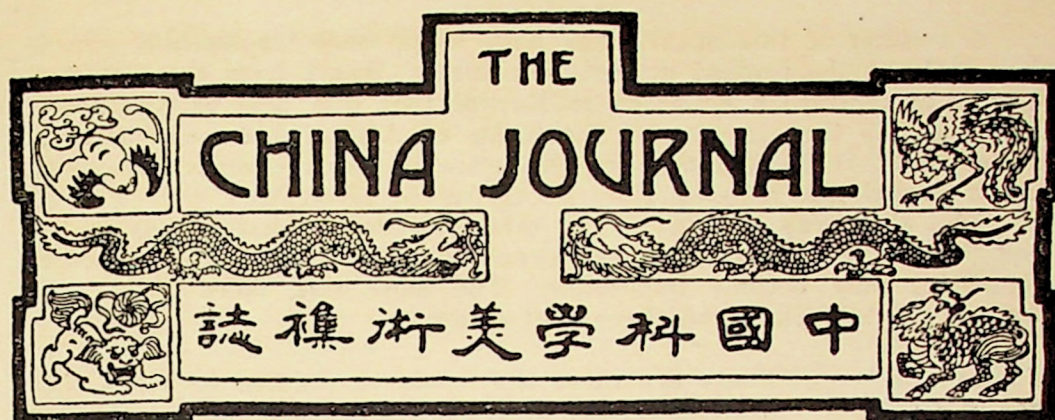
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An Arhat, or Lohan, one of the Eighteen Apostles of Buddhism. A Turquoise Blue Glazed Porcelain Figure in the Collection of Arthur de C. Sowerby, Shanghai.



VOL. XXIII

AUGUST, 1935

No. 2

EVENTS AND COMMENTS

Italy and Abyssinia

The world's attention for the past few weeks has been rivetted upon the situation that has arisen between Italy and Abyssinia, two members of the League of Nations. It is, of course, impossible to predict the course of events in such matters, but the chances appear to be about even for a peaceful settlement of the differences that have upset the good relations of these two countries. Great Britain has been moving heaven and earth to prevent an outbreak of hostilities, even, it is alleged, going so far as to threaten to resign from the League if Italy is allowed a free hand in regard to her course of action against Abyssinia. This has aroused a feeling of hostility against her in Italy, where popular as well as official feeling appears to be all in favour of war. It is reported, however, to have caused France to take a less indulgent view of Italy's attitude and proposed activities regarding Abyssinia. Japan has entered the political arena, her spokesmen condemning Italy's line of action, and accusing that country of indulging in a systematic plot to develop her quarrel with Ethiopia into a general conflict between the white and coloured races. This has infuriated public feeling in Italy against Japan.

A meeting of the Council of the League of Nations is being held, having been convened for July 31, at which the Italo-Abyssinian dispute will be examined with a view to finding a peaceful settlement.

While both Italy and Abyssinia appear to feel assured of victory in the event of recourse being made to armed force, the outcome of such a conflict is by no means certain. The Italian army is, of course, far superior to that of Abyssinia in equipment and training, but the Ethiopians are a fanatical race of excellent fighters, they will be fighting in their own territory, which is all in their favour, and have on their side the African climate. War would inevitably be a very costly thing for Italy, especially in lives.

A feeling of this nature may have much more far-reaching effects than that at the present moment visualizes. Apart from the fact that it may visualize a situation in Europe that may lead to war there, it is possible that it will set the whole of Africa ablaze and actually cause that alignment of the coloured races against the white which has been accused Italy of trying to instigate.

The chief ray of hope in an otherwise dark situation lies in the fact that so much discussion has already taken place over it that actual hostilities may become impossible. The more talk there is in such matters the less likelihood there is of action.

* * * *

Japan and
North China

There are those who could be induced to admit that to them Japan's action in regard to China is somewhat parallel to that of Italy in regard to Abyssinia, which makes it difficult to refrain from a gentle smile when reading the notices in the Japanese press against Il Duce and his country. And to an impartial observer this must indeed appear so, for, fundamentally, economic expansion is at the base of both movements. Highly industrialized countries without much in the way of internal resources must have control of outside territories, on the one hand to assure their supply of raw materials and on the other to provide markets for the products of their factories. The adjacent mainland is naturally Japan's outlet in this direction, while the vast territories of Africa offer a similar outlet to Italian aspirations. Unfortunately in both cases the coveted territories are already occupied by peoples who are keenly alive to a sense of nationalism and who resent being dominated by other countries. In the old days this would have had little effect on the course of events, as the stronger nations would have enforced their will upon the weaker without any to say them nay. But the world now boasts a League of Nations to which the weaker nations have the right to appeal in the event of what they consider aggression at the hands of stronger nations. Just what that League of Nations is capable of accomplishing remains to be seen. So far it has not proved very effective. It has failed to find a formula for the settlement of the situation existing between China and Japan, and, unless it finds one for the Italo-Abyssinian dispute, it will be difficult to arrive at any conclusion other than that it has been an abortive experiment in international affairs. If this turns out to be the case there remains nothing but for nations to go back to the old methods of settling their differences with each other between themselves. And, indeed, this would seem to be the best thing for China and Japan to do, each country adopting a genuine attitude of goodwill toward the other, and, in a spirit of mutual goodwill, arriving through a permanent settlement of economic and territorial questions. Japan must be prepared to guarantee China's integrity, while China must be ready to trade amicably with her neighbour; and both countries must be imbued with sincerity, lack of which will render all efforts at reconciliation.

* * * *

Calvary Flood
situation

The flood situation in China has again become acute this year. Both the Yangtze and the Yellow River have risen to unprecedented heights, with the result

that once more vast stretches of country have been inundated, hundreds of thousands of lives have been lost and millions of people rendered homeless and destitute. By superhuman efforts some of the dykes along the Middle Yangtze were maintained intact till the high level of the waters had begun to recede. In this way many large cities along the Yangtze banks have been saved from complete inundation, including Hankow, which at one time it was feared would inevitably be overwhelmed.

Nevertheless, news is to hand that Hunan and Hupei have suffered an even worse catastrophe than they did during the terrible floods of 1931. It is estimated that seventy per cent. of Hupei Province is under water, while the material losses have been estimated to be over \$200,000,000. The number of refugees is double that of 1931. This increase over the flooding of 1931 is attributed to the fact that this year the Han River, a large affluent of the Yangtze which joins it at Hankow, also rose to unprecedented levels carrying away its dykes, whereas it did not do so in the previous flood year.

Bad as has been the situation in the Yangtze Valley, that in the Yellow River Valley has been, and is, very much worse, Honan, Hopei and Shantung Provinces being in an appalling condition and Northern Kiangsu in danger of a major catastrophe on account of the flood waters from this uncontrollable river. It is reported that the estimated number of refugees in Western Shantung is about 5,000,000. News from Tai-yuan Fu, capital of Shansi, was to the effect that continuous heavy rain was causing the Fen River to rise, threatening the wide valley through which it flows with inundation; while similar news has come from Tientsin with regard to the turbulent Yung-ting Ho, a tributary of the Pei Ho on which that city stands. Extensive floods have taken place in South Manchuria and Northern Korea. There can be little doubt that the flood situation in China this year is worse than it has ever been, and a great deal of effort and enormous sums of money will be needed to bring relief to the millions who will have been rendered destitute by this national disaster.

* * * *

Afforestation No body likes the person who says "I told you so,"
Only Remedy the more especially if he is justified in saying so;
 but it is not easy to refrain from making some such
 remark in regard to China and the flood situation. It is a very long
 time now since we first called attention to the fact that desert conditions
 were becoming more and more prevalent in North China, especially the
 more westerly regions, and that this was the fundamental cause of
 both the famines and the floods from which this country is suffering
 with ever increasing frequency and acuteness. As a matter of fact
 it is a little over eighteen years ago that we published an article entitled
 "Approaching Desert Conditions in North China" in the *China Illustrated
 Weekly*, the weekly edition of the *Peking and Tientsin Times*, in which
 we called the attention of the authorities to the existing state of affairs.
 In May, 1924, we republished this article in *The China Journal*, since
 when we have been attacked from more than one quarter in regard to
 our contentions that the re-planting of the forests or at least vegetation
 that once covered the hills and mountains of North and North-west

China is the only way to prevent the steady increase in the present adverse conditions. Engineers suggested that conservancy work was much more important than afforestation, while recently an attempt was made to prove that our contention that North and North-west China were steadily drying up was wrong.

The task of reclothing the vast stretches of hilly and mountainous country that forms the basin of the Yellow River may now prove to be too big and costly an undertaking; but we have no hesitation in saying that, until it is undertaken and accomplished, the flood situation, at least in North China, will get worse as time goes on; as also will the famine situation.

* * * *

Raven Denies Charges

On July 26 Mr. Frank J. Raven filed a reply with the U. S. Court in Shanghai to the Bill of Complaint brought against him by Mr. Frank L. Hough, liquidator of the so-called Raven interests, namely, the American-Oriental Banking Corporation, the American-Oriental Finance Corporation and the Raven Trust Company, all three of which closed their doors on May 24 last. Mr. Raven was President of all three concerns, and the complaint filed against him alleged that, knowing the American-Oriental Banking Corporation was insolvent at the time, he accepted the payment of Tls. 135,000 as an honorarium for past services, the amount to be written off the company's books over a period of six years. Similar charges were subsequently laid against Mr. Raven in regard to the other two companies, making a total sum of Tls. 405,000 which the liquidator is trying to recover from him.

Mr. Raven's reply is to the effect that the American-Oriental Banking Corporation was solvent in December 1931, and that he refunded the honorarium of Tls. 135,000, which went to the Raven Trust Company as a donation to increase its liquid capital, and was not turned to his personal use. A trial of the case is expected to take place in the U. S. Court shortly. Mr. Raven also said that the *ne exeat* writ which had been issued was unnecessary, as he had had no intention of leaving the country. Meanwhile an alleged statement by Mr. Hough, which appeared in the *Shanghai Evening Post and Mercury* of July 13, was to the effect that probably two years or more will be required for liquidation of the American-Oriental Banking Corporation. He pointed out that in the first month he had been able to collect only \$53,000 of the \$6,700,000 outstanding loans.

* * * *

Street Noises in Shanghai

At a meeting of the General Committee of the Shanghai Foreign Residents Association held on July 9 six resolutions were unanimously passed calling the attentions of the Municipal Councils of the International Settlement and the French Concession to what it termed the existing disgraceful state of affairs in regard to street noises and traffic. The resolutions have been duly forwarded to the secretaries of these Councils, as well as being published in the local daily newspapers. One of the latter has seen fit to criticize rather severely this action on the part of the General Committee of the Shanghai Foreign Residents Association, accusing it of irresponsibility. In view of the flood of correspondence that

continually appears in this same newspaper on the subjects of traffic control and noises, which by its very persistence and volume proves conclusively that there exists these uncorrected evils in our midst, this attitude seems somewhat incongruous. Whether or not the municipal authorities of the two areas under discussion are giving the problems of traffic and noise the attention they deserve, the fact remains that both in Shanghai are a disgrace to a modern city, and it is difficult to believe that more could not be done to mitigate these evils.

A great many Shanghai residents will agree that, if the Shanghai Foreign Residents Association, by its vigorous protests to the powers that be can stir those authorities into some action that will yield palpable results, it will have justified its existence.

Meanwhile it is interesting to learn that Shanghai has a rival in the matter of noises, as indicated by a *Havas* message from Madrid of July 28. Not liking the reputation of being the noisiest city in the world, the municipal authorities of Madrid have issued a decree limiting the use of motor horns to certain hours and regulating the type of klaxon permitted. But, whatever the need for such action in Madrid, we strongly protest that city's claim to being the noisiest in the world. This distinction unquestionably belongs to Shanghai. Even so, the Councils of the three Municipalities of Shanghai might do much worse than follow Madrid's example.

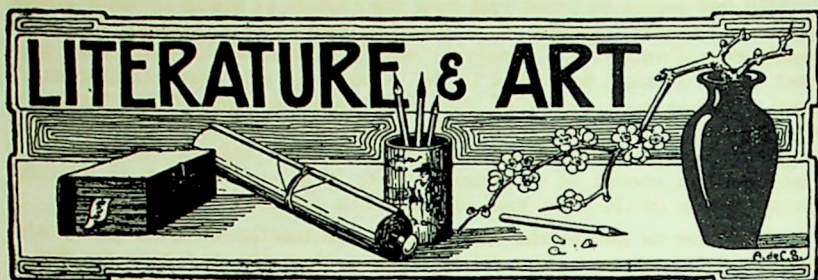
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Neo-Paganism in Germany

Exactly what is to be gained by the revival of an ancient religious cult that dates back to the pre-Christian era in Europe is not clear, but at least a certain amount of ethnological interest attaches to Neo-Paganism as being practised in Germany today. The ritual observed is, we take it, based on what is known of the ceremonies conducted by the early Teutons, which, by the way, gave us our Christmas, with its decorated Christmas tree, and fixed the dates for our other Christian festivals.

The movement is, of course, a racial expression, its main factor being an opposition to anything of non-Aryan origin, including Christianity. Nevertheless, it would seem a pity that this feeling should be given such headway as to lead to acts which the nation as a whole must deplore, as witness the recent fresh outbreaks of riots in Berlin against the Jews.

A. DE C. S.



JIZO, THE PROTECTOR OF CHILDREN

BY

H. CROZIER-FAULDER

One of the features of minor interest which helps to make such a place as Unzen in Southern Japan so delightful as a holiday resort is the presence in the most unexpected places of small images of, and to, the God Jizo, or, to give him his full title, Jizo-sama. One is used to shrines, to wayside images and to temples, but these little images seem to possess a charm peculiarly their own. As a rule they are not much over a foot in height, but, as they repose on pedestals some three or four feet high, they meet one at turns in the path through the woods in a manner that seems to remind one more of Puck and of Oberon than of a minor Buddhist deity. The pleasant, one is tempted to say smiling, face of Jizo is to be seen in almost any part of Japan, and that without entering a temple, because, since he is the traveller's god, his image stands by the wayside to comfort and cheer pilgrims and wayfarers.

More than this, however, Jizo is the god of the little children, their protector and guardian even before they are born, and, should they die as children, he is father and mother to them in the regions beyond. His pilgrim's staff and wide sleeves serve to protect and shelter all those who need his help: he is the most loved of all the gods, and, in spite of the fact that Jizo-worship is Buddhist in essence, any likeness which it may at one time have had to other outward signs of this faith have long ago vanished and his whole significance is now essentially Japanese.

Now, while the unexpected sight of these charming little gods is a little out of the ordinary, a still more unusual sight is that of the great heaps of stones by which they are frequently surrounded. The heaps follow no set pattern, they are of all shapes and sizes: they lie on all sides of and even on top of the images, being deliberately placed there. In fact, as one of the illustrations shows, when occasionally the weather or some accident causes a Jizo to lose his head—literally speaking—it is replaced by a very large stone of approximately the same dimensions. It is somewhat difficult to find out the reason for this, and the usual reply given to the inquisitive is merely that it helps the children.

JIZO, THE PROTECTOR OF CHILDREN

No one seems to know just how the custom of piling up these stones originally began, though it is possibly based on a passage from the Saddharma Pundarika (Sanskrit) which tells how the little boys who erect heaps of sand dedicated to the Ginas have all "found enlightenment." Even Jizo has been identified with Kshitegarbha (also of the Sanskrit), but there can be no doubt that the whole idea of Jizo as the lover and playfellow of dead children originated in and belongs to Japan. In fact the first record of it appears to be in a book written by a priest Kuya Shonin in the first half of the tenth century.

In order to get to the real root of the matter we have to try and trace what happens to the children when they die, and here we find a charmingly pretty little story possessing all the simple beauty of the old myths of the past. The belief is that the souls of these little ones go down to the "Dry Bed of the River of Souls," Sai-no-kawara, which is a lonely and desolate place, full of sharp stones and without trees or flowers. Here they are apt to pine for their loved ones left behind in the world above, and, as might be expected, the tears drop very freely. At this point the beautiful smiling face of Jizo appears, his lovely coloured robes make a splash of warm bright colour in the drabness of the grey gloom. He comforts the children, plays with the little ones, and allows them to hide in the capacious sleeves of his gown.

So the children are made glad, and once more proceed happily to build the stones from the river bed into heaps, each heap being a prayer, one for father, one for mother and one for each of the brothers and sisters. All this is very nice, but, naturally, there are evil ones prowling about, the Oni, ugly red-eyed spirits of evil who dislike seeing the children so happy and who are afraid of the charms wrought by the stone heaps. One of their pleasures, then, is to approach when the children are happily playing at their work to frighten them away, and, much worse, to destroy the stone heaps. Frightened and distressed, the children run away, pursued by the demons. Just as the latter are about to catch up with the terror-stricken children, Jizo appears, calm and dignified. With his pilgrim's



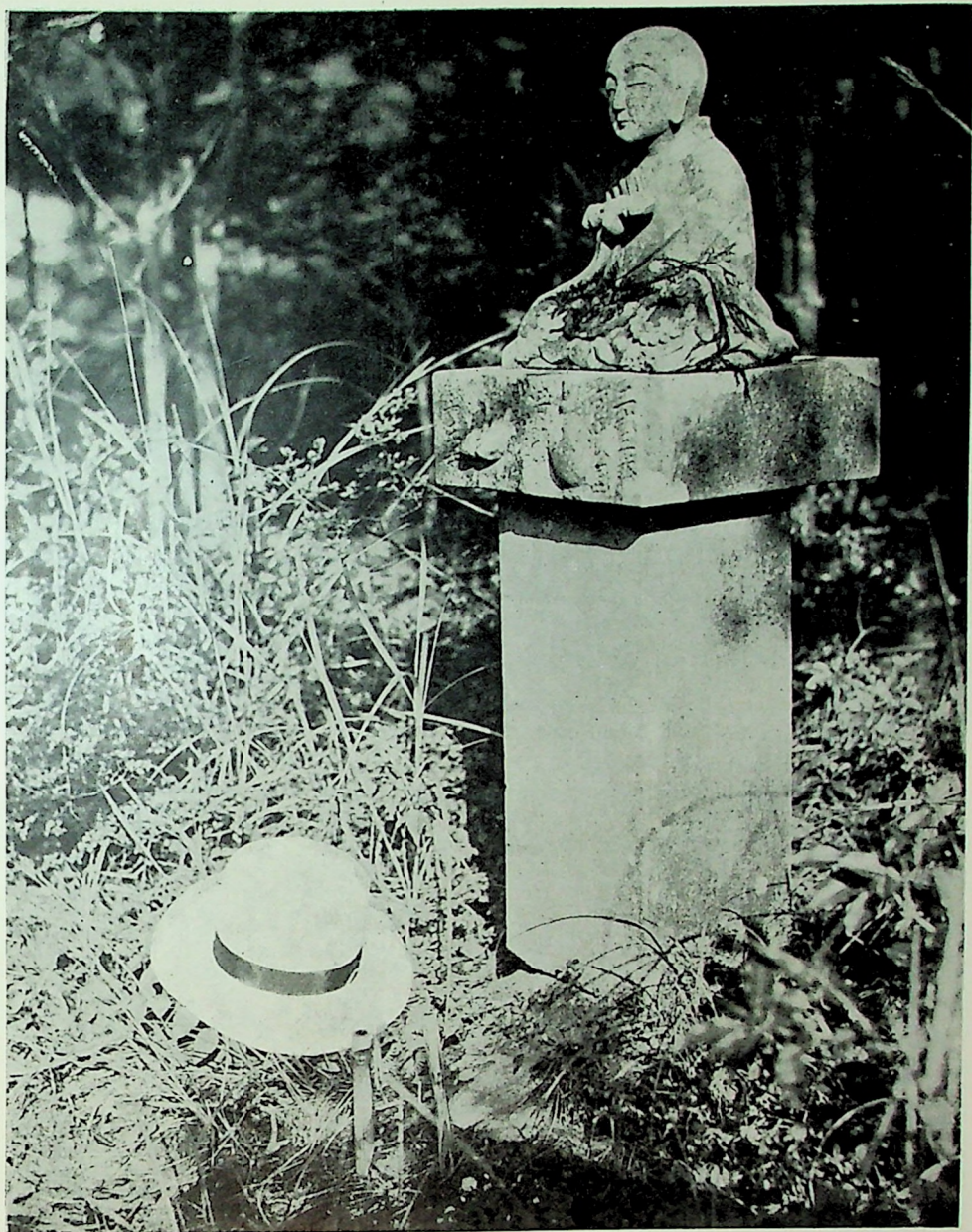
staff he wards off the evil ones, who perforce slink away, while his wide sleeves once more afford sanctuary to the children. Happy and comforted, they again start to play, Jizo staying with them and joining in all their games.

A striking passage from Lafcadio Hearn would not be out of place here. He says, "Farther on I find other figures of Jizo, single reliefs sculptured upon tombs. But one of these is a work of art so charming that I feel a pain at being obliged to pass it by. More sweet, assuredly, than any image of Christ, this dream in white stone of the playfellow of dead children, like a beautiful young boy, with gracious eye-lids half closed, and a face made heavenly by such a smile as only Buddhist art could have imagined, the smile of infinite lovingness and supremest gentleness. Indeed, so charming the ideal of Jizo is, that in the speech of the people a beautiful face is always likened to his—Jizo-kao, as the face of Jizo."

Another legend which might account for the piling up of stones on the images of Jizo is that of the Sodzu-baba witch or hag. Sodzu-baba stands on the left hand of Emma-0, Lord of the Shadows, Judge of the Souls, King of the Dead, while on his right, on a rosy-hued lotus stands Jizo-sama. Sodzu-baba takes away the clothes of those who enter the river of Three Roads, flowing forever through the dark underworld of the dead. Her eyes are cold and hard. Her face and her gaunt tall figure, strangely wrinkled, are in striking contrast to the calm beauty of the Protector of the Children. Actually what happens is that she only takes the clothes from such as cannot pay her the requisite dues, and the trees near her den are decked with these somewhat useless trophies. Now the children when they die do not go to the district where she generally is, so that she goes out of her way to come to them, and, once arrived, sets them the endless task of piling up stones from the Dried Bed of the River of Souls, their only reward being the negative one of knowing that she will most certainly take their clothes unless they do this.

The connection with the practice of loading earthly Jizos with stone will be readily seen. In the first story the heaps are prayers or charms that Jizo might help and be specially gracious to some departed little one, while in the second it is presumed that stone heaps built on earth will count, as it were, towards the total of some little heartbroken infant who is vainly trying to prevent the Sodzu-baba hag from taking its clothes.

At Kaka-ura is what is known as the Cave of the Children's Ghosts, a most inaccessible place, which can be reached only in the calmest of weather. Entering the cave from the sea, a most beautiful cave through the clear translucent waters of which it is possible to see the rocks on the ocean bed many feet beneath, away up near the roof a white rock projects from the wall, and above the rock again there is an opening from which a small stream drips. In itself this is nothing unusual in a cave, but the extraordinary thing about it is that that water, or liquid, is as white as the rock, or at least at that height it gives the impression of being so, a fact which has given rise to the story that this is the Fountain of Jizo, a fountain of milk, placed there to supply the needs of the dead children. Varying in the rate of flow, it never



JIZO-SAMA, PROTECTOR OF CHILDREN

One of the picturesque little Images which are to be found scattered about the Unzen District in Southern Japan, apparently at Random. The Hat in the Foreground serves to give an Indication of the Size of this little God.

Photograph by H. Crozier-Faulder.



Complete with Clothes, Jizo-Sama stands in a Row of Images in a Japanese Garden. He is the special Friend of little Children who have departed this Life.



A Group of small Statues and Gods. The Manner in which the Stones are thrown in an Effort to cause them to balance on some Part of the Images can be clearly seen,



A newly-erected Image of Jizo-Sama keeps Watch over the largest of the Hot-springs at Unzen, South Japan.



A Group of "Children's Gods" along a Roadside in Southern Japan.



A rather Special "Children's God," dressed in Cap and Red Coat, here stands beneath a Young Pine surrounded by Stones which well-meaning Passers-by have thrown on to the Pile in order to help the Spirits of deceased Children, whose great Friend in the Other World is Jizo-sama.

Photograph by H. Crozier-Faulder.

actually ceases, and is worshipped by the peasants and fishermen and more particularly by mothers and those who are soon to become mothers.

Far in the depths of the cave there stands a grey smiling image of Jizo, surrounded by countless heaps of stones piled there at the cost of much time and labour. The generally accepted belief is that the heaps are made by the dead children, because is not this the cave of dead children? And visitors have to walk with the utmost care so as not to disturb these little heaps. In spite of every precaution, however, it is impossible occasionally to avoid disturbing a pile, and, if this happens and the heap tumbles down, it is necessary to build two to replace the one overturned, or the spirits of the departed children will cry during the night.

The outstanding sight in the cave, however, is afforded by the footprints in the sand, the marks made by the dead children. Whatever they may be, there can be no doubt that they really do exist, and, what is more, they vary in number from time to time. Small footprints, three or four inches long, and apparently made by very young children, they are said to be made by the infant ghosts who come there each night to play and to rebuild any of the stone heaps which may have been washed down by the tide.

The story has it that during storms the great waves come sweeping right into the cave with terrific force, that they have even broken off the foot of the Jizo and that they always wreck the little stone heaps and scatter them in all directions. The beautiful part about the story is that, no matter how violent the storm, by the next morning after it, all the stone heaps have been replaced at infinite labour. The children work only at night; in fact, it is even said that the small heaps are changed every night, but that fear of the Lady Sun prevents them from working during the day.

The *wasan* of Jizo, a psalm or descriptive hymn, which is called "The Legend of the Humming of the Sai-no-kawara," is frequently heard in this cave. Sai-no-kawara is the shadow world where children, and only children, go, and the humming is caused by the murmuring of the little ghosts as they go about their play or fly terrified from the evil spirits of the place to the arms of Jizo.

Such are the stories, but there is still a further and probably unique feature to be observed about many of the Jizos along the wayside, where it is by no means unusual to find them dressed up in clothes like dolls, and even at times to find them with their faces painted red. Some of the accompanying illustrations make this quite clear. Behind this again lies the inevitable story, whose origin is lost in the dim and distant past, yet which is still potent in its effect on the people. We are told that a poor Japanese woman who earned her living by making silk once went to the temple to pray. While she was there she saw the image of Jizo, and fancied that he looked rather cold, which was more than likely to be the case! In common with most of the other people, she loved this little god, so, once arrived home, she made him a small cap, returned, and placed it on his head, saying as she did so that, while the gift was

little fit for a god, still it was all she had, and, were she able to do so, she would have clothed him in the finest of silks.

Not long after this the woman died, but, strangely enough, her body remained warm, so that she was not buried. Her friends were more than glad when on the third day she came to life again, well and whole. To a wondering audience she told how her soul had been taken before the fearful Emma-O, Lord of the Dead, and how he had frowned on her and bid his servants cast her into the great pool of molten metal which stood by, as a punishment for her having killed silkworms.

The order was carried out, and the woman screamed in her mortal anguish as the hot metal closed about her. Suddenly it became cool and pleasant to the touch, all pain ceasing, while above her the woman saw the gently smiling face of Jizo, who took her out, led her before the great Emma-O and pleaded with him so earnestly that at last he allowed the woman to go back to earth and her friends.

Now, although the image of Jizo is common to many parts of the Japanese Empire, it seems to be a particular favourite for some reason or other in those districts where hot springs abound, and there are, in addition to the ordinary ones, several more notable Jizos around which legends and stories have grown. One of the most famous of these is near Koshu. Here a curious rocky pinnacle rises on the eastern side of Shirane Ridge called Ho-wo-zan, or Phoenix Peak, though to the peasants the point is known as Jizo-butsu. This would appear to be because the great wedge of split granite, which must have been reared up there in some remote age by a sudden convulsion of the earth's crust, reminds them of the wayside image of their beloved little god. Naturally a legend has grown up round the peak, and it tells us that the spirit of Jizo was walking along the ridge before there was any such peak, and that the spirit became petrified in that exact spot, hence the likeness. That the rock is extremely holy can be judged by its name, Ten-sho-ko Daijin, meaning the "Heavenly Shiner Goddess," which again goes back to Amaterasu-no-mikoto, or the Sun Goddess of Japan's earliest myths.

Agonashi-Jizo is another variation of the same divinity, this time specialising in the cure of toothache. Without going further into the question of how such cures are effected, or supposedly effected, the original story of Agonashi-Jizo has such a very human side to it that it will certainly bear repeating. It would appear that, god or no god, though to be strictly fair it was during one of his earthly incarnations, Jizo had a toothache, one of the kind that fairly sizzles. So dreadful did the pain eventually become that he tore his lower jaw completely off and threw it away—a very definite application of the old adage of cutting off one's nose to spite one's face. But, as he no doubt remarked at the time, he had at least got rid of the toothache!

Now, although as we have stated, Jizo is, first and foremost, the Protector of the Children, he is also the god of the wayfarer—which accounts for the staff he frequently carries in his hand—as well as being the god of the expectant mother. In this connection one can meet, though it is only on the banks of some distant lonely stream, another

appeal to the living for charity for the dead. Here across the stream is stretched a piece of white cloth, held in place on the top of four stakes. Near it on a rough wooden tablet is the name of a woman who died with her baby, and whose soul now waits to be released to enter into its rest. This cannot be until the cloth is quite worn through, and, in order to do this, a wooden dipper is placed near, by means of which water is poured on to the cloth, in time wearing it through. As the passerby helps the weary soul on its way to peace, a short prayer is said, and the ritual is complete.

It is said that the poetry of the custom at least is somewhat spoiled by the fact that rather mercenary priests control the sale of the cloth, so that if one is rich and can pay, a thin and well nigh rotten piece will be served to one, but if one's loved ones be but poor and unable to pay, then a good stout piece of sail cloth is probably the best that can be supplied.

In conclusion it might be added that such minor dieties as Jizo are not so much gods in the full sense of the word, as the personification of the attributes of a god, such as, in this case, the love of little children, and that as such they are entirely personal deities. Actually, though undoubtedly Buddhist in conception, the actual sub-section to which Jizo belongs is open to some doubt, though it seems fairly likely that he is a Bodhisattva of the Nicheren sect, which means that, after one more incarnation into human form, he will be qualified to attain full Buddhahood.

POSSIBLE REFERENCES TO CHINESE ALCHEMY
IN THE
FOURTH OR THIRD CENTURY B. C.

BY

WILLIAM H. BARNES

In the writings of Chuang Tzu (fourth to third centuries, B.C.), one of the most celebrated and ablest of the early exponents of Taoism, there occurs the following curious passage:

"Kû Phing-man learned how to slaughter the dragon from Kih-li Yi, expending (in doing so) all his wealth of a thousand ounces of silver. In three years he became perfect in the art, but he never exercised his skill."*

On this passage Dr. Legge comments as follows:

"'Slaughtering the dragon' means 'learning the Tao,' by expending or putting away all doing and knowledge, till one comes to the perfect state of knowing the Tao and not speaking of it".*

*Legge, Jas., *The Texts of Taoism*. Part II, p. 206, (Vol. XL of the *Sacred Books of the East*, edited by F. Max Müller), Oxford Univ. Press, 1927 (from sheets of the First Edition, 1891).

In view of the data on Chinese alchemy* which have emerged in large part since this translation was made the question of a possible alchemical interpretation appears to be of some interest and importance.

"The earliest reference to alchemy in any literature" is Chinese and dates from the first century A.D. or the first century B.C. (2 e, p.76; 2 f, p.3). Mr. Waley considers the former period as the more probable.

"The earliest treatise entirely on alchemy with which we are at present acquainted" also is Chinese, namely, the Ts'an T'ung Ch'i of Wei Po-yang, and was written probably in the second century A.D. (2 f; 2 g, *Isis*).

Both of these texts imply a well-established art, which is believed to have arisen about the end of the fourth or the beginning of the third centuries B.C. (2 i, p. 656).

Furthermore, there is abundant evidence for the close association of Taoist and alchemical aspirations and practices. In fact the Taoist writings are one of the most fruitful sources of Chinese alchemical literature.

In so far, then, as historical period and philosophical setting are concerned there appears to be nothing inherently improbable in a veiled reference to an alchemical art in the writings of Chuang Tzu.

Dr. H. A. Giles' version (3, p. 427)** of the passage under discussion is that:

"Chu P'ing Man spent a large patrimony in learning under Chih Li I how to kill dragons. By the end of three years he was perfect, but there was no direction in which he could show his skill."

Dr. Giles agrees with Dr. Legge that "to kill dragons" means "to acquire Tao."

I have been given to understand, however, that the modern Chinese dictionaries define "killing the dragon" in the sense of "reaching after that which is well-nigh unattainable," which consequently must include the Tao without, however, precluding other goals. The elixir of immortality and the drug of transmutation were, inherently at least, as impossible of attainment as the Tao.

The "dragon" appears in at least ten of the sixty-nine sections into which Professor Davis and Dr. Wu have divided their rendering of the Ts'an T'ung Ch'i (2 g, *Isis*). Twice it is "blue", once "grey", and at other times unqualified. It has not been possible to identify the "dragons" of Wei Po-yang, except that in one place he refers to them as *yang* in contrast to the "tigers" which are *yin*.

* See, for example,

(a) Edkins, J., *Trans. China Branch, Roy. Asiatic Soc., Hong Kong*, pt. 5, pp. 83-89 (1855).

(b) Martin, W. A. P., *The Lore of Cathay*, Chap. 3, "Alchemy in China" (Fleming H. Revell, Co.), New York, Chicago, Toronto, 1901, pp. 44-71.

(c) Partington, J. R., *Nature*, 119, 11 (1927); *Nature*, 120, 158 (1927).

(d) Read, B. E., *Nature*, 120, 877 (1927).

(e) Johnson, O. S., *A Study of Chinese Alchemy*, (Commercial Press), Shanghai, 1928.

(f) Waley, A., *Bull. School of Oriental Studies*, 6, 1-24, 1102-1103 (1930-32).

(g) Davis, T. L. and Wu, L. C., *Scientific Monthly*, 31, 225-235 (1930); *J. Chem. Ed.*, 9, 859-862 (1921); *Isis* 18, 210-289 (1932).

Davis, T. L., *J. Chem. Ed.*, 11, 517-520 1934; *J. Chem. E.*, 11, 635 (1934).

(h) Forke, A., *Archiv. f. Gesch. d. Philosophie*, 41, 115-126 (1932).

(i) Barnes, W. H., *J. Chem. Ed.*, 11, 655-658 (1934).

** Giles, H. A., *Chuang Tzu*, 2nd Ed., (Bernard Quaritch), London, 1926.

REFERENCES TO CHINESE ALCHEMY

A plausible interpretation of Chapter 33 of the Ts'an T'ung Ch'i (2 g, *Isis*, p. 243) is that the "dragon" and "tiger" are confined in the furnace and treated with fire, until, "As the breath expires, life is ended, Death expels the spirit....The *huan-tan* (Returned Medicine) is obtained." (i.e. the pill of immortality). This procedure apparently involves a "slaughtering" of the "dragon" (and the "tiger"). In Chapter 50 (2 g, *Isis*, p. 253) the dragon and the tiger "eat and devour one another." During another description of the process (Chapter 41) (2 g, *Isis*, pp. 246, 247) the dragon plays an important (apparently a sometimes malignant) part, now in hiding, now making an appearance, then stirring, and, finally, at the height of its power, fighting with *Tê* (magnanimity—virtue).

Admitting a possible difference in time of about five centuries, may not the term "slaughtering the dragon" have been employed by Chuang Tzu synonymously for "learning the Tao" and for the attainment of perfection in alchemy, and thus be similar to Wei Po-yang's use of the Taoist designation, "Huang-Lao," for alchemists? (2 g, *Isis*, pp. 239 272). We know from Dr. Legge (1, p. 10) that "Huang-Lao" was a combination and contraction of the names of Huang-ti and Lao Tzu, traditional founders of Taoism, and, as such, served to denote the system or the texts of Taoism.

It is tempting also to draw analogies between the "slaughtering" of the dragon in this quotation and the "killing" of meals* referred to by Western adepts, although admittedly animism never reached the involved and comprehensive stage in China which it did in Europe.

According to Dr. Legge's rendering of the passage the "art" of "slaughtering the dragon" apparently required the expenditure of time and money, and a certain "skill" was acquired which could be exercised or not as desired. But the attainment of the Tao involved mental rather than monetary efforts (unless, of course, travel and the purchase of books were involved), and the general impression conveyed by Lao Tzu and Chuang Tzu is that, once attained, it became embodied in oneself rather than being a "skill" to be exercised or not as one wished. In the writings of Lieh Tzu (to whom further reference is made below), however, we are told that, "the Master is able to do these things" (i.e. certain miraculous feats such as "passing through solid metal and stone, walking in the midst of fire or on the surface of water, because he is in possession of Tao), "but he is also able to refrain from doing them." (5, 6. 50).**

On the other hand, if the quotation be a reference to alchemical practices, it must be admitted that it stands alone in the writings of Chuang Tzu, apart from certain references to the miraculous results and longevity attendant on the attainment of the Tao which can hardly be claimed as alchemical in the usual sense of the term.

The purpose of the present note is simply to draw attention to the passage without making any claims either for or against its acceptance as a reference to alchemical practices in the hope that some sinologist may be sufficiently interested to re-examine it in the light of present

* See for example, Mercer, J. E., *Alchemy, Its Science and Romance*, (Soc. for Promoting Christian Knowledge), London, (The Macmillan Co.), New York, 1921. Part II, Chapter III, 'Alchemy and Animism,' pp. 100-112.

** Giles, Lionel, *Taoist Teachings from the Book of Lieh Tzu*, (John Murray), London, 1912.

data regarding Chinese alchemy. Chronologically at least it is suggestive enough from the point of view of the student of the history of alchemy to warrant such re-examination at this time.

I am aware, of course, that Chapter 32 ("Lieh Tzu"), in which the passage under discussion occurs, is one of the "doubtful" sections of Chang Tzu's text. I am also cognisant of the conflicting opinions regarding the real historical existence of Lieh Tzu. For example, Dr. H. A. Giles (3, p. 423)* says that it is extremely doubtful if such a person ever lived, that he may be only an allegorical personage created by Chuang Tzu, and that his "Works" generally are regarded as a forgery, whereas Mr. Lionel Giles believes that "although Lieh Tzu's work has evidently passed through the hands of many editors and gathered numerous accretions, there remains a considerable nucleus which in all probability was committed to writing by Lieh Tzu's immediate disciples" (5, p. 13) — a statement which implies a belief in the whilom existence of Lieh Tzu. Furthermore I note that Mr. Waley states that, "Lieh Tzu, it is generally admitted, is certainly not earlier than the second half of the third century B.C."** This is early enough, however, to make any possible reference to alchemy connected with Lieh Tzu's name of importance.

In this connection I wish also to draw attention to two passages in the writings of Lieh Tzu, which, perhaps, imply an alchemical art directed towards the goal of immortality. Both are to be found in Book I ("Cosmogony").†

The first (5, p. 24; 8, p. 10b) is as follows:

"That which has life must by the law of its being come to an end; and the end can no more be avoided than the living creature can help having been born. So that *he who hopes to perpetuate his life or to shut out death* is deceived in his calculations."

Mr. Lionel Giles says that this "leaves little doubt as to the light in which Lieh Tzu would have regarded the later Taoist speculations on the elixir of life" (5, p. 15). Is it possible, however, assuming the antiquity of Lieh Tzu to be a fact, that he was familiar with alchemical practices already in existence?

The second passage (5, pp. 22, 23; 8, p. 6b), if it is not a later interpolation, appears to me to prevent an immediate negative to this question. Lieh Tzu, on being shown a skull lying by the roadside, is reported to have said to his disciple, Po Fêng, "That skull and I both know that there is no such thing as death. This knowledge is better than *all your methods for prolonging life*, a more potent source of happiness than any other."§

Summarising the above, I should be grateful for any light which can be thrown on the following questions, which, as a chemist profoundly interested in Chinese alchemy and its relationship, if any, to the Western art, I pose with some diffidence to the sinologist:

(1) Is the passage from Chuang Tzu a reference to alchemical practice?

* Giles, H. A., *A Chinese Biographical Dictionary* (Bernard Quaritch), London, (Kelly and Walsh, Ltd.), Shanghai and Yokohama, 1898, p. 482.

** Waley, A., *Bull. School of Oriental Studies*, 7, (Part 3), 717 (1934).

† Lieh Tzu, *chüan* 1, section 1, Gest Chinese Library No. 339.

§ The italics in this and the preceding quotation are mine.



Examples of Abyssinian Pictorial Art reproduced here by Courtesy of the *North China Daily News*. They show above the Eternal War between Good and Evil, on the Right Adam and Eve being driven from the Garden of Eden and below the Madonna and Child.



These Pictures were secured by Dr. Walter Fuchs of Shanghai while on a Visit to Addis Ababa some time ago, and it is by his kind Permission that they are reproduced here.



A Picture of a Household Scene in Abyssinia. The Lord and Master and his Lady Wife are seen in the Top Left of the Picture, below them is the Daughter, in Front of whom kneels a Priest. Other Figures are a Servant carrying an Ewer and Bowl, a Servant Flogging a Slave, a Slave making Bread and a Nurse with a Child.

A Royal Procession in Abyssinia. In Ethiopian Art good People are depicted Full Face and bad in Profile. From this it will be seen that only good People make up the Members of this Procession.

- (2) If so, to what approximate date should it be assigned?
- (3) Are the two passages from Lieh Tzu references to an alchemical art?
- (4) If so, to what approximate dates, if any, can they be assigned?

ART NOTES

Abyssinian Art: Although Abyssinia has been occupying headlines in the world press for the past few weeks, it is surprising how little we know about this country perched high up in the mountain massif of (and here we have to refer to the Atlas to make sure we are right) Eastern Africa. This makes the more interesting anything that may throw light upon the life and culture of a people with whom, it is to be feared, a highly civilized and well organized European state is in momentary danger of becoming involved in a bloody and savage war.

Thus a distinct debt of gratitude is owed to the *North-China Daily News*, leading daily newspaper in the English language in Shanghai, for publishing an article in its issue of July 22, describing an ancient Abyssinian Bible owned by Dr. Walter Fuchs of Shanghai, who acquired it in 1923 during a visit to Harrar in Eastern Abyssinia, as well as for reproducing some Abyssinian pictures in that issue of the daily paper and in the Magazine Section of July 28. By courtesy of the *North-China Daily News* we are able to reproduce some of these pictures here, and from them may be gathered a vivid impression of the very backward state of Abyssinian pictorial art. The Bible in question was produced in the seventeenth or early in the eighteenth century. Referring to the artistic expression of the Abyssinians the article runs:

"As far as art was concerned the Ethiopians for many centuries adhered strictly to the second commandment:— 'Thou shall not make unto thee any graven image, or any likeness of anything that is in heaven above, or that is in earth beneath, or that is in the water beneath the earth.'

"Art nevertheless always was exercised clandestinely and in the fifteenth and sixteenth century a secret academy for artists was established in Gondar. There severe rules were elaborated, most of them unexplainable. Favourite subjects are biblical scenes and war pictures.

"Even to this day 'en profil' is reserved for the enemy, the criminal, the devil, the low animal and, from the time of the battle of Adowa, the Italian, whereas the Abyssinian, the friend, the saint, and the angel have the irrevokable right of the reproduction 'en face.'

"In Abyssinian art it also is the rule to make big men big, small men small, with no thought in regard to the perspective. This perhaps is explainable by the Egyptian influence. After the Abyssinian victory over the Italians in the battle of Adowa in 1896, artists were allowed to produce, especially if they centred their efforts on pictures of the battle."

It is remarkable how much some of these Abyssinian pictures are reminiscent of the religious art of the Middle Ages in Europe, but this, perhaps, is due to a common subject rather than any effect of influence. The definite backwardness of Abyssinian pictorial art must be traced to the fact that the making of graven images was forbidden by Biblical Law, by which Ethiopia is still governed.

Ancient Jade Ceremonial Knives:

Amongst the antiques which the Chinese have always valued are certain jade knives which had a ceremonial purpose in the early dynasties of this country. Very little has been written in English about these interesting objects, which are to be found in many collections of antiques in China, and in some collections in foreign lands. The late Dr. Berthold Laufer, in his "Archaic Chinese Jades," which describes a collection made by Mr. A. W. Bahr in China and now housed in the Field Museum of Natural History, describes and depicts some of these ceremonial weapons or implements dating from the Chou and Han periods.

In the accompanying illustrations we here show three of these ceremonial knives, one, the lowest figure, supposed to be of the Shang Dynasty period, which preceded the Chou, the other two of the Chou period. Exactly how those objects

were used is not known, but it is believed that they were held in the two hands in front of the face during audiences, and were symbolical of the rank of the user. They have been found in ancient graves, having been buried with their original owners.

Stone Sculptures in Peking: Many visitors to Peking will have been struck with the numerous beautiful examples of stone carving and sculptures the ancient capital has to offer. In the accompanying illustration are shown a few of these photographed by Mr. Lee Shao Chun of Nankai University, Tientsin. As the location of each is given in the caption there is no need to refer to them individually here, though it is interesting to note that the carving of the Pai T'a, or White Pagoda, is attributed to the K'ang Hsi period, being briefly referred to by George Soulié de Morant in his work. "A History of Chinese Art," translated by G. C. Wheeler and published by George G. Harrap and Co., Ltd., a few years ago.

Chinese Art Exhibits Reach England:

That the Peking Palace Museum art treasures destined for exhibition in Burlington House next November to March had arrived safely in England was the gist of a *Reuter* message dated July 25. The treasures, packed in a hundred steel cases for the voyage, were transported to Portsmouth from Shanghai on *H.M.S. Suffolk*, which left the latter port on June 8.

The message states that Dr. W. C. Chen, counsellor of the Chinese Embassy in London, Sir Stephen Gaselee, keeper of the papers at the Foreign Office, and Mr. Lamb, secretary of the Royal Academy, motored to Portsmouth to greet the arrival of the British cruiser with her precious cargo. The exhibition, it is hoped, will be opened by Her Majesty Queen Mary, who is very interested in Chinese art, and has a valuable collection of art objects from this country in her two large "Chinese Rooms" overlooking the Mall in London.

A. DE C. S.

THE LIBRARY

Kuling Library Completed: News is to hand of the completion of the building for the big library, which is being established at Kuling, the famous summer resort, by the Kiangsi Provincial Government for the purpose of providing a place of research and general study for those who spend their summer vacation there. The library now only awaits the installation of interior equipment and the arrival of books to be opened to the public.

Research Library at Vladivostok:

Containing about forty thousand volumes, a great number of manuscripts of Burian tales embodying ancient information about the region, and full sets of Far Eastern newspapers going as far back as 1885, a fine library has been opened recently to the public in Vladivostok, says the *North-China Daily News* of July 28.

This institution will prove of the greatest value to research workers on Far Eastern regions.

Valuable Volume Returned to China:

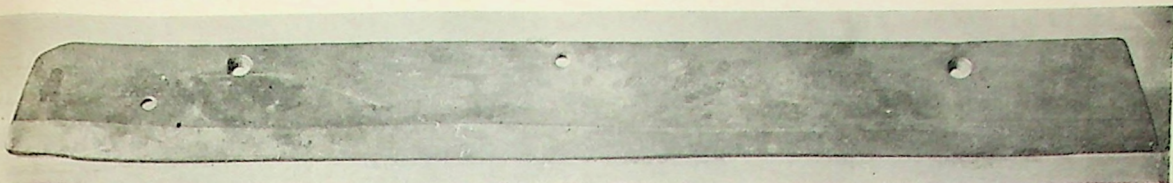
According to a report in the *Peiping Chenpao*, a valuable volume of the early history of the Ch'ing or Manchu Dynasty has recently found its way back to Peking, whence it was taken by a British officer during the Boxer Rebellion in 1900. It is stated to be the only copy in existence, and will be placed in the Palace Museum. No details are given as to how or by whom this interesting book has been returned to China. Incidentally, there must be many such books, taken from the country at different periods of crisis by foreign soldiers, knocking about in libraries in Europe and America, and it would be a good idea if these could be located and recovered for China.

REVIEWS

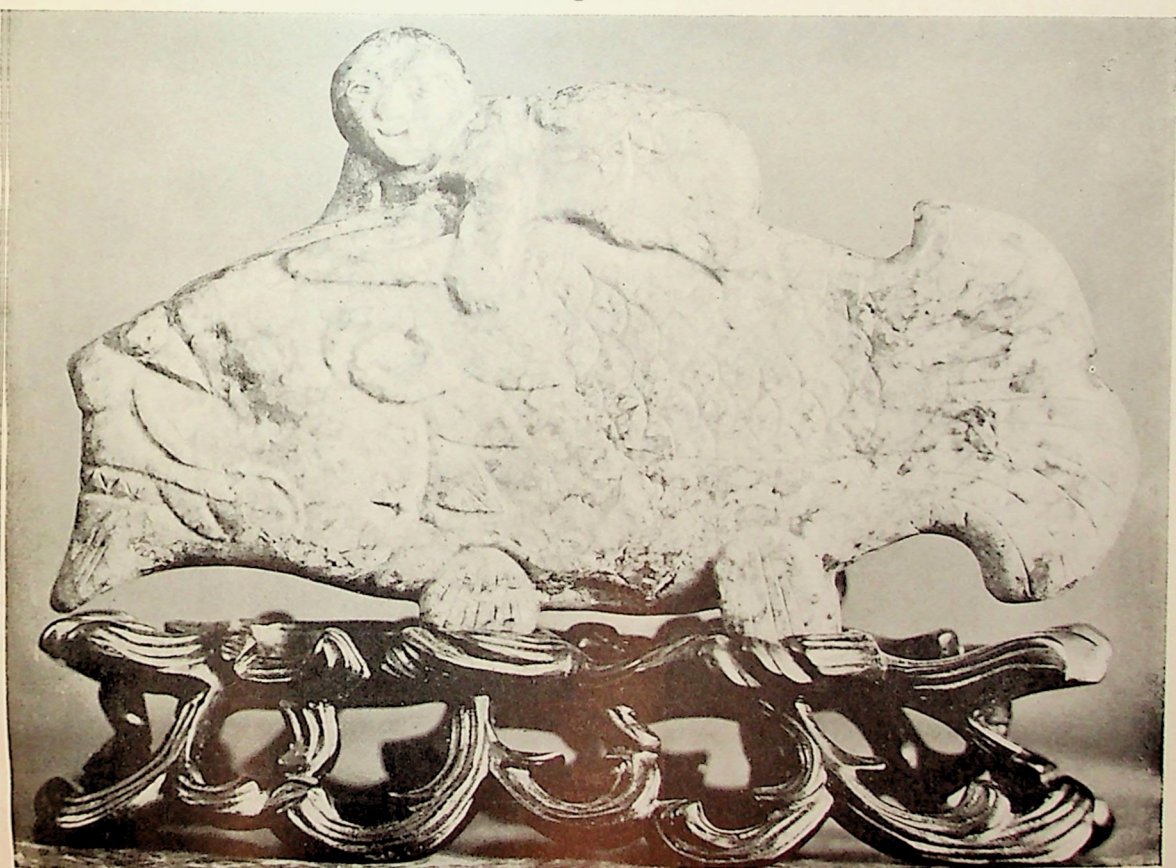
Chinese Calligraphy, by Lucy Driscoll and Kenji Toda: The University of Chicago Press, Chicago, U. S. A. Price G.\$2.00.

Many students of Oriental art and literature have wished for a book on the aesthetic side of Chinese writing, a volume that would give them information

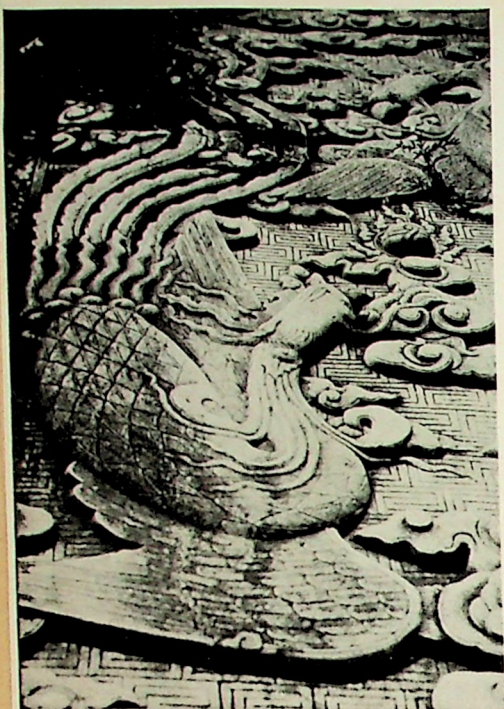
on the laws, principles and ideals of the scholars who for centuries have made the written language of the Middle Kingdom such a living force. For, while there are numerous treatises on the actual mechanical process of putting one's thoughts into print, there has never been a full



Ancient Jade Knives, held by a Minister (top) or the Emperor when in Audience in Chou or Shang (bottom) Times.



A Carved Jade Figure of a Youth Riding a Dragon-headed Carp. Han Period. These Jade Pieces are in a Private Collection in Shanghai.



A Phoenix, or Feng-huang, Carved in Heavy Relief at the Side of the Marble Steps at T'ien T'ai, Peiping.



Stone Carving on the Steps in Front of the Pei Yun Sze, or White Cloud Temple, Peiping. It Represents Cranes Flying in Clouds.

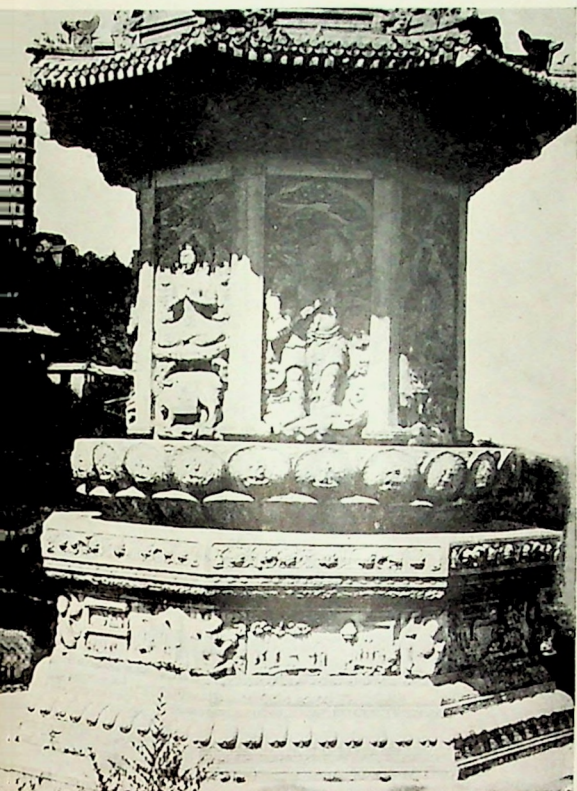


A Lovely Stone Buddha and Detail of Decoration at the Pei Yun Sze, or White Cloud Temple, Peiping.

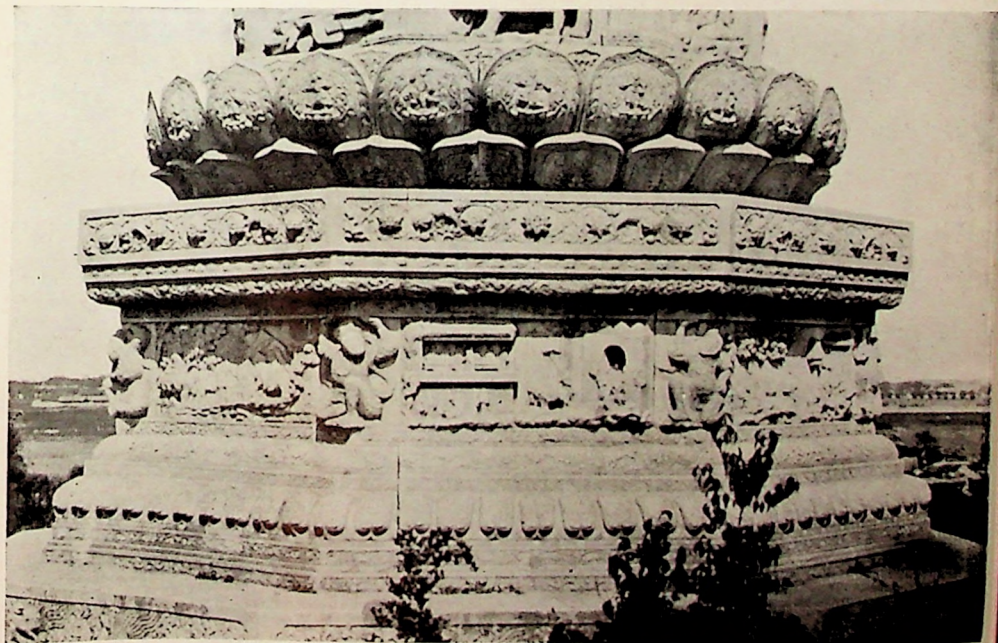


Stone Carving in Marble at the Side of the Steps at T'ien T'ai, Peiping.

OF STONE SCULPTURE
IN PEIPING.

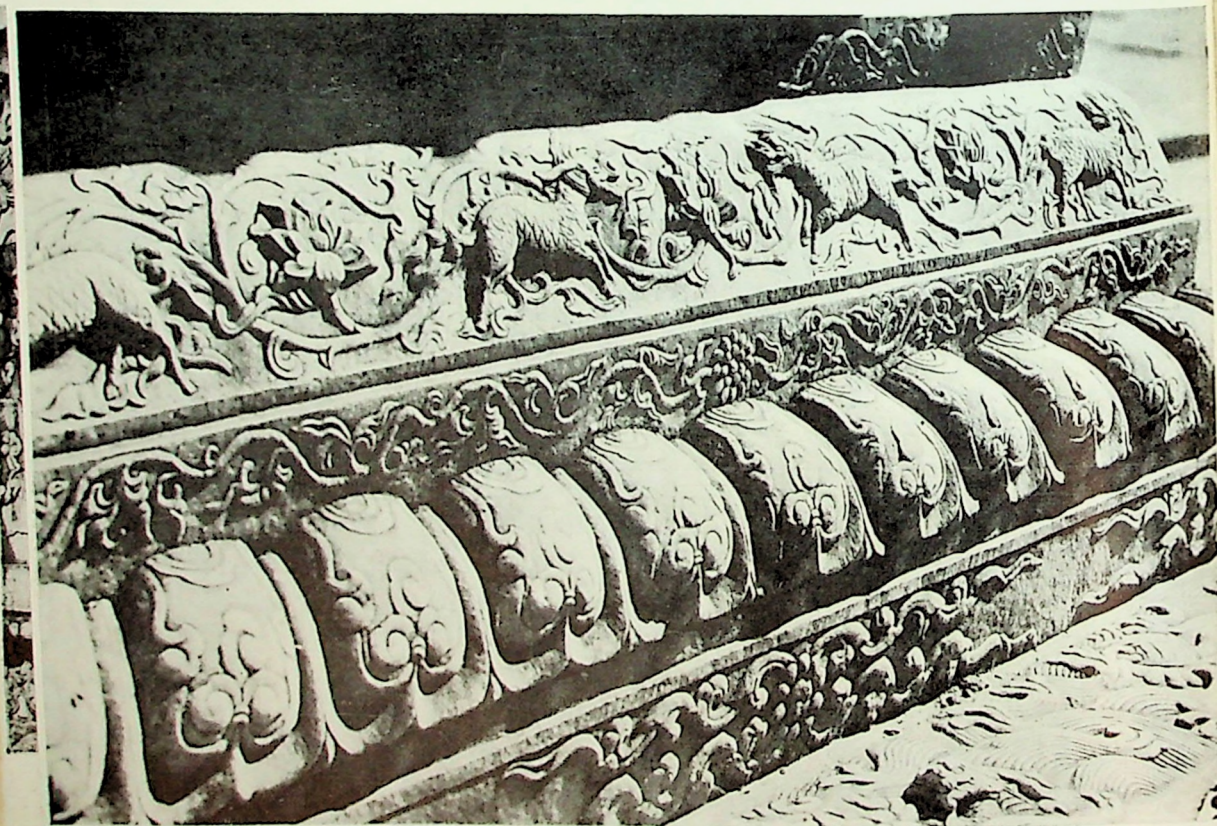


The Shao Pei T'a, or Small White Pagoda, Yellow Temple, Peiping. On the Left and Below are Details of the Carving. This Pagoda was executed in the K'ang Hsi Period of the Ch'ing or Manchu Dynasty.





Some of the Beautiful Stone Sculpture in the Small White Pagoda at the Yellow Temple, Peiping.



Stone Carving at the Pei Hai Kung Yuan, or Pei Hai Park, Peiping.

Photograph by Lee Shao Chun

dissertation on the artistic side. This need has been fulfilled by a monograph entitled "Chinese Calligraphy," which The University of Chicago Press has published for the New Orient Society of America.

The discussion follows an unexpectedly high plane, though it can hardly be termed "high flown." Rather, the subject and its proper treatment call for such a level. Thus we find a description of the eight strokes used in writing the character *yung* (永) occupying more than five pages, and another of "The Nine Forces" taking four. To a person really interested in the subject the book is absorbing. Even to one who is not, it is much more interesting than, with a little less care on the part of the authors, it might easily have been.

The Shanghai Directory, 1935: The North-China Daily News and Herald Ltd., Shanghai.

The mid-year edition of the well known "China Hong List," which is published as a directory of Shanghai only, has recently been received from the publishers, The North-China Daily News and Herald, Ltd. Up to its usual standard of excellence, this year's volume should equal its predecessors in popularity and general utility. The contents are divided into an alphabetical list of business firms, an agents' and trade directory, a Who's Who of maritime officers calling at the port, a Shanghai Who's Who, a street directory, a residents' directory and a list of apartment houses, hotels and boarding houses. The price of this invaluable volume is six dollars without a map of the city, this last feature costing a dollar extra. The whole is well bound and is

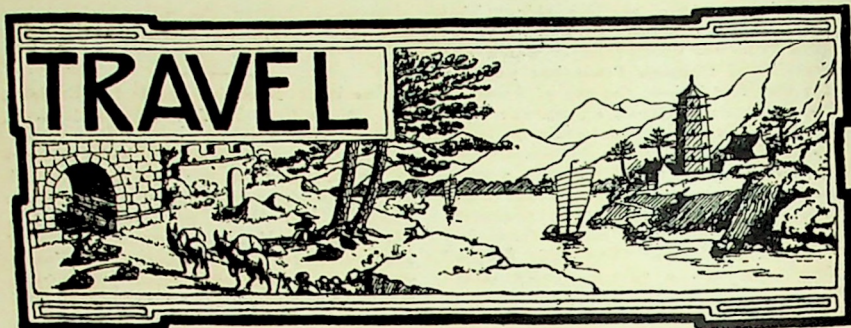
able to withstand the wear and tear of constant use in an office.

S. L.

Fascism: Doctrine and Institutions, by Mussolini: "Ardita" Publishers, Rome. Price, 5s.

At a time when re-born Italy appears to be yearning to try out her strength and seems ready to snap her fingers in the faces of her fellow nations in Europe, this book by Il Duce himself explaining Fascism comes very opportunely. For it stands to reason that most people who follow the course of world events and affairs must be interested in knowing just what it is that has, in the two decades since she entered the World War on the side of the Allies, made Italy a power to be reckoned with. They will find the information they seek in this well and lucidly written book on Fascism. The subject is too vast to be dealt with adequately in the space we have here at our disposal: it would require a review of several pages' length. An idea of the book's contents may be given, however. It starts off with a chapter in which the "Fundamental Ideals" of Fascism are laid down, ideals which show that this system of state government is a vital spiritual force expressing itself in energetic action on the part of the individual for the good of the whole community. Next comes a chapter on "Political and Social Doctrine," explaining the doctrines of Fascism. Then come several speeches made by Mussolini. The rest of the book, and by far the greater part, is devoted to the "Fundamental Laws of Fascism." Here the diligent reader will find just how the Fascist State operates.

A. de C. S.



THE DEVILS DINE

BY

MARION H. DUNCAN

The shrill blare of thigh-bone trumpets and the weird braying screech of white left-whorled conch shells from the roof of the whitewashed temple sounded to the most remote ravines of the spindle-shaped valley. White clouds of incense spiralled skyward. We had been waiting for those notes and watching for that smoke. Our Tibetan teacher led us with quick steps a half mile from our home to the temple.

"How big a ceremony is it?" I got breath to ask as we slowed up near the gate to enter in more dignified fashion.

"Not very big; not over a half of the monks, perhaps a hundred, are in the temple, as it takes a hundred rupees to get the whole two hundred monks in a service. They have to have at least ten rupees for this kind of a service, which pays for the minimum number of priests to exorcise the spirits. A half to a whole rupee a day is what each monk gets," the courteous Tibetan explained.

An epidemic of relapsing fever had been ravaging the valley, carrying off those who did not come in time to obtain the injection of "Neosalvarsan" from the missionary doctor. Some had faith in medicine, but most clung to the old notion that disease was the work of evil spirits who must be invoked to cease their work of destruction. Offerings to the disease devils were often made in ordinary times, but the epidemic had multiplied the number of these ceremonies, which pleased the priests who gathered a golden harvest for chanting medicine.

All day long rows of red-robed monks, with yellow crescent-shaped hats beside them, had rumbled reams of prayers. As they droned they swayed back and forth in cadence with the rhythm of the sound. The two hundred monks sitting cross-legged upon wide tables some seven inches above the floor were led by two priests robed in yellow silk and red serge perched upon two thrones like living idols. They were the Living Buddha and the Abbot of the Monastery, the former upon the higher throne. They led the chanting while now and then the others



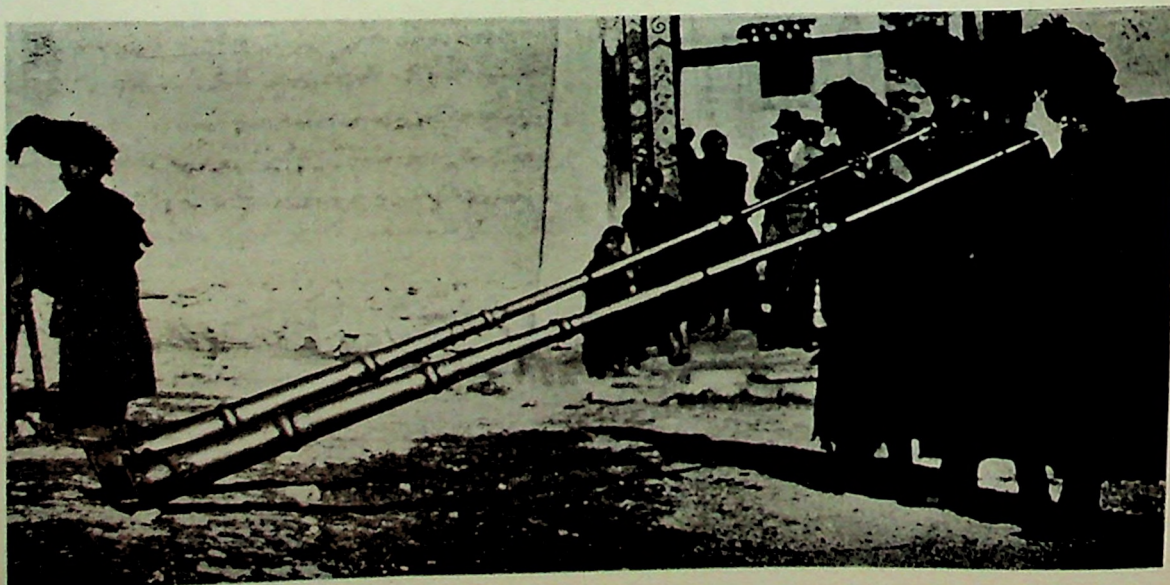
Invoking the Evil Spirits, who have been responsible for the Prevalence of Disease in the Neighbourhood, in the Court of a Tibetan Monastery



The Offering to the Demons in the Form of triangular Constructions, made from Parched Barley, or *Tsamba*, moistened with Tea, and called *Dorma*, may be seen on a Bench in Front of the Chief Exorcist who is making the Invocation.



While the great Trumpets blare, the Ceremony goes on. On the Right the Exorcist may be seen in the Act of throwing the Offering to the Demons. This is eagerly snapped up by Beggar Boys as it falls on their ragged Garments laid on the Ground to catch it.



The mighty Ten Foot Trumpets of the Tibetan and Mongolia Temples. These Instruments are always sounded in Pairs.

quieted down to let the voice of the leaders ring out in some words of special significance or unknown to the ordinary monks.

At signals from the leader each priest would seize a bell in his left hand and a *dorje* (thunderbolt formed like a miniature dumb-bell) in his right, flexing the fingers into peculiar attitudes guaranteed to coerce devils. With the silvery tinkle of bells, the boom of drums and the clanging of cymbals the chanting of words would flow into crescendo bursts of growling, which, after reaching a high point, would die away into the low mumbling tones again.

We climbed a high outside stairway and peered down from a gallery into an immense square dungeon more than fifty feet each way and darkened along the gallery by long yak hair curtains. Brilliant paintings of gods and goddesses in dress and undress danced upon silken scrolls moved by mysterious drafts that assailed us with odours stronger than rancid butter. We could see dim outlines of gaudy leering idols in darkened niches. The fearful faces rose up like imps as the scrolls fluttered aside; the benign gazed unconcerned upon the furious scene below them. From the centre the modest eyes of the God of Love, Shamba, the Coming Buddha, surveyed the monks with heavy eyes.

Short black bristles gleamed from the yellow buttered heads of shaven monks, whose bulging red cloaks made unwieldy barrels from which hung bronzed arms. In and out darted acolytes with greasy cylindrical pots, whose foaming yellow-brown suds were poured into the extended bowls of thirsty priests. Commencing at the sacred Living Buddha, whose jewel-studded silver-lined bowl of mottled maple wood glistened in the gloom, the ragged novices passed on down the line to the dull chipped bowls of the poorest priest; but each got all he could drink. Steamy fumes of buttered tea and sweating unwashed monks flowed upward.

The tempo increased. One large and two small drums in a corner of the temple beat almost continuously, now slowly, now in resounding crashes. Near by were tables supporting burning butter lamps, which threw lurid flickering flames at the red triangular offerings before them. Spears of light shot out to the idols half hidden in the shadows.

At more frequent intervals the shivering echoes of a pair of cymbals chased each other up and down the corridors. The instruments were mostly sounded in pairs. Two trumpets would roar out suddenly, accompanied by the shrill notes of a pair of flutes. Ere they faded out twin conch shells brayed in husky notes that sent tiny chills up and down the spine. Bells tinkled ceaselessly, and the rising rumble of the growling priests rolled like thunder. The tall massive timbers, standing like blackened tree trunks in the gathering darkness, seemed to vibrate with the sound. Crooked arms, shaking thunderbolts, cast jumping shadows in the thickening mist.

"If I were a devil in a place like that, I would not wait to be enticed out into the sunshine," I commented to the Tibetan teacher.

"The spirits that cause sickness are all over the valley in the various homes, and they are gathered here by the power of enchantment, appeased with the offering and dispersed," said Atring in explanation.

The clamour grew greater, until, at the end of an unusually loud outburst, the huge front doors burst open as if by the force of an ex-

plosion. Out poured a motley throng bearing the propitiatory offerings. Offerings are always shaped to resemble some sacred image, instrument or object that is considered most pleasing to the diety to be conciliated. *Dorma* is their Tibetan name. These *dorma*, made of parched barley flour, called *tsamba*, that had been moistened with tea, were shaped with a triangular base coming to a point. The triangle edges were carved into irregular tongues of flame. Pats of yellow butter were stuck here and there upon the fiery red with which the whole had been painted. Tiny cloth flags, printed with sacred texts, waved from the summit.

The *dorma* were placed upon benches where the wealth of *tsamba* and butter, the two staple foods of Tibet, were eyed greedily by ragged beggar boys who never failed to attend these feasts intended for the demons of all sorts that wish to harm man with disease, ill-luck, crop failure, death and a multitude of other ills.

Most of the priests hurried out of a side door, scattering to their cells to break the day's fast, for none had partaken of more substantial food that day than the buttered tea. A dozen must remain to finish the task before eating, and these quickly surrounded the offering to carry forward the exorcism.

The service before the temple door was just long enough to entice the harmful spirits out of the temple to the new location of the offering. The drummers, flutists and cymbalists stationed themselves about the chief exorcist, who was further assisted by a monk to hand up the bowl of wine from the tray of food and drink. A beggar held the tray to make sure that he would get the lion's share of the remnants. In this section of the ceremony, called the Golden Offering to the Spirits, the chief exorcist rings his bell, shakes his thunderbolt and mutters the charms suitable for the occasion. Then he tosses the bowl of wine upon the ground.

"What a waste of good wine. Do not the monks hate to see that wine wasted when some of them like it so well themselves?" I remarked to Atring.

"Most of the priests do not drink wine. Besides this wine is not very strong, so there is not much wasted. The demons do not know that it has been diluted with water," returned my teacher, always willing to minimise the weaknesses of his countrymen, just as all of us hide our follies.

"These thigh-bone trumpets are made of real human bones," he said, turning to another subject as I examined the part of the band not in use while the chief exorcist droned his interminable chant.

"Where do they get them?" I asked, puzzled. "You either burn the bones, throw the body into the river, or feed the corpse to the vultures and wolves. You try to eradicate the body entirely so as not to hinder the rebirth of the dead."

"The thigh-bones they use are taken from the corpses of executed criminals or from men who have died violent deaths: bodies that no one looks after. Those kind of bones are so much more effective in the subduing of evil spirits," explained the Tibetan man of learning.

"You also say that these conch shells are left-whorled. Are they not all turned that way?" I queried, as I placed the conch shells to my ears to hear the sounding sea.

"Most of them are, but there is one in Lhasa that is right-whorled. When they turn to the right they are priceless, because they are so potent in driving demons," replied Atring. I smiled at the reference to Lhasa, which is the centre of the universe, the Holy of Holies, to every Tibetan. If there is anything unique or unusual in the world the Tibetan is sure that it will be found in Lhasa.

Now the triangular offerings were carried outside the west monastic walls, with the priests following at slow waddling gaits. We brought up the rear to find that the brass trumpets, ten feet long, had been set up outside of the gate near a pile of brush and straw, which was supposed to be used for burning the offerings. These brass trumpets are telescopic, but, when extended, have handles in front for the hand to grasp. Ornamented with raised designs they are beautiful pieces of foreign workmanship.

With the four *dorma* in front facing the north the priests performed the final stage of the ceremony. The priests grouped themselves in a circle to the south of the *dorma* and some twenty feet to the north was the pile of brush and straw with some ragged garments of the beggars spread before it. These *dorma* picture tongues of fire in a form suitable to evil deities in general. The tray, besides bowls of barley, wheat and each type of grain grown in the valley, had smaller *dorma* shaped like *chorden*, which might have bits of material from the figures made from the ashes and remnants of sainted lamas who had once lived in this community. Such remnants would have great power in coercing demons.

Spectators were few. Only those passing by would stop and then pass on. Common, though held at irregular periods, these ceremonies are not advertised. On the occasion being described the sight of a foreigner taking photographs caused the curious to pause longer than usual.

The trumpets blared, the cymbals clanged, the drums boomed and the flutes quavered, while the priests growled in rolling tones from the bottoms of their chests. The chief exorcist recited his lines, tinkled his bell and twisted his thunderbolt. At the proper intervals he waved a black cloth toward the north, or, elevating a bowl of wine or grain, suddenly dumped it out. However, it did not reach the ground, for the eyes of the beggars were keen, and, with a rush, their outflung garments caught the grain or large cracked bowls of pottery saved the wine. The chief lama was likewise mindful of the beggars and made no attempt to avoid the garments or spill the wine by trick castings, thereby chalking up merit on high for himself. Perhaps a few grains were spilt, but the birds would find them or the numerous long tailed cocks which had been given to the monastery by devotees of merit. No hens are allowed and the roosters, whose lives have been saved for fat old age, help souls to balance their evil deeds with good in unwanted bachelorhood.

It is essential for the success of the incantation that the offerings be burnt or thrown away. I have never seen anything but paper parts burnt, while the food portions are cast away for the ever present beggars. The food is for the evil spirits, but it never seems to harm the beggars, who assist the demons in an otherwise difficult task.

The black cloth which in these ceremonies is waved toward the north by the chief exorcist is a visible relic of Bönism, the former religion of Tibet. Bönism still exists, mostly in isolated sections of the country, but its rites permeate the reformed sects to such an extent that the Buddhism of Tibet has assumed a peculiar and degraded form, known to the outside world as Lamaism. Priests of the Bön wear black hats, those of the old reformed sect, the Nymaba, wear red hats, while the later reformed Gelugba don yellow hats. The ceremony under discussion was being conducted by the yellow hats, but in some vital ceremonies the chief exorcist will wear the black hat of his ancestral religion. In fact, the exorcism of evil spirits as shown in this worship is a Bön contribution to Tibetan Buddhism.

When the grain and wine were exhausted the chief exorcist took the bow and arrow and shot an arrow toward the north.

"He did not shoot that arrow very hard, it just went a few feet. Why not shoot it hard, and either kill or scare the devils away?" I said to Atring, disappointed at the weak effort.

"The arrow is shot toward the north to show that the demons must go back to their King, the Guardian of the North, who rules over the injurious evil spirits," Atring informed me.

A little more chanting and the final act came. The grain, wine and *chorden dorma* on the tray had all been cast away and hidden in the blouses of the beggars. With a final crash of the band and the last spurt of words the four *dorma* from the bench were hurled, presumably into the pile of brush, but really upon the spread garments of the beggars who scrambled for the choice pieces. At once they peeled off part of the thicker paint, which, being made of ochre, was not harmful, merely gritty to their teeth. With famished greed they crammed some into their mouths while the rest was stowed away in their cloaks regardless of the exposure which might result.

The pile of straw was set afire, and with merely this small waste everybody was satisfied, even the evil spirits, who would wander away for a time and then return, which would mean more work for the lamas.

"Why do not the beggars die when they eat the food and drink offered to the demons, since the demons are evil and would want the offerings themselves? If the offerings do not hurt the beggars, why do not the monks eat them?" I enquired curiously of Teacher Atring.

"It would not do for the priests to eat them, as they must be cast away, and it is not their affair as to what happens to them then. Besides the demons and beggars are about the same, so it makes no difference which gets them," remarked Atring laughingly, which told me this last was a bit of humour. However, beggars are considered to be such because of sins they have committed in previous lives, and, therefore, must endure the unavoidable conditions designed for the wicked. We foreigners, with our comforts of life, are considered to have been very pious in a previous incarnation to have been given such a rebirth in the present, and, since we were laying up so much merit by good acts in this existence, are sure of having a still more happy life in the next rebirth.

The sun was sliding back of the western ranges as the crowd departed. We walked slowly toward home in the deepening golden glow, talking about the impressive Lamaistic ritual, which fascinates the mind

of the simple Tibetan by its uncanny harmonious sound, its elaborate ceremonial intricacies and its boundless detail, the ancient meaning of which has been lost in the flight of the years.

We had seen traces of more gruesome times, when undoubtedly animals and human beings were sacrificed to the demons, which no Tibetan can see, but only believes to exist because episodes in his life he cannot understand.

TRAVEL AND EXPLORATION NOTES

More Tourists Come to Japan: A total of more than 15,000 visitors came to Japan from abroad during the first five months of 1935, the Japan Tourist Bureau announced recently. It is estimated that the visitors spent approximately Yen 30,000,000 during their stay, an average of Yen 2,000 apiece. In the month of May alone, 915 Americans came to Japan, comprising nearly a third of the total incoming tourists. The number is an eighty-eight per cent increase from the corresponding period last year and is generally interpreted as a reflection of better economic conditions in the United States.

New Beach Development on Hangchow Bay: Many Shanghai residents are now taking advantage of the recent opening of Chi-ka Tuang Beach, located on Hangchow Bay about twenty miles from Shanghai and reached by motor car via the Shanghai-Hangchow Highway. Although it is said not to be as attractive as Kao-chiao Beach, which is operated by the Shanghai City Bureau of Public Utilities, Chi-ka Tuang is expected to be a favourite during the summer. Sheds have been erected near the beach for the convenience of bathers.

World's Highest Volcano is Scaled: The ascent under extraordinary difficulties of Mount Kliuchevskaia, located on the Kamchatka Peninsula, Siberia, was reported by Tass from Petropavlovsk on June 26. The peak is credited with being the highest volcano in the world. The difficult four day climb, which was made by way of the steep northern slope of the mountain, was accomplished by Nicholas Vodopyanov and Pavel Burakov, two members of the Young Communists' League and the Dynamo Sports Society.

New Attempt on Mount Everest: In a presidential address at the annual meeting of the Royal Geographic Society

in London, Major-General Sir Percy Cox on June 24 made special reference to a new attempt to scale Mount Everest, *Reuter* reports. A different procedure from that of the previous years' expeditions will be used, a small party under the leadership of Mr. Eric Shipton having already arrived in Tibet to carry out reconnaissances of the western approaches of the mountain shelf. At the same time Major C. J. Morris, who is familiar with the Tibetan language and customs, is to make contact with the local authorities in preparation for the main party. The expedition, which will be ready to start next spring, will again be led by Mr. Hugh Rutledge, the president concluded.

American Expedition to Tibet Planned: After five years of negotiation permission was recently obtained by Mr. Suydam Cutting, a member of the Board of Directors of the American Museum of Natural History, to enter Tibet as the head of an expedition into the Asian hinterland. The object is to collect anthropological material. Mr. Cutting is reported to have left New York en route to Calcutta in company with the well known sportsman, Mr. Arthur Vernay. The actual expedition is to be organized in India. Mr. Cutting expects to return to America late this year.

A Guide to Hangchow: Several years ago an interesting and extremely handy guide book was written by Mr. Robert F. Fitch entitled "Hangchow Itineraries." The volume included descriptions of a series of trips in and around the famous lake city of Chekiang, and filled a definite need for such a volume. In addition, its handy form was greatly in its favour, as it permitted easy reference. A fourth edition of the book has recently been published, and the contents have been enlarged by the addition of information and itineraries to cover most of Chekiang Province. The result is a book that is

invaluable to anyone who would travel extensively through South-eastern China.

Each of the Hangchow itineraries is illustrated by a map showing the route to be taken and the location to be visited. The text takes the various temples and historical sites in order and describes their surroundings, records their history, and points out to the visitor any worthwhile features that might otherwise be missed. The whole is done in a thoroughly attractive manner, so that reading is an actual pleasure. The tours through Chekiang are a little more extensively written up, although the same pleasant style is followed. Altogether, the book includes descriptions of six Hangchow city trips, five one-day itineraries into the surrounding country, and four major provincial tours. The appendices include a list of important dates in connection with the history of Hangchow and West Lake, and an excellent highway map of Chekiang Province, which is published by the Chekiang Tourist Bureau. This guide can be secured at Messrs. Kelly and Walsh, Ltd., Shanghai.

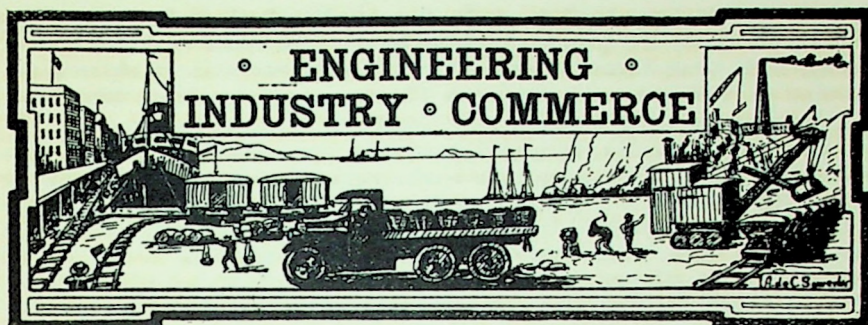
In Search of Garden Seeds: Residents of Shanghai of some years' standing will remember Mr. F. Kingdon Ward, who for a while taught in the Public School for Boys here. After leaving China, this former Shanghailanders began a series of botanical exploration trips into the Himalaya and the Tibetan borderlands. What Ward calls his "twelfth big journey

in Asia" is described in an interesting and delightfully written volume, "A Plant Hunter in Tibet," published by Johnathan Cape, 30 Bedford Square, London. A series of fine photographs and several field maps make the volume even more valuable, while the author's style of writing is extremely easy to follow.

The objectives of Ward's latest trip were two. He wished to prove the existence or otherwise of a range of high snow-capped peaks lying between the Tsang-po and Salween Rivers, and thus develop a theory on the actual course of the main Himalayan range eastwards beyond its apparent culmination at the edge of the Tsang-po River. He also had as a goal the collecting of alpine and temperate zone plant and shrub seeds for the Royal Horticultural Society and its members. In both quests he was successful. The snowy range was found to exist, and a wide variety of new seeds are now in the possession of British gardeners.

From the botanical point of view Ward's book is worth while in that it contains the observations of a trained plant hunter. From the standpoint of the traveller it is certainly interesting as a record of exploration through hitherto unknown territory. The general reader, profoundly interested in neither of these subjects, will still enjoy the book for its lively style. Its price is twelve shillings and six pence.

S. L.



FOREIGN MEDICINE AND HOSPITALS IN CHINA

BY

STUART LILLICO

Although the practice of medicine and the running of hospitals can hardly be considered as coming under the headings Engineering, Industry or Commerce, the fact that the foreign drug, surgical instrument and medical appliance market is so important in China justifies us in including the following article in this section of The China Journal. It has often been said that the missionary is the pioneer for the trader, and in this case the statement is most certainly correct, for without any manner of doubt it was the medical missionary and his hospitals that created the demand for foreign medicines and paved the way for their introduction into this country. Medical missionaries and practitioners, hospitals and clinics are vital factors in a very extensive import business in China, and so indirectly, if not directly, come under the heading of Commerce.

* * *

As with every other line of endeavour in the world, the medical profession in China has been seriously affected by the depression. Not only has a much higher percentage of charity work been forced upon it, but the governmental and private support which it previously received has been seriously cut or, in many cases, entirely discontinued. There has been a big difference, however, between the effect on medical work and that on commercial undertakings. Instead of merely crippling the health services all round, the lack of funds, particularly from foreign countries, is forcing a fundamental change in the character of medical and health work in this country. This is evolving rapidly from an introduced Western undertaking into a purely Chinese one.

The reasons for this are two. For the past hundred years Western medicine in China has been mainly sponsored by Christian missionary societies. These organizations, financed almost entirely by American and European religious groups, have built up a network of hospitals that completely covers the country. The medical missionary was responsible, more than any one else, for the gradual adoption by the Chinese people of Western medicine. But, no sooner had the nation grown accustomed to this idea, than the current depression came along, removing the foreign

support that had up to then made it possible. Rather than lose these hospital facilities the people of China have undertaken to support them locally, and, since financial support usually carries with it control, the running of hospitals and clinics in China is rapidly being taken over by the Chinese themselves.

A second factor is the growing number of properly trained Chinese doctors available. For more than half a century modern medical schools have been turning out graduates, but until recently these men have found their best field in the big cities. Now it is beginning to be possible for them to go farther afield. Their message is no longer viewed with suspicion by the people, and the financial return is at least sufficient to support them. Further—and this is probably most important—a receptiveness to social service for its own sake is becoming apparent among the professional men of China. The result is that trained medical men are now going out into the provinces and establishing their own hospitals in the small cities and towns that previously were dependent on mission establishments or were without modern medical facilities at all.

These two conditions, working simultaneously, have resulted in a radical change in the medical system of China within a few years.

Hunan Province is probably the best example of this alteration, although the change was accelerated and seriously affected by other conditions. Starting in 1927 and continuing almost up to the present one part or other of Hunan has been in the hands of communists almost continuously. The first result was impoverishment of the people, while the second was that all missionary enterprises—schools, hospitals and evangelical work—were forced to close down. With the retreat of the communists in 1933 some of the work was restarted, but many of the schools and most of the hospitals have since remained closed for lack of funds.

Under the inspiration and guidance of Dr. K. Y. Wang, Director of the Yale-Hunan Medical School, and with the active support of Governor Ho Chien, a plan has been worked out whereby the hospitals will be reopened and supported with provincial funds. At the same time, all other hospitals, health centres and medical schools are being brought under the same control. The medical college in Chang-sha will undertake the training of all personnel for medical services in the province, including doctors, health officers, sanitary inspectors, nurses and midwives, and all who would practice medicine in Hunan must obtain a license from the Government.

Students on entering the medical college are divided into two classes. One group is trained at the expense of the province, while the other pays its own tuition. After graduation, however, the first group is pledged to serve a definite period of time in the service of the state, while the second is free to practice anywhere as soon as a license is granted. The advantage of this system is that a constant supply of medical officers for all parts of the province is assured, and, since their support will come from Chang-sha, these men will be free to work for the greatest good of the people. It will be possible to station medical men in the smaller towns, where ordinarily they could not be assured of a living, and unprofitable experimental work can be carried

FOREIGN MEDICINE AND HOSPITALS IN CHINA

on for the ultimate benefit of all. This venture into State medicine, a project that in other lands has been the cause of a great deal of controversy, is drawing the attention of all branches of the medical profession.

A second movement in the same direction is to be found in Shanghai, where a great Medical Centre, which is being erected on Pioneer Field in the French Concession, will stand as the first completely integrated medical establishment in China. In one group will be a 500-bed hospital, a medical school, experimental facilities, a library of medicine, and a meeting place for the doctors of the city. This almost ideal arrangement will give Shanghai a medical centre that can be compared with only a few others in the world. Its greatest advantage will lie in the fact that it has been planned in its entirety from the beginning. In the past, medical colleges and health centres have "just growned," a fact which has usually been obvious in the finished product.

This project in Shanghai is only one of several that are being planned for different parts of the country. In this case it is a joint Sino-foreign effort, the land, for instance, being donated by the Rockefeller Foundation, but in other cities the work is largely Chinese in character. It is deeply significant that this is possible, for a few years ago such a project would have had to come from foreign sources, and be financed from abroad, to be possible.

It must not be inferred from this, however, that foreign managed hospitals in China are no longer important. To the contrary, the best work in the country is being done by these establishments, not only because they are actually greater in number but because they have the advantage of greater permanence and better trained personnel. Several of these institutions are known throughout the world for their work.

In Shanghai alone there are at least twenty-seven hospitals under foreign management. The best known of these include the Country Hospital, the General Hospital, Shanghai Sanatorium, Foo Ming Hospital, Paulun Hospital, Hungjao Sanatorium, Margaret Williamson Hospital, the Lester Chinese Hospital, Saint Luke's and Saint Elizabeth's Hospitals, Saint Marie's Hospital, Dr. Fuchs' Private Hospital, and the Municipal Isolation Hospital.

Several of these are worthy of special mention. The Shanghai Sanatorium and Hospital, located on Rubicon Road well outside the city, is best known popularly for the work of its medical superintendent, Dr. H. W. Miller. Its facilities are in considerable demand for convalescence and general health-building, while the work done by this institution in the curing of narcotic addicts is also remarkable.

The Foo Ming Hospital, which is a Japanese undertaking, does a great deal of good work in the Hongkew and Kiangwan districts. It was established in 1920 by Dr. Y. Tongu, the present director, and was augmented in 1934 with a completely new main building. Its present equipment includes a hundred beds, in addition to a number of charity beds. There is an isolation ward away from the main building. Although the institution is under Japanese management, Chinese, Japanese and European nurses are employed for patients of different nationalities. The doctors are all graduates of the Imperial Universities of Japan, and all types of medical, surgical and special work are done.

The Lester Chinese Hospital, located on Shantung Road in the heart of the downtown section, is kept extremely busy throughout the year. Its out-patient department handles as many as a thousand cases a day, and during 1934 there were 183,839 calls on this important branch. The charge for dressings and such other treatment as the out-patient department performs is ten coppers. The total of 242 beds in the hospital took care of 3,862 patients during 1934, the average stay of these people being 20.1 days. Because of its central location, the Lester Chinese Hospital handles many police cases, attempted suicides and traffic accidents. Financial support comes from the Henry Lester Trust Fund, the Shanghai Municipal Council, private donations, and to some extent from fees charged.

Engaged in much the same sort of work is St. Luke's Hospital for Chinese, which is sponsored by the American Church Mission and is located in Hongkew. With a normal bed capacity of 185, this institution has had an average of about 130 patients throughout the year, with an average stay of 17.5 days. The mortality rate for the in-patient department, exclusive of those who died within forty-eight hours of admittance, was only 5.3 per cent during 1934. The out-patient clinic had 95,949 visits during the year, in addition to 1,539 emergency cases, 10,278 cases sent by employers and 3,253 sent by police. Clinic rates are ten cents for the first visit and five coppers for subsequent calls. The fees are cash, however, and no charge accounts are allowed.

The First Hospital of the Red Cross Society of China is located on Avenue Haig in the French Concession. It was established in its present location in 1932 as a result of the Sino-Japanese fighting. In connection with it is a modern medical college. According to the last report of Dr. F. C. Yen, the superintendant, a total of 91,358 out-patients were cared for in the year ending June 30, 1934, which was an increase of 29.6 per cent from the year before. A similar increase is expected to be reported for the period just finished, and the institution's greatest difficulty is the physical one of providing accommodation for its patients. A total of 378 beds are now available. Special services performed by the Chinese Red Cross Hospital staff include home deliveries in normal obstetrical cases. To obtain this, however, the expectant mother must register beforehand and come in for regular pre-natal examinations.

Two other hospitals are operated in Shanghai by the Red Cross Society of China. The Second is in the Sinza district and the Third is in Nantao.

A new institution for Shanghai is the Mercy Hospital which was opened on the Minghong Road on July 1. It has 600 beds and will be devoted to psychiatric cases. Construction of this much needed asylum was made possible by Mr. Loh Peh-hung, a Chinese philanthropist who has built or endowed several other hospitals in the city. Dr. F. Halpern, famous woman psychiatrist who arrived from Vienna in 1933 to handle Psychiatry and Neurology in the Red Cross Hospital, is directing the work at the Mercy Hospital. Mental cases from most of the other institutions in the community are now being handled by this establishment.

Several special hospitals are also operated in different parts of Shanghai by the Red Cross Society or its members. There is the Ching

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Chong Hospital recently established in Kiangwan to specialize in pulmonary cases. It is located in an old Chinese garden and is nearly ideal for this type of work. While the more serious cases are treated at the main hospital on Avenue Haig, Ching Chong is devoted to convalescent work.

Another idea which was put into effect last year was the Community Medical Service League. Individuals or groups may avail themselves of specified medical services by the payment of an annual fee amounting to five dollars or twelve dollars, according to the service desired. In return the member receives free physical examinations and free medical care in the out-patient department of the hospital. In case entrance into the hospital is necessary, the member is entitled to a reduction from the regular charges. The system has been quite popular with school teachers, clerks, students and others of meagre income.

On Tibet Road near the corner of Avenue Edward VII a summer disease hospital is maintained. It contains 300 beds and is mainly devoted to cholera. It is the only one of its kind in the city. During the winter months it is used as a general hospital, particularly for the treatment of venereal diseases.

On Hungjao Road there is a fine new building known as the Hungjao Sanatorium, which is also run by the Red Cross Society of China. It is designed to take care of the first class patients who are unable to find adequate accommodation in the Avenue Haig Hospital. Its excellent location and equipment have made it extremely popular, and the result has been that a really adequate country hospital for convalescence is available in Shanghai for the first time in years.

Two other fine hospitals do a great deal of good work in their territory. They are Saint Marie's Hospital in the French Concession and the Hospital of the Sacred Heart in Yangtzepoo. Both of these were built largely through the generosity of Mr. Lo Peh-hung. Saint Marie's is now operated by the French Catholic Sisters of Charity, while the Sacred Heart is under the supervision of the Franciscan Missionaries of Mary. Saint Marie's in particular is noted for the great amount of work it does among the poor residents of Shanghai.

There are a few other institutions in the city that are particularly deserving of mention. The Margaret Williamson Hospital at West Gate, Nantao, is a missionary establishment of considerable fame. A great deal of its work is in connection with maternity cases. A school of nursing is included on the premises. In Kiangwan there is a new municipal hospital rising as a unit of the great Civic Centre project. When completed it will have over 200 beds and will be one of the most modern in the city. In Nantao a hospital for infectious diseases is already in operation by the Government of Greater Shanghai. A free baby clinic is operated in Chapei by the Shanghai Y's Men's Club, a local service organization.

A recent addition to the list is The Women's Hospital, located in the Western District on Great Western Road near its junction with Tunsin Road. As the name implies, this institution specializes in maternity cases and similar work. It is thoroughly modern and is located in a new building. Both foreign and Chinese patients are admitted.

It should be remembered that in addition to these hospitals there are many others scattered throughout the community, operating with a dozen or so beds and under the direction of a single doctor. These do a great deal to take care of smaller cases and are maintained on a reasonably high standard of technical skill and sanitation.

Besides the many hospitals in Shanghai there are a number in other parts of China which are well known. Tsingtao, in addition to being a famous summer resort, boasts of an excellent convalescent hospital, the Faberkrankenhaus, a German establishment. Opened in 1907, this institution was named after Dr. Faber, the German missionary doctor who founded it. Funds for its construction were subscribed by the German residents of Tsingtao, which was at that time a German possession, and by German missionaries in Shantung. It is now owned by the German Association of Tsingtao, members receiving treatment there at a considerable reduction on the regular rates. The association is non-profit-making, any surplus funds being devoted to improvements.

The hospital buildings are located within the city on a bluff facing Kiaochow Bay. Forty *mou* of acacia woods and gardens provide excellent conditions for convalescence and recuperation. The main building has twenty-eight rooms, twelve of them having been added only last year. All are completely furnished with modern equipment, spring beds and mattresses, electric fans and heating. Modern plumbing is installed throughout. In the main hospital are well equipped modern operating rooms, maternity wards, X-ray apparatus and equipment for such special treatment as violet ray and short-wave diathermy. Two German doctors and four German graduate nurses, trained in Germany, in addition to one graduate Chinese nurse, comprise the staff.

An isolation hospital was recently built on the grounds with funds provided by the entire foreign community of Tsingtao. Non-German doctors may practice in this building. A small annex is also provided for Chinese patients.

Another German hospital is located in Peiping, which city is also the home of the magnificent Peking Union Medical College. Founded and supported by the Rockefeller Foundation, this organization is one of the finest in the world in its field. It is completely equipped for medical and surgical research and instruction, and has extensive facilities for almost every class of work. While its hospital department is not of paramount importance, the Peking Union Medical College is a favourite with both Chinese and foreigners in North China.

While all these hospitals, whether Chinese or foreign, are located in larger cities and are of great importance, actually less than ten per cent. of the people of China are directly affected by them. The overwhelming majority of the Chinese live in the smaller cities or in country villages, and it is in its contact with them that Western medicine has its greatest opportunity. Modern medical science's greatest apostle in rural China has been the missionary hospital, and the two hundred or more of these institutions are still probably the backbone of medical work in this country, whether still financed from abroad or under native control.

Two or three missionary societies are responsible for the greater part of the hospital work that has been carried on since the Canton

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Hospital was opened just a hundred years ago next November. The English Baptist Mission has done extensive work in Shansi and Shensi, the American Presbyterian and Methodist Episcopal workers have accomplished a great deal throughout the Yangtze Valley, and the American Church Mission, acting in concert with the Church of England Mission, has established medical centres in scattered communities throughout the country. In Manchuria the Scottish Presbyterian missionaries have established a good series of hospitals. The Seventh Day Adventists recently opened their twelfth establishment in Lan-chou Fu.

The manner in which these medical workers have overcome obstacles in the small communities where they have chosen to work is worthy of highest praise. In many places they were opposed, not only by natural difficulties, but by the ignorance and antagonism of the people themselves. This has in most instances given way to enthusiasm and substantial support, but the natural obstacles remain. Few of these communities boast of electric light and power, so that the hospitals have had to install their own plants, and adequate water supplies are almost never available. Supplies usually have to be transported long distances and frequently are subject to heavy taxes at the hands of the military authorities.

Despite all these handicaps, however, some notable hospitals have been established in the interior of China. Examples are the Baptist Missionary hospitals in Tai-yuan Fu and Si-an Fu, the Church of Scotland Hospital in Kirin, the Yale-Hunan Hospital in Chang-sha, the Seventh Day Adventist Hospital in Kalgan and the Methodist Episcopal Hospital in Nan-chang. All have suffered great vicissitudes, but have managed to carry on fine work. It is no exaggeration to say that these mission hospitals are still vital to the spread of Western medicine in China. Without them the whole development of the science would be hopelessly retarded.

For those who wish to pursue this subject farther, a book entitled "History of Chinese Medicine," by K. Chimin Wong and Dr. Wu Lien-teh, published by the Tientsin Press in 1932, contains an excellent survey of the introduction and spread of Western medical science. It also has a wealth of information on Chinese medicine and surgery as it existed before the introduction of the former. Some exceedingly interesting facts are to be found in this volume.

An interesting sidelight on the development of rural medicine in China is to be found at Ting Hsien, a small district near Pao-ting Fu, Hopei, which is famous as the experimental laboratory for the China National Association of the Mass Education Movement. As part of their task of planning a thorough-going reconstruction of China's rural economy these workers have evolved a practical and effective way of substituting Western medicine for both the Chinese type and the use of patent drugs. As a result of their survey, these men found that approximately \$120,000 a year was leaving the *hsien* through the purchase of patent medicine. Likewise they evolved a plan whereby a system of health centres, sub-stations and one central hospital could be operated for approximately \$60,000 annually. To test it out, the system was installed and has proved to be highly successful.

The central hospital in the *hsien* capital is used, not only for major medical and surgical work, but as a training centre for nurses, midwives and health officers who work in the sub-districts. By using as much locally made material as possible, the doctors have kept the costs at a surprisingly low figure. As an example of their thriftiness, they use ordinary Chinese wine, which contains a high percentage of alcohol, and is obtainable every where, instead of regular grain alcohol, which is much more expensive, as a solvent. The results obtained are the same at a fraction of the price.

Located in half a dozen smaller communities in the *hsien* are sub-district health stations, where men who have been trained either at the central hospital or at one of the second or third rate medical schools to be found in the country are in charge. The work here is both preventing and curing sickness, and these men find their time completely taken up with physical examinations, regular clinic hours, and health lectures in the farm communities. They also are responsible for training village health workers, who are the men directly in contact with the people.

These village health workers are ordinary young men of the farms or villages, who have been selected because of a better education or because they have an aptitude for the work. They receive no pay beyond an annual collection which the citizens of their village may or may not take up at the New Year. Their duties include the administration of a primitive first aid, the keeping of such vital statistics as may be possible, and the education of their neighbours in the elements of first aid and sanitation.

Simple as this system may seem, it is a tremendous step forward in rural health work in China. It has the virtue of simplicity and yet is adequate for the pioneering work that is required in this line. A few other experimental areas in China are following something of the same scheme, but to date Ting Hsien is by far the most successful. The work is under the general direction of Dr. "Jimmy" Yen.

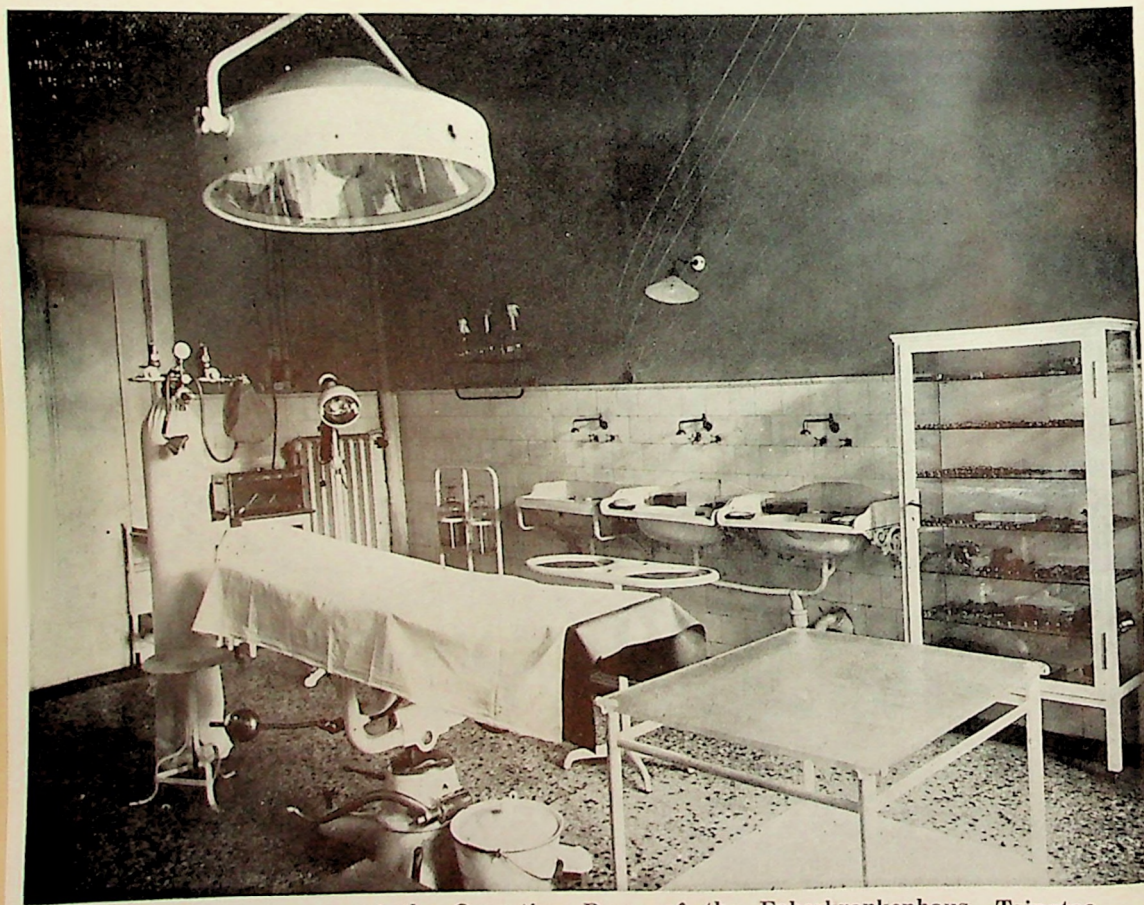
Another phase of the modern Chinese medical situation which is notable is the popularity of scientific devices. Most of the new Chinese operated institutions now have a better assortment of such things as X-ray equipment, diathermy machines and high frequency treatment apparatus than does the average private or mission establishment. One reason for this is that these new treatments have become very popular with the Chinese patients, with the result that the hospitals whenever possible get this equipment.

An interesting example of the transition from old to new is to be found in Ka-shing, near Shanghai. The son of the owner of an old style medicine shop in this town came to Shanghai some years ago to study in the Medical College at St. John's University. Upon his graduation he returned to Ka-shing and established a small hospital in conjunction with his father's shop. Apparently he has prospered, for one of the Shanghai distributors of scientific and medical instruments reports that he has been a close follower of medicine's advance, and a few months ago was able to pay nearly \$600 for a new type of diathermy apparatus.

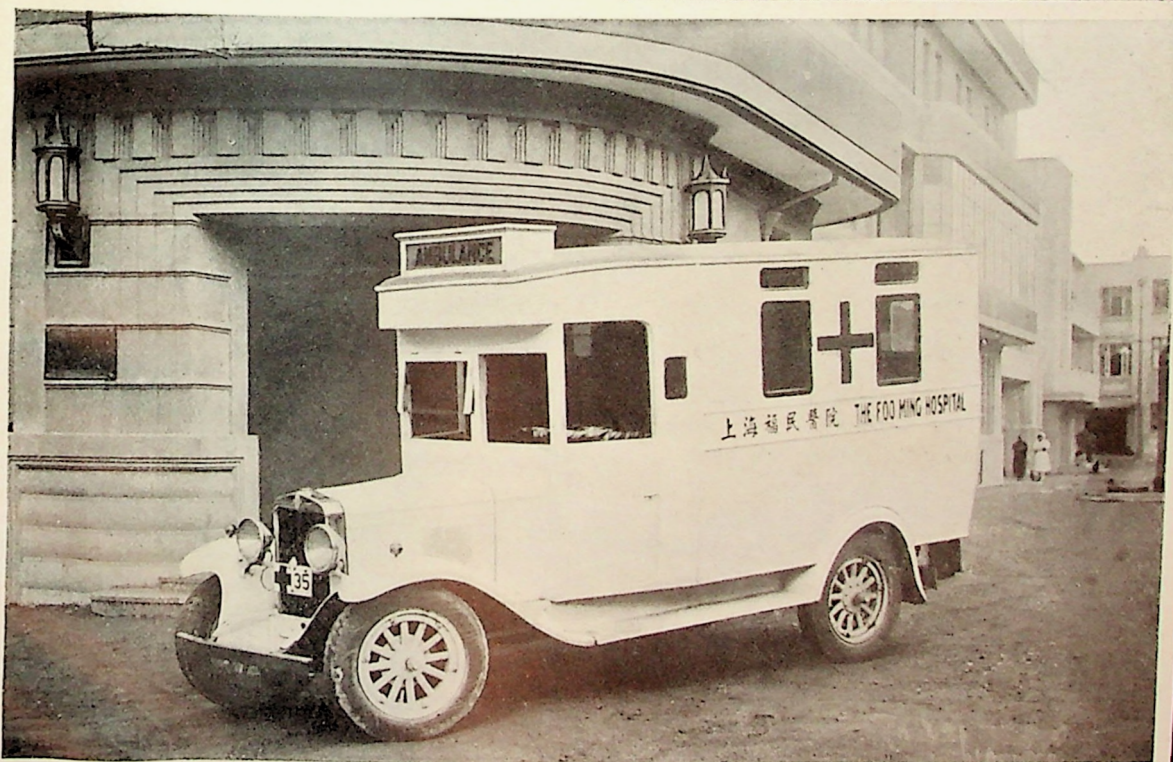
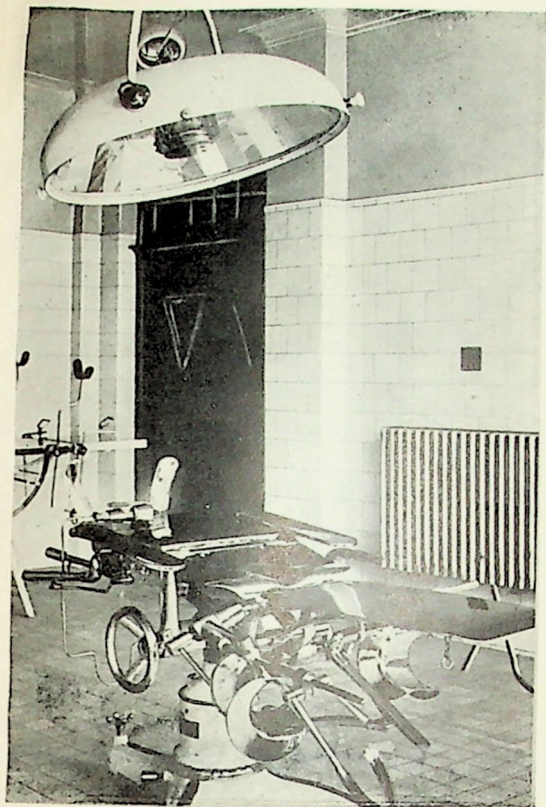
So popular is this new diathermy equipment that the Shanghai branch of Schmidt & Company has been unable to keep it in stock. An aver-



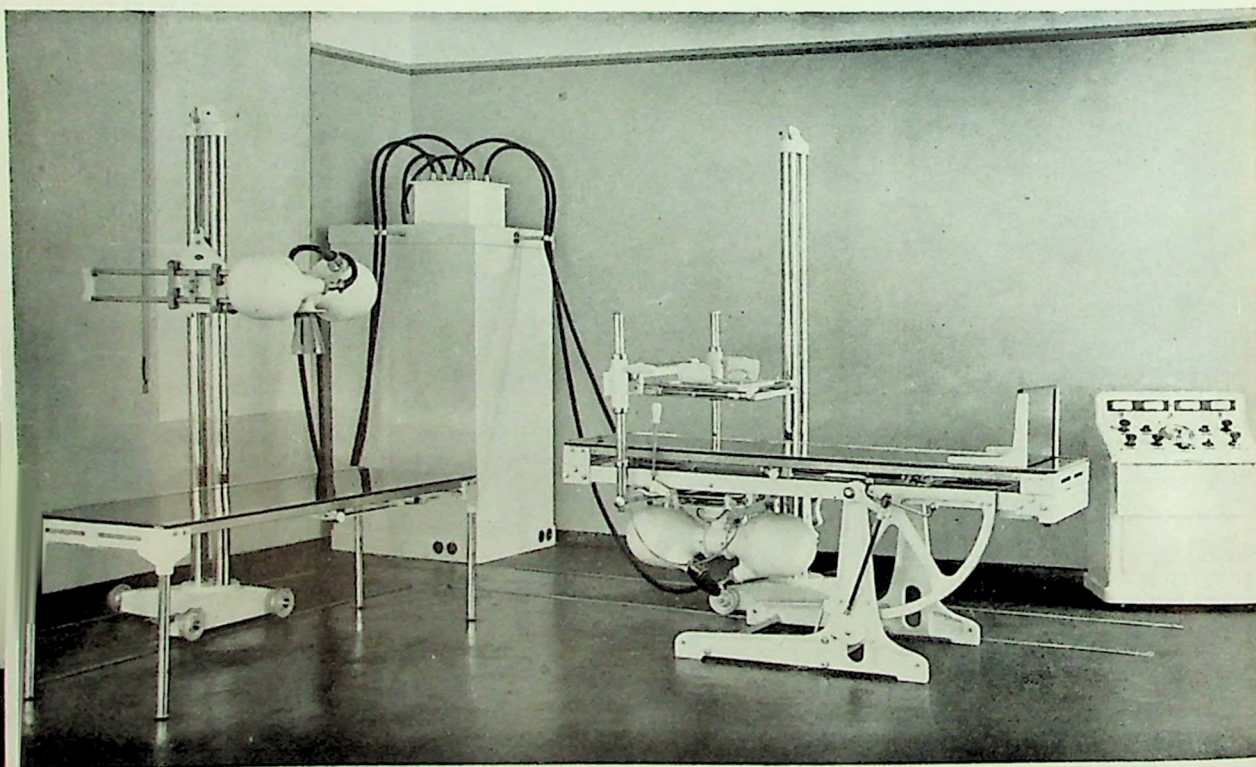
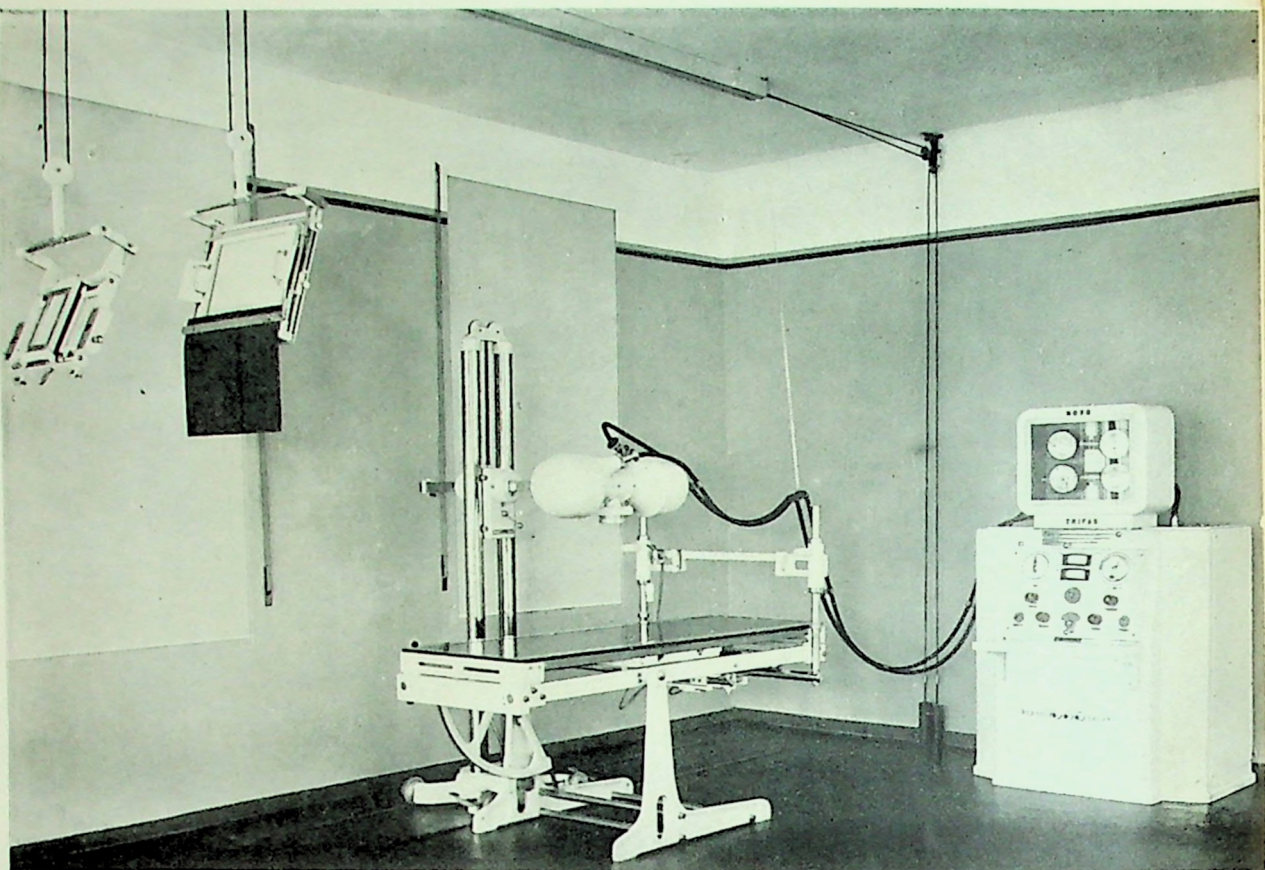
Above, the Isolation Ward and, below, the main Building of the Faberkrankenhaus in Tsingtao. This German-run Convalescent Hospital was first opened in 1907, and is largely patronized by the Foreigners residing on the Shantung Peninsula.



A private Bed Room and the Operating Room of the Faberkrankenhaus, Tsingtao



Modern Equipment, Efficiency and Sanitation are in evidence at the up-to-date Foo Ming Hospital, Shanghai. Above are an Operating Room and a Corridor of the new main Building, below is the Ambulance.



Two Examples of advanced X-Ray Equipment which is popular in Chinese Hospitals today. The entire Machine in the upper set is contained in the white Cabinet. The lower Set is available for either of two Tables. Photographs by Courtesy of Schmidt & Co., Shanghai

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age of nine outfits a month have been sold, mostly to private Chinese hospitals, during the past year. The other principal dealers, notably Carlowitz & Company, Kofa (American Drug Company), and Andersen, Meyer and Company, report a similar state of affairs. New equipment is watched for avidly and snapped up as soon as the first sample appears.

While most hospital equipment must be imported, at least one important item is manufactured in China. Simmons & Company make hospital beds of foreign design and imported steel in their Shanghai plant. These beds are equipped with adjustable frames in accordance with the best hospital practice, and the mattresses are of special design to guarantee the greatest comfort of the patient. The famous Simmons Springs are used. The company also manufactures operating tables.

The supplying of hospitals with drugs and equipment is a matter of some importance to a number of Shanghai concerns, incidentally. The National Aniline & Chemical Company, for instance, has a profitable sideline in the sale of serum dyes, while Imperial Chemical Industries, Ltd., finds a large number of its products in demand for medical purposes. The German Dye Trust (Deutsche Farben-Handelsgesellschaft) handles many other products besides Aspirin. E. Merck Chemical Company, Ltd., is another German company which profits from the large demand for chemicals and drugs. Several Japanese firms also sell in the China field at prices considerably below those of other importers, but they have not yet won the confidence of the medical men as the longer established firms have.

Needless to say, however, these companies have felt the effects of the same depression that has hit the hospitals themselves, and there are some signs that the same result will be in evidence, namely, a conversion to Chinese management and control. Even were this to happen, though, there is little likelihood of harm resulting, if the conversion of the hospital situation itself to Chinese control is any criterion.

ENGINEERING, INDUSTRIAL AND COMMERCIAL NOTES

AVIATION

Don'ts for Air Travellers Given:

At all times on regular scheduled passenger aeroplane flights in China it shall be illegal to smoke, drink liquor, make a noise or fight with one's fellow passengers, according to a list of regulations released recently by the Ministry of Communications in Nanking. Other points mentioned were: no person suffering from neurotic ailments or contagious diseases, or under the influence of liquor, and no unaccompanied children will be allowed to travel on air mail

planes. No passenger is allowed to bring with him contraband, dangerous articles or cameras; to survey or draw maps from the air; to drop any article from the aeroplane; to refuse to submit to legitimate inspection; or to carry letters on behalf of others. Specific penalties are laid down for violation of these regulations, which replace a previous set that ruled out in a vague manner all sick passengers and all children, and proscribed "Kodaks" rather than cameras.

Eurasia Capitalization Will Be Increased: A recent decision made by the Eurasia Aircraft Corporation to increase its capitalization by \$2,400,000 to \$7,500,000 was approved on July 2 by the Ministry of Communications at Nan-king, according to the *China Press* of July 4. Of the increase, the German Luft Hansa will provide \$800,000 while Chinese interests are putting up \$1,600,000. The concern is reported to have spent \$4,600,000 out of the original \$5,100,000 capital for the construction of airports and the purchase of aeroplanes. A report of the decision will be made at the annual meeting of shareholders in September, at which time the future programme for the company will be mapped out.

Canton's Air Force Grows: A fleet of 729 modern fighting aeroplanes is the goal of the Kuangtung Provincial Government, and of that total two hundred 'planes are already on order, according to an item appearing in the *North-China Daily News* of July 12. The orders were placed as the result of the recent trip overseas by Mr. Lam Shih-ching and his party of observers. Eighty fast pursuit

craft were ordered in the United States, while the bombers will come from Italy and the observation 'planes from Germany. The report stated that the entire fleet would be divided up into three sections, pursuit, bombing and observation, with 243 'planes in each. Although the full 729 is aimed at eventually, the arrival of all two hundred aeroplanes now on order will bring the total to about 400. Many of the rest will probably be assembled at the Shao-kuan factory of the Provincial Air Force.

Trans-Pacific Air Line Fare is Rumoured: Although no definite decision has yet been made on the Trans-Pacific fare to be charged by the Pan-American Airways when its new California-to-Canton service is opened, it will probably be less than U.S. \$1,000, according to a statement made in San Francisco on June 25 by Mr. V. E. Chenea, general traffic manager of Pan-American Airways. A new forty-eight passenger air liner is soon to arrive in San Francisco to begin long distance tests with a view to opening a regular air mail and passenger service by September 1, he said.

ROADS AND ROAD BUILDING

Shanghai-Wusih Highway Completed: Construction work on the Shanghai-Wusih Highway, which was begun in April, 1934, was completed on July 15, according to the *China Times* of that date. The road was to be thrown open to traffic on August 1, and the operation of a bus service is scheduled to commence on August 15. The construction work was financed by the omnibus company which received its franchise in return. The fare from Shanghai to Wusih will be \$4.20, with a twenty per cent. reduction the first month. The new highway passes through Nan-hsiang, Ka-ting, Tai-tsang, Chang-shu and Tung-ting en route. A branch road links Chang-shu with Soochow.

Road Building Progress in Fukien: A total of 2,429 kilometers of highway is now open to traffic or projected in Fukien Province, according to a recent *Central News* report. Of the total, 1,470 kilometres are in daily use, 488 kilometers are under construction, and 471 kilometres are definitely projected for completion before the end of 1935. To date, the National Economic Council has appropriated \$678,000 to Fukien for

highway construction. As one result, omnibus service from Hing-hwa to Chuan-chou, part of the route between Foochow and Amoy, in South-eastern Fukien, was officially inaugurated on July 2. In order to encourage private enterprise, operation of this line and the connecting Chuan-chou to Lung-yen 'bus route have been entrusted to private concerns.

Construction Work in North China: Two important highways are under consideration by provincial authorities in North China. A *Central News* dispatch of June 30 says that survey work on the motor road between Tientsin and Tangku has already been completed, with construction to start shortly. The road will be eighty li in length and will fill a definite need.

Farther west the construction of a motor road between Pao-tou Chen, on the Peiping-Suiyuan Railway, and Tung-shen, in Eastern Suiyuan, is in progress. The work is expected to be completed in three months, the labour being undertaken by the soldiers of the 70th Division. General Fu Tso-yi has set aside \$7,000 to meet the necessary expenses.

RAILWAYS

Railway Exhibit Held in Tsingtao: Containing exhibits from every Government Railway in China, the products of more than 500 business firms and wares of nearly 1,700 small merchants from all over the country, the annual Chinese Railway Exhibition was opened in the Municipal Middle School in Tsingtao on July 10. A large crowd of both Chinese and foreigners was present. In addition to the exhibits in the school buildings, there are several acres of small huts which have been erected on the campus to accommodate the throngs of buyers and sellers from all over China who have congregated there. The displays in the main building range from small scale models of every conceivable piece of machinery used on the railways, to collections of old coins and pottery which have been unearthed in the course of construction.

New Locomotives for China's Railways: Two important Chinese railways are soon to have new locomotives, according to *Kuomin* dispatches. The Peiping-Hankow Line on June 24 informed the Ministry of Railways in Nanking that it was placing an order in Europe for twenty locomotives, to cost \$6,100,000. Almost simultaneously, a consignment of locomotives and other railway equipment for the Lung-Hai Line arrived in Tsingtao from Europe. It will be put into service as soon as possible.

New Manchurian Railway Opens: Stretching across 252 kilometers of fertile farm land in North-eastern Manchuria, the Tumen-Mutangkiang branch

of the Manchu-Korean Railway opened for traffic on July 1. The new line will connect Tu-men with Chia-mu Ssu and will be the principal transportation route in Eastern Manchuria, connecting the old Chinese Eastern Railway with the newer line to the south.

Railways Report Good Business: Total operating revenue from the Shanghai-Nanking and the Shanghai-Hangchow-Ningpo Railways during 1934 was \$21,980,000, only slightly below the record set in 1931. Dr. Shao-tseng Wu, Associate Managing Director of the joint railway administration, told a staff tiffin party recently. If the Nanking-Shanghai Railway were considered alone, its revenue exceeded that of 1931, he declared. For the first five months of 1935 the railways reported an increase of \$340,000 over the corresponding period of the previous year. As the result of a bad depression in rural districts, however, there was a sharp decrease in earnings in June, Dr. Wu said.

Discussing improvements for the railway, the Associate Managing Director declared that the steam coach service between Shanghai and Nan-hsiang has proved a success, the total number of passengers over this section reaching 63,628 in May. Fares totaled \$12,548. Dr. Wu also declared that, while double tracking of the whole line from Shanghai to Nanking, a step which was becoming more and more necessary, was impossible at present on account of the expense, an effort to speed up traffic was being made through the construction of additional and longer sidings.

SHIPPING

Fares to Europe are Cut: Despite the refusal of the other steamship companies to join in the cut, the Nippon Yusen Kaisha announced on July 7 that it would reduce its fares between Japan and Europe by from five to ten per cent. The cut became effective with the sailing of the *Hakusan Maru* from Yokohama on July 21. Almost simultaneously it was announced that eight ships of the Japan to London line would stop at Keelung, Formosa, starting in October of this year.

Potsdam Sails for Far East: The m.v. *Potsdam*, new 18,000 ton express liner of the North German Lloyd's Far Eastern Service and sistership of the *Scharnhorst* which was a recent visitor to Shanghai, left Bremerhaven on July 4 for China and Japan ports on its maiden

voyage. It is expected in Shanghai early in August. The third sistership, the *Gneisenau*, is still in the hands of the builders and is to be put into service in January, 1936.

China Merchants' Buy French Vessel: The s.s. *Ta Fei*, formerly operating in Chinese waters under the French flag, was purchased on July 18 by the China Merchants' Steam Navigation Company. The vessel has been renamed the *Hung Hai* and put into regular service between Shanghai and Haichow.

New Steamer for Jardine, Matheson & Co.: Built specially for service on the China Coast, and in accordance with Lloyd's and Board of Trade specifications and in conformity with the Simla and

the Hongkong Government regulations, the s.s. *Taksang* was launched in Glasgow during May for the Indo-China Steam Navigation Company. The vessel is 325 feet in length and is capable of accomodating 550 passengers. It is due in Shanghai late in September.

Shanghai to London in 25 Days:

What was probably a record for travel to Europe via America was set recently with the sailing from Shanghai of the

Canadian Pacific s.s. *Empress of Japan* on July 14. The speedy trans-Pacific liner was due to dock in Vancouver, B.C. at two o'clock in the afternoon of July 30, where passengers made a quick change to the Canadian Pacific transcontinental train "The Dominion", due to leave at 2.45. After a five day run to Quebec another close connection was made with the *Empress of Britain*, which arrived in Southampton five days later, just twenty-five days out of Shanghai.

INDUSTRIES

Utilities Active in Western Area:

Two public utility services of Shanghai were active in the so-called Western District outside the International Settlement boundaries during the past month. The Shanghai Waterworks Company, Ltd., under a temporary arrangement with the Government of Greater Shanghai, completed work in the middle of June which resulted in better pressure in the pipes of consumers in that district. The company recently arrived at an understanding with the Chinese authorities whereby cross-connections between the existing mains could be laid before the summer heat started. A deposit of \$10,000 with the City Government is understood to have been made as a guarantee.

Meanwhile the Shanghai Power Company in July notified its customers in the Western District that henceforth cheques in payment of power bills should be made payable to the "Western District Power Company of Shanghai, Federal Incorporated, U.S.A." To comply with the franchise conditions, billings are now quoted in standard Chinese dollars instead of taels as formerly.

Match Companies Combine Sales Agencies:

In order to combat the slump in prices which has seriously affected the industry, seven large match manufacturers formed a combine recently. Their joint head office is to be in Shanghai. The companies concerned are the Great China, Cheng Ta, Tung Sui, Huai Sang, Ta Hwa, Ming Seng, and Ta Ming. It is expected that branch offices will soon be opened in other cities of China.

The match consumption in China in the last few years has averaged about \$1,000,000 in value. While eighty per cent. of the total has been of Chinese manufacture, the recent fall in prices has been due to foreign competition, in addition to heavy taxation.

Fish Market Ready Soon: A major step in the promotion of China's fishing industry is soon to be completed with

the opening of a big new central fish market which is now under construction by the Ministry of Industries on Chun Pu Road, near Yangtzepoo Road, Shanghai. The formal opening is expected to take place early in September. The group of buildings includes an observation tower and radio broadcasting station, an ice factory and cold storage plant, offices for the fish merchants and a bank where the fishermen may obtain credit at low interest. An attempt will be made to improve the lot of the 2,000,000 people estimated to be engaged in the fishing industry in China by regularizing the marketing facilities and broadcasting information on prices.

The annual financial turnover from the fishing industry along the China Coast from Manchuria to Kuangtung is estimated at about \$50,000,000. Less than half of this is said to be in actual Chinese hands, however. The rest is believed to be mainly in the control of Japanese interests. According to foreign estimates, China's fishing industry could yield as much as \$200,000,000 a year if equipment and technique were improved. The central Fish Market in Yangtzepoo is intended as the first step of this program.

Chinese Gas Company Mooted: The Municipality of Greater Shanghai is prepared to give every assistance to any Chinese citizens wishing to invest capital in a gas company to serve the extra-Settlement districts and other areas under the jurisdiction of that government, the Commissioner of Public Works of Greater Shanghai declared to the Chinese press on July 7, according to the *North-China Daily News* of the following day. He pointed out that the need for the fuel had greatly increased in those areas in recent years. The franchise granted to the Shanghai Gas Company, a British concern, will automatically cease to operate in the territory under the jurisdiction of the Bureau of Public Works whenever a Chinese company comes into existence, he declared.

Toy Factory Fire Takes 27 Lives:

A blaze, which is believed to have started as the result of a workman's cigarette being thrown into a pile of celluloid waste, claimed twenty-seven lives on the night of June 28, when the Great China Toy Factory at Ichang and Ferry Roads was destroyed. The Settlement Fire Brigade battled the blaze for over an hour before it was placed under control, while ambulances from the principal hospitals of the city were busy until a late hour taking care of victims of the disaster. In addition to the dead, those injured totalled fifty.

Because no definite authority is given to the Shanghai Municipal Council in the Land Regulations to carry out and enforce factory inspection work, it is with extreme difficulty that occurrences such as this can be prevented. A great deal has been done, however, to make industrial undertakings within the Settlement safer. It is only when a factory becomes a definite hazard to public safety that it can be forced to close or correct itself. On the other hand, many owners appreciate the work of the factory inspection office and cooperate with its workers.

RADIO AND TELEPHONES**New Telegraph Services Are Offered:**

Messages received through the Chinese Government Telegraph Office and which are either in error or undecipherable may be corrected free of charge through the delivery office, the Ministry of Communications reminded its customers recently. Should the office still be in doubt, it will send another telegram to the despatching office to make an inquiry. No charge is made for telegrams of this nature.

A second service which is available through the Chinese Government Telegraph Administration is that of telephoning the message into the despatching office. As soon as the call is received, a representative is sent for confirmation and endorsement. A receipt is issued, a chit book signed, and a statement made out that is included in the monthly tele-

phone bill. No deposit is required for this service.

Shensi-Kansu Telephone Link is Opened:

The newly installed long distance telephone line between Si-an Fu, Shensi, and Lan-chou Fu, Kansu, was officially opened for use on July 1, according to a *Kuomin* dispatch of that date. The line follows the route of the new interprovincial highway.

Telephone Service Is Improved:

The last of the old "ring up" telephones in Shanghai, those connected with the Hungjao exchange, were converted to common battery operation on July 5. It will be no longer necessary to whirl a handle to call the operator; the service will be the same as on other instruments in the city.

BUILDING**L. Hardoon Building to Rise Soon:**

Plans to erect a fifteen storey building on the corner of Nanking and Szechuan Roads in Shanghai have been abandoned on account of present conditions, the Hardoon Estate announced recently. Instead, it is now proposed to modernize the old Hall & Holtz building which occupies the site. The action will mean a further delay of a decade or more in the widening of Nanking Road between Szechuan Road and the Bund.

Work on a second Hardoon building at the corner of Nanking and Honan Roads is to go ahead at once, however. Plans have been drawn up for a six-storey office and shop building, to be known as the L. Hardoon Building. Mr. Percy Tilley is the architect. Before this is erected, a forty foot strip will be taken off the Nanking Road frontage and twenty-five feet off Honan Road.

New Building Opened in Hongkong:

Hongkong's latest and most modern skyscraper, housing the Bank of East Asia, Ltd., in Des Voeux Road Central, was opened with the traditional string of fire-crackers on July 2. The ceremony was performed by Mr. Li Koon-chun, acting chairman of the Board of Directors.

Floods Delay Chien-tang River Bridge:

Two steel coffer dams which were being used to dig foundations for the new railway and highway bridge across the Ch'ien-t'ang River near Hangchow and a temporary wooden trestle for transporting materials were swept away by the floods which ravaged Northern Chekiang early in July. Work on the big new structure was delayed about two weeks. Although the coffer dams were built with a margin of safety for normal high water, the unexpected freshet, combined with a flood tide in Hangchow Bay, was enough to bring about the collapse of the casings. No

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permanent damage was done, however, and work was merely delayed until the water receded.

Double-Deck Bridge Over the Yalu River: Construction of a two-storey

ferro-concrete bridge over the Yalu River, which separates Korea from Manchuria, is being considered by the Korean Government-General, says *Rengo* of June 29. The top storey will be for vehicular traffic, while the lower level will be for pedestrians exclusively.

COMMERCE

China's Trade Balance Unfavourable: The balance of trade for China during the first five months of 1935 was unfavourable to the extent of \$235,793,227, according to the Monthly Returns of Foreign Trade published recently by the Chinese Maritime Customs. The figures revealed a further decline in the totals from the same period last year, when there was a deficit of \$264,218,505. The port of Shanghai handled 56.76 per cent of the imports during the five months and 48.35 per cent of the exports. Tientsin was second with 9.26 per cent. of the imports and 16.09 per cent. of the exports.

Britain's Manchurian Trade is Better: A comparison of Great Britain's exports to Manchuria at the present time and before the Japanese occupation, a point which was brought up in the House of Commons recently, revealed a considerable increase, *Reuter* reported on June 25. In 1931 the total exports from Britain to Manchuria amounted to £336,000, and by 1934 this figure had increased to £625,000. There was little change in textile shipments, but Britain exports of tools, iron and steel had increased by £130,000.

Minister Urges Industry for China: Asserting that China's national policy should be based on the simultaneous development of agricultural and industry "if the national foundation is to be per-

manently consolidated," Mr. Chen Kung-po, Minister of Industry at Nanking, recently pointed out three dangers of too great dependence on agriculture. Firstly, he said, an agricultural China can never offset the present unfavourable balance of trade, as foreign markets for China's agricultural products are difficult to secure. Secondly, an increased number of farmers will make efficient mechanization difficult and thus the cost of production will be increased. Thirdly, when the national wealth is spread over a great number of peasants taxation is difficult. In conclusion, Minister Chen suggested that, as a step toward rural relief, part of the farm population should be converted into industrial workers through the development of light industries.

Two days later, on June 27, *The Shanghai Evening Post* editorially pointed out the greatest weaknesses in this set of arguments. For one thing, it was pointed out that China is assured of no better markets for her projected industrial products than for the present agricultural output, and would be confronted with greater competition. Secondly, mass farming is not necessarily a success, as has been shown by the efforts along the same line in Russia and the United States. On the third point, that concerning the presence of a mass of "poor peasants," the editor saw no reason why industrial workers could not be just as poor as farmers.

FINANCE

"Mex" Coins to be Suppressed: As a step toward unification of China's currency system the Executive Yuan on July 10 ordered the Customs authorities to stop any further importation of foreign silver coins into the country. At the same time all Provincial Governments and provincial finance bureaux were instructed to notify private holders of foreign silver coins (notably the old "Mex" dollars, which are still current in many parts of the interior) to turn them in to the Central Bank of China or the Manufacturers' Bank in exchange for proper coins.

In order to continue the replacement of old coins and to provide the entire country with a uniform system of money, the Central Mint on August 1 began turning out standard silver dollars for the twenty-fourth year of the Republic. The original proposal to change the size of the dollar slightly this year was vetoed on the grounds that it might weaken the confidence of the people in the money.

Shanghai Bank Closes Doors: Declaring that the institution was in a position to meet all its obligations, although

it lacked cash, the World Commercial and Savings Bank, on Foochow Road, Shanghai, failed to open its doors on the morning of July 4. A meeting of stockholders subsequently decided to liquidate the enterprise. Established in 1930, with a capital of \$200,000, the bank had deposits amounting to nearly \$500,000 at the time of its closure. In accordance with the savings bank law, however, the institution had about \$130,000 worth

of securities deposited with the Central Bank of China.

Post Office, Savings Bank are Merged: The long heralded amalgamation of the Postal Remittances and Savings Bank with the Chinese Post Office took place on July 1. The Bank is henceforth to be a department of the Post Office, although financial independence will be maintained.

CONSERVANCY

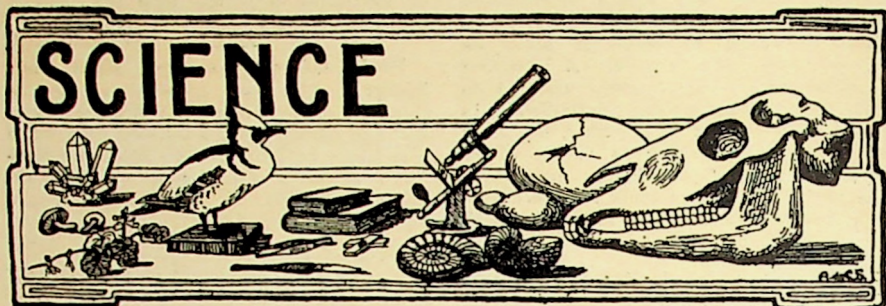
Conservancy Work to be Filmed: With a view to enhancing public interest in water conservancy work in the Northwest, plans are being made to film the operation of the Ching Hui and Lo Hui Irrigation projects, two of the outstanding hydraulic engineering projects in Northern Shensi, says a *Kuomin* message of June 18 from Si-an Fu.

Afforestation Pushed in Kiangsi Province: Over ten million trees have been planted throughout Kiangsi Province as the result of the administration's encouragement of afforestation, according to Mr. Kung Hsueh-sui, the Provincial Commissioner of Reconstruction. There are altogether seven nurseries in the province, and eventually each of the seventy odd *hsien* will have one, he declared. Periodical competitions are to be held to determine the best saplings.

North Kiangsu To Build Long Dyke: Agitated by the fear that the flood waters of the Yellow River may seek an outlet to the sea by way of the Grand Canal and the Huai River, a conference

of magistrates in Northern Kiangsu decided recently to build a seventy mile dyke around the southern edge of the Wei Shan Hu near the Shantung border. The magistrates of Tung Shan and Pei Hsien have been instructed to recruit 100,000 labourers, completion of the work in two weeks being desired. The dyke will take the form of a semi-circle around the Wei Shan Lake, starting at Yu-Tai on the west and ending at Han-chuang on the east. In addition, the outlet of the lake into the Grand Canal will be blocked for the time being, so that there will be no exit for the Yellow River water via the Grand Canal and the Huai River. At last reports, the rising water had spread across the flat Shantung plain to within sixty miles of Pei Hsien.

New Dredger for Manchurian Rivers: Designed for dredging operations on the Liao River in South-western Manchuria, a large new dredger was recently launched by the Asano Shipyards in Yokohama for the Manchoukuo Government, says a *Rengo* message of July 11. It has a capacity of from fifteen to sixteen cubic meters of mud per hour.



SHELL COLLECTING ON THE CHINA COAST

BY

ARTHUR DE C. SOWERBY

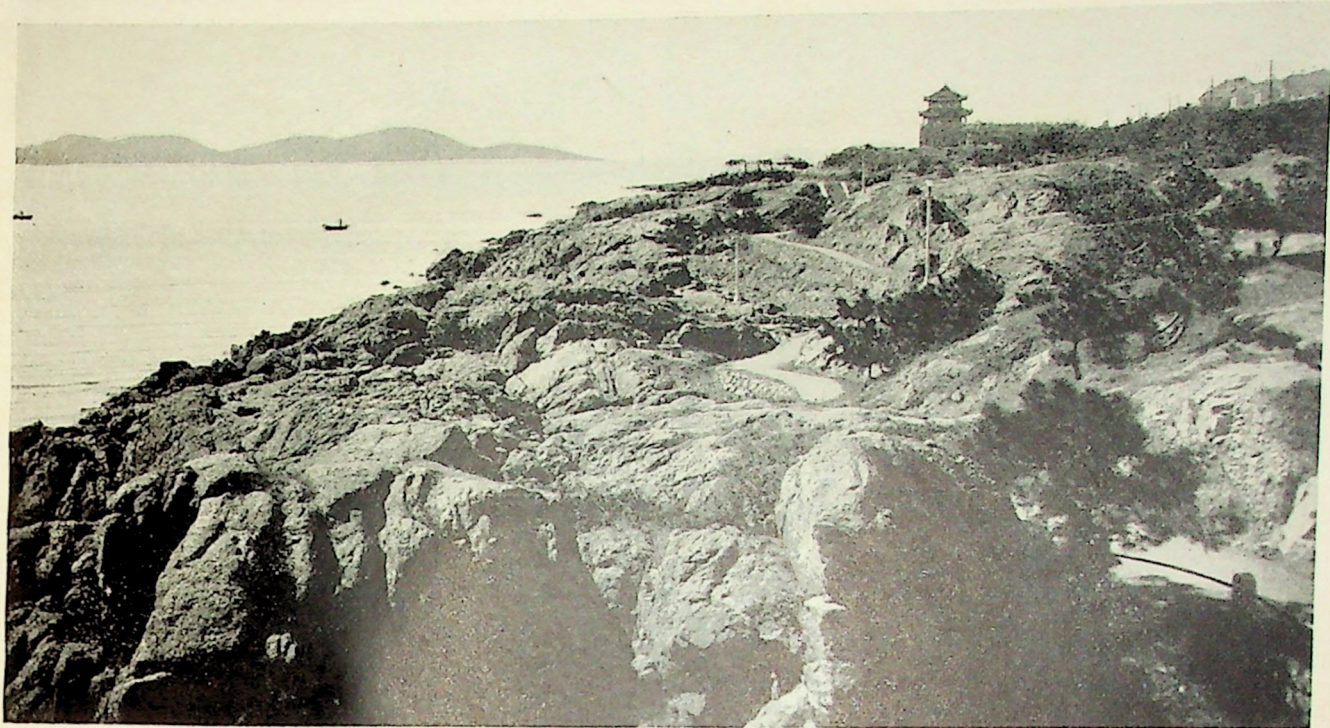
One of the most fascinating occupations with which the visitor to the seaside can busy himself is the collecting of sea shells. It is certain that almost every one has at some time or other indulged in this pastime, though comparatively few may have taken it seriously. There was a time, half a century or more ago, when the collecting of shells, not merely from the nearby seashores, but from all parts of the world, seems to have been an extremely popular hobby or avocation in England, so much so, indeed, that professional dealers in shells did a considerable business. Certain of the rarer shells commanded high prices. An interesting example of this is to be found in the case of what was known as the Chinese wentletrap (*Scala scalaris*), which at one time was worth as much as £40 a piece.

To-day the collecting of sea shells has, apparently, lost much of its popular interest; or, perhaps, it would be fairer to say that the making of properly classified and arranged collections of shells, except by individuals connected with museums or other scientific institutions, is not nearly as common as it used to be. More especially is this the case in China, where few people seem to have either the time or the inclination to give to the pursuit of anything but the dollar. This is a pity, for it is remarkable how much interest can be derived and knowledge acquired by indulging in pastimes of this nature. Those who have not already tried it will be surprised at the excellent opportunities offered in this country for making really interesting and valuable collections of marine shells.

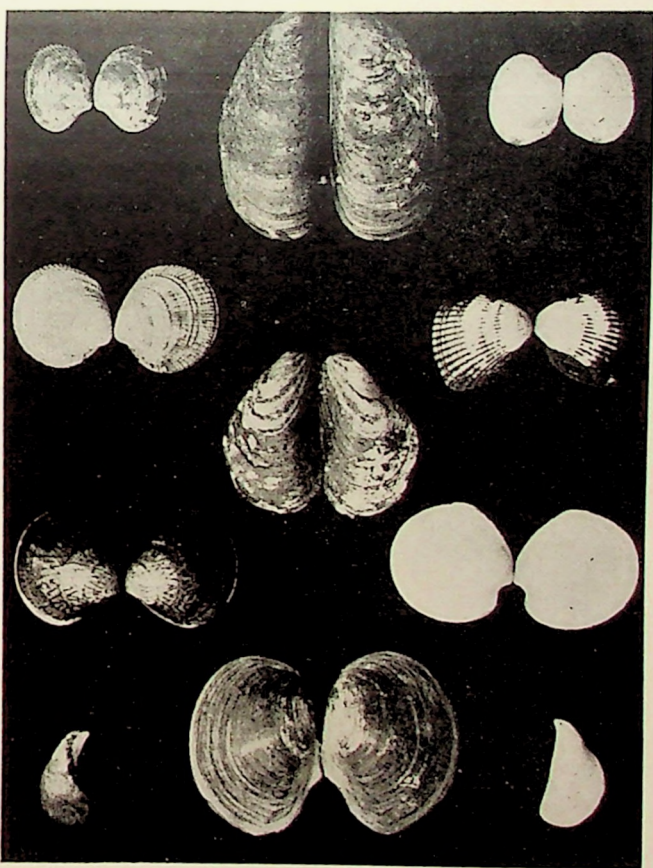
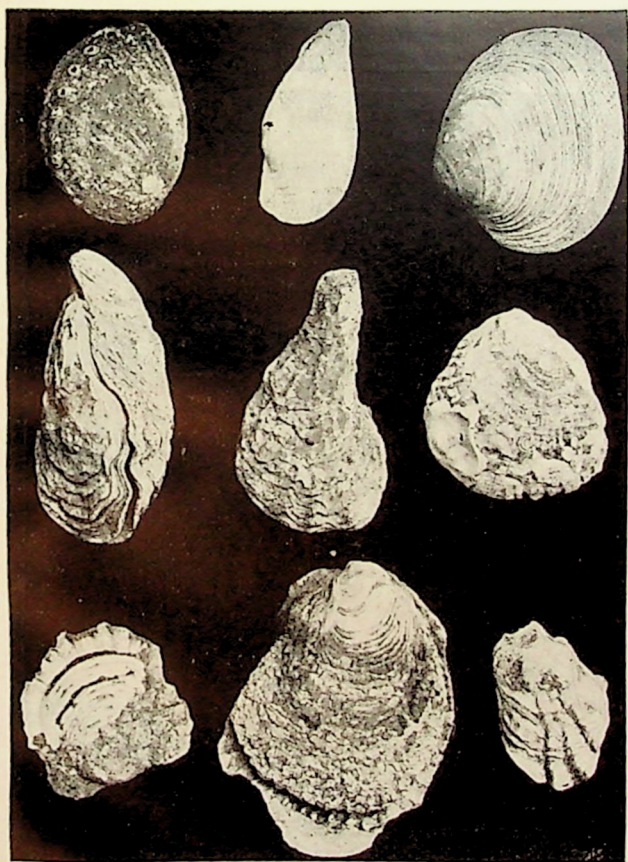
Some years ago an article entitled "Shells of Peitaiho," by A. W. Grabau and Shotsu G. King, was published in *The China Journal*.^{*} This was subsequently expanded and published in book form with numerous illustrations by the Peking Society of Natural History, and now forms a very useful handbook for the collector of North China sea shells. It, of course, covers the northern shores of the Gulf of Pechili on which Pei-tai Ho lies.

As one proceeds southward from there along the coast of China, one finds that the marine molluscan fauna changes as to species, sub-

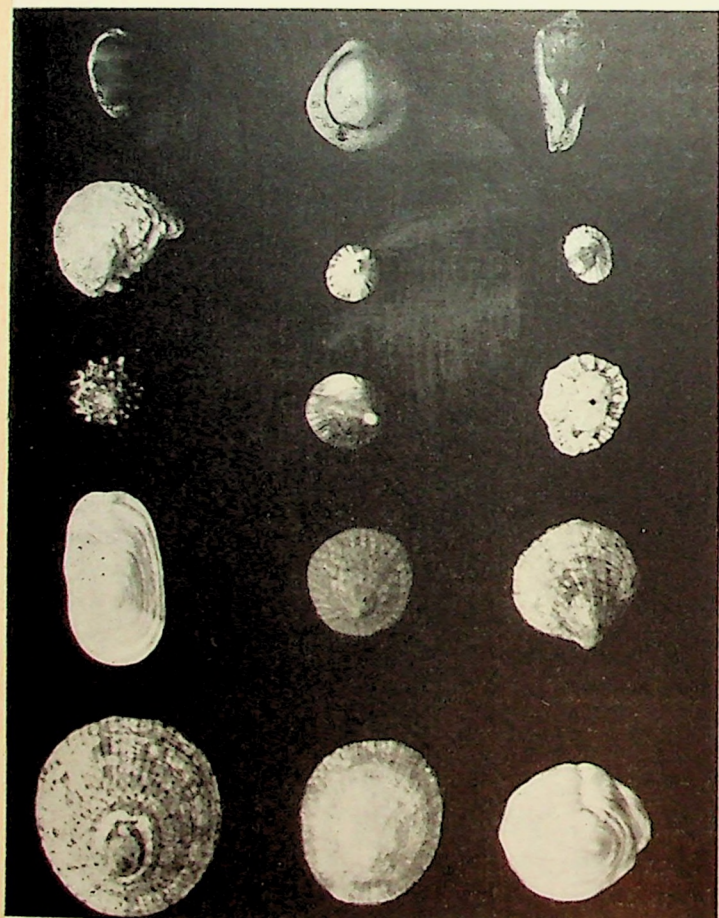
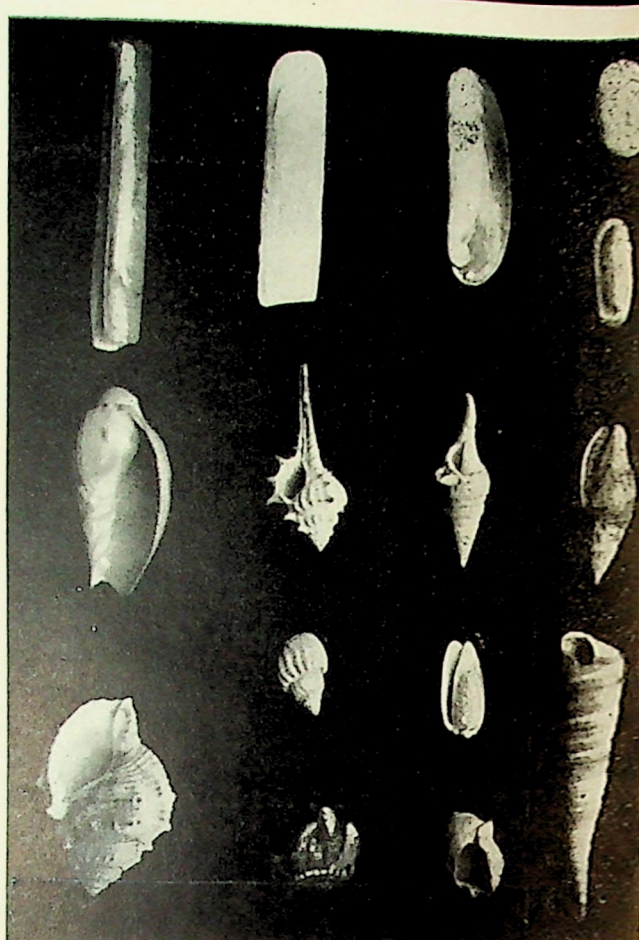
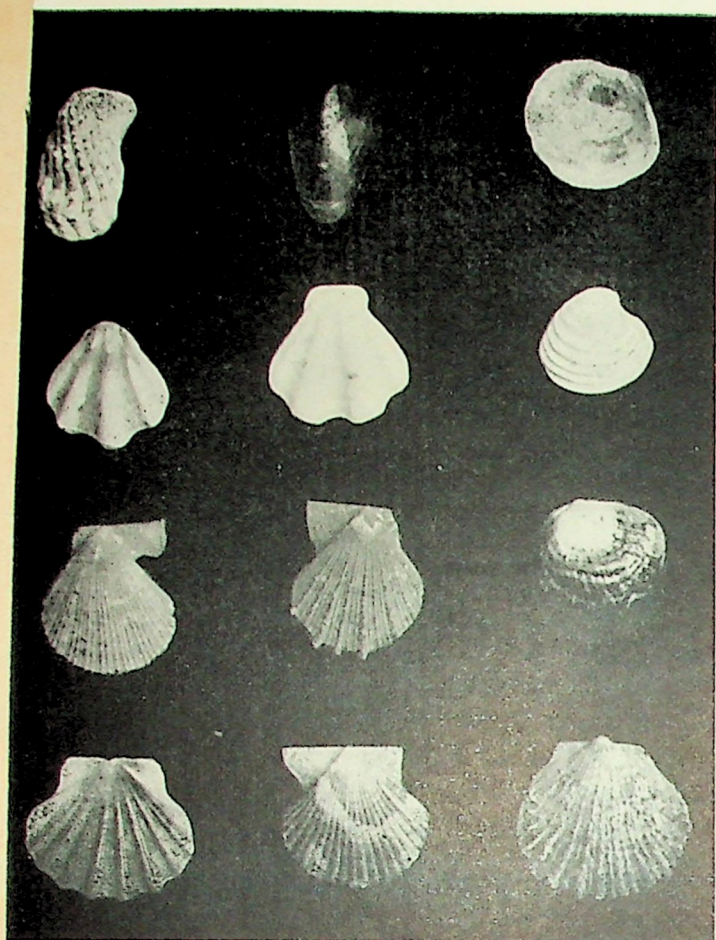
^{*} Vol. VI, 1937, Nos. 3, 5 and 6.



A View of the Rocks, the Bay and the Aquarium at Tsingtao, Shantung, where many interesting Sea Shells may be gathered.



Here and on the next Plate are shown many Examples of Sea Shells obtainable along the Coasts of China. These Pictures have been supplied by the Tsingtao Aquarium, shown above, which was first opened in 1932. The Names of the Shells are given in the accompanying Text.



Some of the many lovely Sea Shells to be found along the China Coast. See accompanying Article for their Names.

SHELL COLLECTING ON THE CHINA COAST

species, varieties and forms; so that the shells one picks up along the sands or on the rocks of the Shantung coast are not quite the same as those found in the extreme north, let us say at Chin-wang Tao. The further south one gets the more noticeable the changes, till, by the time Hongkong is reached, tropical forms have begun to show up in more or less abundance.

As far as South China shells are concerned, those interested in the subject of Chinese conchology may be referred to the valuable semi-popular quarterly journal known as *The Hong Kong Naturalist*, in which have been appearing papers dealing with the shells of Hongkong.* Incidentally, it may be pointed out that, for those who wish to go more deeply into the subject of Chinese sea shells, there are now to be found many papers on this subject in various scientific journals published in this country. Thus Teng-chien Yen has recently produced a valuable paper entitled "The Molluscan Fauna of Amoy and its Vicinal Regions," while the same author, collaborating with Dr. Chi Ping, has issued another entitled "Preliminary Notes on the Gastropod Shells of the Chinese Coast."

As an example of a good place in which to start making a collection of Chinese sea shells the popular sea side resort of Tsingtao may be chosen. Tsingtao is situated on the southern side of the Shantung Promontory, and is characterized by having a more or less rocky shoreline with splendid stretches of sandy beaches. The water is clear, and there is a fair amount of seaweed growing on the rocks, all of which constitute favourable conditions for the presence of many species of marine molluscs, whose shells are to be found everywhere. On the other side of the promontory are Chefoo and Wei-hai-wei, also popular seaside resorts, but, since they lie on the Pechili Gulf, it will be found that the shells obtained there are more or less identical with those of Pei-tai Ho. At Tsingtao, which lies on the shores of Kiao-chao Bay, opening into the yellow Sea, one finds several species of marine molluscs that do not occur further north, and, of those that do occur also at the more northerly places here mentioned, not a few show slight or more or less pronounced variations, as the case may be.

Fortunately for those who may desire to start making a collection of sea shells at Tsingtao there is the Aquarium, where identified and classified specimens of all the local species may be seen, which will prove a great help to the beginner, as well as being of value to the more experienced collector, who can never be quite sure of the identity of his finds without good books on the subject or some such institution to which to refer.

Before going into details regarding the various species of marine molluscs to be found at Tsingtao, it would be well, for the sake of the uninitiated, to run briefly over the general classification of these animals, so that they may at least be familiar with the terms that it is necessary to use. It is taken for granted, of course, that every one is aware of the fact that the shells that one collects are not the animals themselves, but only an outside covering produced by secre-

* The Molluscan Shells of Hongkong, by Shotts G. King and Chi Ping. *Hong Kong Naturalist*, Vol. II, No. 1; Vol. II, No. 4, 1931, and Vol. IV, No. 2, 1933.

tions of chalky material from the animals themselves. Inside the shells, or pairs of shells, as the case may be, are to be found the animals when alive. These vary very greatly, according to the group to which they belong, being divisible into two main classes, the pelecypods or bivalves, and the gastropods or univalves. The bivalves may at once be distinguished by the fact that the shelly part of the animal consists of two more or less saucer-shaped plates usually joined together by a chitinous hinge so that they can open and shut like the covers of a book, protecting the fleshy part of the animal between them. The gastropods, on the other hand, are characterized by having but one shelly part, usually in the form of a hollow spiral, into which the fleshy part of the animal withdraws for safety, frequently closing the aperture with either a chitinous or a shelly disc.

There are three other classes to be found in the great phylum *Mollusca*, namely, the cephalopods, which includes the cuttlefishes, octopuses and the like; the scaphopods, which includes the tooth shells, so called because of the resemblance of their shells to the long canine teeth of mammals; and the amphineurons, which includes what are known as the chitons, whose shells consist of a series of dorsal scutes bound together by tough leathery tissue.

Of these the scaphopods are not only few as to species, but individual specimens are comparatively rare. No specimens have so far been found at Pei-tai Ho, nor do we know of any having been found elsewhere along the China coast. A few species are known from the coast of North-western America on the other side of the Pacific, one form, the Indian's tooth shell (*Dentalium pretiosum* Sowerby), having till quite recently been used by the Indians as money. The discovery of a tooth shell on the China coast would be interesting indeed.

Chitons are fairly common at Tsingtao. They may be looked for amongst the low-lying rocks, or shingly areas usually covered by water, where they will be found clinging like limpets to the under surface of loose stones.

All the members of the class *Cephalopoda*, with the exception of certain tropical species, such as the pearly nautilus, have no external shell, what was originally the shell having become reduced to a flat lanceolate chalky object within the animal's body. This is commonly known as cuttlefish-bone, specimens of which can usually be picked up on the sands at any seaside resort.

The "shells" which it is suggested shall form the object of search will practically all be found to come from animals belonging to the two classes *Pelecypoda* and *Gastropoda*, briefly described above.

Amongst the pelecypods, or bivalves, will be found the well known oyster (*Ostrea*), several species of which have been described from the China coast. These are, perhaps, the commonest shells in our region, in places whole banks or beaches of them occurring, with practically no other species present. Related to them are the lovely saddle oysters (*Anomia*), whose thin opalescent shells are amongst the most attractive objects to be found along the seashore. Then come the beautifully shaped and often brightly coloured scallops or pectens (*Pecten*), whose fan-like

SHELL COLLECTING ON THE CHINA COAST

appearance at once attracts attention. Most people call these "fan-shells," but this name is incorrect, belonging, as it does, to another group of bivalves generically known as *Pinna*, which are not known in the waters of North China, but are common in those of the south.

Very common along the coasts of China are numerous species of ark-shell, some of which are usually mistaken for cockles on account of their shapes. Generically known as *Arca*, some nine species of ark shell have been listed from Pei-tai Ho alone. The name is derived from an alleged resemblance of the shells of certain species to a Noah's Ark. Next come the various forms of mussel, the common edible form, *Mytilus edulis*, Linn., being prevalent in places. A lovely species, with its rich brown outer jacket and the opalescence of the inner surface of the shell, is *Modiola atrata*. This is by no means common. The flat white valves of the various species of *Dosinia*, almost like porcelain dishes, will soon attract the collector's eye, as also will the heavy triangular valves of *Cythera meretrix*, with its many zig-zag lightning-like brown markings. Fascination will accompany the collecting of the common little carpet shells, represented along the China coast by *Tapes variegatus* Hanley. It will be found that the pattern on the shells of no two individuals are alike; hence the name. The lovely pink *Tellina inquinata*, the sunset-shell, will soon come to one's notice as one wanders along the beach at low tide, when also is the time to be on the look out for such strange forms as the razor shell, *Solen corneus pechiliensis* G. and K. at Pei-tai Ho, and *Solen grandis* and *Solen gouldii* at Tsingtao.

While many beautiful forms are to be found amongst the pelecypods or bivalves, it is likely that the beginner will derive more satisfaction from collecting the shells of gastropods. These, on the whole, are more brightly coloured, but they have the added fascination of an infinite variety of form, many of them being intricately decorated with excrescences of the shell. There is also a wide variation in their spirals, from the long drawn-out spires of *Terebra dussumieri* Kiener, found at Pei-tai Ho, and *Tetrachita squamosa* of Tsingtao, to the squat cone of the common winkle of these coasts, *Littorina balteata* Reeve, or the flat whorl of the necklace-shell (*Natica didyma ampla*, Phil.).

It is impossible to go into details concerning or to give the names of even a part of all the numerous shells to be found along the China coast. They run into hundreds, many of them not yet having appeared in published lists. There is much work to be done in this direction alone, and, in the meanwhile, the collector must be content with such works of reference as have been mentioned above.

In making collections of shells everything should be taken, even broken or imperfect specimens. One can never tell when a new species or variety is going to come to light. Efforts should, of course, be made to get as perfect specimens as possible, but, until one has this in connection with a given species, imperfect ones should be kept. In this connection it may be noted that specimens taken with the living animals in them and subsequently carefully cleaned are always in the best condition. Others are liable to be worn or chipped. Series of specimens are always more valuable than single specimens. Careful packing with

cotton-wool and tissue paper is an important factor in bringing home a good conchological collection.

In the accompanying illustrations are shown a series of shells photographed at the Tsingtao Aquarium. Presumably they were secured in the Tsingtao vicinity, so that their names may be of help to collectors in that locality. Reading in each case from left to right across the illustration, the names of these shells, as supplied by the Tsingtao Aquarium, are:

Plate I, Lower left: *Haliotis* (sea-ear or abalone), *Barnea*, *Saxidomus mittallii*, various forms of *Ostrea* (common oyster).

Lower right: *Tapes variegatus* (carpet-shell), *Mytilus crassitesta*, (a form of edible mussel), *Tapes variegatus*, *Venus jidoensis*, *Arca inflata*, *Mytilus edulis* (edible mussel), *Meretrix petechialis*, *Dosinia*, *Brachydontes senhausi*, *Margaritus* (freshwater mussel), *Brachydontes senhausi*.

Plate II, Upper left: *Lardita cummingiana*, *Modiola barbata*, *Anomia peruviana* (saddle oyster), *Chlamys plica* (2 specimens), *Venerupis lamellifera*, *Chlamys laetus*, *Pecten squamatus*, *Pecten laquaetus*, *Pecten circularis*, *Spondylus regius*.

Upper right: *Solen gouldii*, *Solen grandis* (razor-shells), *Cultellus attenuatus*, *Novacalina constricta* (2 specimens), X, *Murex troscheli*, X, *Mitra*, *Nassa gemmulata*, *Oliva mustelina*, *Turritella*, *Bursa rana*, *Mitella mitella*, *Tetracita squamosa* (the last two are barnacles, not molluscs).

Lower left: *Cypraea macula*, *Cypraea moneta* (money cowrie), *Octaconella*, *Trigonia*, X, *Elysia viridis* (2 specimens), X, *Patelloida pallida*, *Elysia viridis*, *Parmopharus australis*, *Acmaea asmi*, *Acmaea persona*, *Acmaea limatula*, *Acmaea asmi*, *Patelloida pallida*.

Lower right: *Eburna formosae*, *Chicoreus sinensis*, *Cypraea mauritiana*, *Hemifusus ternatanus*, X, X, *Rapana buibosa*, *Rapana bezoar*, *Batillus cornutus*.

IMPORTANT WORKS IN THE STUDY OF CHINESE MEDICINE

BY.

K. KIMURA

Read before the Shanghai Naturalists' Club on June 6, 1935.

The study of medicine is, indeed, the mother of all sciences, and, as the world in general is turning its attention to the nature and merits of Chinese medicines, this subject would seem to be one of interest to those who undertake biological work in China.

Medicines played their part even in the lives of our troglodytic ancestors. Needless to say, in those far distant days medicines were obtained from natural sources. However, the accumulation of experience and knowledge by human beings has led to the discovery and production of an immense number of important medicines or chemicals.

In olden times the practice of medicine in China was thought to be superior to that of Western people. But there seems to have been a long period during which the Chinese made no progress in medicine and continued the use only of their primitive preparations. In the meanwhile, however, Western people were developing research in this branch of science, preparing extracts, making tinctures, isolating the constituents and active principles of drugs, or evolving new compounds from them. The only progress in Chinese medicine during that time appears to have consisted of an increase in the number and variety of medicines in harmony with the progress of medical treatment, or of the art of combining medicines in the prescriptions. Recently, however, the attention of the world has focused upon certain Chinese medicines and several important compounds that have been isolated from them. This has led to definite aims in the study of Chinese medicines. These are taking the form of research, chemical and therapeutic, with a view to discovering how best to utilize Chinese drugs in the modern treatment of disease. They must be considered individually, and also as they occur in the prescriptions written in the old medical books. Therefore, to study Chinese medicine, it is necessary to know the real nature of the medicines used in the old therapeutics and also to be able to compare the drugs on the market to-day with the descriptions written in the old Chinese *Materia Medica*. This means that we are compelled to make an intensive study of the old methods of Chinese medical treatment in all its aspects.

Biological work, essentially, is the first step towards the discovery of the origin of a drug. However, as a given drug usually is derived from some natural product, and, as several different drugs may be handled under one name, or there may be some error in nomenclature or counterfeits of it may be on the market, it becomes necessary to make a pharmacognostical study of it. By this means investigation is made of each suspected source of the drug and the correct or original one is finally determined, comparison being made with the natural products. Taxonomic determinations are made by systematists, or by referring to the descriptions written in the old Chinese *Materia Medica*, or *Pên Ts'ao*.

1. *Importance of the Determination of the Origins of Drugs.*

In the market in Shanghai at the present time are to be found nearly one thousand drugs used by the Chinese. The general impression is that the origins of most of these drugs are known. On the contrary, they are not known. The origins of many are very uncertain, and others have either been wrongly identified or are totally unknown to Western science.

To test any one of them, either chemically or medically, it is necessary first to discover the actual origin of the material. Study of drugs without this fundamental knowledge would only yield results worthless from a scientific viewpoint.

To explain how important it is to determine the origin of a drug I will mention a discovery (*Journ. Pharmaceut. Soc. Japan*, Vol. 48 No. 9, 1928, 884) I made during the course of a pharmacognostical study in which I was engaged under Professor Y. Asahina at the Pharmaceutical Institute of the Tokyo Imperial University.

Professor Eijkman, working in the Pharmaceutical Institute, had found berberin in a Chinese drug named *chang-shan* (常山) (*Nederl. Tijdschr. Pharm.*, 1884, 228). He gave the origin of the drug as *Orixa japonica* Thunbg., a shrub of the family *Rutaceae*, which is indigenous to Japan. However, the real origin of *chang-shan* is to be found in *Dichroa febrifuga* Lour., a shrub of the *Saxifragaceae*, the distribution of which extends from Szechuan to India. It is used as a febrifuge, especially for malaria, both in India and in China.

In Honzô-wamyô (本草和名), the oldest Japanese explanatory work on Pên Ts'ao (本草), published between 898-900 A.D., the author calls *chang-shan* by a Japanese name *kokusagi*. It is not certain whether at that time he had really meant to indicate *O. japonica* (*kokusagi*) as the original source of *chang-shan*. Afterwards *kokusagi* was recognized as the Japanese name of *O. japonica*, which, accordingly, came to be recognized as the original plant of *chang-shan*.

Therefore, I presume, Professor Eijkman took *Orixa japonica*, as the original source of the drug he used in his chemical work. To make matters worse, it was not genuine *chang-shan* that he used, but one of its counterfeits. My pharmacognostical study of the specimen he left in the Institute disclosed the fact that the counterfeit was the stem of a species of *Berberis* or *Nandina*, a shrub of the *Berberidaceae*, in which berberin occurs naturally as one of its chemical constituents. If he had made pharmacognostical tests of the material, he would have found, at least, its lack of relation to *O. japonica*.

Before this discovery this inconsistency was not known. *Orixa japonica* was believed to contain berberin, this view being extensively cited in the literature on the subject, notwithstanding the doubt as to whether it was the original source of the Chinese medicine *chang-shan*. Following the work of Professor Eijkman many Japanese pharmaceutical chemists tried in vain to extract berberin from *O. japonica*, and it was only the pharmacognostical study which finally cleared up the question. New alkaloids named orixin from *O. japonica* and dichroin from *Dichroa febrifuga* were isolated, but berberin was recovered from neither of these plants.

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2. *Pharmacognosy and Pharmacognostical Study of Chinese Medicine.*

The collection of herbs for medicinal use in the West dates back to remote antiquity. The papyri of the Egyptians, written as early as 1600 B.C., record the names of many drugs used by the physicians of that period.

The term pharmacognosy was introduced by Seydler in 1815. It is formed from two Greek words meaning medicine and knowledge; and literally means the science or sum of knowledge of drugs. However, we may agree with Tschirch that the ancient herbalists were the first pharmacognocists. The most comprehensive idea of the scope of pharmacognosy has been given to us by Flückiger, who states that it is "the simultaneous application of various scientific disciplines with the object of acquiring the knowledge of drugs from every point of view."

The subject was well expounded by Martius, who, in 1825, published a work entitled "Grundriss der Pharmacognosie des Pflanzenreiches," which may be regarded as a pioneer work in pharmacognosy.

The development of modern pharmacognosy may be said to date from the initial studies on the histology, or microscopic anatomy, of plants. All of these studies show that we find the plant unit in the cellular structure of plants. The importance of this discovery will at once be apparent when we recall that many plants, as well as drugs, may resemble each other very closely when viewed with the naked eye. It is when we examine their cellular structure that we find that the nature of the cells, their contents and their arrangement, while varying in different plants or drugs, is constant, for the most part, in the same drug.

This advance in the study of plants is largely due to Schleiden, who, in 1838, announced his doctrine that the cell is the fundamental unit in plants as it is in animals, and showed further that the different tissues are combinations of cells of different types. Schleiden not only contributed very largely to the knowledge of the structure of plants, but was among the first to recognize that drugs of different origins might be determined by their cellular differences.

Schleiden early saw that pharmacognosy was to be a distinct science. He designated it a botanical discipline, and went so far as to say, "Pharmacognosy is the mother of all scientific discipline." When he said this, he no doubt had in mind the difficulties attending pharmacognostical work, and recognized the value of the training required in this study, for the pharmacognocist working upon dried material must have in mind the relationship between the fragments of the drug he is examining and the morphology of the living plant.

From then on pharmacognosy developed rapidly in Europe through the researches and publications of many scholars.

Crude drugs occur in commerce either in the entire, nearly entire, or broken condition, as in most roots, rhizomes, barks, fruits, seeds and some leaves, or matted together, as in the case of herbs. There always has been a wide variance in the quality of crude drugs. This generally

is due to one or more of the following causes: (1) deficiency in knowledge or carelessness on the part of the collector; (2) want of care in preparing the materials for the market; (3) carelessness in gathering or selecting them; (4) carelessness in storing and preserving them; (5) contamination, accidental or otherwise, with other drugs; (6) adulteration; and (7) substitution.

Pharmacognosy may, therefore, be defined as the science that treats of the history, commerce, collection, selection, identification, valuation and preservation of crude drugs and other raw materials of vegetable and animal origin used in medicine.

In Chinese medicine, as has already been stated, a given drug may exhibit more or less variation in its origin, quality and place of production. Accordingly it is still necessary to discover the origin of the different kinds of drugs handled under a certain name, and to know which is the original one recorded in the Pên Ts'ao. With this must go the detection of spurious material in the way of adulterations or substitutions. Thus, pharmacognostical identification is prosecuted as an anatomical study supplemented by micro-chemistry, drugs being compared with the known natural products.

For this purpose the natural substance should be known scientifically. Such knowledge can be brought about only through research work in the biology of China.

Recently Mr. A. de C. Sowerby has given us a glimpse of the work of the biologist in China (*The China Journal*, May, 1935), in his paper "Progress of Biological Work in China," and with this as an introduction, I shall now proceed to a consideration of the important work of Pên Ts'ao and Chinese medicine.

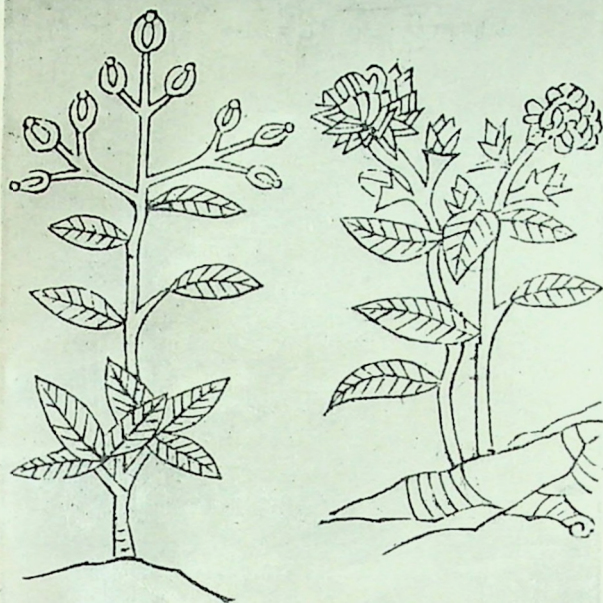
3. *A Brief History of Chinese Medicine and its Important Works in China.*

The founder of Chinese medicine is said to have been Shên Nung (神農) or Emperor Yen (炎帝), who ruled over the country about 2780 B.C. The famous Emperor Huang-ti (黃帝), 2600 B.C., also gave his attention to the promotion of the art of medicine and medical treatment. Pên Ts'ao is commonly understood to be a description of Chinese medicine. However, this term, Dr. Nakao suggests, first appeared in the literature between 97 and 31 B.C., notwithstanding the fact that Chinese works on medicine already existed before 167 B.C. It is believed that, in the beginning, the term was used to describe an art concerning the prolongation of life, or a science of alchemy. Afterwards, the term came to be used with a still wider meaning that included, not only medicines as used both in medical treatments and for prolonging life, but as connoting victuals both for daily use and for special contingencies.

It may, therefore, be reasonable to regard the Pên Ts'ao as a work of biology, or, perhaps, more properly, as something like a work of ancient pharmacognosy or old *Materia Medica* in China. It is believed that the books describing medicine under the name of Pên Ts'ao certainly appeared at the beginning of the 1st century A.D. There is an old book, of which reprints are now extant, called the Shan-hai Ching (山海

海州蜀漆

海州蜀漆



1. *Ch'ang-shan* or *Shu-ch'i* of Hai Chou.

海州蜀漆



2. The Same from the Shao Hsing Pen Ts'ao.

PLATE No. 402.



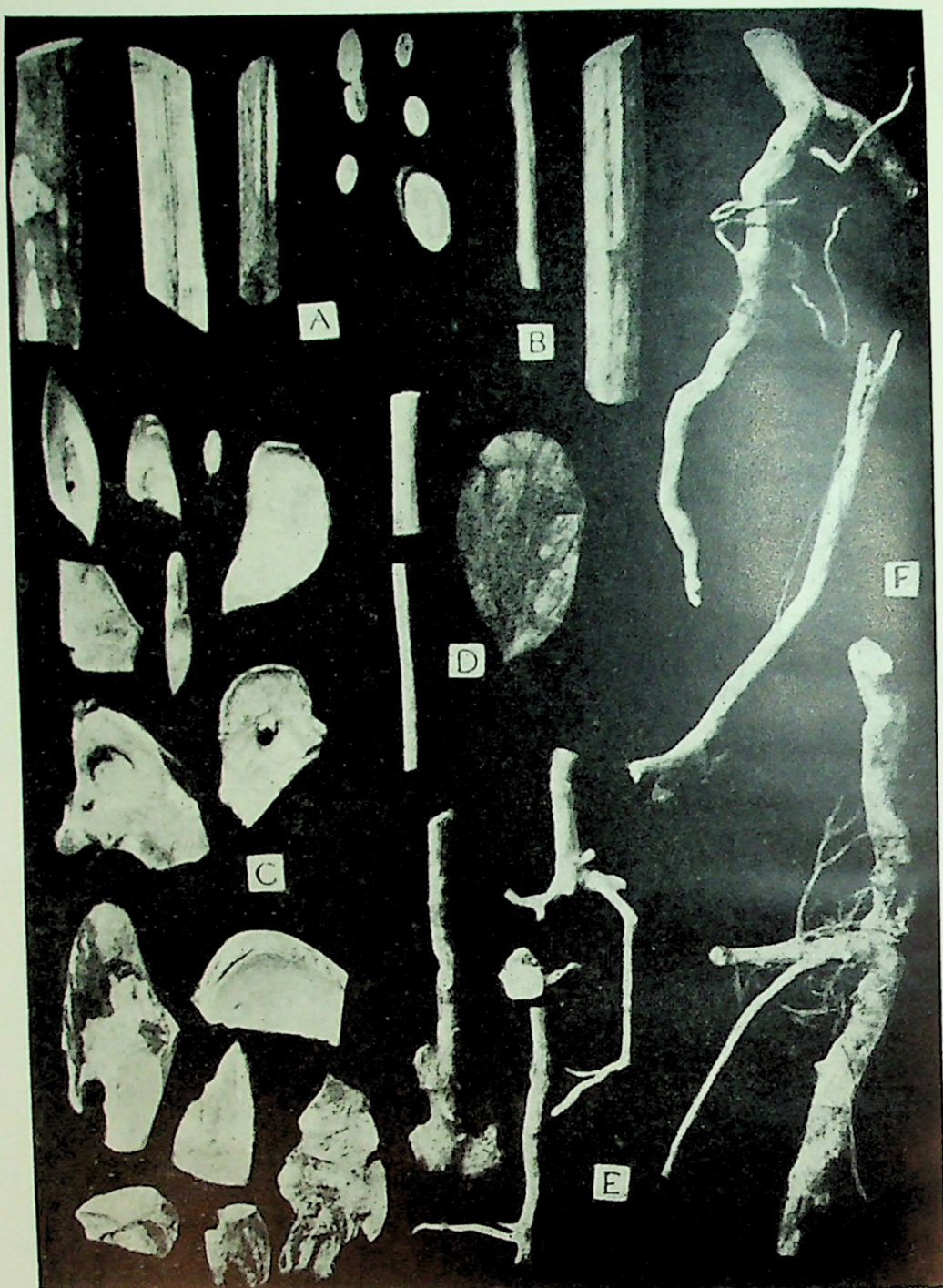
DICHROA FEBRIFUGA, LOUR.

3. *Dichroa febrifuga*, Lour.



Orixa japonica, Thunb.

4. *Orixa japonica*, Thunb.



VARIOUS SPURIOUS DRUGS OF CH'ANG-SHAN (常山)

- A. Ejikman's Specimen of *Ch'ang-shan* preserved in the Tokyo Imperial University.
- B. *Ch'ang-shan* from a Drug Store in Tokyo, both specimens having been determined as Species of *Nandina* or *Berberis*, counterfeits of *Ch'ang-shan* from China.
- C, D, E. Specimens of Material histologically very close to *Hydrangea*, but differing from each other.
- F. *Ch'ang-shan* as sold in the Korean Market. It is actually *Spiraea prunifolia* Sieb. et Zucc.

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經), which describes the geography and products of ancient China. Dr. Nakao says that the former part, the Wu-tsang Shan-ching (五藏山經), may be assumed to have been written before the Chin Dynasty (秦) or about 400 years B.C., and the latter part, the Hai-ching (海經), somewhat later. Both were combined in the early period of the former Han Dynasty (前漢), 206 B.C.-8 A.D.

In the Wu-tsang Shan-ching about 270 drugs of animal origin, about 160 of vegetable origin and about 60 of mineral and other origin are recorded. The descriptions of these enable us to understand their medicinal usage and to trace their place of production in ancient China.

Shen Nung Pên Ts'ao (神農本草) is famous as the oldest Pên Ts'ao. Who the compiler was, or when it was compiled, no one knows. However, the local names used in the book are said to be of the Later Han Dynasty (後漢), 25-220 A.D. They are believed by Tao Hung Ching (陶弘景) to have been augmented by such men as Chang Chung Ching (張仲景) or Hua T'o (華佗), who were famous physicians in that dynasty.

Tao Hung Ching was born in the 29th year of Yüan Chia (元嘉), 452 A.D., and retired from his position at the court of Ch'i (齊), 479-493, in the 10th year of Yung Ming (永明), 492, at the age of forty-one. He died in the 2nd year of Ta Tung (大同), 536. He was a good and erudite friend of Emperor Wu (武帝) of Liang (梁), 502-549.

Tao Hung Ching did revisional work on the Shên Nung Pên Ts'ao. He dealt with 365 kinds of medicine, and compiled the Ming I Pieh Lu (名醫別錄), in which he made 365 new entries later used by famous physicians. His work should really be the first edition of the ancient Chinese Materia Medica, and, accordingly, the fundamental study of Pên Ts'ao for the later works.

The T'ang Pên Ts'ao (唐本草圖), or the Newly Revised and Illustrated Pên Ts'ao of the T'ang Dynasty, was compiled by Su Ching (蘇敬) with the sanction of Emperor Kao Tsung (高宗) and the aid of scholars in medicine and literature in the 4th year of Hsien Ch'ing (顯慶), 659, of the T'ang (唐) Dynasty. It was the first Chinese Materia Medica to be compiled under the auspices of the Government, and it marked great progress. Illustrations of the products of olden times are very important if we are to get a perspective view of ancient medicines.

Even though we find in the Shen Nung Pên Ts'ao some products of a Western source, such as the grape and the sesame, the T'ang Pên Ts'ao is the first book in which many Western products were introduced.

In the Sung Dynasties (宋), 960-1126, 1127-1278, much important work was done, but we need not enter into details of it at this time.

The K'ai Pao Hsin Hsiang Ting Pên Ts'ao (開寶新詳定本草) was compiled by Ma Chih (馬志) and others in the 6th year of K'ai Pao, 973. In the next year its revised edition, called the Kao Pao Chung Ting Pên Ts'ao (開寶重定本草), by Ma-Chih and sundry other workers was brought out by the order of Emperor T'ai Tsu (太祖). They can be said to comprise the 3rd and 4th editions of the Chinese Materia Medica. They added 133 new medicines to the Chinese armamentarium.

At the request of Emperor Jen Tsung (仁宗), the Chia Yu Pu Chu Shen Nung Pên Ts'ao (嘉祐補註神農本草) was produced by Chang Yü Hsi (掌禹錫) as the chief compiler, and the Pên Ts'ao T'u Ching (本草圖經), or T'u Ching Pên Ts'ao (圖經本草), the illustrated Pên Ts'ao, by Su-Sung (蘇頌) as the chief compiler, in the 6th year of Chia Yu (嘉祐), that is, in 1062.

In the Chia Yu Pu Chu Shen Nung Pên Ts'ao there were selected 360 medicines from the Shên Nung Pên Ts'ao, 182 from Ming I Pieh Lu, 114 from the T'ang Pên Ts'ao, 133 from the K'ai Pao Pên Ts'ao, 82 hitherto unlisted, 17 newly selected, and 194 not yet in use, a total of 1082 medicines. The Su Sung's Pên Ts'ao T'u Ching really is an authoritative work. Its illustrations are drawn from the original material, and it includes the original descriptions of the author, which are thought to have been superior to those of the Pên Ts'ao Kang Mu (本草綱目).

We next come to the 4th edition of the Chinese Materia Medica with its annotations and illustrations. Two separate works were made, each of which embraced the combined text, descriptions and illustrations of the aforesaid books. One was the Ching Shih Chen Lei Pei Chi Pên Ts'ao (經史證類備急本草) by T'ang Shên Wei (唐慎微) in the 5th year of Yüan Feng (元豐), 1082 (?), and the other the Chung Kuang Pu Chu Shên Nung Pên Ts'ao (重廣補註神農本草) by Ch'ên Ch'êng (陳承) in the 7th year of Yuan Yü (元祐), 1092. The former was added to the other two works with many prescriptions collected by the author from the ancient literature. The latter incorporated the author's own opinions as to Pên Ts'ao.

Ai Shêng (艾晟) thought it would be more convenient to combine these two books. The resulting work, with his preface, was produced in the 2nd year of Ta Kuan (大觀), 1108, and was named the Ta Kuan Pên Ts'ao (大觀本草).

A few years later Ts'ao Hsiao Chung (曹孝忠) was requested by Emperor Hui Tsung (徽宗) to republish Ai Shêng's combined text for the Government. This was the Chêng Ho Pên Ts'ao (政和本草), issued in the 6th year of Chêng Ho (政和), 1116, and it was based on the Ta Kuan Pên Ts'ao with some insignificant modifications.

Although these two works have been handed down to the present day, the illustrations in them must have undergone some variation from the originals on account of the repeated changes in the wood prints. The Shao Hsing Hsiao Ting Ching Shih Chêng Lei Pei Pên Ts'ao (紹興校定經史證類備急本草) or the Shao Hsing Pên Ts'ao (紹興本草), compiled by Wang Chi Hsien (王繼先) and others in the 29th year of Shao Hsing (紹興), 1159, is the only book now extant which is said to preserve the original style and fidelity of the old illustrations. Fourteen hand copies of the original manuscript have, happily, been preserved in Japan. There is none in China or Korea. Recently a reprint of the work has been published in Japan from one of the copies kept in the Omori Memorial Library (大森紀念文庫) of the Kyoto Botanical Garden (京都植物園), Kyoto, Japan.

By consulting the Ta Kuan Pên Ts'ao or the Chêng Ho Pên Ts'ao, and with reference to the illustrations of the Shao Hsing Pên Ts'ao, we

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can reach an approximate understanding of the true forms of the old medicines. It is no exaggeration to say that research into Chinese medicines cannot be carried on to-day without consulting these books.

In the same year of the publication of the Chêng Ho Pên Ts'ao, 1116, K'ou Tsung Shih (寇宗奭) compiled the Pên Ts'ao Yen I (本草衍義) and presented it to the Emperor. In it he described only the important medicines of his day, and included his commentaries more for the purpose of practical use than for the study of Pên Ts'ao.

Many books named Pên Ts'ao have since been written. Among them only the Pên Ts'ao Kang Mu (本草綱目) and the Pên Ts'ao Kang Mu Shih I, (本草綱目拾遺), or the Supplement of the Pên Ts'ao Kang Mu, are of value as references in current study. Almost all of the others cover variations in prescriptions of the wider application of medicines, and, accordingly, are not so important in the quest for the origin of medicinal products.

The Pên Ts'ao Kang Mu was compiled by Li Shih Chên (李時珍) in the 18th year of Wan Li (萬曆), 1590, of the Ming Dynasty (明). It cost him nearly thirty years' labour. It was a great work, and one in which he had no assistance. In it he listed 1871 kinds of medicines, of which 374 were added to those formerly mentioned. There were given 8161 prescriptions, including the addition of 2935 to the old ones. The arrangement of the contents was greatly changed, probably under the influence of Western science.

It seems that the work was mainly based upon the Ta Kuan Pên Ts'ao or the Chên Ho Pên Ts'ao, but the arrangement of the contents of each subject was changed to accord with the author's views. We must be wary of the mistakes he made in his rather dogmatic dicta when we are examining the Pên Ts'ao Kang Mu. In the older Pên Ts'ao, when a medicine is credited to several origins, this is so stated in the description. Li Shih Chên, however, tried to secure unity in his work by assigning a drug to a single origin. His attempt, it must regrettably be said, ended in failure. Such a consummation is greatly to be desired in Chinese medicine, but it is almost impossible of accomplishment, especially when attempted by a single student and in the absence of scientific determination of the raw material at competent hands. In general, however, it is sometimes regarded as the most authoritative publication of its kind. The work is really well done. Nevertheless, the older Pên Ts'ao should stand first as the groundwork of the study of Chinese medicine.

The author of the Pên Ts'ao Kang Mu Shih I is Chao Hsueh Min (趙學敏). This was published in the 30th year of Ch'ien Lung (乾隆) 1765, of the Ch'ing Dynasty (清). He newly described many kinds of medicine, besides correcting Li Shih Chên's mistakes and omissions in a supplement. His book is very useful in conveying the theory and condition of medical science in the 18th century in China.

In the 28th year of Tao Kuang (道光), 1848, of the Ch'ing Dynasty, Wu Ch'i Chün (吳其濬) compiled the Chih Wu Ming Shih T'u K'ao (植物名實圖考) and the Chih Wu Ming Shih T'u K'ao Chang Pien (植物名實圖考長編). These were commendable and reliable works on vegetable products in the China of those days, with fine illustrations

sketched from life and the classical descriptions summarized from the Pên Ts'ao and other books, 1714 kinds in the former and 838 in the latter.

The famous Chinese encyclopedia, Ku Chin T'u Shu Chi Chêng (古今圖書集成), compiled by Chiang T'ing Hsi (蔣廷錫) and others, and the works of historical geography of different districts and provinces issued by various authors afford information as to the other places of production of medicinal materials that are not cited in the Pên Ts'ao.

4. *Studies on Pên Ts'ao in Japan.*

Intercourse between China and Japan goes back to remote antiquity. The Pên Ts'ao was introduced into Japan with other features of Chinese civilization in ancient times, and many important works about the Pên Ts'ao have been issued by the Japanese from the earliest times. These should not be neglected when studying Chinese medicines.

Hinamitai (日並立) is said to have been a pioneer Japanese student of Chinese medicine. He was taught by a Korean priest, Kwanroku (觀勒), who came to Japan in 602 A.D., bringing with him numerous books, such as almanacs and works on astronomy, geography, medicine and so forth.

In Kojiki (古事記) are records of ancient matters written in 712, thus forming the oldest Japanese history. Several scores of plant names are recorded in Chinese ideographs. This is the first document in which appears an effort toward a comparative study of Chinese and Japanese plants. In 701 in the reign of Emperor Monmu (文武天皇), a university had been erected in Nara (奈良), then the capital of Japan. At the same time a Medical Bureau was founded and steps taken to establish a science of medicine. A botanical garden of medicinal plants was put under the charge of the Bureau. There the professors gave lectures on Pên Ts'ao and taught the students the terminology of medicinal plants and other drugs, and how to prepare and where to collect them.

In 787 the T'ang Pên Ts'ao was used in the Imperial Medical Bureau for the first time as the textbook in the investigation of Chinese Materia Medica.

Izumo Hirosada (出雲廣貞) and others compiled the Daido-ruiyû-hô (大同類聚方) in 808. Their purpose was to preserve the old Japanese prescriptions. The work was done under the stimulus of Chinese medicine and by request of Emperor Heizyo (平城天皇). No copies of it are available today.

Between 898 and 900, a professor of medicine, Hukae Hozin (深江輔仁), by Imperial order compiled the Honzôwamyô (本草和名). This book gave the names of 1025 Chinese drugs, with their corresponding Japanese names. Through his work we learn the extent of knowledge of that period concerning Chinese medical material.

In 907, in the reign of Emperor Daigo (醍醐天皇), the Imperial Record, or Engi-siki (延喜式), was compiled at court by Fujiwara Tokihira (藤原時平). In it the medicinal products offered to the court from different parts of Japan were recorded with their Chinese names.

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Between the years 925 and 929 Minamoto-no-Sitagô (源順) wrote the Wamyô-ruizyû-syô (和名類聚抄) in twenty volumes. This book gives the Chinese names of all manner of things, including those of natural objects. Japanese equivalents of the Chinese terms are given.

Later the Pên Ts'ao T'u Ching, the Ta Kuan Pên Ts'ao, the Chêng Ho Pên Ts'ao and others were introduced into Japan, and several Japanese accounts were written of Pên Ts'ao.

At the time of the Korean expedition of Toyotomi Hideyoshi (豊臣秀吉), which was undertaken in 1592, Ukita Hideie (浮田秀家), leader of a troop, brought back a great many Chinese and Korean books. Amongst these were five volumes of the illustrations of the Shao Hsing Pên Ts'ao, from which the existing reproductions are thought to have been made.

However, there was little study or investigation of Pên Ts'ao until the Pên Ts'ao Kang Mu was presented to Tokugawa Ieyasu (徳川家康), the first Shogun or the founder of the Shogunate of Tokugawa, by Hayasi Dosyun (林道春), a famous physician, who had secured the book at Nagasaki (長崎) in 1607. Hayasi Dosyun made an extract from the Pên Ts'ao Kang Mu with Japanese text in 1612, calling it Tasikihen (多織編). It was printed in 1627. A Japanese reprint of the Pên Ts'ao Kang Mu was published in 1637.

The Honzô-wage (本草和解) was compiled by Oe Iken (大江) in 1697, and the Kôeki-honzo-taisei (益廣本草大成) and the Wago-honzô-kômoku (和語本草) by Okamoto Yositate (岡本爲竹) in 1698. All of these are works explanatory of Pên Ts'ao. In the first of these works the subjects are arranged according to the Japanese alphabet.

The famous scholar Kaibara Ek'ken (貝原蓋斯) compiled the Yamatohonzô (大和本草), or the Japanese Pên-Ts'ao, in 1708. In it he described 1362 kinds of natural products, 772 from Pên-Ts'ao, 203 from other works, 358 Japanese products and 29 from Western sources.

The description of natural products in the Wakan-sansai-zu'e (倭漢三才圖繪), or the illustrated encyclopedia covering Chinese and Japanese subjects, compiled by Terazima Ryô'an (寺島良民) in 1713, is also available to readers today.

Ono Ranzan (小野蘭山) wrote the Honzô-kômoku-keimô (本草綱目啓蒙) in 1803. This is more a work of biological investigation of the Pên-Ts'ao Kang-Mu than a medical book, and it is one of the most important works in this line.

It is a matter of great regret that there are no illustrations in the Honzô-kômoku-keimô, Honzô-suhu (本草圖譜), compiled by Iwasaki Zyôsei (岩寄常正) in 1828 after more than twenty years' labour. This is a work designed to make good the deficiencies of the former. It is enriched with fine coloured illustrations.

In 1856, Iinuma Yokusai (飯沼慾齋) published the Sômokuzusetu (草木圖説) in twenty volumes. In it plants are arranged according to the Linnean system of classification. This work, also, was biological rather than on the basis of the Pên-Ts'ao.

In the study of Chinese medicine in Japan a great deal of effort was expended in the determination of the origins of the various drugs.

This greatly stimulated the rise and progress of the study of natural history in Japan, and led to the production of many works that are important even today.

Further data that must be considered lie in the forty-eight specimens of old Chinese drugs left at Syôshô-in (正倉院), the Imperial Memorial Museum of Emperor Syômu (聖武天皇), 724-748. They date back nearly twelve hundred years, and it is very important for us to clear them up scientifically, even though their number is small. Several scholars have already studied them, but, as yet, no pharmacognostical studies have been made upon them.

5. Scientific Works about the Origin of Chinese Medicines.

Gradually Western naturalists have come to inquire scientifically into the old Eastern civilization and its methods, and many important works which have promoted the study of Chinese medicines have been the fruit of their endeavours. Among these may be cited:

- F. P. Smith: Contributions towards the Materia Medica and Natural History of China (1871).
- S. W. Williams: A Syllabic Dictionary of Chinese Language (1874).
- A. Henry: Chinese Names of Plants. *Journal of the North China Branch of the Royal Asiatic Society*, Vol. 22 (1888).
- J. Shimoyama (下山順一郎): Pharmacognosy, a Text Book for Japanese Pharmaceutical Students, 1st edition (1890).
- Bretschneider: Botanicon Sinicum. *Journal of the North China Branch of the Royal Asiatic Society*, Vol. 29 (1894).
- Diels: Die Flora von Central-China, Engler's Botanisches Jahrbuch für Systematische Botanik etc., Vol. 29 (1901).
- Forbes and Hemsley: Index Florae Sinensis, Vol. 3 (1903), *Journal of the Linnean Society, Botany*, Vol. 36.
- G. A. Stuart: Chinese Materia Medica, Vegetable Kingdom (1911).
- Giles: Chinese English Dictionary (1912).
- J. Matsumura (松村任匀): Syokubutsu-meii part 1, Chinese Names of Plants (1915).
- B. E. Read and J. C. Liu (劉汝強): Plantae Medicinalis Sinensis (1927).
- M. Nakao (中尾萬三) and K. Kimura (木村康一): Photographical Catalogue of Chinese Drugs, Collection 1, *Bulletin of the Shanghai Science Inst.*, Vol. 1, No. 2 (1929); Collection 2, idem Vol. 1, No. 5 (1930).
- M. Nakao (中尾萬三): Notes on Shih-liao Pen-ts'ao (食療本草) (1930).
- S. U'eda (上田三平): A History of Botanic Gardens of Medicinal Plants in Japan (日本藥國史) (1930).
- T. Kariyone (刈米達夫) and Y. Kimura (木村雄四郎): Japanese Medicinal Plants (邦産藥用植物). 1st edition (1929) 7th edition (1933).
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6. Conclusion.

The study of Chinese medicine is now being actively prosecuted in Japan, and many chemists are engaged in the work of determining the chemical composition of these compounds and mixtures. However, only a few specialists, such as Professor N. Fujita (藤田直市) in the Tokyo Imperial University, Professor T. Munosada (宗定哲二) in the Kumamoto Pharmaceutical College, and myself in the Shanghai Science Institute, are engaged in the pharmacognostical study of Chinese medicine.

The pharmacognostical study of Chinese medicines presents a very difficult problem because the origins of Chinese products are not clear. Chemistry is making great progress the world over, yet very few of the Chinese medicines have been chemically identified. This is partly because of the uncertainty as to their origins.

Chemical and medical researches into Chinese medicines will fail to make satisfactory progress unless and until the basic materials are correctly identified and scientifically classified. We pharmacognosts work on the identification of drugs on a basis of knowledge of their natural source, but, for determination of the natural sources, we are forced to depend upon naturalists working in China.

SCIENTIFIC NOTES AND REVIEWS

BIOLOGY

The Reptiles of China: This is the first of the "Great Volume of 'The Natural History of Central Asia'" being published by the American Museum of Natural History, New York, embodying the results of that institution's Central Asiatic Expeditions under the leadership of Dr. H. S. G. Anderson. It is written by Mr. Clifford B. Pope, who spent four years in China and Hainan Island collecting herpetological material in connection with the above mentioned Expeditions as well as ichthyological and other biological material, his collections constituting the largest in these lines ever made by a single individual in this country. The volume is the tenth of the series, although it has made its appearance ahead of some of the others.

To say that it is a valuable contribution to the herpetology of China is to understate the case hopelessly. Perhaps it might be said that it is the most important single contribution to the subject that has ever been produced, for it is practically complete as far as our present knowledge of the snakes, lizards, amphisbaenians and crocodilians of China is concerned. Mr. Pope in his tour of this country made a very thorough job of collecting these animals, and since his return to America has spent several years minutely studying his large number of specimens in conjunction with the material in other collections in Europe and America and the now extensive literature on Chinese Herpetology.

While the greater part of the text in the monumental volume is, of course, of a purely technical nature, the casual reader will find much of interest, for Mr. Pope is of that school of naturalists who have the habit of describing interesting things in connection with the lives and habits of the organisms they study, and, thus, become. For the particular material which forms the basis of the sections on snakes, lizards and crocodilians and Remarks, the volume contains, in connection with each of the species, the following: species description, localities, habits, and notes on the life history of the species. In this volume, the notes on the life history of the species are of great value, and the notes on the life history of the species are of great value, and the notes on the life history of the species are of great value.

of the Yangtze. Indeed, the further one goes from north to south, the greater the number of different kinds as well as individuals one finds in this country. And of this list of serpents a surprising number belongs to the category of "poisonous." There are the cobras, the kraits, the sea snakes, the Russel's viper, the pit vipers and the terrible little bamboo snake, which is one of the pit vipers. Surprisingly enough, though, Mr. Pope has very little to say on this phase of his subject. A useful purpose would have been served had each poisonous species been indicated in some way, also the type of venom it emits. This would have made the work of considerable value to doctors in China who are often at a loss to know whether a snake is poisonous or not. There appear, however, to be exceedingly few records of death by snake bite in this country. Mr. Pope gives a few cases of people being bitten.

The book is well illustrated, especially that part dealing with the snakes, most of the species being depicted either in text figures or in the plates at the end of the volume. We could have wished for some figures of lizards. A picture of the Yangtze alligator, one of China's only two crocodilians, would have been welcome too, the more especially as this reptile has not to our knowledge hitherto been adequately figured in any publication. Figures of the skull only are given.

There are 66 species or subspecies of lizard described as from China. These, however, are not nearly as thoroughly dealt with as the other reptiles, which, beside the single crocodilian and 130 snakes, include 22 chelonians, that is to say, marine turtles, land tortoises, terrapins and river turtles.

The printing and general get up of the volume under review is extremely good. It is published by the American Museum of Natural History, but can be ordered through G. P. Putnam's Sons, New York and London, the price being U.S. \$10.

What Bird Is That? If some one would do with the birds of China what Mr. Neville W. Cayley has done for the birds of Australia in his splendid book called "What Bird Is That?" he would have rendered an invaluable service to nature lovers and students. This "Guide to the Birds of Australia" (subtitle)

SCIENTIFIC NOTES AND REVIEWS

actually figures in colour some 706 different species of birds found in that country. In cases where there is a marked difference in the plumage of male and female both are figured. These excellent figures are printed on thirty-six plates. Besides these coloured plates are quite a number giving half-tone illustrations of the kind of country in which the birds occur. The popular and scientific names of each species of bird are given, as well as its distribution, notes on its habits and where it is to be looked for and brief descriptions of its nest and eggs. The birds themselves are divided into groups according to the types of country they inhabit, thus: Forest-frequenting Birds; Birds of the Heathlands and Open Country; Birds of the Lakes, Streams and Swamps; and Birds of the Ocean and Shore. The illustrations obviate the necessity of describing the birds themselves. With a book like this in his hand we venture to suggest that no student of nature with reasonably good eyesight and normal powers of observation could fail to identify at short notice any bird he might come across in the wilds, while it makes the identification of specimens in the hand mere child's play. Ornithologists in China will be pleased to recognize quite a number of our birds, whose migrations take them as far south as Australia. Examples of this are the Chinese quail (*Excalfactaria chinensis*, L.), called the king quail, as well as many waders and marine birds.

Australians living in China, of which there are not a few, will enjoy this volume, even if only because it will bring to their minds the many familiar birds of their childhood days when they rambled in the country.

Published by Angus & Robertson Limited, of 89 Castlereagh Street, Sydney, the book costs 12s. and 6d., which is absurdly cheap considering what it offers. This is the fifth edition, the first having been published in 1931.

A Useful Book on Insects: Some years ago China was honoured by a visit from the famous Italian entomologist, Dr. F. Silvestri, who came here specially to collect insects that parasitize other insects and therefore may be used as a means of combatting the latter. Before and since his visit to the Far East, Dr. Silvestri has written extensively on various groups of insects. Now comes Volume I of his comprehensive series entitled "Compendio di Entomologia Applicata." This covers the various wingless insects such as the skiptails, thysanura, silver fish, the cockroaches, the termites or white-ants, the mantises, crickets, grasshoppers, locusts, and earwigs, the stone-flies, dragonflies and may-flies, the bird-lice, the thrips and their relatives, and the vast hord of Hemiptera—shield bugs, bed-bugs, water scorpions, cicadas, leaf-hoppers, lantern flies, scale insects, aphids and the like. Wherever known their insect parasites are given, and the whole work is profusely illustrated with text figures. The fact that it is in Italian naturally militates against its usefulness to those who do not read that language, but, even so, the illustrations, the careful classification and the scientific names will prove of the greatest value to them. It is a work of some 448 pages. Its scope is world-wide.

SEISMOLOGY

Monthly Record of Earthquakes:

Numerous earthquakes have been recorded from various parts of the world this month. Two shocks were felt in Sicily in the vicinity of Acireale at the foot of Mount Etna at 4.30 and 10.30 a.m., respectively, on July 1, no casualties and but little damage being reported.

A strong earthquake was recorded at the seismographic station of the Academy of Sciences of the U.S.S.R. on July 6, said a *Tass* message from Tashkent. The epicentre was some 720 kilometres from that city, near the Afghan frontier.

Another *Tass* message from Almaata in Kazakstan reported that an earthquake of "five points" had been recorded there on July 7 at 11.23 local time, presumably in the morning.

On July 8 a series of tremors occurred in the Argostoli district near Athens in Greece, causing considerable damage.

On July 9 in the district of Yuan-lin, near Chang-sha in Hunan, Central China, fifteen people were killed and an entire village wiped out by a series of earthquake shocks.

Central Japan was rocked by a severe earthquake during the afternoon of July 11, twelve people having been killed, four being missing and a hundred and eighty-seven injured. The main damage was at Shimizu. The epicentre was tentatively placed somewhere along the banks of the Oi River.

A number of people were killed in Erdek in Turkey by an earthquake in that region on July 11, the same area

having felt similar tremors at frequent intervals for some time.

With its epicentre a hundred and seventy miles from Sofia an earth tremor was felt all over Bulgaria on the morning of July 13.

A slight earthquake occurred at Los Angeles on the morning of July 13, no damage being done, however.

Shocks were felt throughout Rumania on July 14, without causing any casualties.

On July 17 at 12.20 a.m. Shinchiku Province in North-western Formosa was rocked by a severe earthquake which took a toll of forty-seven lives and seriously injured a hundred and forty-two people. This is the fourth major seismic disturbance that has occurred in this area since April 21, when over three thousand deaths were caused by a quake which devastated a large area. Another earthquake rocked the northern half of Formosa at 6.11 a.m. on July 18, no further damage being

done, however. Meanwhile Foochow on the mainland opposite Formosa felt a slight tremor at 12.15 (noon) on July 17, probably the same disturbance as shook the island.

Once again Central Japan was rocked at 9.50 a.m. on July 19 by a strong earthquake, though no loss of life and little damage was recorded.

Finally on July 29 the seismograph of the Central Technical Institute at Pasadena, California, recorded an earthquake which had taken place some 5,400 miles out in the Pacific Ocean.

According to Mr. Reuben Greenspan, the *United Press* message went on to say, New Zealand would be shaken lightly on the same date, while Turkey, Persia, North Africa and West India would experience heavy earthquakes on July 30. Mr. Greenspan is the Pasadena seismographic station forecaster, and has successfully predicted the last thirteen major tremors.

VOLCANOLOGY

Krakatoa in Eruption: Krakatoa, the famous island volcano in the Sunda Straits between Java and Sumatra, erupted on July 10, with the result that the little island called Anakrakatoa, or the Child of Krakatoa, which was only formed a few years ago by another eruption, has disappeared.

Stromboli Awakes: The long inactive volcano Stromboli showed signs of

awakening from its sleep on July 22, when a gas explosion occurred in its crater. After the explosion dense black smoke was projected from the crater, plunging the whole island into complete darkness. This was followed by a rain of ashes. Stromboli is situated on an island in the Straits of Messina. Considerable panic was caused amongst the local inhabitants by these signs of activity on the part of the volcano.

METEOROLOGY

The Weather in China During July: Commencing cool in the Shanghai area with a certain amount of rain during the first week, the weather last month turned suddenly hot on July 9, a fortnight's period of intense heat following, during which a maximum temperature of 100.8° F. was reached on July 14 and 100.4° F. on July 15. Thunderstorms and heavy rain towards the end of this period helped to bring down the temperature, which, however, remained high till the end of the month. Two threatening typhoons failed to materialize in this district. A very strong wind, almost of gale force, struck the area at about 7.30 p.m. on July 15, accompanied by lightning and rain. During the hot spell there were many cases of collapse and death from the heat in the city.

Similar weather prevailed in the Hangchow area, where 101.0° F. was registered on July 19. The whole of the Lower Yangtze Valley region also suffer-

ed from intense heat practically all through the month. A temperature of 100.0° F. was registered in Nanking on July 14, and of 101.0° F. on July 27. At Lo-yang, Honan, North-central China a temperature of 106.0° F. was recorded on July 27. Nanking's heat record was broken on July 28 by a maximum temperature of 104° F.

Fears of a drought owing to a prolonged period without rain in Shensi, Honan and Shantung were dissipated early in the month by the advent of excessively heavy rains. These, continuing, have brought about very serious flood conditions in the Middle and Lower Yellow River Valley. The almost equally disastrous floods of the Middle Yangtze Valley were caused by the severe rains of June.

In the north the Tientsin and Peiping general area suffered most of the month from heat and drought, which were broken up by torrential rains commencing

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July 24. These were so heavy as to cause the overflow of the rivers and threaten various cities with inundation. Another heat wave descended upon the region during the last few days of the month, a temperature of 101.0° F. being registered in Tientsin on July 28.

Very heavy rain was reported on July 13 from Lan-chou Fu as occurring in Kansu, causing the washing away of high roads.

Early in the month torrential rains were reported in South China in the vicinity of Canton. The Fukien coast was visited by a severe typhoon on July 23, the same gale sweeping on through the southern provinces as far as Yunnan before being dissipated. A second typhoon swept Southern Formosa on July 28,

striking the China coast south of Foo-chow, thereafter fading away.

In Manchuria tropical heat was reported in the Harbin district, followed by torrential rains on July 12, while very heavy rains occurred in the Liao River Valley and Liao-tung Peninsula on July 28 and 29, causing wide-spread floods. It was reported on July 20 that heavy rains had been deluging Korea, also causing floods throughout the country.

The Yalu River has risen to unprecedented heights.

Summarizing weather conditions in China during July, it may be said that high temperatures and heavy rains have been their main characteristics throughout the country, the latter causing severe floods over wide areas.

MEDICINE

Bubonic Plague in Fukien: A report from Amoy dated July 26 was to the effect that bubonic plague, which had been raging in Lung-yen for the past few weeks, was continuing unabated, taking many victims.

Cholera in Hsu-chou Fu: A severe outbreak of cholera was reported on July 15 as having occurred in Hsu-chou Fu as a result of unfavourable weather conditions, many deaths having occurred from this terrible disease. Meanwhile Shanghai has remained free from cholera so far this summer.

Typhoid on the Increase in Ju-Kao: That typhoid was rapidly increasing in the Ju-kao region, Kiangsu, was the burden of a message from that city dated July 17, which appeared in the

North-China Daily News of July 24. Mortality was said to be very high.

Typhus Epidemic in Harbin: A *United Press* message from Harbin on July 9 was to the effect that typhus fever had broken out both in New Town and in the Chinese section of the city, resulting in several deaths.

Shanghai Leprosarium to Open Soon: According to a recent announcement in the local press the leprosarium, which was commenced in the spring, will be completed by the end of this month and ready for occupation. The Hongkew Clinic for Skin Diseases will be closed at the end of the month and its staff transferred to the new National Leprosarium of Shanghai as it is to be called.

A. de C. S.

SHOOTING AND FISHING NOTES

SHOOTING

Killed by a Tiger: Recently there appeared in the daily press a *Havas* news item from Bombay, dated July 27, which reported the death the previous day of Rawtapa, the Hindu big-game hunter. It seems that Rawtapa was following the trail of a tiger which he had wounded, and while halting for a brief rest was attacked by the animal, which leapt upon him from behind and badly mauled him before a shot fired by one of his companions frightened it away. Though badly wounded, the big-game hunter

wanted to continue the pursuit of his quarry, but was unable to do so, and shortly afterwards succumbed to loss of blood from his wounds. The animal which killed him was his thirteenth tiger.

Though everybody knows that tigers are hunted extensively in India, where the jungles are full of them, it is not so well known that this large feline is distributed all over China, in some places being so plentiful as to be a menace to the human inhabitants of the rural district. There are records of tigers being

killed in Shansi, Hopei (Chihli) and Honan in the north, while south of the Yangtze they occur in every province, Kiangsu, possibly, excepted.

The number of tigers killed by Western sportsmen is quite large. In the old days when Amoy was a much more important place than it is to-day, as far as foreign trade is concerned, it used to be a regular thing to go tiger hunting in the nearby hills, and many a foreign resident had one or more of these savage animals to his credit, some a dozen or so. The two most famous tiger hunters in Amoy in those days were Mr. Robert Bruce of Tate & Co. and Mr. Leyburn of Jardine, Matheson & Co. In latter years the exploits of the Reverend Harry R. Caldwell, an American missionary stationed variously at Foochow, Yenping Fu and Fu-tsing in Fukien, have become famous, he having killed about a dozen tigers in the country areas surrounding these cities, some of them man-eaters. His faithful servant, Da Da, is responsible for over a dozen more. Recently some young American sportsmen from Hangchow killed a tiger in the Fu-tsing district under Mr. Caldwell's guidance, an account being published in the April, 1935, number of *The China Journal*.

Every year tigers, the so-called woolly tigers with thick heavy coats and of great size, are killed by professional Russian hunters in Northern Manchuria. The same species, or, rather, subspecies, of tiger is found in Korea.

While so many tigers have been killed by Western sportsmen in China, we do not remember ever having heard of one of these big-game hunters' having been killed by a tiger, and recall only one instance of a foreigner in China being mauled by one. This was Lieutenant-Colonel Hayley-Bell, formerly Commissioner of Customs, who, while in South China in 1905, went tiger hunting. Having wounded a tiger, he went into the jungle in search of it, and was just about to give it the *coup de grace*, when he was suddenly attacked by what he supposed to be the tiger's mate, an unwounded animal. He was severely bitten in the legs, the tiger leaving him without apparent reason after having mauled him. His sensations, he says, were exactly similar to those described by Sir Charles Baker when he was in the

clutches of a lion while hunting in Africa. Although the tiger, or tigress, as he supposed it to be, as it stood over him kept on biting at his legs he felt no pain whatsoever. Neither was he aware of a feeling of fear, merely interest and curiosity as to what the animal would do. It should be noted that hunting tigers in the district in question, namely, on the Chinese-Tongkin border, was a very dangerous sport. No shooting the animals from a *machan* in a tree or from the back of an elephant, as in India, was possible. It was necessary to go on foot into the jungle after the beasts. On the same day Hayley-Bell was mauled one of his natives was attacked by the tiger he killed and subsequently died of his wounds. The Colonel himself had to be invalided home, and it took him two years to recover completely. His companion on the occasion was Mr. George Potts, a well known China hand.

A Bird Sanctuary for Shanghai:

A suggestion has come to us from a well known Shanghai sportsman that it would be a good idea if a large section of the Western District, running well out beyond Hungjao Road, were made into a Bird Sanctuary, within which no shooting or trapping of birds or any other wild creatures should be allowed. We have a better idea, and that is that the shooting and trapping of birds and wild animals within the boundaries of the Greater Shanghai area should be strictly forbidden. This would automatically create quite an extensive Bird Sanctuary. Strange though it may seem, pheasants are still to be seen in gardens in the Western District, while egrettes still build their nests and rear their young in the trees of the Hardoon Estate on Bubbling Well Road. These lovely birds should be encouraged. It may be suggested that a few prominent members of the Shanghai community should form a group to approach Mayor Wu Te-chen of Greater Shanghai with a view to getting his cooperation in this matter.

Incidentally, the Chinese Government would be well advised to set aside a number of areas in various parts of the country as Game Sanctuaries before it is too late and the game birds and animals have been exterminated, as they rapidly are being at the present time.

FISHING

Alleged Record Fish: Recently a picture appeared in one of the local newspapers of a mako shark weighing

1,100 lbs., which had been captured on a rod and line off the New Jersey coast near Brielle by Francis H. Low, a graduate

SHOOTING AND FISHING NOTES

of Yale University. It was thought, said the caption, that this was the biggest fish ever captured with a rod. We doubt very much if this is the case. Perhaps some of our readers can enlighten us on the subject.

Shark in Hongkong Harbour: It should be well known to those interested in sea fishing, especially that section called big-game fishing, that the mako and other sharks offer extremely good sport in such waters as those round New Zealand, where they rival the kingly swordfish. Thus the news that a shark has been captured in Hongkong Harbour recently should stimulate anglers in the colony to an effort to discover whether shark fishing with rod and line may not be developed as an attraction to visitors and a sport for the local community.

Giant Fish Caught in the Nonni River: A monster fish measuring 7 feet 8 inches in length and weighing 578 pounds was caught in the Nonni River, a tributary of the Sungari River in Northwestern Manchuria, on July 11, according to a *Rengo* message from Chang-chun. It was captured at a point about twenty Chinese *li*, or six miles, north of Tsitsihar on the Chinese Eastern Railway. While the report does not mention the name of the species to which the fish belongs, its size makes it certain that it was a sturgeon, two species of which are known to inhabit the waters of

the Sungari River system. These are the giant *Huso dauricus* (Georgi) and the slightly smaller *Acipenser shrenckii*, Brandt. The fish in question was being transported to Chang-chun to be presented to Emperor Kangte by Governor Ching Ming-shih of Lungkiang Province.

Shanghai Visited by Swarm of Eels: A phenomenon which has been witnessed in Shanghai before, as many of our readers will recall, was repeated on July 19, when the foreshore of the Bund was invaded by enormous numbers of serpent-like eels. Recently a similar visitation was reported as occurring at Hankow. The species of fish is known to science as *Fluta alba* (Zuiewu), one of its synonyms being *Monopterus javanensis*, and its distinguishing feature is the complete absence of fins. As it is of an olive yellowish brown colour, often strongly mottled, the absence of fins gives it a very snake-like appearance. What causes these sudden eruptions on the part of this strange looking eel is not clear, for its normal home is the soft mud of the flooded rice fields. Large numbers are consumed daily in Shanghai, the local fish market always being well stocked with the species, which are brought in alive.

On the occasion of the recent influx of these eels many Chinese coolies enjoyed excellent sport catching them with baskets fastened to long poles.

A. de C. S.

THE KENNEL

Dog Registration in Peiping: According to a statement in the *Peiping Chronicle* over 13,000 dogs had been registered by the Bureau of Public Health up to July 2 in the Peiping area. This announcement was made by Dr. J. C. Fang, Director of Public Health in that city. In addition some five hundred and twenty ownerless dogs had been captured by the Bureau's dog-catchers during the past few months. A fresh drive against strays is to be launched as soon as quarters for those captured are completed.

It would be interesting to know how these figures compare with those of the Chinese administered areas of Shanghai, where rabies has been rampant this summer.

The Peiping Dog Show: On June 5 the second International Dog Show was held in Peiping at the French Hockey Field, and, according to reports, was in every way a great success. While fifty breeds of dog are reported to have been registered, the most popular were the Chows, Pekes, and Lhassas. This is only what one would expect, considering the place. Space does not permit the publishing of a detailed list of prizes, though it may be said that Dr. C. W. Young, who has been largely instrumental in getting the Dog Shows in Peiping going, was very successful with his chows, of which he is an enthusiastic breeder.

A. de C. S.

THE GARDEN

AUGUST NOTES

August a Hard Month in Shanghai:

The present is one of the hardest months in which to keep the garden in Shanghai looking nice. Indeed, both July and August are hard months, mainly owing to the excessive heat. Nevertheless, many gardens in the Western District have been looking very lovely and are full of radiant blooms. This, of course, has been due to good work on the part of the gardener, and a careful choice of plants and selection of seeds on the part of the owner. One resident on Hungjao Road, whose garden a couple of weeks ago, that is, in the middle of July, was a blaze of colour, informed us that he got his seeds from Australia, and found that the plants from them did better here than those from England. Cannas, zinnias and portulaccas make a great showing if properly planted, while good results can be had from the many lovely varieties of gladiolus now on the market.

Lawns Need Attention: Lawns need attention, especially watering, if they are to be kept looking green and nice during this hot period. A garden hose should be installed by all those who desire to have a well kept garden. And it is surprising what little difference it makes to the water bill here in Shanghai. The

hose itself, with sprayer, is not an excessively expensive item.

Chrysanthemums Coming On: Now is the time to devote care and attention to the chrysanthemum cuttings which should have been taken and planted some time ago. Indeed, many are now quite large plants and need their superfluous shoots nipped off, careful watering and fertilizing, and protection in the way of reed mats from the hot rays of the sun. The mats should be rolled out on wooden frames, well above the plants, so as to allow the latter plenty of air and adequate light.

The Vegetable Garden Yielding Results: If the kitchen garden has been properly dealt with it will now be yielding many delicious vegetables in abundance. Some of these have come our way through the kindness of friends, and we must say the difference between these home grown products and anything that one can buy in Shanghai certainly justifies the trouble and expense of running a vegetable garden. Everyone who can secure a little plot of land should have his or her own kitchen garden.

A. de C. S.

SOCIETIES AND INSTITUTIONS

THE NUMISMATIC SOCIETY OF CHINA

Annual Meeting: At the Annual Meeting of this Society, held on June 11, the President, Mr. A. de C. Sowerby, read the following report prepared by the Honorary Secretary, Mr. G. H. Parkes:

The Society is to be congratulated on having just completed one year of its existence. Seven of the original founders are still present, and the membership to-day totals twenty-one (21), including a lady enthusiast, which goes to show that the mere male is not the only pebble on the numismatic beach interested in the science of coin collecting.

The Society has held eleven regular meetings, the twelfth having had to be cancelled owing to the ill health of the Honorary Secretary.

Since the inception of the Society communications have been established with the Royal Numismatic Society of London, the American Numismatic Society of New York, and the Keeper of Coins and Medals in the British Museum. Through the efforts of Mr. K. F. Mulder it is hoped to extend the Society's activities to Holland. Eventually it is hoped to be in communication with all Numismatic Societies throughout the world.

The Society possesses a numismatic library on Greek, Roman, Chinese, British Indian and Native Indian coins. Several of its members have private libraries on Greek, Roman, Chinese and old English coins, so that it is not very difficult to classify any coin coming under these headings.

Mr. A. M. Tracy Woodward kindly presented the Society with a set of his papers on Chinese numismatics, a rare treat for the student and the older collectors of Chinese minted coinage. He also donated some other useful publications on Chinese cash coins.

A member well versed in Chinese numismatics is Mr. H. E. Gibson, who is entirely responsible for arranging the collection in the Shanghai Museum (R.A.S.). Many of the Chinese members of the Society are in possession of very fine and valuable collections of the ancient cash and other coins of this country.

The Society contributes to the *Numismatic Circular* issued monthly by Messrs. Spink & Sons, London. This periodical is a valuable adjunct to any numismatic library inasmuch as it gives the collector a fair idea of the price obtainable for certain choice specimens. Moreover, the lists it publishes may contain the very coin required by a collector to make up a series in which he is interested. Messrs. Spink & Sons also deal in medals and medallions.

During the past twelve months lectures have been delivered by Messrs. A. de C. Sowerby, G. H. Parkes, H. E. Gibson and K. F. Mulder, while Mr. L. Paul showed his fine collection of rare gold and silver coins. Several choice specimens of Greek, Chinese, Roman and English coins, to name only a few, have been exhibited by these and other members from time to time.

The Society has been instrumental on more than one occasion in helping collectors in the United States in securing certain Chinese coins that they required.

Persons outside the Society with a few coins in their possession have sought the Society's aid in classifying what most of them considered to be valuable coins. The majority were, however, sadly disappointed to learn that they had nothing of any value. Many of the so-called rarities were nothing more or less than crude imitations, while others were of doubtful origin, or were so badly damaged that they came under the heading of "worthless." The committee identified several genuine specimens of Greek coins in the form of a bracelet. This was reproduced in the *North-China Daily News* of June 5, 1934.

It is with regrets that the resignation of our Honorary Treasurer, Mr. K. F. Mulder is announced. Mr. Mulder has left Shanghai, whether permanently or only for a short while remains to be seen. It is hoped he will return.

Mr. G. D. Raeburn is on long leave,

being due back about September. The Honorary Secretary has made it a point to ask members to communicate with each other with a view to knowing what each requires in the way of coins and what each is inclined to dispose of by exchange.

The funds of the Society are in a healthy condition. Printed copies of the balance sheet, presented at this meeting, will be sent to all members as soon as possible.

The Society's thanks are due to the President and Council of the Royal Asiatic Society for the use of the reading room for its monthly meetings, and it is suggested that, if any member has a few choice specimens or spare sets of coins with which he is willing to part, it would be a fine gesture to present them to the Shanghai Museum's numismatic collection.

All numismatic societies throughout the world possess a collection, but as this Society is not rich enough to indulge in this kind of luxury, it is suggested that in lieu of having its own collection, the Society as a whole should take special interest in the Shanghai Museum's collection, which is available at all times to its members for study.

Before closing reference should be made to the assistance the Society has received from the local Press in publishing announcements in the "Day to Day" columns, for which cooperation the Society tenders its heartiest thanks.

Members would do well to spread the numismatic doctrine to their friends. The science of coin collecting is a hobby not to be despised. Many a coin has brought its owner a small fortune, but, apart altogether from financial considerations, the hobby is thoroughly worth while on account of its educational value.

Altogether, the year may be considered a successful one, but the Society could do with more members. It is hoped that the present members will make it their business to look after the Society's interests in this direction.

The officers elected for the year 1935-36 were as follows: *President*, Mr. A. de C. Sowerby; *Honorary Secretary*, Mr. G. H. Parkes; *Honorary Treasurer*, Mr. R. P. Butrick; *Committee*, the foregoing and Messrs. H. E. Gibson and G. D. Raeburn.

Votes of thanks were passed to the President and Honorary Secretary for the work they had done on behalf of the Society, the former Honorary Treasurer having been thanked by letter when he resigned on leaving Shanghai.

THE SHANGHAI NATURALISTS' CLUB

A Correction: In the last issue of this journal there appeared a report of the First Annual Meeting of the Shanghai Naturalists' Club, giving the date on which this was held as June 15. This was a mistake, as this meeting was held on April 15, a more brief report of its proceedings having appeared in this journal in the May issue. What should have appeared in the July issue were reports of two meetings of the Club held in June.

A Reception: On June 3 the President, Mr. A. de C. Sowerby, and Mrs. Sowerby held an informal reception for the members of the Shanghai Naturalists' Club at their home on Lucerne Road, when the guests were shown Mr. Sowerby's private collection of birds, mammals, reptiles, fishes and other animals from all parts of China made during his lifetime as a naturalist-explorer in this country. Many of those present also looked over his extensive library of zoological, botanical and other scientific books and pamphlets on China, while others enjoyed a look at his aquaria and aviary, as well as making a tour of his garden, where he has cultivated many species of wild flowers with attractive blossoms or foliage.

Lecture at the Shanghai Science Institute: On June 6 Dr. K. Kimura delivered a most interesting lecture before the members of the Club at the Shanghai Science Institute, his subject being "Important Works in the Study of Chinese Medicine." Dr. Kimura, who is a prominent member of the faculty of this important Institute, illustrated his lecture with specimens of plants and animal parts used as medicine by the Chinese, various Chinese books on the subject of Chinese medicine and materia medica and lantern slides. His exceedingly valuable paper is being published elsewhere in the present number of this journal.

After the lecture was concluded the President called the attention of members to a series of copies, mostly from the *American Museum of Natural History Novitates*, of papers on Chinese fishes by Dr. John Treadwell Nichols of that institution, which he had kindly presented to the Club through Professor F. G. Haughwout, one of the Club's most active and enthusiastic members. These, it was pointed out, were the first works in the Club's Library. A motion to the effect that the Club should accept this gift and that Dr. Nichols should be duly thanked in a letter from the President was put forward and passed.

EDUCATIONAL NOTES AND INTELLIGENCE

Oriental Institute Created in Hawaii:

To interpret the culture of China and other Asiatic nations to the Occident is the purpose of the newly established Oriental Institute of the University of Hawaii, says a recent dispatch from Honolulu. The Institute will sponsor exchange professorships and student scholarships between the University of Hawaii and the leading universities of Asia, will promote graduate research in the various fields of Oriental culture, and will encourage the translation into English of notable literary works of the Orient. The Institute hopes to assemble a comprehensive library on the literature, history, religions and economic and social development of the leading oriental nations.

Professor Gregg M. Sinclair, a member of the University of Hawaii faculty since 1928, has been appointed director of the Institute. Professor Shae Chang Lee, Chairman of the Department of Oriental

Studies and Professor of Chinese language, literature and history in the University, will be associated with him.

English Lessons Will Be Broadcast:

Following the lead of educators elsewhere, regular radio lessons in English conversation are reported to have been inaugurated by a Shanghai school. Special textbooks have been written and are to be on sale at all bookstores.

\$720,000 is Granted to Private Colleges: Thirty-two private colleges and universities will share in educational grants amounting to \$720,000 to be appropriated by the Ministry of Education for the twenty-fourth fiscal year ending June 30, 1936. Out of the total of thirty-two, those receiving the largest grants were the University of Nanking, \$32,000; Nantung College, \$42,000; Utopia University, Shanghai, \$37,000; University of Shanghai, \$22,000; Yenching University,

SOCIETIES AND INSTITUTIONS

Peiping, \$65,000; Chiaotso Engineering College, Honan, \$36,000; Chee Loo University, Tsinan, \$29,000; Yale-in-China University, Changsha, \$37,000; West China University, Chengtu, \$22,000; University of Amoy, \$98,000; Nankai University, Tientsin, \$43,000; and Lingnan University, Canton, \$34,000.

Out of the entire budget of \$37,827,081 to be devoted to educational purposes, nearly two million dollars is for the Ministry of Education and its subordinate organs, thirteen million is for the various national universities and colleges, and fourteen million is for special civic education in the areas recently recovered from the communists. The Academia Sinica is to receive \$1,200,000.

For the promotion of mass education in all parts of China, a total of \$20,000,000 will be available, according to a *Central News* dispatch of July 16 from Nanking. Of the sum, \$2,400,000 will be available from the National Government and \$800,000 will be from the four Boxer Indemnity refund commissions. The remainder is said to have been promised by the various local governments. At the same time the Ministry of Education announced that 48,986 mass education classes would be established throughout the country during the forthcoming year.

Boxer Students Leave for London:

Twenty-four students holding scholarships from the British Boxer Indemnity Fund for study in England were to sail from Shanghai on August 6. They are the first of the hundred or more Chinese students which leave each Autumn for further study abroad. Four students who went to England last year on Boxer Fund scholarships recently transferred their work to other countries as they were unable to obtain the tuition they desired in Great Britain. Considerable fear was expressed lest this action might be construed as a precedent, but trustees of the Boxer Indemnity Funds belatedly explained that they had previously granted a modification of the scholarship terms in these cases, which were of a special nature. Such transfers are not to become common practice.

Educational Changes are Noted:

Transfers, alterations of curricula, and additions to educational circles in China during the past two months included the following:

Mr. Chang Tai-yen, one of the first "returned students" from the United States, recently agreed to head a new Institute of Chinese Studies to be inaugurated in Soochow. In a circular sent out by the founders the importance of promoting the Chinese classics as a basis of study, especially at this time when Western culture and ideas are beginning to dominate the country, is emphasised.

The resignation of Mr. Shen Peng-fei as head of Chinan University in Shanghai was accepted by the trustees of the institution in Nanking on June 22. Two weeks later, Mr. Ho Ping-sung, present editor-in-chief of the Commercial Press, Ltd., was appointed to succeed him. Mr. Ho received his advanced education in Wisconsin and Princeton Universities in America, and since his return has been closely connected with educational work.

Reforms in five colleges in or near Shanghai were enjoined recently by the Ministry of Education. They were Fuh Tan University, Shanghai, Soochow University, Soochow, Aurora University, Shanghai, Great China University, Shanghai, and the Shanghai College of Law. The reforms were on particular points and were brought up as the result of visits by inspectors from the Ministry. Better treatment of teachers and consolidation of finances were two important items brought up.

Kuling British School is Dissolved:

After a year that was marked by good scholastic results but poor financial returns, the Kuling British School has decided to close down in its present form. Mr. H. R. Dixon, the Principal, announced on June 14. In place of the formal scholastic arrangements, however, a set of Home Tutorial Centres will be in effect. Boys between the ages of twelve and sixteen will be accepted as boarders for private tuition by Mr. and Mrs. Dixon, while girls and young children will be taken care of independently and on separate premises by Mrs. H. Ruck and the Misses Ruck.

PUBLICATIONS RECEIVED

BOOKS

In Search of Old Peking, By L. C. Arlington and William Lewisohn: The French Bookstore, Peiping.

Chinese Calligraphy, by Lucy Driscoll and Kenji Toda: University of Chicago Press, Chicago, U.S.A.

Biologie de Pareumenes Quadrspinus Saussure, by le R. P. Octave Piel, S. J., Universite L'Aurore, Shanghai.

Fascism: Doctrine and Institutions, by Benito Mussolini: "Ardita" Publishers, Rome.

Comparative Studies on the Scales and the Pharyngeals and their Teeth in Chinese Cyprinids, with Particular Reference to Taxonomy and Evolution, by Yuan-ting T. Chu: Department of Biology, St. John's University, Shanghai.

Preliminary Report of Studies on Littoral Vegetation in the Vicinity of Amoy, by Albert N. Steward: College of Agri-

culture and Forestry, University of Nanking, China.

What Bird is That? by Neville W. Cayley: Angus and Robertson, Sydney.

Geology of the Iron Deposits in the Lower Yangtze Region, by C. Y. Hsieh: Memoirs of the Geological Society of China, Peiping.

Upper Palaeozoic Ammonoids of China, by T. H. Yin: Palaeontologia Sinica, Geological Survey, Peiping.

Miscellaneous Mammalian Fossils from Shansi and Honan, by C. C. Young: Palaeontologia Sinica, Geological Survey, Peiping.

Fresh Water Gastropods from Tertiary and Quaternary Deposits of Kwangsi, by Singwu C. Hsu: Palaeontologia Sinica, Geological Survey, Peiping.

Shanghai Directory, 1935: North-China Daily News and Herald, Ltd., Shanghai.

PERIODICALS

Bulletin of the Geological Society of China—The Periodical—Chinese Trade Winds—Far Eastern Travellers' Guide—Man—Geographical Review—Extrême Asie—Chinese Economic Journal—Smithsonian Miscellaneous Collections—Shipping Review—Natural History—Chinese Social and Political Science Review—New Zealand Fishing and Shooting Gazette—The Countryman—Salmon and

Trout Magazine—La Revue Nationale de Chine—Discovery—Philippine Journal of Science—Metropolitan-Vickers Gazette—People's Tribune—Chinese Economic Bulletin—Nankai Social and Economic Quarterly—Science—Lloyd Mail—New Zealand Journal of Science and Technology—Progress—Game and Gun—Far Eastern Review—Oriental Affairs—The Leper Quarterly—Chinese Critic—Soil Bulletins.

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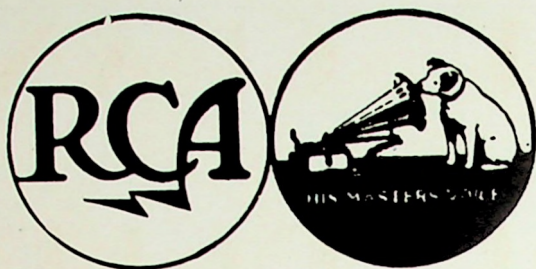
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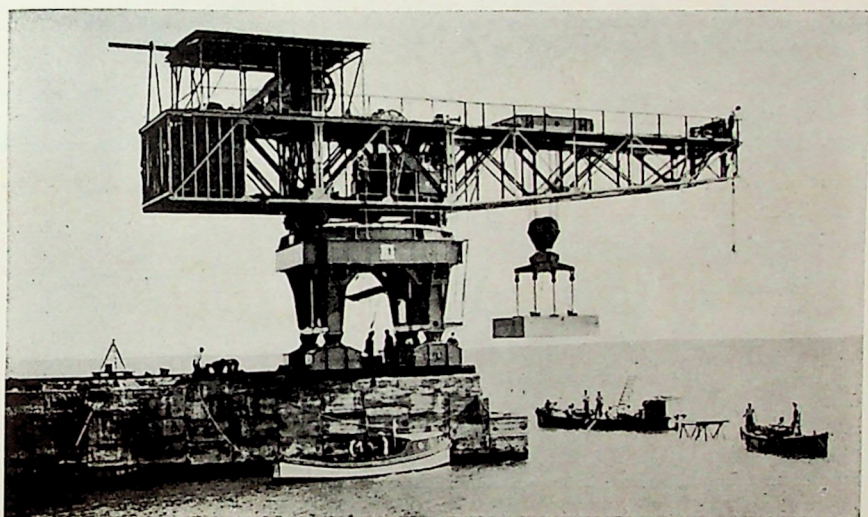
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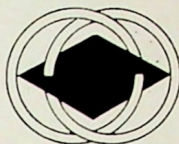
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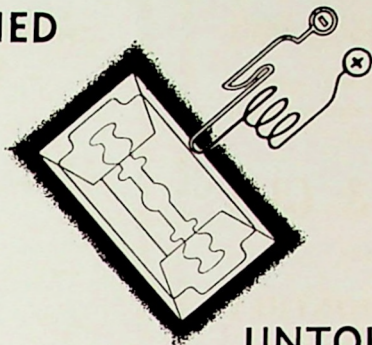
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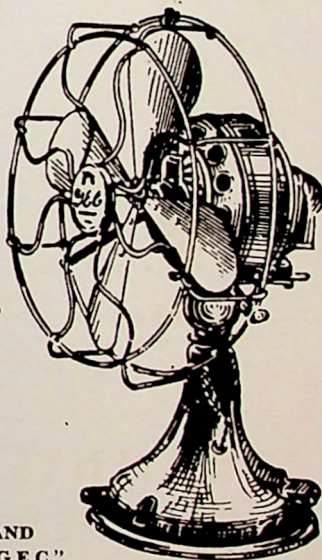
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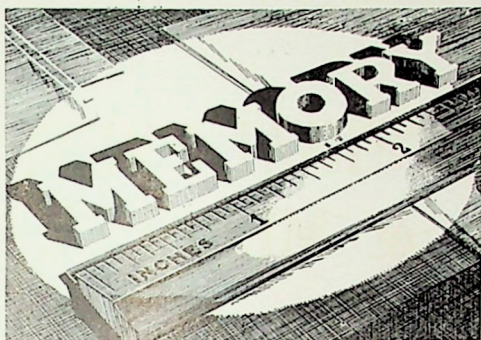
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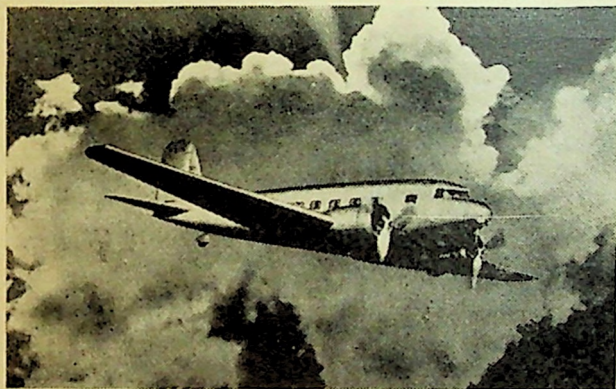
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