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Source: *The Geographical Journal*, Vol. 29, No. 3 (Mar., 1907), pp. 273-302

Published by: geographicalj

Stable URL: <http://www.jstor.org/stable/1776711>

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NINE YEARS' SURVEY AND EXPLORATION IN NORTHERN AND CENTRAL CHINA.*

By Lieut.-Colonel A. W. S. WINGATE.

The many accounts which I have read of the Great Wall (especially one in a book published by John Murray this year) are inclined, in my opinion, to convey a totally false conception of this Brobdingnagian undertaking. I have seen it in over twenty different places widely apart, and have heard many verbal descriptions of it in other places from travellers, and I have arrived at the conclusion that it was built by degrees and in sections in the first instance, not of hewn stone, but of round boulders and earth, and that the different sections were repaired from time to time as they fell into ruin. Only in the valley bottoms and on the passes was it composed of masonry or brickwork. The Mings rebuilt of solid masonry all those sections through which led a likely road for invading Tartars to follow, or where it could be seen from a distance against the sky-line; of these the chief, and the only one really worth a journey to see, is at Ch'a-tao, the northern entrance to the Nan-k'ou pass. The First Emperor's conception may have been a great one; but with a population like the Chinese, and a system of government like that in existence in China before Christ, the building was a sufficiently simple affair, and not to be compared, as it has been, with the Great Pyramid of Egypt.

But to continue. Our road crossed several passes, notably Tsü-ching-kuan (1800 feet), 15 miles west of the Hsi Ling, the scene of conflict in 1900 between Chinese troops and Boxers on the one side, and German, Italian, and Indian troops on the other. That this should have been so was quite in accordance with the dictum that history repeats itself; for it was by the road leading over this pass (and the one we followed) that successive hordes of Mongols and other invading armies have descended on to the fertile plains of Chih-li. Though once a cart road throughout, it is now only passable for animal-pack transport where it leads over the pass. The construction of the railway, now well advanced, from the Pei-han line at Cheng-ting Fu to T'ai-yuan Fu, the capital of Shan-hsi, will hasten the abandonment of this difficult road as a trade route.

It is impossible, in the limited space at my disposal, to describe in detail all we saw of geographical interest on our way to Wu-t'ai Shan. A few general remarks must therefore suffice.

The main geological characteristic is limestone covered by loess forming a succession of fantastically shaped mountains almost bare of

* Read at the Royal Geographical Society, December 17, 1907. Maps, p. 368. Continued from p. 200.

trees or vegetation of any kind, interspersed with narrow, but extremely fertile valleys, watered by streams of varying dimensions, but similar in general characteristics. The roads or paths mainly follow these river-beds, which are more often than not a mass of stones; so progress is slow and very laborious. In the loess the going is excellent when dry, and, owing to its adhesive and slippery character, it is easier riding or driving than on foot.

On August 28 we crossed the divide between Chih-li and Shan-hsi provinces at P'ing-hsing-kuan, 4500 feet. Heights are only approximate. Careful observations with B.P. thermometers and aneroids were taken throughout the journey; but the results, as worked out by Captain Turner, are not available for inclusion in this paper, but will, I hope, appear in the published maps.

From this elevation we obtained our first view of the northern peak of the Wu-t'ai Shan, 35 miles distant. On this pass only a few towers remain to mark the alignment of what was once an inner branch of the Great Wall. The people along the route speak with a different accent to that of the inhabitants of the Great Plain; they are more timid, less intelligent, ruder, and have not the habit, as is the custom further east, of passing one the "time o' day." There are numerous orchards, chiefly apple, apricot, the jujube plum, and walnut.

On August 29 we experienced a very heavy hailstorm; the size of the stones varied from that of a pea to a pigeon's egg. It only lasted fifteen minutes, but caused such a heavy spate in the river-bed as nearly to drown a surveyor. Such hailstorms are of frequent occurrence in the hills of North China. Lieut. Doveton told me of one he experienced in the hills 30 miles north of Peking, when the stones were as large as hens' eggs. This seems almost incredible, unless he meant eggs laid by Indian hens!

Our ponies, who had been having rather poor food, now got oats—a crop much grown in the mountain districts of Shan-hsi. Potatoes were plentiful—the same variety as our own. In respect to the potato, Sir Clements Markham stated that it was "through Warren Hastings' forethought and care in considering the nature of the country in Tibet and to the eastward, that the potato was introduced about 120 years ago. And it has undoubtedly spread from the valley of Lhasa into Ssü-ch'uan." Now the potato is grown all over the hilly country of North, and in many parts of Central, China, especially in Shan-hsi and the K'ou-wai. It is mentioned by many travellers, and is now a staple food of these people. Shan-hsi is one of the earliest civilized parts of China long before Warren Hastings' day.

Are we, then, to believe that the Chinese only began to cultivate the potato a little over a hundred years ago? It is quite possible, for it is stated that opium has not been grown much longer. These examples are of interest, as, if correct, they tend to show how quickly new

plants and habits can be introduced and spread over this vast empire. Excellent grapes are grown, from which a palatable wine is made.

On August 30, we climbed the Hua-yeh-ling (pass, 7500 feet), and reaching the top, the holy place of pilgrimage, with its red and white, golden and yellow-roofed temples lay, silent and beautiful, in a narrow well-wooded valley, at our feet. On the pass we met several Mongols with their ponies hurrying back to their native soil, their pilgrimage completed. One Mongol was prostrating himself full length on the ground nine times, making his last Ke-t'ou to the P'u-sa-t'ing, the principal temple of this Mongol Mecca. That night we took up our abode in one of the temples, at an elevation of 6000 feet above sea-level, in comfortable quarters surrounded by the Wu-t'ai, or Five Peaks. Though it may appear remarkable to those acquainted with the usual condition of things in lama temples, our rooms were clean and free from uninvited guests.

Wu-t'ai is an ideal spot in which to pass the hot, enervating months of July and August. Here the temperature stood at 60° in the shade at noon on a bright sunshiny day, while a few miles down the valley 70° could be got; and to those who prefer the cold, a climb to the top of any of the five surrounding peaks will give as low as 45° to 48° Fahr. in the shade, even at that season of the year (August). We made a plan on a scale of 6 inches = 1 mile of this the most famous Buddhist, or rather, ought we to say, lama, place of pilgrimage (there are several others of the same name in China, notably in North Ho-nan and in North-East Hu-pei, to which Manifold has referred, but these are mainly for orthodox Buddhists), the execution of which caused some consternation among the priests, who, having only recently heard of the arrival of our mission at Lhasa, wondered whether we might not be the advanced guard of a similar expedition to their retreat.

On September 1 we were awakened at 3 a.m. by a deafening noise of drums, gongs, and horns calling the priests to early prayer. Once started, prayers continue on and off till noon. Then a meal (they had previously partaken of a light meal of small millet soup about 8 a.m.) and sleep till 4 p.m., after which prayers again commence and continue till dark, when the evening meal is eaten.

Prayers consist mainly in chanting the Buddhist liturgy, turning prayer-wheels of many shapes and sizes, and walking at a fast pace round and round the central building, always in the direction of the hands of a clock—this, I suppose, by way of a constitutional!

About 8.15 a.m., on September 1, we started to ascend the Chung-t'ai, or central terrace, which lies next to the Pei-t'ai, or northern one, on the west side. We reached the top at noon, after a pretty steep climb over grass-covered bare slopes. The summit is a water-logged plateau or terrace of about 400 to 600 yards in diameter. This is covered with the ruins of what must once have been a very fine temple, built of solid

blocks of granite and limestone. Carved dragons and lions and obelisks lie strewn about. The bulk of the remains have been collected into a single structure $40 \times 15 \times 10$ feet. Inside this are three vaulted chambers with cast-iron images of Buddha. Two slate tablets let into the wall on the west of the entrance give a history of the temple and the names of those who, by subscribing to do this work, hoped to earn merit.

In front of this rough structure, on the south side and in the middle of what was once evidently the central courtyard of the temple, is a pagoda, 30 feet high, of carved stone. Further south, about 100 yards distant, are the remains of a masonry terrace and pagoda. From this spot a magnificent panoramic view is obtained of the other four "t'ai," and the valleys beyond; and here, no doubt, the emperors and other distinguished pilgrims have sat when visiting—as they have done for over a thousand years—this mountain summit.

According to Rockhill, these temples on the summit of Chung-t'ai were built in A.D. 581–601. The three travellers who have left records of the height of the Pei-t'ai, or north terrace, all give approximately 10,000 feet. We made the Chung-t'ai 9600 feet, and computed that the Pei-t'ai was 400 feet to 500 feet higher. With a temperature of 48° in the shade, water boiled at 195.6° . We could see no other peak higher than the Pei-t'ai. As already mentioned, the highest peak of the Hsiao-wu-t'ai Shan is certainly under 10,000 feet, and I am inclined to believe that the Hing-an mountain range, of which the Greater and Lesser Wu-t'ai might be called southern extremities, does not contain a single peak over 10,100 feet above sea-level; moreover, in all probability, no peak of the Hing-an, lying north of the Lesser Wu-t'ai, reaches 7000 feet. The next highest mountain in Shan-hsi to the Greater Wu-t'ai, is a curiously shaped one with three peaks lying south-east by east of the Chung-t'ai, and about 30 miles distant. We were unable to discern the mountain mentioned by Edkins, as lying to the north-east, and which he says is higher than Wu-t'ai.

The rocks are mainly granite and sandstone, with an admixture of quartz and conglomerate. Excellent coal comes from Ching-ho-wa, 35 miles to south-east.

Oats are grown within 1500 feet of the top, *i.e.* at an elevation of 8000 feet, and rhubarb at 7000 feet. The whole hillside is cultivated, giving a kind of chess-board appearance. There is less terracing than in other parts of China. A remarkable thing (considering the limited area of these plateaux) is the large amount of water at 9500 feet, and that in spite of an extremely dry year. At 8000 feet there were springs of water. Scarcity of water along the routes had resulted in a large falling off in the number of Mongol pilgrims, consequently, as the Head Lama carefully explained to us, there was a heavy shortage in the amount of contributions. Pilgrims give both in cash (anything from

10s. to £100) and in presents of appurtenances for the temples. The chief industry of the place is the making of copper and bronze idols. It may be interesting to mention that the Dalai Lama was then in Urga, and the priests said that he would never return to Lhasa as another had been appointed in his stead. Evidence of the decay of the lama religion is the absence of any Mongols approaching the shrine by prostrating themselves at full length on the ground, as mentioned by Edkins years ago. Even the few who do prostrate themselves for a number of hours daily, do so with extraneous assistance in the shape of smooth sloping boards, and pads for the hands, knees and forehead.

A TYPICAL ROAD IN THE MOUNTAINS OF NORTHERN CHINA.

It is small merit such pilgrims will store up for themselves, though the exercise is no doubt conducive to a good appetite and digestion.

Rockhill speaks of 360 temples in the valley. In 1905, omitting very small insignificant places, there were only 107. Of this number 30 are at Wu-t'ai itself (of these only five are called "Ta," or Great); the remainder are scattered along the valleys through which the main route from Pao-ting Fu leads. There is a fine pagoda in a prominent situation; at the time of our visit it was undergoing repairs, the expenses being met by a local merchant desirous of piling up merit. It is 70 feet high. Two splendid stone lions are all that remain intact of the Emperor Kang-hsi's picturesque summer residence, now a mass of ruins overgrown with foliage and grass. As at Je-ho, so at Wu-t'ai, the decay of lamaism is everywhere in evidence. A Japanese called on the chief lama during the time of our visit.

On September 5 we said good-bye to our kind Mongol friends, and made our way to Wu-t'ai Hsien (the chief town of the district);

thence we proceeded by unsurveyed routes to the Pei-han railway at Cheng-ting.

The country was wild and rugged. The main points worthy of remark are, the perseverance with which the Chinese carried coal for distances up to 50 miles from the mines over the most heart-breaking tracks imaginable; the steepness (30°) of the descent from the Hei-shan-kuan (4800-feet pass); the broken character of the hills, which were nearly bare of trees; the labour and skill with which the people cultivated the steep mountain-sides to a height of 8000 feet above sea-level, the fertility of the loess, and the almost total absence of game and small birds.

THE CENTRAL CHINA REGION.

In 1903 and 1904, Lieut.-Colonel Manifold had charge of the expeditions devoted to gathering information concerning the geographical and commercial aspects of the western half of the great Central China region. Lieut.-Colonel Manifold gave an account of his explorations in two interesting papers read before this Society, mainly devoted to the province of Ssu-ch'uan, which is held to be, no doubt with reason, one of the finest fields for future commercial enterprise. Distance, ever prone to lend enchantment to the geographical horizon, has always had its attraction for explorers. Thus it happens that the remoter regions of the Chinese Empire have received rather more than their fair share of attention. In our efforts to learn as much as possible about these distant lands, thousands of miles from the sea-coast, we have somewhat overlooked those not less geographically interesting and commercially profitable, though little-known, districts within easy reach of ocean-going steamers.

Looking through the *Journals* of the Royal Geographical Society for the last fourteen years (1893 to 1906), out of twenty-five papers devoted to the Chinese Empire (excluding Chinese Turkestan and Tibet), there appear to be only three dealing with Northern China, and none at all relating to the eastern portion of the Central China region. In the number of the *Journal* for November, 1898, is a useful compilation by Mr. G. Chisholm dealing with China as a whole, but it requires bringing up to date.

This is an astonishing fact when we remember the importance of these regions, and, until quite recently, the lack of accurate geographical information concerning them, so that even now there are quite large areas which are scarcely explored.

I cannot do more here than mention the extensive explorations done in 1903-04 by Lieut. Webster in North Ho-nan; along the Yellow river; in the hills in the triangle Ho-nan Fu, Lung-chü-hai, Nan-yang Fu; in south-east Ho-nan, and north Ngan-hui. He surveyed in some six to seven months between 2000 and 3000 miles, with the assistance of

two surveyors who generally followed different routes to Webster's. The Peking Syndicate's surveys, executed by Survey of India men, formed the basis of the sheet of Ho-nan province, and Webster's work was mainly responsible for the rest. The hills in the triangle above mentioned had never been explored by a foreigner before. Those north of the Lo-Ho (that historical ground of ancient China) were explored by Manifold and Hunter in 1901-02.

If it is in a country with a growing population that we must look for the increase of trade, then may we safely turn our commercial attention to the eastern section of Central China in general, and to Ngan-hui in particular. Devastated during the Tai-p'ing rebellion, it is recovering rapidly, and its population is increasing by leaps and bounds.

The 'Encyclopedia Britannica' translates its characters, "Peace and Plenty" (a doubtful meaning), and justly calls it "one of the most productive provinces of China." Richthofen says of it, "The exuberant fertility of the soil in the lower portions of the province" (and I would add in the central also—A. W.) "is not excelled by anything I have seen in temperate climates. No expense has therefore been spared in protecting the lowlands by embankments, and introducing a perfect" (I would rather say nearly perfect—A. W.) "system of irrigation. Both deserve the highest admiration."

It was the difficulty of learning anything about Ngan-hui province (except along the banks of its main artery, the Yang-tzu Chiang and the country contiguous to it) that first guided my steps in that direction.

As with Outer Chih-li, so with Ngan-hui—with the exception of a page or two in the late Baron von Richthofen's "Letters," and a short paper in the reports of the Chinese Imperial Customs, we have to turn to the French and German languages for information available to the public. As so often happens, the French were before us in this matter, and Père Havret's little work, though somewhat out of date (1890-93), is of great value. It is for this reason, and that they are among our most recent travels in China, that I thought it might be of interest to tell something of a territory not much heard of in this country, although, strictly speaking, only about one-third of it is included in the term "Northern China."

First, a few figures to give some idea of the size and population of Ngan-hui province. Greatest length, 350 miles; greatest breadth, 320 miles; which gives an area of 54,000 square miles—that is, about the size of England, the state of New York, or Uganda. Population, 24,000,000, equal to Austria, or to the Royal Niger Company's territory plus the Niger Protectorate, and only some eight millions less than that of England and Wales. This gives a density of about 440 to the square mile, equal to that of Belgium. The above are the official figures, but I incline to think they may be overestimated, though every year there is a steady increase both by birthrate and immigration.

The name Ngan-hui (the *ng* at the beginning is an attempt to give the peculiar nasal sound to the word) is derived from its two most important cities, Ngan-ching (the capital) and Hui-chou, the chief city south of the Yangtzu-Chiang. The words signify "Peace and Excellence," which might truthfully be rendered "Peaceful Beauty," if applied to the southern half of the province.

The province is split up conveniently and naturally by the rivers Huai and Yang-tzu into three parts, each with its marked characteristics. North of the Huai is level plain, with nothing but a few isolated mounds to break the monotony. It is, in fact, a continuation of the Great Plain, to which it belongs, together with its icy dust-laden blasts, its crowded though poor population, its carts and its mules (camel caravans and cart traffic are, on the northern bank of the Huai, giving place to coolie transport and wheelbarrows south of it), and its scanty flora and fauna. The central portion, lying between the Huai and the Yang-tzu, is half mountain, half plain, studded with lakes and low-lying, inundated tracts. The population is less dense than in the northern region. The part south of the Yang-tzu differs altogether from the other two. It is mountainous, with a comparatively wealthy and fairly dense population.

Though there are as yet no railways, and the roads are poor, intercommunication between these three regions and the neighbouring provinces is easy, owing to the numerous waterways. Thus Ngan-hui unites in one province the main characteristics of North and Central China, as well as the coastal country of Kiang-su and Ché-kiang.

Geologically, the northern region is, as already stated, alluvial soil like the Great Plain, with occasional patches of loess in the valleys between the outlying spurs of the K'un-lün, which are composed of sandstone, granite, and marble. The branches of these spurs extend eastwards as far as the Hung-ch'ih lake. South of the Yang-tzu we have the Nan-shan range, mainly composed of granite, limestone, and schist, with alluvial soil in the valley bottoms, but no loess. I have been in Japan, and was struck by the general similarity in appearance of the scenery of southern Ngan-hui and Japan. Richthofen states that the geological formation of the two countries is similar. If we except the immediate neighbourhood of Wuhu, a favourite centre for cold-weather shooting among the foreigners residing in the lower Yang-tzu basin, very few people, except missionaries, have travelled in the south and most interesting part of the province, except along the borders of the Yang-tzu river. Of those who have, I can only find records in English of Brawn in 1794, Fortune in 1848, Richthofen in 1871, though, of course, there may be others.

Previous to our visit, with the exception of two railway reconnaissance surveys, none of it had been surveyed—at least, there are no

published records of any—and the maps (the best of which were the Chinese and Père Havret's based on it*) were very faulty indeed.

There is little of special interest to tell concerning the country north of the Huai. It is densely populated by poor, though hard-working farmers, who do not find time for much else. The conditions in this part are almost identical with those of the rest of the Great Plain, except that, partly for purposes of protection against robbers, and partly against floods, the villages are raised above the level of the ground, on little islands, so to speak, with often a mud wall and moat.

In the northern part of the central belt, the aspect of the country is very like that of Southern and Eastern Mongolia—long, gradual undulating slopes, looking like immense ocean waves; as each one is

A FREQUENT SIGHT IN CENTRAL NGAN-HUI.

breasted, another appears about the same distance ahead. The soil is poor, and the population not dense.

In the whole of the region north of the Yang-tzu there is an almost complete absence of timber, which must have a very high value for it to pay to carry tree-trunks from the Po-yang Lake to Lü-chou Fu by water, and thence in wheelbarrows to Fêng-yang Fu, in Northern Ngan-hui, a distance of 80 miles.

To see the wheelbarrow men (many of them intelligent farmers and traders out of present employment) heaving, pushing, and staggering along with their heavy and often unwieldy loads is indeed a lesson to those who believe in the theory that only the fittest survive, and who are accustomed to European and American methods of conveying goods. Yet these men are nearly all opium-smokers. No sooner is their day's journey ended, their evening meal of rice and a bowl of tea or soup consumed, than they hie them to the opium dens, and there pass the

* There is another map by A. Pierre, 'Province du Ngan-hoei,' which I have failed to obtain. It is not among the collection of the R.G.S.

night, laughing, talking, smoking, and gambling. They are up again next morning and well on their road by 7 a.m. Who that has seen these men toiling along the atrocious roads, up and down hill (ay, even steps!), or watched boatmen circumventing a rapid, will be certain that all opium-takers are lost creatures? If they are, who would not try and do something to save such splendid specimens of humanity?

THE HUAI HO.

One of the most interesting geographical features of North Nganhui is the Huai river. Hitherto it seems to have received but slight attention. No foreign gunboat has ploughed its waters; only one steam-launch had, at the time of our sail on it, visited its ports. Why is this? The reason is simple—because, through neglect, the Grand Canal from Yang-chou Fu to Ch'ing-chiang-p'u, and the passage from there through the Hung-ch'ih lake, have been allowed to silt up. This is a pity, because once through this latter and in the Huai proper, the depth and width and other conditions of the river are such that river steamers drawing 6 feet could proceed to Ch'eng-yang-kuan, while a smaller type of vessel could reach such places as Wu-lung-chi.

Navigation by steam-launches, and specially built river steamers of a smaller type than those which go from Hankow to Ichang, would find no difficulty in reaching Ch'eng-yang-kuan once in the Huai river itself. Even under present conditions the lowest water in the Hung-ch'ih lake is 3 feet, and highest 10 feet. In width the Huai varies from 100 to 590 yards.

It would be worth while to survey the Grand Canal and the Hung-ch'ih lake with this object in view. Best of all would it be to construct a fresh canal, or improve the existing waterway, from the Huai *before* it enters the lake to the Grand canal about 30 miles above Yang-chou Fu.

The traffic on the Huai is immense. Ch'eng-yang-kuan is a thriving, bustling mart. According to Chinese sayings, fifty waterways meet about here; but be that as it may, it receives one important tributary, the Sha-Ho, which gives access to the inland port of Chou-chia-k'ou, the most important mart in Ho-nan south of the Yellow river.

Lü-chou Fu is an ancient city, whose people pride themselves on their literary attainments. This is the country and home of the Li family, of whom Li Hung-chang is the best remembered. The great statesman's grave is a picturesque but simple affair by the side of a pond, near the banks of the canal leading from the city to the Ch'ao Hu (lake). Near by are the remains of the grave of an even more celebrated (from a Chinese standpoint) statesman, who lived and was buried here about five hundred years ago. I wonder will the great Li's headstones be in a similar condition five hundred years hence? The older grave receives now no care at all.

Lü-chou is undergoing a great revival, and shows signs of becoming a leading city in the new China that is making. It was in the college here that I was introduced to several fine Chinese lads, whom, in the twilight, one might have taken for English public schoolboys, such was their garb and nonchalant demeanour! In this city, and also in Nganching the capital, we were much struck by the rapid strides which education had made along modern lines. Splendid schools and hospitals are already in full operation, and the thirst for up-to-date knowledge is apparent on every hand. There is regular steam-launch communication between Lü-chou and the treaty post of Wuhu, 100 miles distant by the water route. Along this route small river-steamers might ply, provided some improvements were effected in the approaches to the city of Lü-chou from the lake. Between the lake and Wuhu there is a fine broad waterway of sufficient depth. There is a great traffic carried on along this route.

From Lü-chou the waterway leads one into the Ch'ao Hu, a splendid sheet of water. The north and west shores are flat. Picturesque islands are dotted about here and there, and the scenery along the southern shore is pretty, though the hills are too bare. What they might be with proper afforestation can be seen south of the Yangtzu.

In Ngan-hui, north of the Yangtzu, deforestation reigns supreme, but in Southern Ngan-hui afforestation seems to really have taken root. There the trees got a start in the years following the T'ai-ping rebellion, when there were scarcely any people left to cut them and the undergrowth. While on the subject, I should mention that afforestation thrives also in Hu-nan province, whose thrifty population is too sensible to destroy the goose with the golden eggs.

A curious feature of the Ch'ao Hu is the method of fertilization along the lake-shores which I have not seen elsewhere in my travels in China, nor is it mentioned in Père Havret's book, though he speaks of most things. Unfortunately, owing to adverse weather, contrary winds, and tempests and cold, I was unable to do more than note this matter. To illustrate my meaning, I cannot do better than quote what I find in my diary for that day, bearing in mind that we had spent the previous day in beating against the wind, with the result that we gained barely a mile along our course.

"November 3, 1905.—During the night it clouded over (min. temp. in boat with doors shut, 40° Fahr.) and came on to blow hard from the north-east, just the direction we want to go—result, we are obliged to stay where we are, a rather undesirable spot a mile east of the Chung-miao promontory, with nothing to do. Some duck too wild to approach. If one wanders more than 100 yards on either side, one's nostrils are assailed by manure-pits, not made from the usual human ordure, but by pouring the water of the lake into sand-holes and allowing it to evaporate. Result, much smell and a green deposit, the colour of verdigris, and

called 'cha-ts'ao.' The manure itself looks like a dark-green mud. The shores of the lake are red conglomerate formations of red sand and clay, and very hard. Heavily laden cargo-boats can sail, but not the lighter ones. Very few fish in this lake, but the Chinese say the Pai or Po Hu further south is full of them (Note---this lake has never been explored by foreigners). But no one seems to know anything, and the dialect spoken here is perfectly unintelligible. The boatmen, too, are a lazy lot, and cannot be got to respond to inquiries. Extracting information is like drawing blood from a stone. Blew all day hard from the north-east. Very cold. Progress *nil*."

Passing to Southern Ngan-hui, the district all around Wu-hu for many miles is a network of waterways, embankments, and rice-fields. This is one of the best shooting districts in the Yang-tzu valley, though there is plenty of excellent pheasant-shooting almost anywhere in Southern Ngan-hui.

Even small-game shooting in China is sometimes attended with all the exciting scenes more properly belonging to the chase of sterner game. Every one has read of the unfortunate shooting incident which happened last year near Ngan-ching, to the American admiral on the China station. Well, the first we heard of it was at Wu-hu, and so, naturally, we were inclined to be extremely careful when the local Celestials and the pheasants got too much in the same line of fire.

All went well till one day, at Ning-kuo Fu, my companion and I were out together, and both shot at (and missed or hit, I cannot remember) a fine cock pheasant. Immediately after the shots, I saw a Chinese man running towards us from the left front, and not in the line of fire of the bird, followed by two or three others. He showed a little spot of blood on his lower lip, and, opening his mouth, a very dirty and crooked lot of teeth. He declared he had been hit, and half his teeth knocked out. We argued for a bit, the spectators meanwhile increasing in numbers. At last, seeing he had about two to one the best of us in evidence and ten to one in numbers, I put my hand in my pocket and was deliberating how much to start with, when a man behind me intervened, saying to me, "Don't you be a fool. He was never hit by the shot; he hit himself with his hoe-handle when he heard the shots close in front of him." Then, turning to the culprit, he said, "You be off; you know you are only lying!"

This story serves to illustrate two points: one common to all China, viz. the adaptability of the Chinese nature to circumstances when possible gain is in view; and secondly, that in Southern Ngan-hui, owing to the immense immigration of people from every quarter of China to make up the number who were there before the T'ai-p'ings came, there is a diversity of interests, one man's hand being, so to speak, against all; so that, while on one bank of the river you might be stoned, on the other you would very likely find protection.

Talking of the T'ai-p'ings reminds me that the author of a very popular 'Life of Gordon' told me that somebody had told him that Gordon had said that when he fought for the Chinese Government against the T'ai-p'ings he fought on the wrong side. I do not believe Gordon said any such thing; he fought on the only side he could—on that of law and order. Any one who has walked, as I have, for days and weeks in Southern Ngan-hui, through towns, villages, and farms laid waste by the ruthless band of the T'ai-p'ing rebels, will ever rejoice that Gordon lent his wonderful power in assisting to overcome them. His memory is revered to this day: I have received on several occasions unlooked-for

THE GRAVE OF ONE OF CHINA'S GREATEST STATESMEN, LI HUNG-CHANG.

kindness in the interior of China, for no other reason than that I belonged to the same army as Gordon.

It is when we come to Southern Ngan-hui that we enter a country having certain attributes peculiarly its own. It again divides into two parts—the flat rice-growing country around Wu-hu and bordering the Yang-tzu, and the mountainous interior. In the former one meets with the same characteristics as in other similar localities where the people by growing rice eke out a monotonous life in the struggle for existence. But once inland and all is changed. Two things are immediately apparent. Here were once the homes of an artistic and opulent people, and here also the hand of the destroyer has laid waste

the land. The prefecture of Hui-chou was formerly inhabited by a clever industrious people, celebrated throughout China as merchants and bankers.

Père Havret thus admirably sums up their good qualities: "Hardi et entreprenant dans le négoce, le peuple de Hoi-tcheou laisse aux femmes la garde de ses maisons, il afferme à des étrangers la culture de ses vallées, puis il s'en va au loin chercher une future que la terre lui refuserait. Cette remarquable aptitude des habitants du Hoi-tcheou est consacrée par ce proverbe que toute la Chine connaît 'Wu Hoi pu-ch'eng-shih'"—that is to say, "Business cannot be carried on without the people of Hui-chou."

The truth of the above saying is at once seen in the better dwelling-houses, the splendid ancestral halls and memorial arches, with their beautiful architectural designs and sculpture; the number and quality of the bridges; the excellent condition of the roads (a rare thing in China); and the better clothes of the people. Of course only a small proportion of the inhabitants of pre-Tai-p'ing days remain, and one notices quickly the difference between them and the more recent immigrants from Hu-pei, Kiang-si, and neighbouring provinces.

This prefecture is full of interest to the artist, the botanist, and the lover of natural history.

Southern Ngan-hui is fast being repeopled. The inhabitants are very enlightened as Chinese in the interior go, and are anxious for all modern and Western improvements. Even in religious matters they have shown much spirit—some villages having, of their own free will, destroyed their idols. A couple of years ago the students attending the examinations for degrees, attributing their backwardness and ignorance to the bad influence of their idols, destroyed the statues of the eighteen lohan or saints which line the right bank of the river opposite the Hui-chou city. They knocked all the heads off except one.

We found existing maps of Southern Ngan-hui very inaccurate. Altogether in South Ho-nan and Ngan-hui we surveyed 3600 miles of routes and made thirty-one plans of cities and towns in ninety-seven days, including halts.

The mountains of southern Ngan-hui have been very little explored. The higher peaks average over 6000 feet, are forest-clad and exceedingly beautiful. There are many birds, and excellent pheasant-shooting almost everywhere.

Chinese Ink.—One of the chief industries of Hui-chou prefecture is the manufacture of Chinese or, as we wrongly call it, Indian ink. The centre of production is Hsiu-ning, a district town 25 miles west of Hui-chou city. Here is made the supply of ink for the whole empire, indeed for the whole world, if ink of the first quality be required. The firm of Hu K'ai-Wen is world-renowned, and no ink is considered good without this name being on it.

Chinese ink is of varying quality, ranging from eightpence to seven or eight sovereigns a pound, containing from thirty to thirty-two small sticks. I cannot describe here all the finesse of its manufacture, but much depends upon the quality of oil and lampblack.

We watched the men at work in dark, confined rooms at the back of the small shops—much like similar factories in London two hundred years ago—and came to the conclusion that here lay a mine of wealth to the first who should lay down suitable machinery to carry on this industry on modern lines. From 20 to 160 sheets of goldleaf are used per pound, and great artistic taste is exhibited in the various designs. Models of the lohan, or saints, and of temples and mountain scenery are made. Presentation cases for export are now obtainable in Shanghai. Each case contains two boxes, each of which has two beautifully lacquered inner cases. A box contains eight slabs of ink—making a total of sixty-four slabs for \$64 or \$65 (say, £6 10s.), well worth the money, as the ink does not perish by keeping.

SHA-SHIH TO WAN HSIEN.

After completing our explorations in Ngan-hui and Hu-pei provinces, we wished to prove by actual examination the possibilities of the route through northern Hu-nan to Wan Hsien on the Yang-tzu (above the gorges) for a railway.

We examined the only available maps, and from previous experience in similar country, made our calculations as to the number of days the journey would occupy from Sha-shih *viâ* Li Chou and Tzu-li to Wan Hsien. We made it—allowing a liberal margin—400 miles, which at 20 miles a day made twenty days.

The distance we travelled (and we went by the shortest route) was 612 miles (all of which we surveyed), and the number of days thirty-three, exclusive of two days in halts, that is at the rate of $18\frac{1}{2}$ miles a day. So much for existing maps of the mountainous districts of the Central China region. Our route lay up the river from Tzu-li to Shih-nan *viâ* Ho-feng, and on to Wan Hsien; almost a bee-line on the map, but it proved one of the most tortuous, roundabout pathways possible to imagine.

We formed the opinion that the particular route was very unlikely ever to be selected for a railway, and that the “chord” line will never be made in our time. The only possible route would be *viâ* the following towns: Tzu-li, Yung-ting, and Lai-fêng to Shih-nan.

So we arrive at this conclusion, that if there is to be a railway to connect the upper and lower navigable Yangtzu sections, it must be more or less, as Lieut.-Colonel Manifold has pointed out in his admirable paper, along the north bank.

There is no published account of explorations in the mountains between the Yuan and Ch'ing-Chiang rivers east of 109° E. long., and

so far as we could ascertain no foreigner (not even a missionary) had ever travelled by the routes we followed from Tzu-li to Shih-nan Fu, and from there to Wan Hsien.

Our work dovetails into my first journey through Hu-nan in pre-Boxer days, and Manifold's and Hunter's work south of the Yangtzu.

The country is wild, rugged, and beautiful. Between Tzu-li and Shih-nan the population is, on the whole, sparse; though there are several small densely peopled and cultivated valleys. Cultivation, as in Ssü-ch'uan and other parts of the hill country of China, is carried nearly to the tops of the mountains.

Underground rivers are frequent. In one place I came upon a dirty yellow stream of water flowing from the cave-like recesses of a dark ravine. Ascending this for 300 feet, I found a broad alluvial valley covered with grass, and with several boats lying high and dry on the mud. The only sign of water was a fast-flowing stream (also muddy, but clearer than below) which disappeared suddenly into a hole in the ground, near the head of the ravine up which I had come. Near by was a roadside shrine. The Chinese state that every rainy season these elevated valleys (they average 1500 feet above sea-level) become lakes, the water being often 30 to 50 feet deep, and the only means of communication is by boats. Numbers of cattle and water-buffalo were grazing. The temperature was low, only 48° at midday on a fine but hazy day, March 6. Elsewhere I saw a number of Chinese men and boys engaged in extracting, with small hand-nets, the fish from a pool, which was evidently the last remaining water of one of these lakes.

Our road lay for the most part through deep, narrow gorges with perpendicular cliffs often 2000 feet above the river bed. The undergrowth was very thick and varied in character. Birds were numerous. A section of the route would show many steep ascents and descents of over 3000 feet, sometimes two in one day. The highest passes were about 6000 feet above the level, and the loftiest peaks 7000 to 8000 feet.

At T'ien-ch'iao, 6 miles south-west of Shih-nan Fu, is a natural bridge under which the river passes. This phenomenon is said to have been due to an earthquake in the reign of Tao-Kuang (1821-1851). Good coal is mined close by; the whole valley hereabouts is limestone and coal; the scenery beautiful.

THE GEOGRAPHY OF RAILWAYS.

Northern China.

This subject has, during my sojourn in the Far East, received more attention than any other. It is worn pretty well threadbare; but I would ask forbearance while I say a few words mainly on behalf of the Chinese. They do not get a fair chance. The bulk of them want railways, want

mines, want every kind of modern and Western invention and improvement. But they must be allowed breathing time. In 1895, and again in 1900, they were hit below the belt, and, like an untrained boxer, they have scarcely had time to regain their equilibrium. Who that has seen them travelling by train in those luxurious (?) third-class carriages will deny that they must have a perfect passion for travelling? See their poor women pushing and shoving to get seats in the train—for all the world like people rushing for front seats at a popular play. Surely such things speak for themselves. Gold, silver, copper, tin, coal, *et hoc genus omne*, lie buried beneath the surface of their splendid inheritance, and they are as keen to get possession of them at the lowest possible

THE BEAUTIFUL VALLEY OF HUI-CHOU PREFECTURE, SOUTHERN NGAN-HUI.

capital outlay as were ever the most astute of South African companies. But as yet they don't quite understand the business. Why should they? They have no London or New York Stock Exchanges to teach them. During the Russo-Japanese war they got no respite; but they learned something, and now they are just beginning to awake as from a foolish dream. Like most revolutions, the Boxer one of 1900 produced the man for the occasion, in the person of Yuan Shih-k'ai, a strong man, knowing his own people's peculiarities well, but not fully versed in the vagaries of the foreign capitalist and concessionnaire. So he said, "I will manage my own people myself, but I will collect around me as advisers men who have been trained and taught by the countries which possess the

greatest reputation for go-ahead methods; and while my poor people are learning something of western knowledge, I will get these clever men to help me to stave off the rush of the foreigner with his uncontrollable fierceness."

The chief of these men is Tong Shao-yi. Now, no one who has met this clever, enlightened, polished Chinese gentleman will be so foolish as to suppose that H. E. Tong believes a railway can be built from Hankow to Ch'eng-tu or Canton without the assistance of foreign capital and brains. Unlike their predecessors, Li Hung-chang and Jung Lu, Yuan, Tong and their friends really know and understand something of Western civilization, and they realize that if these immense railway and mining enterprises are to be undertaken, it can only be with the assistance of foreign nations. They also know that the working of railways and mines in China by purely foreign-controlled companies engenders—as indeed it would in England or America, were our railways and mines to be managed solely by Chinese—so much ill feeling, and calls for so much meddling by foreign governments in Chinese internal affairs, that the people are—and in my opinion quite justifiably— anxious to control them themselves. But this does not mean that, provided they can get it on their own terms, they are adverse to use foreign capital or foreign engineering skill and material in the fulness of time. China is moving, but the Chinese do hate, above every thing else in the world, being hustled. They lead the strenuous simple life, but they like to do it quietly and slowly as suits an Asiatic people who, after all, are only what their climate and surroundings have made them. We must grasp these facts, not as we hitherto have done, only in connection with the building of fleets and the making of armies, but with respect to education and economic and industrial enterprise. They want—and who in justice will deny their right to it?—the lion's share of the industrial development of their own country. They mean to learn all about Western civilization, but to apply it in their own time and way for their own people. To tell where and how railways should be made is the business of the engineer and the capitalist. I will only say, therefore, that the Chinese people, as soon as they understand what railways mean, want them and appreciate them. During our recent wanderings we were often welcomed by the people, and by some officials too, as "T'ieh-lu Kuan" (railway officials). We had conversations with many Chinese in the interior, and found them anxious for the extension of the railway, the telegraph, and the post office to their towns and villages. In my opinion the Chinese engineer who, without foreign assistance, will build a line of rail in the best and most economical way from Hankow to Ch'eng-tu, or through the Nan-k'ou pass, or Hün Ho valley to Kalgan, is not yet born. That such lines are desirable no one who has watched the transit of passengers and merchandize through the Yang-tzu gorges, or over Chinese

mountain roads, can doubt; and that they will be costly we may be sure. But whether these, or any other lines, be built with foreign capital or with Chinese, or by both combined (as is most probable), the Chinese can never accuse the British of a dog-in-the-manger policy. It is our explorers and our surveyors who have pioneered the exploration of possible routes by land and water—made maps of their mining districts, plans of their mineral deposits and cities, charts of their coasts and rivers—in a word, discovered for them their natural assets, and though for a time some of the results may be regarded as confidential, sooner or later they become available for the Chinese, when ready to make use of them, and it is they—and rightly so—who will benefit.

There are those perhaps who may regard expenditure incurred in doing for the Chinese what they should do for themselves as money and labour wasted. I find myself unable to subscribe to such a creed. A little open-handed liberality is appreciated by any one, but more particularly so by the Chinese, among whose virtues hospitality and liberality should most certainly be included. I have never found them niggardly. True, they will spend hours bargaining over a single cash ($\frac{1}{35}$ of a penny), but once the bargain is struck they stick to it and do not grudge a few extra cash over a side issue. They have something of the Americans in their disposition. If they get money easily and quickly they spend it in the same way.

Railway construction has been more successful and rapid in Northern China than elsewhere in the Empire, and we can now proceed by rail from London to Hankow (600 miles inland from Shanghai), a distance of 7500 miles, except for the crossing of the English channel. The branch to Kalgan has reached the mouth of the Nan-k'ou pass, where I am afraid it is likely to remain for a rather long time. This section was built by Chinese engineers, but it will take a very clever engineer to make a good job of the ascent of the pass—a rise of 1400 feet in 12 to 13 miles in a very confined gorge, so that the gradient is not likely to be less than 1 in 65, even allowing for 18 to 20 miles of line. We have surveyed the gorges of the Hün Ho where it flows from the Hsüan-hua plateau on to the Chih-li plain, and it is an open question whether a railway to Kalgan might not more profitably go by this route, which is considerably shorter. No doubt the initial expenditure would be much greater, but once made, the working cost would be a good deal less, as the sudden ascent of the Nan-k'ou pass would be avoided. There is abundance of good coal along the Hun Ho valley route, and of course no traffic would be lost, as little comes through the Nan-k'ou pass that does not come to Hsüan-hua first.

I understand that the reason for selecting the Nan k'ou route was that it would be easier to overcome the prejudices of the Chinese. But the day is quite past when the alignment of a railway in China should

be allowed to depend on the idiosyncrasies of the local inhabitants. There are now far too many enlightened Chinese for that sort of thing. Of course these objections are often merely a cloak for gain, and the railway engineers prefer to go round and take up cheaper ground than pay the exorbitant sums demanded for ground along the best alignment. But surely the time has come when the leaders of 400 million willing workers and really intelligent people should see to it that the future prospects of their country are not sacrificed to the grasping selfishness of a minority of the present generation.

Railway construction in the loess is not easy, but once the metre-gauge line from the Pei-han railway at Chêng-ting Fu to T'ai-yuan Fu is completed, the unexplored recesses of Western Shan-hsi and Eastern Shen-hsi will be brought within easy range, and a shooting trip to the Alashan will have lost half its charm and excitement. Railways, which are badly needed in North China, are one from Tientsin to Pao-ting Fu, and another from Tientsin to C'hi-nan Fu.

The Central China Region.

Of railways in the Central China Region there are almost none. The Pei-han connects it with the north, and a line is constructing from Shanghai to Nanking, but the bulk of the trade in this region is along a general north-west and south-east line, and *vice versa*. There was much talk, when I was at Wuhu a year ago, about a line from that treaty port to Kuang-tê, on the Chê-kiang border, and the chief promoter was Lord Li, the adopted son and successor of the great Li Hung-chang. Such a line may be needed, and may pay, but more urgent ones are from Wuhu to Hui-chou Fu, and from P'u-k'ou (opposite Nanking) *via* Lü-chou Fu to Ch'eng-yang-kuan, and thence to K'ai-fêng and the Yellow river *via* Chou-chia-k'ou.

In connection with railways, I should like to see steps taken to improve the navigation of the Grand Canal between Yang-chou Fu and Ch'ing-chiang-p'u, and the construction of a short length of new canal (easily accomplished, as there are already waterways) to connect the Huai *before* it enters the Hung-ch'ih lake with the Grand Canal, and thus enable large boats and small river-steamers to navigate this splendid waterway right up to the Ch'eng-yang-kuan, and even beyond.

At the conclusion of a journey from Hankow to Bhamo, in Burma, in 1898-99, I drew up a memorandum concerning railway construction from Burma into China, in which, I remember, I strongly urged the desirability of stopping the work on the Mandalay to K'un-lung line at Lashio, in order to provide funds for a line from Bhamo to T'eng-yüeh. This recommendation was supported by the acting engineer-in-chief in charge of railways in Burmah, and given effect to later by Lord Curzon. The late Mr. Litton, whose untimely death all geographers will lament, when consul at T'eng-yüeh, was of the same opinion as myself in regard

to this matter. I am glad to find a fresh and quite independent opinion in a report dated June, 1906, by Mr. Ottewill, who succeeded Mr. Litton as our consul in Western Yün-nan. He writes:—

“The remedy for the want of good communications is the building of a railway from Bhamo. . . . There is every chance that even a short line to T'eng-yüeh will pay its working expenses, and leave a margin for profits. . . .”

My contention was this: not that a railway from Burma to Ssü-ch'uan cannot be made, nor even that it should never be made, but that such a railway is before its time. First, we should look to see a line from Shanghai (or Hankow, at any rate) to Ssü-ch'uan,

VIEW LOOKING EAST FROM WALL OF HSIU-NING CITY.

because a railway line, or, indeed, half a dozen lines, from Ssü-ch'uan to Burma (or Tonking either, for that matter) will never divert to Rangoon or Haiphong a single waggon-load of goods that can go to Hankow or Shanghai. My reason for wishing to see a line to T'eng-yüeh quickly made was that it would tap nearly all the existing trade of Western Yün-nan, is on an old and well-established trade route, and that no particular harm is done even if, as may quite possibly be the case, it prove commercially impossible to push it further west. Possibly it might some day continue northwards. About this latter point, no doubt, Mr. E. C. Young, the most recent explorer in those regions, will be able to tell us something. In any case, it would be a feeder line to serve the Burma railways much in the same way as

do those which run up from the Bengal trunk line against the wall of the Nepalese State.

I agree with Mr. A. J. Sargent, who, writing in this Society's *Journal* of June, 1905, advocates caution in embarking on trans-continental lines through countries which do not afford much prospect of development along the line of rail. Short lines, to and fro between the best water-communication, are what are wanted in China before undertaking costly and possibly unremunerative trans-continental railways, unless it be to develop a newly acquired territory where no proper water-communication exists, and with a growing community at either end. Such a railway would be that to connect the Lower and Upper Yangtzu basins.

China is unlike North America in one respect—it does not lack population, and there is not the same amount of waste land and virgin forest to develop. Consequently there is not the same urgent necessity for through goods traffic as in America, where grain and lumber produced by a few people require to be transported quickly great distances to find a market. What the Chinese want is quicker and cheaper transit between important local centres. For instance, it is the short 29-miles section (from T'ang-ku to Tientsin) of the 500 miles of line between Peking and Hsin-min Fu which yields 75 per cent. of the returns on the imperial railways of North China.

What is true concerning railways in China is true of all enterprises. The Chinese cannot afford to spend a large sum of money all at once. Their capital is small, their realizable assets few. All their wealth lies buried in the future. They have to earn more before being able to spend more. Had concessionaries been less ambitious in their undertakings, things might have gone more smoothly. All the railways now constructed, or constructing, had small beginnings.

Railway and mining enterprise in China seems to me to have been too ambitious, too neglectful of the old adage about the tortoise and the hare. When first I began to be interested in things Chinese, eight or nine years ago, the two projects I heard most about were a railway from Peking to Hankow (over 700 miles long), and another from Mandalay to Ch'eng-tu, anything over 1500 miles in length. True, the former line is now a *fait accompli*. There were only two big bridges to construct and one short tunnel; the rest was level plain. It is a magnificent undertaking with its bridge over China's Sorrow, by means of which goods and passengers, that under the old *régime* would occupy a week or more and an army of men to convey, are now carried across in five minutes. But the history of the Pei-han is exceptional, and led to its quick—I had almost said hasty—completion. The alignment chosen in haste may yet prove not to have been the best.

A good deal of adverse criticism has been passed on the screw-pile bridge which for 3 kilometres spans the Yellow river. Though in

outward appearance a light and airy structure, I fail to understand why it should not, under normal conditions, continue to do the work asked of it, though capital outlay may have to be continued for some time longer. Personally, I am full of admiration for this spirited piece of engineering work in the heart of China, offering, as it daily does, a practical object-lesson to the Chinese of what they can do and have in their own country, provided they will exercise a little self-control, self-denial, and common sense.

The mistake made is in not starting "right there" (as our American cousins would say), with a few miles of line from the sea, or the head of navigation of some important waterway, to complete a line of communication. The most important bulky articles which Chinese railways have to carry are coal, timber, salt, beans, rice, and cotton. They will not at first be able to compete against good water-carriage for these staples (at least, not with a proper system of taxing goods), but they can start where this ends, and eventually what will happen has been demonstrated on the Pei Ho, which has quite ceased to convey the traffic to and from Tientsin and Peking.

In 1878, or thereabouts, Mr. Kinder built a little bit of a line to carry coal from the mines at K'ai-p'ing to the head of water-communication with Tientsin, a distance of a few miles. That railway has been since extended in both directions, until one end is at Peking, and the other termini are close to Mukden and at Newchwang. Somebody—I don't know who—started similar little bits of line from Wusung to Shanghai and P'ing-hsiang to Li-ling. The first will soon have its other end in Nanking (it would have been there long ago had the pioneer line been made from Shanghai to Su-chou instead of from Wusung to Shanghai), while the P'ing-hsiang line has reached that great waterway the Hsiang-t'an, and no doubt it will soon go further from both ends. Now, of these three, the first pays 5 per cent. to the bondholders, and the balance pays the new army; the other two will also pay well. They are commercial lines—not political or strategical. The Pei-han line is an example of a "through" line; it will certainly pay its way one day, as will almost all sensibly constructed lines in China, but not for some years.

COMMERCIAL GEOGRAPHY.

This subject is beyond the scope of my present paper. I will only say that, although there is plenty of room for development, yet the people are poor; by which I do not mean starved, or lacking the absolute necessities of the simple life, but not possessing capital sufficient to purchase expensive articles, which at present they have not yet been educated up to the standard of feeling in want of. Something should be done to foster cattle, sheep, and horse-rearing in Outer Chih-li and the K'ou-wai; there is money in it. If the Chinese are going to

take to milk (tinned or fresh) as they have to kerosene oil, opium, and cigarettes, there should be millions in a Mongolian cattle-ranch.

There is a good deal of gold and silver in Outer Chih-li, besides coal, which will eventually prove workable, I think—I mean, of course, by Chinese, not foreign companies. Much of the gold is not worked, because, after paying royalties and local taxes to the Chinese interested, there is not enough left to divide among the foreign shareholders. As is well known, China is one vast coalfield; one can march for days literally on top of the coal. There is no doubt about the quantity, and, I believe, quality also—at any rate, of the coal deposits along the borders of Shan-hai and Chih-li, and in north Ho-nan and in Hu-nan and Ssü-ch'uan. Some day, of course, the Chinese will burn coal and make gas like other civilized countries, and then all those lucky people who own coal-mines will become millionaires. Possibly, too, they may discover kerosene oil—then where, I wonder, will the Standard Oil Company come in?

In China things move slowly but surely. Profits are small, but must be reckoned in millions. If an article can be sold in China at a profit of only one-tenth of a penny, it is just a question of the number of Chinese who will use it, whether it pays or not to import it. They want cheap things, not because they do not like dear things, or because they are unable to tell the difference between a good and a bad article (they quickly learn that), but because they simply do not possess the wherewithal to purchase the better article; nine-tenths of the people live simply from day to day. They are taking to cigarettes like other people, and in a decade or two (in China one speaks of a “decade” rather than of a “year”) Chinese men and boys, and half the Chinese women and girls, will smoke anything from one dozen to one hundred cigarettes per diem. The interesting point to foreigners is, will these articles be home made?

In Northern China the people will, not improbably, also become beer and wine (grape) drinkers, and will likely manufacture these beverages themselves. Within the boundaries of their empire they have everything a great nation needs, except indiarubber and kerosene oil. They may yet discover how to produce locally these necessities also.

In Central China, on this last journey, I found everywhere in the interior a very rough and strongly made cotton-cleaning machine of the simplest construction, worked by the foot. It was a Japanese manufacture, and cheap, costing only £3 10s. to £4 10s. even in out-of-the-way mountain districts, removed from water-communication. There is room for similar rough and cheap semi-modern machinery of this nature, for agricultural and farm uses and for purposes of irrigation. The Chinese are not yet nearly ready for the wonderful machinery which we find listed in the catalogues sent to our consulates in China for distribution in the interior. Be it noted, these catalogues are more often than not in the English language. On the cotton-cleaning machines were nothing but Chinese characters.

CHINESE CHARACTER.

To the end that we may obtain a materialized conception of the Chinese unsearchable mind, some people tell us that we should first stand on our heads and then think backwards. But it seems to me the best way to try and understand it is to realize that the Chinese are (that is, the great bulk of them) still where Confucius left them more than 2000 years ago. What, I ask, was the condition of Europe then, or even of England only 500 years ago? Now, my experience of the Chinese

SOME SPECIMENS OF HUI-CHOU SCULPTURE, PARTLY DESTROYED BY T'AI-P'INGS.

man in small things has been that once he decides to undertake a business he goes through with it to the end: not, maybe, exactly as we would, nor as we should like, nor perhaps in the best possible way, but in the long run he gets there somehow. Let me give an illustration which relates to geography. I was about to undertake a journey of many months' duration, and I wanted to make a plane-table traverse of my route. I wished to find some educated Chinese who could do this plane-tabling

No. III.—MARCH, 1907.]

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for me, so that I might be free to attend to other matters. This was some years ago; and where now you might find a hundred such men, then they were *rareæ aves*, especially at the somewhat low rate of wage I was able to afford. Eventually, however, through the kindness of an American gentleman, I secured a really delightful young fellow, full of life and energy, but to my great grief he knew nothing of plane-tableing. When I pointed this out to him, and said I thought he might not do on that account, he said, "Oh, I can learn." And learn he did, so quickly and well that within a fortnight he was able to commence the route-traverse on a scale of 2 miles to 1 inch, and (although it seems incredible) that fragile, delicate-looking Chinese gentleman continued plane-tableing for over 2000 miles, up and down mountain and valley, over most difficult country, often unhealthy and feverish, through every degree of temperature and all conditions of weather, yet he never omitted a village or hill which he could see, nor a stream which he crossed, nor laid aside his plane-table for a single day, except one day when it snowed too heavily for work. So much for a reformed Chinese Christian, for even as he never ceased his work, neither did he ever omit each night, no matter how wearied or how late the hour, to read his Bible and say his prayers.

One more example. Several instances of the value of Christian ideas, when they have properly taken root in the Chinese character, have been cited in connection with the "Boxer" uprising in 1900. I will only refer to one man, but to him in no small measure is due, so far as the British are concerned, the happy ending of the siege of Peking by the early entry of the British troops through the Water-gate, for he was, among our guides, almost the only reliable one we had. Owing to my previous knowledge of North China, I had been selected to assist in the advance to Peking, and it was my daily duty to obtain information concerning affairs in the front and regarding the routes to be followed, etc. My guide, comforter, and friend throughout that trying fortnight was a Chinese Christian, one of the first to try to take a message to Peking, but who, failing to obtain entrance to the Legation, had returned, twice running the gauntlet of the Boxers. Nothing daunted, he would have again essayed the dangerous task, but I kept him to act as my orderly. I had no servant, so he did everything for me. I had two ponies, a bay and a grey, which we rode each day alternately, but he often volunteered to ride the grey all the time. He never tired, and never left me, and risked his life often. To my great regret, he died in 1903 at his home. "A little leaven leaveneth the whole," and Sir Robert Hart may be not far from the truth in the horoscope he has cast for the Chinese; only I do not think they will be Boxers.

Who, after such examples, will prophesy what the reformed Chinese shall not accomplish? Ten years ago such men were not common, now there are hundreds—nay, perhaps thousands like them. I hold no brief

for the Chinese. I take them as I have found them, good, bad, and indifferent, much the same as the people of any other country, but I will say this—that in some great essential virtues they certainly excel. It is these very virtues which Western civilization may, in its frantic efforts to force upon them all its good things and some of its vices, destroy. These old-world charms of character, to call them nothing else, may be stifled. They are—reverence for parents and age, sobriety of conduct and demeanour, temperance; cheerfulness under adverse conditions, bravery in the face of death; and, lastly, business integrity. I might even add, in this strenuous time, a complete absence of “nerves,” and the power to sleep in any position or under any circumstances. There are, of course, numbers of people who know the Chinese far better than I do, and they will perhaps not altogether agree with me in my estimate of their virtues, especially where it concerns bravery. Well, the Chinese are in this respect a contradiction in terms. During the last hundred years or so, the soldiers have taken to running away when faced by the soldiers of a resolute enemy, but I do not think it was fear of being killed which made them fly. It was, first of all, a desire to live; because, not having been taught otherwise, they could not see any particular use, or advantage that would accrue to themselves, or any one else by getting killed. Next, it was a belief that, if killed, or wounded and left on the field, they would be mutilated, and arrive among their ancestors in this condition. This belief may seem absurd in this twentieth century, but it is so real to the Chinese, that they will pay large sums of money to ensure going out of this world in a whole condition of body.

CHINA'S TWENTIETH-CENTURY ARMY.

This brings me to the question of the value of China's new army as a fighting machine—potential, not present value. No army in modern times will fight except for a cause which appears to the bulk of its soldiers a just one; one in the interests of their own hearth and home. The more intelligent and civilized an army is the more is this the case. If this be true of other nations it is doubly true of the Chinese, for to them “home” means all, everything worth living or dying for. It is represented by the character “chia,” which is composed of the character for “pig” placed underneath that for “roof.” This may seem to us a poor conception of home, but was ours any better, I wonder, two thousand years ago? Chinese ideas of home are the same now as then. They change their ideas slowly. Consequently, before one can expect a Chinese army to stand and fight to the death, each soldier (or at least a majority) must see clearly that it is his interest to do so—that he is fighting for the existence of his hearth and home, and, through it, for national existence. At present they are far from comprehending this. At learning drill, manœuvres, military

exercises, and all about modern warfare they are adepts. Under favourable conditions, they quickly acquire the proficiency and accuracy of the German Imperial Guard on the parade ground; while at examinations for fitness for command, or at military sketching, reconnaissance, etc., they soon learn to excel. What they lack individually is the will to fight for what, hitherto, has been to them an incomprehensible object. As an army their fighting value is still inconsiderable, because of divided interests, and the corrupt and inefficient way in which an excellent system is worked. But it will be several decades before the Chinese are able to grasp the full meaning of the Japanese soldier's maxim—"Watakushi wo sareti oyake ni hozuru,"—the casting away of self to save the commonwealth.

CONCLUSION.

I have now completed a rough and wholly inadequate sketch of some recent British explorations in Northern China and the Eastern Part of the Central China Region. Though only a tithe of what has been accomplished has been mentioned, it is, I hope, sufficient to show we have not been idle. The results of the survey work are being used in the compilation of the one-to-a-million map of the Chinese Empire, on which Major Close has been for some time engaged, and several provisional sheets of which I have been enabled, through his and Captain Fraser's kindness, to exhibit.

Among those travellers who have recently contributed to our geographical information concerning Northern China are not a few Fellows of the Royal Geographical Society—Campbell, Bruce, Young, Kidston, Russell, Hedley, Pereira, Woods, Maguire, Webster, Doveton, McCleverty, Turner, Gunter; while there are others, such as Goold-Adams, Mahon, Williams, and Leake, who, I regret to say, are not Fellows.

All, or nearly all, these explorers have been assisted by Indian surveyors. Our thanks are due to these silent workers, who have done so much to fill in the blanks on our maps of the Chinese Empire, and several of whom have lost their lives in the work.

Another who, though he may not have taken latitudes and longitudes, or determined the exact heights of hills, has contributed, as a Fellow of this Society, towards the sum-total of Chinese geography, is the *Times* Peking correspondent, Dr. G. E. Morrison, to whom not a few travellers are indebted for assistance and for the use of his unique library relating to Eastern Asia.

My remarks concerning our topographical work in Inner and Outer Chih-li would not be complete were I to omit to record the harmony which ruled among topographical sections and travellers of the many nationalities in North China, and the truly international spirit which influenced those engaged in the work, by which mutual exchanges took place, adding to the general knowledge and facilitating the work.

But perhaps the brightest side of this geographical work in China is that we received valuable assistance from the Chinese themselves, both officials and people, who seemed quite able to understand that topography and geography did not necessarily mean gunboats and howitzers!

May I here interpolate a word on behalf of the much-maligned Chinese Government? So far as I have been able to observe, whenever it has been approached by travellers *bonâ fide* in search of information of a scientific character, it has invariably rendered a free and generous assistance.

What I have experienced in this connection leads me to believe that

EN ROUTE FROM TZU-LI HSIEN (IN HU-NAN) TO WAN HSIEN (IN SSÛ-CH'UAN).

the time seems opportune for the institution of a Chinese Government Survey Department, which would do for China what hitherto other nations have tried—somewhat inadequately, perhaps—to do for her. There are now quite a number of capable Chinese surveyors; quite sufficient to make a start with.

Then, with a Chinese Imperial Geographical Society, we should be released from the great burden of trying to map the third biggest empire in the world, instead of letting its 400 million people do it for both themselves and us. The Japanese have, I believe, a Geographical Society, and it does seem a pity that such a literary people as the Chinese should be without one. I think they should be approached on this subject.

To those who have fears that the Chinese cannot take care of themselves, I would recommend the perusal of the latest work on the subject, entitled 'The New China,' by an American author, Mr. Millard. I have selected the following quotation from his work with which to conclude this paper. He writes, "It is difficult to conceive how Japan, with scanty natural resources, will be able to industrially and commercially overtop a country like China, upon which nature has lavished her favors, and where an intelligent, capable, and industrious people are ever ready to apply their activities. What reason is there to warrant the opinion that, in a prolonged industrial and commercial struggle, China—with a land of unsurpassed fertility and vast extent, with undeveloped mineral resources of incalculable variety and value, with willing and efficient labour in any quantity, and with immense capital of her own—will be distanced by a competitor like Japan?"

Before the paper, the PRESIDENT: I note the presence here of a good many visitors and Fellows of the Society whom I am sure we shall wish to join in the discussion, so that I do not propose to occupy your time with introductory remarks, especially as Colonel Wingate's eight or nine years' work in China is well known by the general public. The only thing I shall say is to remind you that some years ago he contributed a very valuable paper to our *Journal* on his noteworthy journeys of 1898-1899 through China to Burma, which paper I think some of you will like to read after you have heard his paper to-night, and I will therefore remind you that it is in vol. 14 of our *Journal*. I will now call upon Colonel Wingate to read his paper.

After the paper, the PRESIDENT: I received a letter this morning from Lord Curzon, who is in the country, expressing his regret that he is unable to attend here to-night to hear Colonel Wingate's address, otherwise I should have called upon him first to open the discussion. But we have here to-night the late very well-known Minister of China, who is now ambassador in Japan, Sir Claude Macdonald, who must, I am sure, have felt strange emotions in looking at some of the photographs that Colonel Wingate presented to us. I believe Sir Claude is one of the few persons who has ever read his own obituary or possessed a ticket to attend his own funeral. I recall the last time I saw him on this platform, when he gave us an interesting address, about fifteen years ago, on the Explorations on the upper Benue.

Sir CLAUDE MACDONALD: At the request of Sir George Goldie, it gives me great pleasure to say a few words. Judging from a five years' experience of China, I can entirely endorse everything Colonel Wingate has said so far as the Chinese are concerned. I have always found the peasantry intelligent, thrifty, hard working, and friendly. With regard to the commercial classes, their reputation for probity stands very high; there is a phase of this commercial morality, however, which is interesting, which is common to most classes, and which, with your permission, I will illustrate by a short story told me by my friend Sir Robert Hart. He said that in his earlier days in the Imperial Maritime Customs he was promoted from the post he then held to a somewhat higher one, and his salary was raised in consequence. His head "boy" was a most excellent and honest individual, who took a fatherly care and interest in his young master. Sir Robert noticed, however, that when his salary was increased, his weekly bills also rose. On expostulating with his boy, he was met with the surprised answer, "Master get chancee, boy must get chancee too."

CHINA Wingate

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