

INDIAN
BRICK TEA FOR TIBET

REPORT

ON A

MISSION TO SSU-CHUAN

*SECRETARY'S
COPY.*

Indian Brick Tea for Tibet.

REPORT

ON A

Mission to Ssu-chuan

BY

JAS. HUTCHISON, M. A.,

*COMMISSIONER APPOINTED BY THE INDIAN TEA CESS
COMMITTEE.*

Calcutta:
PRINTED AT THE CITY PRESS,
12, BENTINCK STREET,

1906.

INTRODUCTORY.

The question of introducing Indian brick tea into Tibet is one which has been before the Indian Tea Industry for many years past. As long ago as 1883, the possibilities of a trade were discussed ; but it is only recently that the question has taken a practical shape. There is no need to refer here to the political difficulties, which have hitherto been the principal obstacle. These had been it was understood overcome by the new treaty, but there seems now to be a hitch in the arrangements and freedom of trade between the two countries as far as tea is concerned is still as it was, and the Chinese are as strong and as obstructive as they were before. But there were other than political difficulties in the way of introducing the Indian bricks. There seemed to be some inherent quality in the Chinese article which made it acceptable, or some inherent defect in ours to which the Tibetans objected. It was therefore suggested by the Darjeeling Planters' Association, that definite information should be obtained as to the methods of manufacture employed by the Chinese. The Association proposed to the Indian Tea Cess Committee that a Commissioner should be deputed to Ssu-chuan—where the Chinese brick tea industry is centred—for the purpose of making investigations. The Cess Committee adopted the suggestion, and offered me the appointment of Commissioner. They consulted Mr. E. C. Wilton of the Chinese Consular Service, who was then temporarily engaged in the Foreign Department of the Government of India. It was decided, upon Mr. Wilton's advice, that I should proceed to Shanghai and thence up the Yantsze River to Ya-chou, which is the centre of the brick tea manufacturing industry for Southern Tibet. Among other aids, a plan of the most expeditious route was given to me by Mr. Wilton as well as letters of introduction to Consular officials and others in Shanghai. I was thus enabled to make without difficulty, all necessary arrangements for the journey. And the advice so willingly given to me in Calcutta and Shanghai was so sound that, by following it, I succeeded in completing my investigations in three months less than the estimated time.

CALCUTTA TO SHANGHAI.

I left Calcutta in the S. S. "Gregory Apar" on Sunday, the 11th March. We reached Penang on the 16th, and Singapore on the 19th. By the forenoon of the 27th we were at Hong Kong, where I tran-

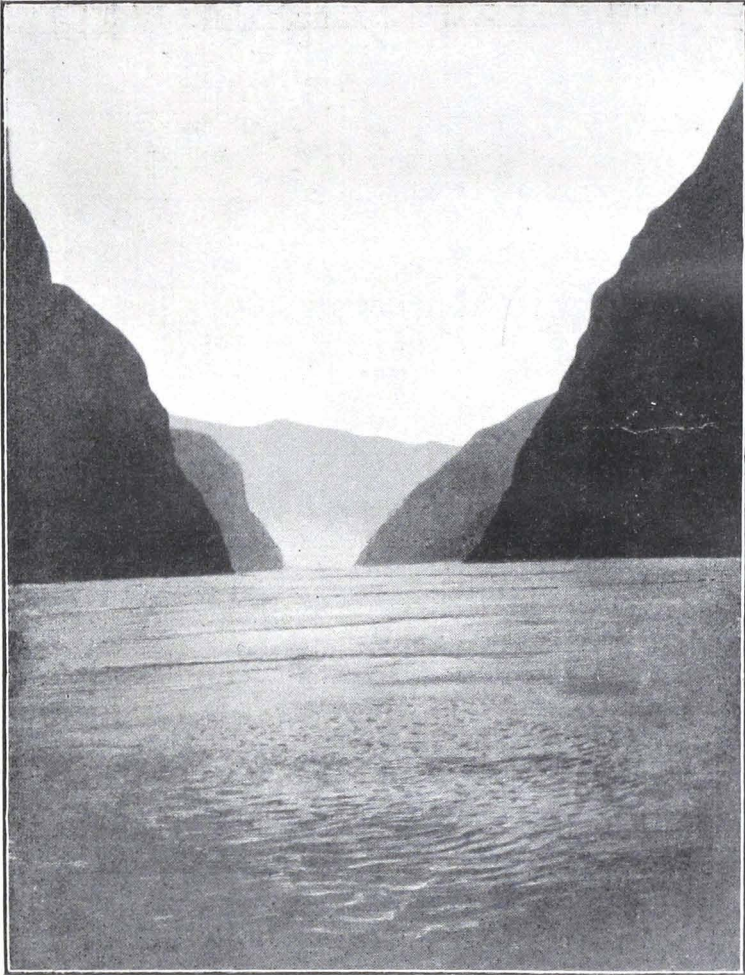
shipped two days later into the S. S. "Empress of China" for Shanghai, which was reached on the 1st April.

Up to Hong Kong the weather had been very hot, In fact at Penang and Singapore almost record temperatures were registered, even for the excessively hot time between the Monsoons when there is no breeze. But at Hong Kong we met with cold, raw, dull weather, which continued while I was at Shanghai. The thermometer fell to as low as 42° and even 38°, with a north east wind and almost continual rain. The sudden change was very trying, but it is typical of the climate of China. On one occasion during the overland journey, at an elevation of 2,800 feet, the temperature was at 80° for a good part of the day. Next morning at 5-30 A.M. it was 70° and it fell steadily during the forenoon till it reached 55° at a much lower elevation, a disagreeable raw cold with steady rain all day. On the following morning the effect of this cold snap was painfully evident. We passed three dead bodies within the first hour after leaving the township, and one more in the afternoon. They had just dropped in their tracks along the road.

UP THE YANGTSE RIVER.

Leaving Shanghai by one of the splendid river steamers, I reached Hankow in four days. It is 500 miles from Shanghai. The river at Hankow is a mile and a quarter broad, and it is deep enough to accommodate large ocean-going steamers. Hankow is the great tea emporium for Central China; and two large tea manufactories, under Russian control, have been established there. At these factories some 20,000 tons of tea are made annually into bricks for the Siberian, Mongolian and Russian markets. A Railway from Peking to Hankow has just been opened. In the near future it will be linked to Canton; and there will then be fairly complete facilities for transport to Hankow by river, lake and rail. These communications serve a vast area, and it is beyond dispute that Hankow is becoming of very great importance as a business centre.

From Hankow a similar class of steamer, but smaller, is used for the next stretch of the river to Ichang. The latter place is 500 miles from Hankow, and roughly speaking about 1,000 miles from the sea. At Ichang the flat country suddenly ceases, and with it steamer traffic; so I changed there into a house boat and, leaving on 23rd April, reached Wan hsien on May 1st, a journey of about 200 miles. From Ichang upwards for the rest of its course the Yangtze is a mighty mountain torrent, unsuitable for navigation of any kind, except under such conditions as



A scene among the gorges on the Yangtsze.

obtain in China, alone of all the world. It has worn out a course between ridges, and cut out a bed straight through ranges of mountains in the most unexpected places, leaving the precipices perpendicular to the very summits ; and it exhibits some of the grandest and most impressive river scenery in the world. When the *Joss* of the wind is favourable—and these occasions are numerous—as these gorges “draw” like huge chimneys, there can be no more fascinating and enjoyable trip than a sail against the stream along one of the reaches between the rapids. The traveller is then free from the distracting element of incessant straining and struggling on the part of the men at the oars or the towing rope, which is a great draw back to the thorough enjoyment of the magnificent scenery. They are truly marvellous men these ‘trackers.’ From day-light till dusk they are on the strain, with little intermission, and often for nearly half-an-hour at a time with every sinew at full tension, almost lying down on their faces and gripping any fixed object within reach to help them to hold their ground, while the boat swings from side to side across the stream as the master at the bow may direct, hoping to catch an eddy and gain an inch. It becomes positively enthralling to watch the struggle for many anxious minutes at the critical juncture and never an inch gained or lost. Even when the strain is over and the junk shoots up the back water there is no rest for the men. Some of them must run forward to keep the rope tight, while others scramble up and over boulders to clear it, and all exhibit a stamina and activity that I have never seen equalled by man or beast elsewhere, and could not have believed to be possible : yet they are cheerful all the time and tackle any job at dusk with as much sailor-like alacrity as they did at day-light. In the presence of such an exhibition of human activity and strenuous life and action, one finds it impossible to contemplate with due appreciation the mere dead examples of nature’s terrific convulsions imposing and sublime though they be. China is essentially the land of labouring locomotion, and this fact detracts from the enjoyment of any journey, even though the service be willingly and cheerfully rendered. Notwithstanding this however I found the upward journey the most favourable for sight seeing ; for coming down as I did on the top of the highest flood of recent years, there was quite enough diversion in other ways to take up all my attention, and the speed of travel prevented any thing more than a mere panoramic glance at the features of the country.

THE OVERLAND JOURNEY.

Instead of going up the river to Chung-king, as is usual, and thence overland to Chengtu, I went overland from Wan-hsien. My

object was to save time, as the route on the map seemed a fairly straight line to the capital of the province. With the help of Mr. Taylor of the China Inland Mission at Wan-hsien, my boy was able to complete arrangements for transport; while Mr. Taylor himself kindly secured suitable chairs. It was impossible to procure a pony, and I therefore took a mountain chair as well as the dignifying Sedan one. Into either of these I placed my tiffin basket and such odds and ends of my personal luggage as I might need *en route*, or on arrival at the day's destination. So the extra one was not a useless encumbrance. As a matter of fact, I found them both so irksome that I walked a considerable part of the way each day. My boy and cook had to have a chair each also; and after one day's experience I did not grudge them the luxury. An average march of thirty miles per day for a fortnight on end, up and down hill alternately needs practice which neither of them had gained previously, and they would not have been of much use at the the end of a day's walk. Besides which, nothing so clears and smooths the way through China as an imposing equipage and retinue. I have nothing to say in favour of a sedan chair as a means of locomotion, except on a wet day or to get through a crowd expeditiously and unnoticed. I was fortunate enough to require it seldom for either reason, though it was always politic to enter a town demurely ensconced in a proper chair with a retinue in the rear. But I never got reconciled to that mode of transport, partly because I could not acquire the trick of disposing of myself into the various corners in a semi-rigid and semi-relaxed state; and partly because the manual labour involved went sorely against the grain, my natural inclination being to jump out and give the bearers a hand at bad parts of the road. But though they deserved sympathy in one sense they needed none, for they improved in condition every day, the result of regular pay, better food and more of it. The opportunities of getting food were too frequent, for eating houses abound, and at first the men were inclined to stop and indulge in a snack every half hour or so. To begin with I did not object to this, as it gave me an opportunity of looking into farm barns and examining the various agricultural appliances, the eating houses being generally adjuncts to agricultural homesteads. Everything pertaining to agriculture, from the treatment of the land to the manipulation of the various products into articles of utility on the spot—for nothing is wasted—was a source of unending interest; and the writing up of the notes an amusement in the evening. In China the more minutely you observe and examine into details of everything, the more interesting you find it. If it is profitable or desirable to



An honorific arch.

gain a certain end the means and materials that are at hand are turned to account in ways that are always simple and peculiar but always effectual, the labour involved being a matter of comparatively little importance. It is inadvisable, however to refer to any in this report except such as bear on the special subject of Tea, but the habit of noting details on every thing that comes within observation passes the time, and is useful when the special subject of investigation is available with perhaps the chance of only a very cursory glance to take it all in. The monotony of what under the circumstances was necessarily a companionless and almost silent journey, was thus not only avoided, but considerable pleasure and benefit were reaped. The best method of imparting such information to others is by epistolary communication at the time to several sympathetic readers, on the various topics that are of special interest to them individually. To condense the information afterwards is both difficult and uncongenial.

But to proceed, the roadway for the whole 300 or 400 miles traversed may be described in a few words as a narrow track from four to eight feet wide, paved practically its whole length from one end to the other with stone slates or slabs, or these and boulders combined, but seldom for its whole width. The general trend of the first 300 miles was westerly, but to get there you have to compass innumerable segments of circles northerly and southerly, and the distance gained in a westerly direction by so doing is the day's distance on the map. But besides this continual winding in and out among the gullies and valleys at the base of hills and *teelaks*, or along the ridges and round the knolls near their tops, you have a corresponding continuity of ups and downs; for the path crosses the drainage of a vast area of mountainous country the whole way. The elevation varies continually to the extent of 2,000 feet in each day's journey and often after going through a long narrow dismal street, you suddenly emerge under an honorific arch spanning a cutting through a ridge, and behold another of the not infrequent and always picturesque prospects! Some 1,000 feet below the precipitous hill-side a lovely winding narrow valley, with tier upon tier of terraces along both sides, covered with water and bathed in sunlight, frequent homesteads in sheltered nooks with their white-washed walls glinting through their surrounding shade of trees, with the different crops adding variety of colour to the landscape, including many spots of the vivid green of the seed plots of paddy ready to be transplanted, and a fence of uninhabited ridges enclosing the whole from the outer world. A peaceful rural scene on the very verge of a dismal dirty crowded city,

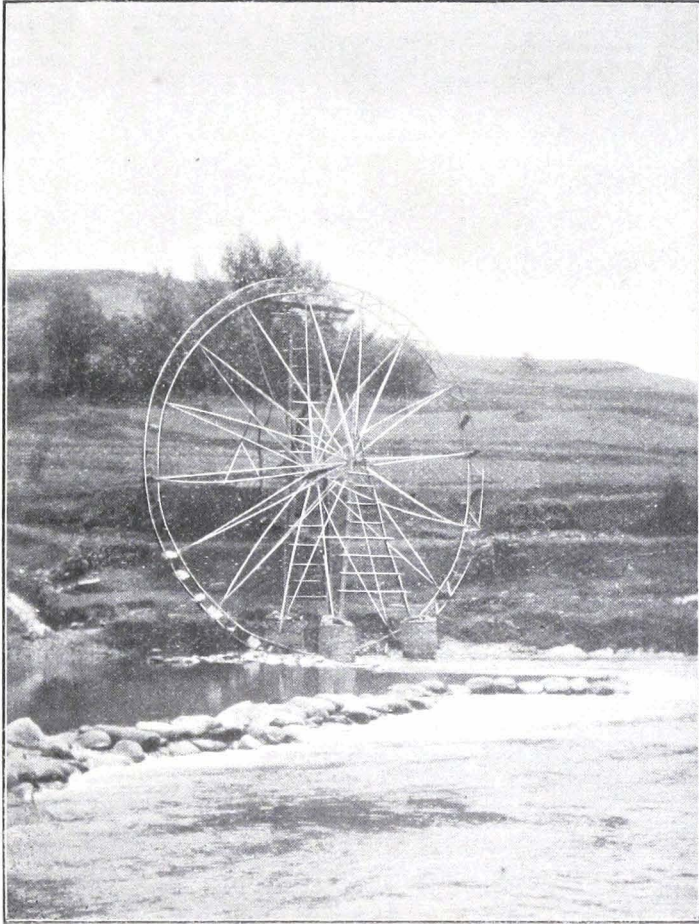
the sudden and unexpected contrast deepening the impression of the picture. So daily ; till after thirteen days you reach the great central and almost sole plain of the Province which is about 90 by 60 miles in extent, with some undulating land of between 100 and 200 feet above the general level, interspersed. This plain has been artificially watered for centuries, by one of the most boldly conceived and complete systems of irrigation that could be devised. Although the river Min is large, and in the rains a raging torrent, running between hills, it is led off at right angles by an artificial channel cut right through the hill on the left bank down to its base level and so kept under control and spread over the plain in all directions. On the face of the rock where the channel begins is carved in Chinese characters the simple injunction of the bold designer " keep the bed deep ; keep the walls low " and for centuries this has been carried out annually. The channel is cleared of boulders and gravel to the level of the iron bar that is fixed across the old bed at the point where the diversion is made, and which is the proper height for the overflow.

For several reasons I could not stay at Chengtu as long as I would have liked, and I had four more days' travel to reach Ya-chou along the main road which leads to the important border town and trade centre for Tibet, Ta-chien-lu. On the border there had been some disturbance in connection with a gold mine. Two French Missionaries and the Chinese Envoy to Tibet had been killed, and large numbers of troops were being sent forward with trains of pack-ponies and mules, all well appointed and in good condition. The soldiers were tough, wiry-looking young men. Their accoutrements were a rifle and a fan ; and the order seemed to be : " go as you please." The officers were in Sedan chairs and seemed somewhat portly for active service. They were doing the regular stages of 25 to 35 miles a day at about three miles an hour, including stoppages, the pack-animals with fewer halts finishing the journey more quickly. The real object of the Chinese seemed to be the acquisition of, or, as they would put it, the strengthening of their hold on, the Eastern and South-Eastern portions of Tibet proper ; where not only valuable minerals are found, but where good arable land is available in the valleys, and where the Tibetans—never friendly with the Chinese—have hitherto resented aggression, though not developing the country themselves. The French, through their semi-religious, semi-political emissaries, have been persistently intruding there also ; and the situation was so strained that H. B. M. Consul General at Chengtu requested me not to go to Ta-chien-lu without special permission. The last information I had, before leaving Ya-chou, was that the Chinese

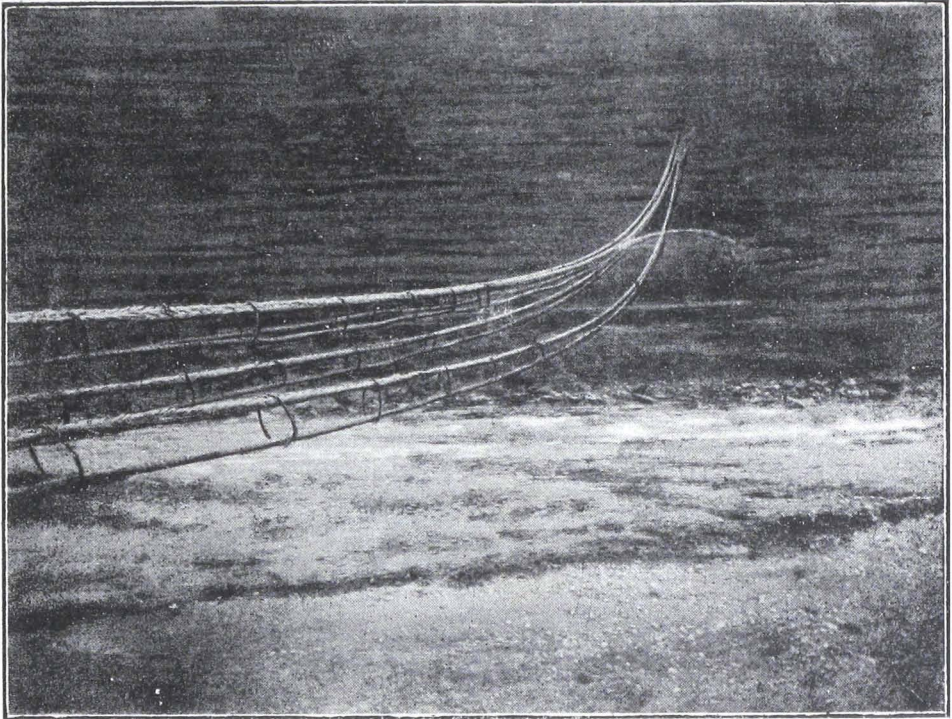
had been victorious, but that the Tibetans had destroyed an important bridge between Litang and Batang on the main route through Central Tibet to Lhasa, and that trade was stopped. The Chinese were counting on the necessity for the Tibetans to get their annual supply of tea, as a factor towards an early settlement of the dispute. Any lengthened interference with the trade would certainly help to break down the barrier that restricts the importation of the Indian article, and a favourable opportunity of pushing our trade seems at hand.

At Ya-chou I found it impossible to get accommodation at any of the inns or temples, which were crowded with soldiers. In a difficulty of that kind, when travelling up-country in China, you cannot 'ask a Policeman', for, except in one or two large towns, there are no such institutions. But if there is a Mission station you will not appeal to it in vain; and it was one of the luckiest incidents of my journey that necessitated my asking assistance of the American Baptist Mission, the only Protestant Mission there. I was not only made welcome by Mr. and Mrs. Openshaw, but was soon given to understand that any hint at changing my quarters would be considered a slur on their hospitality, and I settled down in a most pleasant, homely way for the rest of my stay of six weeks in the town, except when on short tours round the district, where the Mission Out-posts afforded me comfortable accommodation and much appreciated assistance. The other members of the staff were Dr. Corliss, who was building a large hospital, and Mr. Taylor, a student assistant. From there I visited the surrounding centres of the tea business *viz.*, Min-shan, Tien-chuan, and Jung-ching, and other places of interest, including the "Lotus-flower Summit" of Mung-shan, where are growing the venerated seven tea plants, which tradition says are over 2,000 years old and were originally brought from India. But of them more hereafter. On my return I broke my journey at Chiating, at the junction of the Ya and Min rivers, to visit the tea districts in that neighbourhood, and the most noted sacred mountain in Western China, O-mei-shan, where a kind of tea called sweet tea, mentioned by Baker, is offered to visitors. This mountain is marked on the maps as 11,000 ft. in height. It rises abruptly from a plain of an elevation of 1,700 ft., a day's march from Chiating. I could not make it out to be higher than 10,000 ft., but it has a very striking appearance from the town on the plain at its base, while from its summit the view over the plain on the east side is extensive and striking, and to the west, range upon range of mountains culminate with the snow-covered peaks of Tibet. But the striking features of the mountain are the grand precipices on the

east side, probably some 4,000 ft. almost sheer to the bottom of some of the gullies, that run as it were straight into the face of the hill. This is where the famous "Glory of Buddha" appears. Under certain conditions, when a haze or mist lies over the valley, the shadow of a spectator looking over the edge of the cliff is projected upon it, and a halo is seen surrounding the head of the shadow, when the sun is in a suitable position. The peculiar conformation of the mountain renders this and other rainbow phenomena liable to be produced more frequently than probably anywhere else in the world. Then there are the "Spirit Lights" that sparkle and flicker and vanish at various points on the lower hills when darkness has set in, and to account for which many fantastic explanations have been given. A very clear atmosphere and ordinary lanterns and cottage lights afforded sufficient explanation to me, after having frequently seen a similar pleasing spectacle from near Kurseong in Darjeeling district exhibited on the plains below, with a difference in elevation of a few thousand feet only. One very peculiar effect was produced by a fine sunset, the slowly sinking sun casting a very distinct shadow of the mountain over the plain below, enclosing a triangle with its apex gradually lengthening out and rising to the opposite horizon some fifty miles away, round which point there seemed to be a reflection of tints of the setting sun, rose-coloured with a surrounding tinge of blue, from which well-defined and beautifully tinted streamers, forming the sides of the triangle, reached back to the base of the mountain, the enclosed space being quite clear, but of a different shade from the part outside. This produced quite as striking and notable an effect as the sun's magic lantern projection of the spectator's shadow on the sheet of mist, with its accompanying halo such as is exhibited under similar conditions on a lawn covered with a silvery sheen of dew in the early morning, but of course on a grand and impressive scale. The road up may be described as a narrow winding stair from base to summit, with some aggravating descents every now and then, entailing a double climb up the hundreds of steps consecutively without a break. There are numerous 'temples' along the road all the way, each professing to have some special object of veneration. Huge rambling wooden structures they are, with rooms for the accommodation of travellers and pilgrims, thousands of whom go up every season. A bronze cast of an elephant natural size was the greatest curiosity I saw, but I was not sufficiently impressed either with the places themselves or the Priests who live at them, or the performances which the latter go through, to investigate the various traditions and legends concerning them.



A 'Persian Wheel.'



Bamboo water pipes suspended on ropes of strips of bamboo plaited.

SOME RURAL ASPECTS OF SSU-CHUAN.

I may now shortly allude to some of the characteristics and products of the country traversed, having already indicated its almost universal hilly nature. The whole area comprises what is known as the Red Basin, from the predominating red sandstone formation. The soil is a red sandy loam of a physical condition admirable for agriculture of all kinds. The volcanic action has created a natural series of terraces, often completely encircling the cone-shaped hillocks, which are crowned with an upstanding mass of sheer rock—corks of bottled up, though now 'flat' extinct volcanoes—forming striking features of the landscape. These natural terraces have been utilised to the full by the expert Chinese, and every gully, valley and hill is terraced more or less closely, according to the slope, up to between 3,000 and 4,000 feet. Wherever water can be laid on or collected, rice is the main crop in summer, but not a foot of land is wasted or allowed to lie idle winter or summer. The banks of the hill streams are carefully built up and protected, (the rounded flattened and oval water worn stones being always set on edge for this work without any dressing, and with very little packing) and the water is so distributed that very little of it ever reaches the bottom of the valleys. On the flatter country, where rivers and canals are available, Persian wheels are placed along the banks, lifting water day and night to a height of thirty feet. And near Ya-chou, I saw an arrangement of bamboo piping, supported by ropes made of plaited strips of bamboo 1 foot 3 inch in circumference and about 300 yards in length, carried from the hill-side across a river. These ropes were tightened by being wound round red sandstone rollers $4\frac{1}{2}$ feet in circumference and 9 feet long, which were laid behind stone pillars, and had holes through them for levers. These ropes do not stretch much, and they are the kind universally used by the junks on the river. After they are plaited in various ways, they are steamed, having first been sprinkled over with lime to make them tougher and more pliable. One advantage they have over any hemp or fibre rope is that they do not carry water. Every junk has several of them from 100 to 400 yards long. The bamboo pipes having had the joints bored out are bound round every six inches or so by strips of the outer skin of bamboo, with a wedge of bamboo inserted under each binding, to prevent or repair any cracks caused by the sun. The joints were so tight, that even under considerable pressure there was scarcely a leak. Of the agriculture itself it is needless to speak, for the attainments of the Chinese are proverbial, but I was surprised to see such scientific application of suitable

manures to the several crops. Every plant is manured individually, generally with liquid manure, except in the case of paddy, and such a thing as a weak plant or a poor spot in a plot is hardly ever seen. Nearly all the 'bunds' round the rice fields carry full crops of dwarf beans planted 8 inches apart, drilled with an implement for the purpose which neatly and expeditiously lifts out a cone of earth about $2\frac{1}{2}$ inches in diameter, thus leaving the 'bunds' intact and water-tight. Into these holes two or three beans are dropped, and a handful of compost including some potash, a special food for legumes, which has been obtained by burning the roots of wheat or other previous crop. Every farm along the road has a convenient and conspicuous receptacle for waste products, and every traveller contributes conscientiously. Every inn and private house in the towns and villages has its cemented cess pit, where the night soil is carefully hoarded, and though it constitutes a constant nuisance to the olfactory nerves, it is a practical and sanitary improvement on its promiscuous and wasteful distribution round villages and our own cooly lines in India, for the delectation of pigs and poultry and Pariah dogs, and the pollution of the water supply.

BRIDGES.

One thing that impressed me greatly in that out-of-the-way part of the world was the number and variety and substantial nature of the bridges. I cannot recollect at present a single instance where I had to wade or be carried through a stream. These bridges are of six kinds: the high arched with steps leading up from the roadway, the level-arched, the level stone slab resting on piers above high water, the low-level kind of similar construction covered during floods, the iron-chain suspension and the wooden trestle ones. The first and handsomest of the high arch kind I saw was at Wan-hsien. It spans a rocky bedded creek which divides the town. It is a single arch of 80 ft. span and 60 ft. in height with thirty odd steps on each side leading over it from the roadway, and has a house or covered-in shed on the top. Unfortunately a photograph of this fine arch has gone astray in the Chinese Post Office. There was also a perfect example of a natural bridge a little nearer the big river, which had required merely a few rough steps hewn on the slippery rock at both ends to make it as perfect as any artificial one; while yet another low level stone slab one crossed the stream higher up. This last bridge, composed of heavy stone slabs roughly morticed into each other, and into the top stone of the piers, withstood the torrent of



A high arched and stone Slab bridge in conjunction,
The latter is at road level.



A gorge on the Ya-River above Ya-chou.

water that poured over it during heavy rain. The finest of the stone slab bridges however was near Ching-Chow over a river called locally Han-ja-ho. It is nearly 700 ft. long comprising thirty two piers 4'. 6" broad and 43 ft. long, with a roadway 15 ft. broad, composed of stone slabs each 18 ft. long and 1'. 8" broad, nine of them resting on each pair of piers. There were the remains of two other bridges a little lower down. The longest trestle bridges and almost the only ones seen were across three branches of the Min-ching-ho, the gravel and boulder-strewn bed of which was nearly 700 yds. broad. The first was about 100 paces long, the second 123 paces, and the third 150 paces, the first two being 200 yds. apart, with about 320 yds. between the second and third. The Suspension bridges were all over the deeper rivers that rush through the rocky ravines among the hills beyond Ya-chou and were made of chains or of jointed rod iron, and stretched so tight as to give a comparatively level pathway, with generally two guard-chains on each side. The longest one I crossed was near the town of Lushan, and was over 300 ft. in length. The base consisted of thirteen chains, four or five inches apart and held in position by cross-bars, over which were laid two 8" boards. The early Venetian traveller, Marco Polo, refers to a suspension bridge in this neighbourhood, or rather South-East from Ta-chien-lu and it is said to be still in existence, though the road on which it is situated does not seem to be the important highway now between East and West that it then was. What was then a country advanced in civilisation is now one of the least accessible parts of the world, and Assam was then perhaps its nearest civilised neighbour.

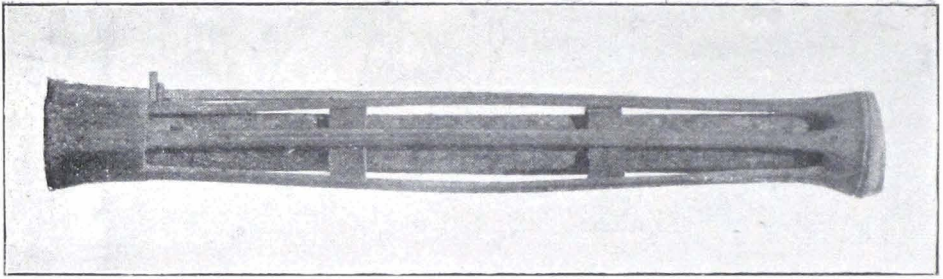
WATER WHEELS.

Water power is made use of to a considerable extent in connection with various industries, the hill streams being suitable for its application. Besides the Persian Wheel, which is used chiefly for irrigation, I saw several vertical overshot wheels some 5 ft. in diameter each driving four "Dhenkies" employed in pounding white clay "Kaolin" at a China-ware factory. I also saw many horizontal water wheels, embryo turbines, from 4 to 6 ft. in diameter. These are constructed like an ordinary cart-wheel with many short spokes close together each one grooved lengthwise on one side, giving it a curved section on which a stream of water plays delivered through a shoot from a height of several feet. An upright shaft is fixed in the hub and the power is imparted direct to various implements, millstones, rice husking stones like pug-mills, and flour-sifters and in one instance at an iron foundry,

to working a large double-acting air-pump, which is the Chinese substitute for a pair of bellows. This one was made out of a trunk of a tree bored out and a piston working inside. The simplest application of water-power I ever saw was to work a stamper or "Dhenkie" for husking rice. The part of the beam to which the foot is usually applied was hollowed out like a trough. When the mallet was down, the hollowed-out-end of the beam was in position to catch a shoot of water falling from a few feet above, the accumulated weight of which lowered the beam out of reach of the falling stream, and the water being thus discharged at the same time, down came the mallet and up went the trough again for another fill. I might mention many more simple contrivances connected with the various industries as seen *en route*, but the complicated mechanism of the silk-weaving hand-looms was beyond my comprehension.

INNS AND HOTELS.

To finish this part of the report, which has already been spun out perhaps disproportionately, I may refer to the accommodation afforded to travellers and to the people themselves, whose awakening and regeneration are so much discussed and speculated on at present. There are inns enough at every recognised stage, but the majority of them were dismal, dirty structures; a series of apartments enclosing a square and three or four such enclosures in succession. Entering the doorway from the street you pass through the restaurant portion with the cooking-range, a lot of tables (at which half-clad coolies and loafers are seated on benches) a few fowls and a pig or two, into the square where the third class compartments are, and through that to the better quarters. The general plan is not so bad, except for the exclusion of light and air, for each square has a verandah around it and the only light available often is from the comparatively small space open to the sky. Each square in the better quarters is floored with stone-slabs and on a wet day the water from the inward sloping roofs of each side pours into the centre and splashes all round, while on a clear day the mid-day sun turns the place into an oven. These inconveniences however might be disregarded if ordinary cleanliness were observed. The compartments are divided by wooden partitions, sometimes covered with paper which is sure to be in tatters. The furniture consists of straight-backed wooden chairs, a few tables and wooden bedsteads, all of which have convenient chinks and crannies for harbouring vermin, which are really "China's millions." The cemented cess-pit and pigstye are in the same enclosure, and sometimes divided from the bed-room by a wooden partition only.



An artificial check on 'China's Millions'—a Flea trap.
The piece of bamboo inside is covered with an attractive sticky substance.

The floors are of roughly laid planks, or of beaten earth only, which is generally very damp and greasy. Some of these nuisances can be avoided, partly by having one's own bed, as well as bedding and a folding-chair, and by tying a band round the legs of one's pants as the better class Chinese themselves do invariably, while 'use and wont' may let the other discomforts pass unnoticed, but there are other forms of dirt that one cannot get accustomed to. The trouble that a Chinaman 'gentle or simple' will go through to work up a good expectoration is extraordinary, especially when contrasted with the promiscuous and careless way he disposes of the result of such exertion! The imitative hill *mynah* would have much better opportunities of "acquiring merit" than is afforded even by our Mahomedan Khansamahs of a morning. The greasy floor and plastered walls were anything but inviting, and even after a long day's journey I looked forward with anything but pleasure to the termination of it. I must admit however that on more than one occasion I was unfortunate in finding the best inns occupied by Mandarins, and had to take shelter in somewhat inferior ones. But the utter want of taste in connection with home comforts, as we regard them, may be indicated by one instance. After entering an inn from a very narrow dark street through the dingy public restaurant, and having looked through my quarters I was "following my nose" through a passage which led round to the back of my room, to make further investigations. There I found a byre and a pig-stye combined, with the usual store of maturing manure under the latter, from which I would be separated by a board partition only. This I had become accustomed to, but judge of my surprise when emerging at the back by the only available passage (we were all under one roof) I found myself on the banks of a fine river where many junks were lying and across which the declining sun was setting, behind a variegated glory of illuminated clouds with bright green paddy fields in the fore ground. With barbarian contrariness, I spent the rest of the evening at the back door.

GENERAL.

One cannot generalise on anything in China any more than in India, for though the inhabitants are more homogeneous there, the country is so vast and the conditions under which they live so different that one is not justified in giving more than his personal experience. My journey confirmed the previous impression I had formed of the working classes by contact with them in Australia and in India, and my observation of them in several other parts of the

world. Give them more or less well-defined work to do and set a time to do it in, make it worth their while to do it, leave them to their own devices during their leisure, except in so far as they may intrude aggressively to the annoyance of their neighbours, (and it is not their nature to offend in this way,) and treat them fair especially with regard to the terms you have arranged, and there are no such obedient, quiet, willing and steady workers in the world. In small commercial affairs those engaged in business will quibble and over-reach when they can and with a shortsightedness that is quite at variance with their ability otherwise. In large business transactions I am told they are exceptionally honourable, their word being as good as their bond and in this matter decidedly superior to their neighbours the Japanese. The officials and business men I met impressed me as courteous, affable and shrewd, always diplomatic, and leaving an impression of reserved capacity and of correct discrimination regarding my humble self. I have a soft side for them all. There is one point however on which I can't excuse them and that is their treatment of Foreigners. My remarks on this subject however must be taken as referring to the unscrupulous and black-guard class chiefly. It is not to any rudeness or insolence that I allude, because such insults would soon lead to condign punishment, if offered even by high officials, under the present regime; but rather to the very reverse. The ingenious ways however in which these scoundrels support and foster the new dispensation with its favourable treatment of Foreigners, which has been the vogue since the last troubles, and yet turn it to their own benefit and against their own countrymen gave me more amusement than anything else on the journey. They work the Missions, Missionaries, travellers, and Foreigners generally, for all they are worth and by attaching themselves to them nominally, as inquirers or adherents, or when employed by them in any way, they utilise their improved position to browbeat the officials, levy blackmail or demand favours from the well-to-do, and ruthlessly fleece the lower classes all in the name of the Foreigner. Hence it comes about that the presence of a Foreigner is associated with injustice and oppression through no fault of his own. Schoolboys, taking advantage of their status if they are studying under a missionary, are a "holy terror" to the shop-keepers along the street. The soldiers or Yamen runners who accompany a traveller between the different stages, travel both ways at the expense of the refreshment sellers along the road. Even astute Missionaries, who were men of the world and men of business before "the spirit moved" them, have found themselves compromised by the wiles of some of their professing

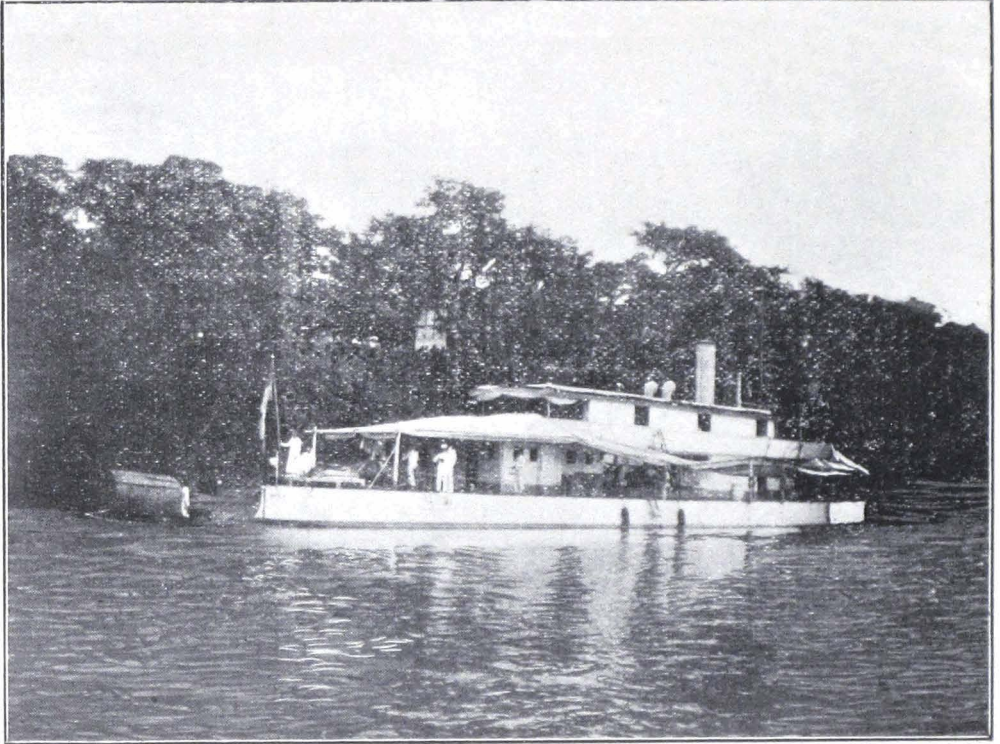
adherents when they took any interest in their worldly affairs. The consequence is that now nearly all missions prohibit their representatives from taking any cognisance of the worldly affairs of their adherents, and rightly so, because it would invariably end in their doing good with the certainty of evil accruing.

THE RETURN JOURNEY.

My first day's journey on starting on the down trip was on the Ya River on a bamboo raft, the only kind of craft that is navigable on such waters. Taking advantage of a fine morning and a roaring river after heavy rain we started from Ya-chou at 6-30 on the 18th July proposing to reach Chaiting, a distance of some 100 miles, before dark and actually reached the water gate of that city at 5 p. m., the speed for the first 35 miles being some twelve miles per hour and at some parts at least one-third faster! The raft is composed of a single layer of large bamboos lashed together, and is about 75 ft. long and 10 ft. broad at widest part, being narrower at the bow which has an upward curve. The water gurgles up through; but there is a slightly raised platform about three-fourths of the length on which the baggage rests, and over a part of it a shade is provided for the passenger, by a mat cover under which he can recline. It is a safe mode of conveyance, when managed properly, and the skill displayed in guiding such an unwieldy craft is wonderful. One trick of the river experts is somewhat disconcerting if you do not know it, and it is adopted at the most dangerous looking parts where the stream spreading over a boulder strewn bed turns and rushes in a gradually narrowing torrent straight into and under the bank and sweeps under the over-hanging cliff. You are quite prepared for the craft to become unmanageable in such broken water, and when you find it first going down broadside and then stern foremost, you begin to think that at last skill and strength have failed and to wonder what the upshot will be. But just when it seems as if nothing could prevent a catastrophe, and at the moment when the stern of the raft reaches the eddy which is always found at such a place, and is thus delayed somewhat in its rapid career, the bow is swung round, and instead of being carried under the cliff you find you have gained some 50 ft. and are gliding along parallel to it just outside the strongest water. This was resorted to once only, and under precisely similar conditions I had seen it performed while going down a river in Formosa. It was fortunate that I started down the river from Ya-chou when I did as no rafts followed us for many days. A letter dated

August 11th from Mr. Openshaw has since reached me in which he says: "It has "poured almost steadily for weeks and only after the "two North Gates were shut and a fast proclaimed did the rain desist "and some fine sun-shiny days appear. It is really amazing how "many times their little tricks work out all right"!! If on the other hand there is a prolonged period of dry weather the South gate has to be shut. Now the South gate leads to the cemetery, and so obdurate was the "Joss" of the weather on one occasion that the people got tired of carrying the heavy coffins half round the city walls and they piled them up at the gate. This put the city fathers in a fine quandary whether to face a famine or a pestilence. I fancy the dead carried the day.

At Chiating, I found H. M. S. "Woodlark," Captain Knox in command, a gunboat which was the first steam boat that ever went up the Yangtze without the aid of "trackers," but she had to wait at each Rapid till the water was suitable. It is, however, a small steamer, belonging to a mercantile firm, Messrs. Little & Co., that has the credit of being "the first that ever burst into that silent sea," but she was towed up, with steam to help. The latest feat in that line was performed by H. M. S. "Widgeon" a few days before I went up. She succeeded in going up in, I think, 47 hours steaming between Ichang and Chung-king, some 400 miles, and I had the pleasure of having tiffin on board her at Sui-fu on my way down. These gunboats are light flat bottomed craft, and each carries an English crew, some twenty-two in number. The latest designed ones have three propellers and four rudders; and the next improvement will probably be broad up-turned bows on the Chinese Junk Model, which has been the laughing stock of the "Barbarian" for years. But that model has not been evolved from the experience of 2000 years in vain. As usual, John has produced a craft to suit exactly the conditions which prevail, and in the simplest way, with such materials as have been at his disposal. A sharp-pointed deep keeled cutter would 'shear' away beyond all control, in spite of any rudder in such strong whirling water. But a Chinese model glides over the cross currents, and its broad over-hanging bow saves it from the vortex of any ordinary whirlpool, even if it had not enough 'way' on to carry it across without being spun round like a top. Our model has been evolved to catch hold of water that is comparatively stationary, while the Chinaman's main object has been to make his so as to prevent the strongly agitated water *from taking hold of it*. On my way down I had some experience of these whirlpools, and by a slight accident once on my way up, I felt what a strong rapid and its corresponding



H. M. S. 'Woodlark' at Chiating on Min River.

back water could do. I was in the 'Red boat' taking advantage of the favourable wind, and a sun bath as a treat after a long spell of cold dull weather which had prevailed since my arrival at Shaughai. The "Red boat" service is maintained by the Chinese Government, and is one of the most useful and best equipped institutions in the country for the saving of life and property on the river, where accidents to the shipping are said to be between 10 and 20 per cent. It is customary for one of these Red boats to accompany any traveller, Chinese or Foreign, who is of sufficient standing to justify a formal request for one to the Taotai of the town or district where a start is made. The boats are strongly built on a model that experience has taught is suitable to the peculiar conditions, and they are manned by four picked men. They keep generally within hail of the house boat, tie up alongside it as a guard at night, and warn the important cities along the river of the traveller's arrival and departure by three loud explosions of cartridges kept for the purpose, and one of the crew escorts him on shore if necessary. It is a pleasant variety to sail along in the open Red Boat when the wind is favourable, as it is lighter and faster than the House boat, and gives a better view of the surroundings. On the occasion referred to the boat, with the sail up, was shooting up a back water along the bank parallel to a very strong rapid, with the object of running alongside a large cargo junk which was lying at the head of it, before being towed past the rapid. It so happened that both boat hooks slipped at a critical moment, and the boat shooting forward a few feet too far, was caught in the rapid and sent spinning down. The long sweep at the stern, used as a rudder caught the back water and we were sent gyrating at a bewildering pace down stream, as first the bow, and then the stern got caught by the edge of the rapid. The affair happened so suddenly, that there was no time to lower the sail, and it was awkward, but this was attended to first, and as soon as we got into less turbulent water oars were put out and we gradually edged out by pulling down stream. Some water was shipped but the men were equal to the emergency at every point though the skipper laid his tongue on them for a quarter of an hour without intermission for their carelessness. A somewhat similar accident happened to the House Boat once, when the trackers were on shore and the rope was unhitched to pass a junk. There were only five hands on board including the cook and the *lopan's* wife, who took the rudder to allow the man who handled it to attend to more urgent work, and by luck and good guiding and the help of one of the trackers who had hurried along over the huge boulders like a goat and

caught us up, we eventually got hitched to a boulder some half mile down stream with nothing worse than a bump or two, though just in time to avoid a nasty rapid. These were the only accidents we had, but it was a continual source of wonder and admiration, how many more were avoided. On the return journey we had some further experiences one of which I may mention. It was at Kui-Fu at the entrance to one of the gorges. The river was in high flood, and only one other junk, a medium cargo one, well manned, was moving. We caught it up manoeuvring for a favourable opportunity to enter the gorge, but it was meanwhile being driven around in large circles by the immense whirlpool, besides being spun round by the various smaller but stronger ones that burst up in various places. As luck would have it, we got into the same circle for a time, and as the junk had a 30 ft. sweep projecting at the bow, and as each boat was gyrating on its own account, besides being driven round in an erratic way in the larger whirl, the chance of an awkward entanglement in which the smaller would suffer most seemed imminent. Taking advantage however of a calmer spot, and a favourable whirl, our men dipped oars, and we got out of danger on the outer circle of a vortex, but in the attempt, got right into the middle of another one that burst out unexpectedly with a most disconcerting roar, and the bow got under for a second, causing the men to quickly crawl back, which fortunately was sufficient change of trimming to prevent much water being shipped. Three of the men had also stuck to their oars and lowered the butts of them so as to raise the blades clear of the water, and the other two, from whose hands they had been wrenched by the strong water, quickly got theirs into position again and we soon got a chance of gliding away between the outer circles of adjacent whirlpools which is the great art in this navigation. The Red Boat, which had been keeping at a distance to avoid worse complications while we were in the vicinity of the junk, then came alongside, and I was transferred to it. By skilfully availing themselves of the eccentricities of the water as just described, and, when they had sufficient way on, shooting over the smaller or slower vortices, both crews got their boats to the mouth of the gorge and soon were out of sight of the Junk which was still circling and waiting for a chance to enter.

The chief danger at such places is from collision when several Junks are on the move at once, and therefore when the water is above a certain mark, no boats are allowed to proceed. The worst place which we encountered was where there was a jutting point on the right bank, and a similar one a short distance lower down the



Entrance to a gorge at Kui Fu.

left bank, causing a strong rush of water on each side and a regular torrent where they joined in the middle. There was no avoiding this danger. We had halted all the previous afternoon at a small town ten miles higher up on account of a head wind, much against my inclination, for the river was still rising fast and was now above the highest tracking path all along the bank. But the men were evidently averse to tackle this danger from wind and water combined, especially after half a day's hard work. As I have indicated, it is hard work tracking up stream, demanding quite extraordinary strength and activity and stamina, and I often on the upward journey wished I were going the other way for relief to the workers, willing and cheerful though they always were. But I found the work was generally just as hard on the way down to keep the boat's head straight and avoid the whirlpools and rapids (into which it was being continually drawn) often by a very narrow margin, in spite of the care I had taken to have a full crew for my boat and an extra hand for the Red one. On the morning referred to, I had heard the cook preparing food long before daylight, and by 4 o'clock I was informed that it was time to get ready to go into the Red Boat. On approaching the rapids there was a hard struggle to get the boat into the desired position near the junction of the two torrents at the easiest point of the weaker one; and the energy and determination displayed were extraordinary, the result being, that we just missed the worst part. But even then we were sent spinning round and down stream so violently that, seated as I was on a low chair in the bottom of the boat, I had to grasp its legs to prevent myself being swung out of it. Of course it was soon over and we had shipped only a little water, but the "boss" remarked with a sigh of relief: "that was a near thing." The men sat down for a rest, and let the boat whirl about quietly in the back water, while we waited to see the result of the other boat's venture. She got a nasty "shog" as we could see from the distance, but I had taken the precaution of trimming what cargo we had before we started, and not much damage was done.

Before leaving Shaughai a friend remarked to me: "you are somewhat grey now but you will be greyer before you finish the river journey." And I was told on my return to Ichang that this actually did occur to a lady traveller, during the time I was away. The river itself, I have described as a mighty mountain torrent, and with such a body of turbulent waters moving at from six to ten miles an hour in its beautiful and comparatively quiet reaches through the gorges, and from which its momentous force at the rapid may be sur-

mised the description seems suitable. At the Customs outpost above Ichang the depth of water is 250 ft., and at some points the difference between low and high water is some 120 ft. At low water it is a series of rapids, its bed strewn with huge boulders piled on top of one another, or confined between limestone and conglomerate cliffs all worn into grooves by the countless towing ropes and indented by iron pointed barge poles of generations of boatmen. On my downward trip the day previous to my arrival at Wan Hsien, the flood rose 27 ft. in one day. It rose to 112 ft. at Chung King, the previous record during the last eleven years being 101 ft. During full flood its surface seems smooth and rapids are few. All boulders are covered, and it fills up the valley to the smooth hill sides. Appearances are deceptive however, for bursting boiling whirlpools abound that twist even the rounded narrow bladed oars from the hands of the unwary boatmen. I had scoffed at the inefficiency of such queer implements, that seemed hybrids between a barge pole and an oar, but as usual found that the Chinaman knew better.

I stayed a week at Chiating to see the sacred mountain of O-meishan. From Chiating, where I left H. M. S. "Woodlark" on the 1st August, I reached Hankow on the morning of the 13th at daylight, a distance of 1,230 miles.

CONCLUSION.

I am happy to record that from the beginning of my journey to the end of it, I received nothing but respectful attention. Sometimes, of course, with a degree of inquisitiveness that might disturb some folks' equanimity, though always conducted with a manner that indicated its harmless intention to any one who was in sympathy with his surroundings. As a matter of fact, I was a greater offender in that respect than many of those who had more excuse for their curiosity, and considering the many quaint superstitions attaching to very simple matters of which I was ignorant, and the etiquette of which I must have transgressed frequently, my advances were invariably courteously received. I had, however, to pay the price of a sacrificial fowl once, to expiate some trivial sin, against the peculiar sanctity of the bow of the Houseboat compared with any other part of it! I noticed also that the chair bearers invariably showed appreciation of the consideration and respect I indicated towards their work by avoiding to step over the front bar and going over one of the poles instead. The journey was begun on Sunday morning, 11th March at daylight, and ended exactly six months afterwards on Sunday morning, 10th Sep-

tember. I left Ya-chou on 18th July, and finally on 1st August leaving Chiating, after a twelve days diversion, in a smaller boat than a houseboat as being not merely half the expense, but also safer and faster, I reached Ichang on the morning of the 11th, Hankow at daylight on the 13th, Shanghai on the 18th, Singapore on the 31st August, (having changed boats at each place mentioned and utilised six different nautical conveyances), and Calcutta as mentioned above, somewhat the worse for the wear, and though safe and sound so much run down as to be unable to begin the compilation of this report for nearly a month.

THE BRICK TEA TRADE.

A short account of the tea trade carried on between China and Tibet, and an interesting story bearing on the introduction of the tea plant to W. China from the 'Western region' or "Western Heaven of Buddhism" *viz.*, India, may serve as introductory to the more detailed description of the process of manipulation to which the raw material is subjected to render it suitable for the peculiar conditions of that trade. I may however first allude to the origin of certain peculiarities in the trade itself. These peculiarities must, I think, be regarded as primarily and essentially the outcome of the difficulties of transport, rather than an attempt to cater for any particular taste on the part of the consumers. The exigencies of the trade have created the taste for an inferior grade of the product. These difficulties indicate expense to the extent of doubling the original cost of the article before it reaches the market at Ta-chien-lu, and quadrupling it before it can be delivered in Central and Eastern Tibet, not counting trade profits. This necessitates a cheap common article to begin with. The distances to be traversed are enormous, considering the means of transport by coolie, or pack pony, or the much slower yak, and therefore bulk is an important factor. These two considerations, *viz.*, cheapness and small bulk, may be regarded as the most important factors in the evolution of Tibet Brick tea. The Chinese, with their usual acuteness, have adapted the materials at hand to suit their necessity. In doing so they have established a trade in a very low class quality of an article, and have confirmed in the consumers the taste for it, which they themselves regard with contempt. This latter we shall find to be one of the greatest obstacles to the introduction of the genuine high grade article produced in India. The trade itself is of great importance and value, and therefore has attracted the attention of all travellers and Consular Agents who have visited Western China. But Baber, in his "Travels in Western China 1879" is the only writer who has given any approximate description of the process of manufacture, and even his account is too indefinite to be of practical value. No two enquirers agree as to the extent of the trade. Baber estimated it at 10,000,000 lbs. through Ta-chien-lu alone, of a value of £160,000. In 1883, Mr. Hosie estimated the value at between £150,000 and £200,000 for the same trade centre. As a result of his further enquiries in

1903 he stated that the total export approached 40,000,000 lbs. Mr. Litton visited Ta-chien-lu and Sungpan in 1897-8, and estimated the export from the latter place at 14,000,000 lbs. It is very difficult to get any very reliable statistics from either officials or merchants engaged in the trade. In a supplementary private report by Mr. Hosie, with which I was favoured with by Mr. Goffe, Consul General at Chengtu, and which I understand has since been published (as I noticed a reference to it in a communication from the London Tea Committee to the Indian Tea Association recently) he again treats of this subject. Mr. Hosie, bases his calculations on the number of official licenses granted by the Government and Provincial authorities to the Tea Hongs at the several centres, this being the system on which the trade is carried on. He arrives at the conclusion that the total annual quantity of brick tea carried to Ta-chien-lu for consumption to the territories west of that city, is approximately 8,533,000 catties or 11,377,333 lbs. of the value of Taels 9,48,591 or between £125,000 and £130,000.

On the same basis he drew up a further set of three tables, indicating the distribution of these licenses among the different centres of production, and also the number issued for the manufacture of each quality of tea at each centre, followed by a table showing the total quantity of each quality at each place and the total value. In the penultimate sentence of his report, however, he confessedly nullifies the value of the tables as far as regards the proportion of the different grades. For he says "In the above tables I have for the sake of convenience, grouped the different grades of tea manufactured in the various centres together as if they were of equal quality. This however is not the case as may be seen from the disparity in values" If he had grouped them according to their values, which is the final test of comparative quality, a result very different to that which he arrives at would have been shown, *viz.* : 926,000 *catties* first quality : value 202,179 *Taels* : 4,355,500 *Catties* second quality ; value 510,861 *Taels* : 2,651,500 *Catties* third quality ; value 197,108 *Taels* : and 600,000 *Catties* fourth quality, value 38,443 *Taels*. At Ming Shan and Tien Chuan for instance no No. 1 quality is made and not even good second quality, compared with Ya-chou manufacture, and the same is true approximately with regard to Jung Ching, and yet all these centres are credited with first quality with only third and fourth class values against them. After having visited the various centres my observations quite bore out the statement as to the different qualities produced at each, as far as they were based on their respective values at Ta-chien-lu.

But the conclusion that the different licenses taken out for any one quality actually indicate the quantity of that particular quality produced, seems to me to be erroneous. The licenses seem to be interchangeable, not only between the different centres and Hongs, but also as to the kind of tea manufactured under them. There seems to be no great restriction in this matter, and the Government charge is the same for each kind, so that there is no reliability to be placed on a calculation based on the licenses as far as the various qualities are concerned. Taking Mr. Hosie's values at Ta-chien-lu as a guide, and the four main kinds made at Ya-chou as a standard, we would have first quality 295,000 *Catties*; second quality 3,376,500 *Catties*; third quality 1,980,000 *Catties*; and fourth quality 2,881,500 *Catties*. My own observations however would point to a considerable increase of the third quality at the expense of the second and fourth qualities; and this season at least there was no prospect of the figures opposite the first quality being reached.

With reference to the export through the important trade centre of Sungpan, which is on the Tibet border north of Chengtu, there is the same discrepancy according to the different sources of information. From particulars gathered at Chengtu, I was led to think that this trade was unimportant, but I afterwards received from what should have been an inspired and reliable source an estimate putting it at 12,800,000 lbs. This was through the merchants of the four Hongs at Kuan Hsien, who have a monopoly of the trade through Kuan Hsien for Sungpan, where also the Government exercises supervision and causes a stamp to be fixed on each package of 120 catties. On my way down the river at Chiating I had the pleasure of meeting Dr. Forrest of H. M. S. "Woodlark," from whom I got some interesting information. He is a good Chinese scholar, and had travelled recently along part of the border between China and Tibet, south of Sungpan, eventually passing through Ya-chou on his way back. He got some figures from the Commissioner of Customs at Kuan Hsien, which would indicate a trade of only 5,840,000 lbs. through that centre. There are however several other routes, mentioned by other writers, besides those by which smuggling is carried on; while a considerable quantity of the brick tea manufactured by Russian firms at Hankow finds its way through Mongolia southwards. Then there is the leakage through the Customs Barriers, which was openly hinted at, and may be put at 10 p. c. roughly. So that, taking a fair estimate of the supply through the various sources, the Tibetans may be credited with handling a trade of between 20,000,000 and 30,000,000 lbs.

In this connection the value of the different grades may be mentioned, and for convenience I state them in English money, calculated as closely as there is necessity for under the circumstances. Taking the teas as composing four main grades we may put the value of the best at $1\frac{3}{4}d$ to $2\frac{1}{4}d$ per lb., the second quality at $1\frac{1}{2}d$, the third quality at $1\frac{1}{4}d$, and the 4th at $\frac{1}{2}d$ to $\frac{3}{4}d$ at the several centres of manufacture. At Ta-chien-lu the value of each kind has doubled, nearly three-fourths of the increase being due to transport. This is accepted as a general guide to prices as between these places, *likin* charges &c. account for the difference. The tea is carried by coolies, by a very rough road and over one pass 9,000 ft. high, the vicissitudes of the climate being also very trying. There are two routes from Ya-chou to Ta-chien-lu, one by a round-about way comprises twelve ordinary travelling stages, and the other only six stages; but the former is the one generally used as being in better order. With the usual heavy load, of about 180 lbs, the coolies take several days longer *viz.*, from sixteen to eighteen days by the former and eight or nine by the latter. From Ya-chou to Lhassa the distance is about 1,300 miles, and is done in seventy-two stages on horseback, while for pack ponies and yaks the time required to complete the journey is not under three months. On this latter road there are several very trying passes to traverse up to 11,100 ft. and 13,000 ft. From Sungpan the route is also difficult, but a considerable portion of the trade goes to the grass country of Northern Tibet and Southern Mongolia. The prices at Sungpan work out on the whole pretty much the same as rule at Ta-chien-lu. The trade is one of barter more than of cash down and in fact, when money is the medium, it has to lie out so long that it is difficult to get at any real practical value of the article bought with it. There are many bad debts, and often the merchant has to wait for settlement until the following season when the Tibetan trader returns. This way of conducting the business has to be taken into account when considering the means of fostering a direct trade between Tibet and India.

HISTORICAL.

The Tibet tea trade is said to be of long standing, but unfortunately I mislaid a note which would have indicated approximately the date of its origin. The originator of the trade is venerated however, and a full size effigy of him is in a large glass frame in the temple or Hall of the Tea guild at Ya-chou with his name, Lu Yu and his designation Shen-Shi (early teacher or initiator) duly set forth. There are two other figures in the same case, one of Gan Lu and the other of

some regal personage both of whom are intimately associated with the tea business of Western China. Of Gan Lu more hereafter, but I may mention in passing that all effigies, statues or drawings of him represent him as of very distinct cast of countenance with regular clear out features and full face. The other two have more contracted features, and are ornamented with the much coveted hirsute appendages, so generally depicted in all drawings of the highest classes, or of any one supposed to represent authority, and on the ancient tapestries. I procured four specimens of these tapestries, and on two of them natural hair is affixed to represent the moustache and beard. It is very strange how these should be regarded as ornamental, considering the comparative rarity of hair on the face of a Chinaman and its sparseness when it is cultivated.

When going through a Hong with the courteous proprietor soon after my arrival, I saw some small cakes or bricks being made of which a description will be given in its proper place. This tea was of a special quality, and the name 'mung cha' was embossed on each cake. I learnt that it was named after a mountain in the neighbourhood, 'Mung Shan,' and that tea was sent from that hill to the Emperor at Peking every year. The following extract from a letter to the Secretary, Tea Cess Committee, describes the interesting particulars bearing on this subject.

"Thinking there might be something about a place which was worthy of bestowing a title on a high class tea meant as a complimentary gift to patrons, and wishing to see another centre of the brick tea manufacture, I took the opportunity of accompanying a member of the China Inland Mission, who was returning to his station through Min-Shan-Hsien, to visit that place, which is the head quarters of the Magistrate of the district in which the mountain stands. While making enquiries about Mung Shan and the tea for the Emperor, I was delighted to learn that some leaf had been plucked the previous day, and was being prepared by the Magistrate. I decided to call and pay my respects, and after certain necessary preliminaries, at the time arranged for, I was received in due formality by that dignitary. In course of conversation, through my boy who acted as interpreter, I learnt that this tea is sent only once a year to the Emperor and that the quantity amounts to only 700 leaves taken from seven tea plants on the top of Mung-Shan. I was shewn some of the leaves both in the green state and when dried, but could not distinguish any marked peculiarity about them compared with ordinary China leaf. It began to dawn on

me that there was more sentiment than utility about the business. I directed my inquiries accordingly, and learnt that the tea was from bushes over 2000 years old, and that it was sent, not for use in the ordinary way, but to be dedicated by the Emperor as an offering to God, with a certain ceremony. I at once asked to be allowed to have access to the enclosure where the plants are ; for they are kept under lock and key and no one is allowed to see them without permission. Instructions were at once given for a written order to be made out, authorising me to be admitted into the honoured precincts and for a runner to accompany me up the mountain in the morning. On my return to the mission house my curiosity was further heightened by a story, related by the man in charge, that the tea, after being dedicated to God was infused and used for mixing the ink with which the Emperor signs the death warrants of criminals. The Mandarin, on his return visit shortly afterwards, did not quite confirm the latter part of this legend but said the first part was true.

“ On the following morning I started in a drizzle of rain for the mountain. I intended to stay the night at the temple on the top and to go round by another road to Ya-chou. But afterwards I learnt that no food could be got at the top or even at the temple Da-oo-ting about half way up where we arrived at 10 o'clock, elevation 3,300 feet, about 1,200 feet above our starting point. At this temple, which is associated with the one on the mountain top, is an image representing one Gan-Lu as a Buddha enshrined. This Gan-Lu it was who brought the venerated tea plants and planted them. In the hope that it might clear, I started at 11 A.M. for the summit ; and after a somewhat steep climb up stairs all the way reached a rest house at 11-30, elevation 3,800 feet, and descending a little through a hollow, where the scattered tea bushes among the maize had been cut down by thieves two nights previously, we began a very steep ascent by flights of steps averaging 6 inches to 9 inches high by 14 inches to 16 inches broad with stone oblong blocks along each side. This continued very regular with a few turns up to the temple Kee-Kay-Zu, or Chin-Ga-Zu, as it seems to be called by some, at an elevation of 4,700 feet with some fine trees in the patch of forest surrounding it. Passing through the temple we ascended about 50 feet up steps, and entered a narrow winding hollow between the knolls on the summit. This hollow is enclosed by a closely packed fence of branches some seven feet high and the knolls, five in number, are covered with trees, thus forming a well-sheltered nook for the plants. There is a gateway at the entrance with locked doors, and beyond this, round a bend, is another sparred gate also locked, through which could be

seen some tall straggly bushes and an oblong wooden paling enclosure with a porch and another gate. The boy hesitated about opening the second gate, but eventually after a little persuasion did so, and we passed through up to the small enclosure. This measures about 9 yards by 4 yards. Inside of it are seven tea plants, three of them about 12 feet high and the rest some 5 or 6 feet, of lank straggling growth of shrub rather than tree tendency, though the larger ones had nice clean healthy grey bark with the main stem some $2\frac{1}{2}$ " in diameter I guessed. There was no appearance of great age about them but they were certainly like suckers from old roots. They had been cultivated, and fresh earth was piled over the roots. There were some weaker shoots or stems round each with some moss on the older ones. Outside of this small enclosure at one end there were four bushes. One tall, strong, growing, and with clean bark, but branching out at the top as if it had reached its natural full growth attracted my attention by the size of some of its old leaves, two of which I took measuring $6' \times 2\frac{3}{4}"$ & $5\frac{1}{2}" \times 2\frac{5}{8}"$; while alongside of it was one with many stems about 4 feet high, moss covered and with very small leaves two of which were $2\frac{3}{4}" \times \frac{3}{4}"$ and $2\frac{1}{4}" \times \frac{3}{4}"$ fully developed, this being the only plant with extra small leaves. Round a bend at the end of the hollow, about 40 yards away, were four more bushes of ordinary good China or rather hybrid habit when not pruned or plucked *hard*. There were fifteen bushes in all, seven of them being inside the small enclosure. It was raining all the time and dull, so that two photographs I took are failures. A dense mist came on at the time too, and our guide was pressing to get away as he was afraid of losing the track along the hill side leading to another temple where we hoped to stay. My visit was therefore a hurried one, and the so-called priest in charge was very stupid and uncommunicative and I got little information, and had no time to examine minutely the stone slabs with writing and a draped figure engraved on one $5' 9"$ long, the head being $9\frac{3}{4}"$ from crown to point of chin with a circular earring in each ear. The priest at this temple called Young-ching-zu some 8 *li* off and 1,000 feet lower, in reply to some inquiries next morning regarding tea in general and that on the Mung-Shau summit, and Gan-Lu who planted it in particular, rather astonished me by saying that it was about 2,500 years old and was brought from India by Gan-Lu who was a Chinese priest from this neighbourhood, and who went to India on a pilgrimage and brought the tea plants back with him.

"After making further inquiries from another priest my hopes of having the above statement confirmed were rather shaken, as regards the reputed original habitat of the plants, which he referred to as Hsi-Tien. On looking up an Anglo-Chinese dictionary afterwards, I found that Hsi means west or western and Hsi-Tien has the specific term of "Buddhist Paradise" applied to it and this seemed to indicate that its original geographical location had merged into a mere myth, but a learned Secretary to the Magistrate here says that the characters referred to do not apply to any indefinite Paradise but indicate the original home and birth place of Buddhism—India. The term Hsi-u was also used as synonymous with Hsi-Tien to indicate India. It means western region and in writing or speaking it is the usual expression when referring to India. The history of the plants seems to be this. They were brought from the "western home of Buddhism" *ie.*, India, about 206 B. C. to 73 A. D. by a priest who came from there, or who went there from China on a pilgrimage and brought them back with him. They were planted first on a mountain Geo-Kung Shan on the south east of this town of Ya-chou. Some time after this an earthquake occurred, and it was attributed to the fact of these bushes having been planted on that hill. There are still the remains of a very ancient temple on the edge of a precipice on the top of it, which is in part roofed with brass; and there is a still older one built entirely of stone, walls, roof, beams, king-posts, everything. As a consequence of the earthquake the plants were removed to their present location, and their existence is venerated and honoured by the highest in the land in a way that the world regards as the highest."

There is another version of the reason why the plants were removed from this first location, namely, that the tea did not grow well there. I had the curiosity to climb this hill with a view to elucidating the subject. It is 5,600 feet high or 3,500 feet above the small plain on which Ya-chou stands. The summit is a series of exposed knolls, covered with small bamboo scrub, and snow lies on it sometimes for days or even weeks in winter. This had probably as much to do with the necessity for a change of site for the plants as the earthquake. Their present location about 1,000 feet lower in a circular space in a narrow winding hollow between forest covered knolls well sheltered, and on good red soil is much more suitable. This hollow on the summit is very aptly styled the "Lotus flower mountain top of Mung-Shan."

On my visit to Geo-Kung Shan we were accompanied more or less all the way by two brothers, who were going to worship at the shrine. I thought my ordinary mode of progression was hard enough, but they measured their length on the ground all the way up, each grasping a small fourlegged stool in his hands with a burning taper in each end of it. I secured one of the stools as a curiosity. Their religion is evidently a matter of works as well as of faith! The chief feature of this shrine however was where both men and women worshipped for the honour of begetting sons. They burn incense, light a few tapers, bow three times from a standing posture, three times while kneeling, tie a hair from the head, a woman's for choice, round the neck of one of the effigies of a child in a woman's arms (there are four such effigies) and throw some *cash* at a small figure in a niche behind these effigies, a hit by one of which indicates certain response to their wishes!

* The accompanying print represents an interesting advertisement bearing on the above subject, a printed sheet of paper which is used as a wrapper for the small complimentary cakes of 'Mung-Cha' referred to above. On the upper half is a sketch map of Mung-Shan with its two temples and stairs leading to them, the small house between the temple and the tea plants, and the small enclosure itself in the usual Chinese style, and quite recognizable. On the lower half is a short history of the plants the translation of which is as follows.

"In an ancient book of the Great U Dynasty (2205 B. C.) the mountain "Mung" in the Min-Shan district is mentioned, In the later Han Dynasty (A. D. 25) a Priest, Wo-li-Chien, came from India (Hsi-U) to this mountain to cultivate purity and so attain immortality. He brought with him seven tea plants and planted them on the Lotus-flower summit of Mung-Shan. (This very aptly describes the circular part of the hollow surrounded by tree covered knolls (5) on the summit). The plants were over one foot in height and since then for over a thousand years have remained the same (lit. have neither lived nor died.) Every year in summer time the local official at Min-Shan ascends the hill, and with his own hands plucks the tea which is prepared in leaves and sent to the Emperor. Other tea bushes have been planted on this mountain and derive benefit from the life-and-light-giving influence (yang-chi) and from the

* It has not been found convenient to have this print executed in time.



Sketch of Gan Lu reduced from a rubbing (natural size) of a monumental stone.

dew. The drinking of this tea gives pure heart and clear understanding and it cures flatulency. One cup of it and you are well." I was afterwards honoured with a tiny sample of the tea as sent to the Emperor enclosed in a metal box $2\frac{1}{2}'' \times 1\frac{1}{8}'' \times \frac{1}{8}''$.

The family name of Gan Lu was Wo Li Chien, and Gan Lu is his saintly name meaning sweet dew, while his designation is Tsu Si meaning original teacher. He is now patron Saint of the Tea Guild at Ya-chou. In connection with this subject I may mention a very noteworthy coincidence that came under my notice lately. In a lecture given at Darjeeling recently by Rai Bahadur Sarat Chandra Das, on the later development of Buddhism, reference is made to the introduction of that religion into China. Referring to the edicts of Asoka he says : " these he had sent in charge of Buddhist missionaries to various districts so that they might interpret them with the " tenets of Buddhism." " There was an exodus from these countries of the leaders among the Buddhists up to about the time of the Christian era. It was about A. D. 65 that Buddhism was introduced into China by, it is said, a swarm of three thousand missionaries from India." This corresponds with the time that Gan Lu is said to have gone from India, or returned from there and to have taken the seven tea plants with him. It would be interesting to know by what route these missionaries reached China. If it lay through Assam or Western Burmah (and I have read about some ancient trade route through the former country, where there are signs of tea having been, if not planted systematically, at least treated as a useful plant) then this story of its introduction into Western China need not necessarily be a myth. By mail I have received through Mr. Openshaw a 'rubbing' of a monumental stone, with a long story inscribed on it of drought and other evils relieved at various times by manifestations of the renowned Priest, with an engraving of him exhibiting the striking features above referred to which are quite unusual in Chinese. There is a reference to his having " hand-planted the fairy (or immortal) tea " with its benignant leaves that are fragrant." There is also reference to his having, " with his staff (abbot's) gone to live at Ming Shan and " planted seven tea trees." The date is the Han dynasty (B. C. 206 to 73). The rubbing was made for me by a Priest from a neighbouring temple, and was kindly translated by Mr. Openshaw.

THE TIBETAN METHOD OF BREWING TEA.

It only remains now to describe how the tea is used by the Tibetans, before going into details of its production. I quote from

Mrs. Reinhart's thrilling and sad story of her daring but wantonly reckless attempt to penetrate to Lhasa, as told in her book "With Tibetans in tent and Temple." After referring to the rough brick tea she continues: "The brass pot is filled with the correct amount of water and is placed on a good fire. The leaves are then in large quantities put into the water and a little salt and sometimes soda, if they have it, is added and the whole boiled thoroughly. The tea is then strained into a churn containing butter and " tsamba " (barley parched and ground) and the whole churned up into a mixture looking not unlike chocolate. Should the harder brick tea (probably referring to the kind of brick made at Hankow by the Russian houses), be the kind used, a piece is put in a wooden mortar and with a stone pestle is pounded up. Tea is also poured into a basin with a lump of butter and drunk in large quantities." It is thus a food and refreshing drink combined, and must be regarded as a necessity of every Tibetan household, as Mr. Hosie remarks. This mode of preparing it may account for the fact of our stronger and rawer article having the reputation of disagreeing with the Tibetans. It would take a cast iron stomach to stand such a decoction. With the best Assam kind of tea as the basis of the mixture an ordinary membrane would be transformed into a leather bag in a week.

CULTIVATION.

During the whole of the overland journey, described in the first part of this report up to the day I reached Ya-chou, I had seen no signs of tea bushes except at two places, and then merely a few scattered plants among the crops and trees on a hill side. These were high unpruned bushes of the common kind called Shay Tay in Formosa, and represented the type which, with the exception of a few spots, seems to be universally cultivated in the Western districts. The bushes however are bigger and stronger, and their leaves are on the whole considerably larger than we would associate with China *Jat* as seen in the older gardens in the various districts here. These bushes had not even been plucked regularly, but some leaf had been taken off the previous day at one homestead and was being manufactured. It had been coarsely plucked, panned, and rolled roughly, and pressed firmly into a basket to ferment overnight. In the morning it was being dried in the sun, and had a prominent true tea smell and a sweet pleasant taste. Even on my arrival at Ya-chou, which is the centre of the Brick tea manufacture for Southern Tibet, my greatest difficulty was to find growing tea.



Churn for mixing tea butter and *tsambá*

I could not even bear of any plots of it any where, but only of scattered bushes here and there, the leaves of which were plucked for private consumption. Tea leaves were being brought into town for sale in large cylindrical bags, but not even from the coolies could I hear of any garden of any extent. They said it came from every direction, and from not less than five to fifteen miles away, or even double that distance. After some touring round among the hills, I was still more puzzled, but eventually found that there were no large areas devoted to tea. It is grown along the bunds of rice fields on the more level country occasionally, but chiefly among the crops that grow on the dry land at higher elevations. Even at such places the traveller on the beaten track will encounter very little, and I had to go up among the side valleys at an elevation of 3,000 to 3,500 feet before meeting with any considerable area; and even there the bushes were few and far between. They seemed to get but little attention and no cultivation, except when the crops among which they were growing were being planted and weeded. These crops were maize in summer, and beans, wheat or some other food crop in winter. Occasionally the bushes are planted in hedges on the dry high-land as on the lower land but not as a rule. In no instance did I find even a small area of land devoted entirely to tea. The necessary food crops require all the available land, and tea for Tibet is treated as a by-product. It enables the cultivator to derive a little money from strips of land which would not grow any other crop; or it may give some return from high land where the crops are precarious among which it is grown. Beyond the fact that it is always planted from seed, and that I saw no extensions being put out, and heard of only one of a few hundred plants in a sub-division where there were none previously, there is nothing more of importance to be said on this subject. The district from which Ya-chou, and the three smaller manufacturing centres of Ming-shan, Tien-chuan and Jung-ching which lie round about it, draw their supply, is as may be surmised a very large one, some hundreds of miles in extent. The low price which the raw material fetches is no inducement for further production *viz.*, 40 to 60 *cash* per *catty* (if it comprises leaves alone of but *ordinary* quality, or about 1d to 1½d per lb.), the coarser stuff is not worth half of this amount, and the coarsest I saw at Jung-ching was being bought at 2¾d per picul of 133½ lbs. Not only in the matter of planting is tea for Tibet treated as a by-product but in the whole course of its treatment. For from the time it is plucked till it is packed, it receives attention as a

rule only when the necessary food crops do not require labour. This system of treating it as a by-product will be found the best to adopt in India in the initial stages of the trade. In the matter of plucking, as indicated above, little attention is given to fineness of leaf. For, as one merchant put it, it does not pay the cultivator to take the leaf before it is full size, as it weighs more then. Fine plucking is carried on occasionally, but this does not interfere with the Tibet trade ; for after the tips, buds alone, or bud and young top leaf, have been taken the material for Tibet is none the worse. The gathering of the crops for the trade is carried out in two ways. The shoots on unpruned buds are allowed to grow up to five or six leaves, and when run out or nearly so, they are stripped off the stems, leaving them bare. This is repeated three or perhaps four times a year. The other method is to let the shoots grow up to eight or nine leaves, and to a length of 15" or so, and then cut them back, well into red wood, by gathering a lot of them in one hand, and simply drawing a hooked knife across. This system seems to be coming into vogue, and is specially suitable when the bushes are planted in hedges or among maize. A large proportion of tea I saw had not been reaped up to the middle of June, so there was a considerable growth. Sometimes the leaves are stripped off the stalks and shoots and sold separately to different Hong, while small bundles of long green stalks may often be seen for sale and larger ones of still coarser stems.

PANNING.

It is almost invariably the custom to " pan " the material before it is brought to the Hong for sale. This work is carried out on the gardens, and as soon after the leaf has been gathered as may be convenient, no withering or fermenting process intervening. I described the panning process in a Report on Formosa Oolongs last year and reproduce the description here.

" The next process is panning. The pan is of thin metal usually about 2 feet in diameter and 7 inches deep at the centre, (in Western China the common size is 3 feet 3 inches) and it is set, slightly sunk, in a *pucca* fireplace or merely in a bamboo frame-work lined with mud, fitting closely and sloping. The lower side, where the operator stands, is about 2' 7", and the upper about 3' 2" in height. The slope makes the panning easier and more even. About as much leaf as can be comfortably held between the hands is placed in the pan and turned continuously from the front backwards, the back leaf



A bundle of old tea branches at the door of a Hong at Gong Ching.

slipping down meanwhile. This process lasts about six minutes. I had no means of testing the heat of the pan itself, but Mr. Bamber burst a thermometer at 350°F., and I have seen one showing red heat, but it was cooled down a little before use. At the Government model factory it was said that the temperature should be about 380°F., but in practice it is varied, and I have seen one pan, when leaf had not taken proper colour, being carefully kept at a much lower temperature by an attendant, so as "to make the most of it." I tested the leaf during the process, which was continued for 12 minutes, or twice as long as usual, and the temperature, when taken out and held on the thermometer, showed 115°, and when left unmoved in the pan for a second longer before being taken out, went up to 124°F. Its temperature falls very quickly when taken out. This leaf, at this low temperature, emitted a very slight crackling sound, whereas in the usual course of panning the crackling is brisk and distinct. A sample of leaf from second class bushes was treated to higher temperature for 6 minutes, and my thermometer, covered up with it when taken out of the pan, showed 142°F. It was the custom of one of my informants to treat the leaf differently from different varieties of plant, but he treated both coarse and fine leaf of each class of plant in the same way.

"The point in panning seems to be to keep the leaf constantly and evenly on the move so as to let all the leaf come in contact with the pan which must, in normal cases, be hot enough to cause it to emit a brisk crackling sound from the bursting of the cells. Sometimes the process is varied by rolling the leaf after panning for two or three minutes, then panning it again for a short time, say about three or four minutes, according to the temperature of the pan, and again rolling it.

"I could not ascertain that the process of panning made any distinct impression on the character of the tea. It stopped fermentation and it rendered the leaf much more easy to roll; it dissipated a considerable quantity of moisture, caused the bursting of the cells, made the firing process quicker and cheaper, and it probably also rendered some of the constituents of the leaf more easily soluble during infusion.

"In the event of any attempt at making 'Oolong' tea on a large scale, it would be necessary to carry out the panning process by mechanical means, and the Japanese with their usual intelligence and enterprise have apparently overcome this difficulty. At the Govern-

ment model factory I saw a series of large pans so arranged that a horizontal shaft running along an arched way over which the fire-places were built, operated vertical shafts which passed up through each fireplace, protected, of course, by a sheath, and through the bottom of each pan. Attached to each of these, inside the pan, was a casting, consisting of four arms of about one foot long each, curved to fit the contour of the pan, and curved also backwards from their line of motion, so as to throw the leaf upwards and outwards along the bottom and sides of the pan while circulating it. The doors of the fire-places were at the back, and a door with a lever handle in the bottom of each pan at the other side, served efficiently to discharge the leaf down a shoot in the brickwork at the front."

As panning seems to be an essential part of the process of brick tea making, I may describe a substantial plant for carrying it out on a large scale, which I saw at a temple. It consisted of a range of six chulahs measuring $25\frac{1}{2}$ ' long $5\frac{1}{2}$ ' broad 4' high at the furnace door side and 2' 6" at the other side built of dressed red sandstone blocks. Into each "chulah" a pan 3' 3" in diameter was set at a slight incline towards the front, *i.e.*, the side opposite the furnace doors, and sunk about 9" from the level of the surface, this space being built up with a slope outwards of solid-faced stone. The pan thus formed the bottom of a circular basin a little over 4' diameter and 1' 9" deep at the front. Set on this 'pucca' base and round the top of each chulah or basin except at the front which was open, was a strong bamboo frame 3' 6" high securely supported and plastered with lime and mud. Each pan takes a fill of 80 lbs. of leaf and the whole is kept stirred up and turned over by means of a long piece of bamboo worked as a lever, suspended from a beam above by a rope which acts as a fulcrum. I have not yet heard a definite opinion as to the effect of the panning process, but it is in universal vogue though apparently sometimes done, especially at the end of the year, when the material is too coarse to be benefited, in a perfunctory manner, as evinced by the open red or brown leaves often seen in heaps of last year's leaf. When properly done the colour of the leaf is an olive green. Other parts of the usual manipulation, such as rolling and fermenting, may be left out by some producers and some brick manufacturers, but the only material I have seen, which it was acknowledged had not been panned, was composed of autumnal forest leaves of sorts chiefly of a tree something like an alder, the leaves of which are certainly used as an adulterant occasionally. I expect the process has some effect on the

keeping qualities of the tea and probably on the checking of sourness during the fermentation. I have seen leaf white—mouldy—but never found it sour during that process. It certainly seems to make the leaf more tough and to prevent it crumbling when stored away dry. Anyhow not only does the leaf keep well, but it is said to improve with keeping.

ROLLING.

Rolling is not invariably done, partly because the material is too coarse to be treated either by hands or feet. But the firm leaf and tender green shoots are almost always rolled, though generally in a rough way, sufficient merely to detach the older leaves from the stems and to bruise them somewhat. A better price is obtained for rolled leaf, because it is more easily sorted afterwards and makes finer quality bricks. After having been panned and rolled or panned only, as the case may be, the material is put out in the sun and partially dried, and is then piled up in a heap 3 feet or 4 feet deep in an open verandah for choice. The leaf, after being panned, is olive green colour, and is damp to the touch, and retains that colour without changing even when only partially dried, if not heaped up too thickly and pressed down, for a considerable time. In this state it is carried in large cylindrical bags to the Hongs for sale. Almost all teas in China are subjected to these two processes, in a greater or less degree during some stage of their manipulation, no matter what kind it may be intended to make them into; be it fancy tips, Oolong, Souchong or Green. This emphasises the importance of panning, at least in the estimation of the Chinese. The process has been discarded long ago in India.

FERMENTING OR COLOURING.

When such bulk as I have described above is purchased at a Hong, it is at once taken out of the bags and heaped up in large masses 3 feet to 5 feet deep in a place closed in with boards, or against a wall in an open verandah and sometimes covered up with a cloth. A heap that I examined had been bought on the previous day, and undergoing this treatment had generated a temperature of 112°, some 15 inches from the surface. It is compressed somewhat by the men tramping over it to empty the bags. There is no definite time for this process; it varies according to circumstances but about four days seems an average duration. In dull weather it has to be ten days sometimes, but though as mentioned above it may become mouldy in spots where it has got wet, it does not readily become sour. These

latter remarks refer specially to the finer leafy bulk with green stalks mixed. The object is to darken the colour of the infusion, but of course it has the effect also of toning down the asperities of the raw material, and of rendering it perhaps more palatable ; but certainly less liable to cause any disturbance of the digestive organism than would otherwise be the case. A variation in the process of fermentation is practised when the new material is too dry or too coarse to pack closely and so generate sufficient heat, and also to freshen the previous season's coarse leaf that had been stored. The usual method of treating such stuff is to steam a portion of a heap, mix it well into the remainder, and to cover the whole up with a cloth. Bundles of it bound in open texture cloth are placed one above another over the steamer, and when the lower one is ready, say in about three minutes from the time it was put at the bottom, it is taken out, and the one that was above it is put down, there being generally three bundles under treatment at one time. The temperature of the leaf when ready ranges about 170°.

The steaming apparatus consists of an under-ground fire place, with a short flue leading to a chimney at one side. Over this fire-place a thin metal pan of the usual somewhat shallow pattern and 3 feet 3 inches in diameter is placed and cemented round. The whole is built round and covered with masonry, except for a circular hole on the top of the dome about 1 foot 9 inches in diameter, into which is fitted a wooden tub with open wooden or iron grating as a bottom and about 1 foot 4 inches deep. The height from the rim of the tub to the bottom of the pan is about 3 feet 7 inches. When the pan has some 8 inches of water in it, and a strong fire underneath, a considerable volume of steam is produced quite sufficient to keep one man steadily at work changing the bundles.

DRYING THE LEAF AND STORING.

When the material has been 'coloured' as described, advantage is taken of the first sunny day to put it out on the flagged floor of the court yard, and to dry it thoroughly. Men with rakes and forks keep turning it over frequently, making furrows through it, and any broken stuff that may accrue from the handling is put aside and comes in useful afterwards to mix with the bulk of the finer qualities when being moulded into bricks, after it has been dressed with 'glutinous rice.' There is, however, less broken stuff than might be expected. This thorough drying is very necessary, for the material is then stored away in large godowns often to a height of

10 or 15 feet and may lie there for months. When I left Ya-chou, in the middle of July, many of the large Hongs were fairly full of leaf, and very little manufacture was in progress; and even then I saw some large lots that had been kept over from the previous season. The collecting and storing of material goes on till the beginning of August, when, after the summer crops are planted, labour is more plentiful for brick manufacture. This season, owing to the disturbance on the border of Tibet, no orders were coming in and the Hong owners were somewhat despondent. The material does not deteriorate, however, and when I condoled with a large manufacturer on the extent of his previous year's stock, the poor prospect this season, and the consequent loss in value he was amused at my ignorance. "There will be no loss of material," said he, "it improves by being kept!" Yet most of it was in an open shed! It was coarse stuff, however, and I expect some of the shoots and stems would be none the worse for being semi-rotten before they were made into bricks having first to be chopped into short lengths, then dressed with glutinous rice, and afterwards steamed and pounded into the mould. They would be more easily manipulated, but it would take a stretch of imagination for us to fancy them making better tea.

SORTING.

Before going into the details of 'sorting' which is the next process it may be advisable to enumerate the various qualities or 'makes' that are produced so as to simplify any reference to them. With this object in view I give their names in Chinese and Roman characters and their significations, together with a description of the material of which each is composed. It will be seen that there are variations in the nomenclature and assortment, but I have adopted a standard of four qualities based on the style of manufacture as carried on at Ya-chou, the most important centre. This will facilitate comparison and make it more definite. The Chinese characters will be found useful:—

Names and description of the different qualities of tea made for Tibet.

金
尖
茶

1	Chin or Gin Jien.	Gold pointed or tapering.	<p><i>Ya-chou, 1st Quality Standard Tibet Tea.</i></p> <p>New season's early young leaf. Two leaves and bud, top two leaves of run-out shoots, some soft leaves that have taken twist during panning and partial rolling.</p>
---	-------------------	---------------------------	---

金玉茶
金倉茶
老茶
黑茶
大茶

2	Gin-u	Gold gem	<i>2nd Quality.</i> —New season's leaf, mostly top leaves of run-out shoots down to red wood partially twisted, some stalks. Pekoe Souchong and Souchong kind.
3	Gin Tsang	Gold Granary or Bin.	<i>3rd Quality.</i> —New season's coarse leaf from red wood with many stalks and some twigs. Some of previous season's leaf is occasionally mixed with this. Chopped up into 1" and 1½" lengths.
4	Lao Cha	Old Tea	<i>4th Quality.</i> —Coarsest new season's leaf with stalk and twigs predominating, but mostly the previous season's material kept over. Chopped into short lengths.
	Heh (Cha)	Black Tea	Name of best of two qualities made at Trinchuan similar to 2nd and 3rd standard Ya-chou. The other kind 'Tsang Cha' is similar to Ya-chou, 4th grade.
	Ta (Cha)	Large Tea	Yung-ching 3rd quality, Ya-chou 4th, and Yung-ching 2nd and 3rd quality, Ya-chou 2nd and 3rd but coarse. No 1st grade made Ning Shan, manufacture is similar to Ya-chou but not much of two kinds made.

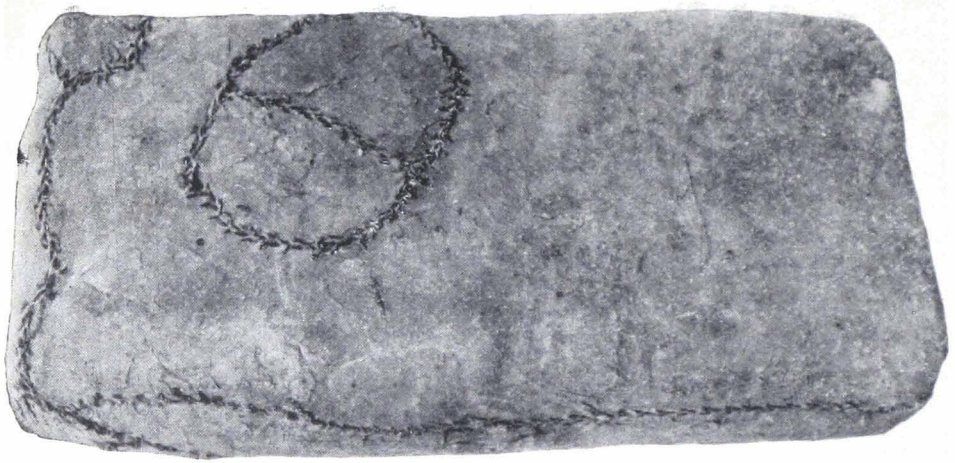
We have seen that the material after certain treatment is stored away in bulk, but in storing it a rough preliminary classification is adhered to, following the lines on which it is brought to the Hongs for sale. This classification may be described as comprising: 1st 'Leafy bulk'; 2nd 'Stalky'; 3rd 'Sticky'; of which the first is in far the largest proportion. When the brick making

begins, the first quality 'Leafy bulk,' is picked over and sorted into four kinds, *viz.*, fine twisted young leaf of olive green colour with reddish tinge; 2nd opener leaf with some brown leaves and a few green tips of stalks; 3rd coarser brown leaf and green stalks; and 4th a few pieces of red wood shoots, and old coarse brown leaves that could not be rolled and had got mixed up with the finer bulk. By far the largest proportion goes with the second quality Ghin-u, while the third and fourth qualities are mixed up with the 'stalky' and 'sticky' bulk respectively. The finest or first quality of the leaf may be kept apart for making Ya-dze or Chin Jien but it comprises a very small proportion of the whole and most of the material for these kinds, or that kind, (for the former name is more or less a euphemism, and is applied to a special make of brick as a rule) is purchased separately. While treating of plucking, I mentioned that occasionally fine tipping is practised, leaving long shoots below. Nearly all this fine leaf goes into the hands of shop-keepers and petty dealers, and by far the largest part of it goes into consumption in the provinces. When the Tibet merchants want any of this kind for their trade, they have recourse to these petty dealers and shop-keepers. There was none of it procurable in Ya-chou when I was there, because the Chief Examiner had bought it all up as a speculation, or peculation, shortly before I went, the quadrennial examination of students having just terminated. There is another source of production of leaf, or rather reproduction, which is said to help the Tibet trade. Tea rooms or Tea bars are very common in all the towns. It is in them, while sipping a cup of tea, that all the news and scandal of the day is discussed by gentle and simple alike. They are always open to the street, and a cup costs three *cash*. A little leaf is put in the cup and boiling water poured over it and another small cup placed on top. The cup will be refilled as often as required at the same price provided no more leaf is wanted. There is seldom much 'in it' to begin with, and after several refillings the infusion is tea only by courtesy. The leaf, however, is not done with, as may be noted any sunny day when the bamboo trays, on which it is being dried, take up a considerable portion of the street. When it is exhausted past any colourable imitation, it is sent to Tibet. The bare green stalks are tied in bundles, or held firmly in both hands by a man over the parallel edges, about $\frac{3}{4}$ " apart, of a straw-cutter, while another man operates the knife—which has a handle at one end and works on a pivot at the other end—and cuts them into lengths of 1

to $\frac{1}{2}$ inch. The coarser stems are chopped up in a rough way by a chopper on a block of wood, and the finer stuff goes to make *Lao Cha* the fourth quality, while the coarsest of all is used for 'Packer's cakes.' These last are merely a conglomeration of twigs, stuck together by a dressing of glutinous rice, and are made by putting a handful of the material at the bottom and top of the moulding case when better class bricks are being made. They help to protect the bricks at the top and bottom of the package, but their chief value is as part payment of the coolies and transport servants who take the tea from Ta-chien-lu to Lhasa. The packages of first and second quality tea are opened at Ta-chien-lu, and are repacked in skin cases. The hide is neatly sewn up after having been well moistened and softened with water and when dry it contracts and forms a very strong tight package fit to withstand the rough treatment it is subjected to, as the yak wanders about among the rocks and trees grazing as it goes. Each case contains 12 bricks, weighs between 60 and 70 lbs., and measures about 2', 7" \times 1', 3" \times 8". The men who attend to this work take out the cakes as a perquisite. A large proportion of the packages of coarser tea *Chin Tsang* and *Lao Cha* are disposed of during the earlier stages of the journey, and are left in their original cases to take their chance.

THE GLUTINOUS RICE PROCESS.

The coarser kinds of tea are subjected to a peculiar treatment, which has been referred to incidentally above, and may be now described. This may be called the glutinous rice process. A quantity of glutinous rice (*Oryza Glutinosa*), as distinguished from the ordinary rice (*Oryza Sativa*), is steeped in cold water for some time till it becomes soft, and is then ground between the common hand mill-stones. It is fed through a hole in the upper stone with the addition of a little water and issues as a fine semi-liquid paste. This is boiled in a large pan till it becomes a dark brown glutinous mass, and no care is taken to prevent its being burnt during the process; in fact a burnt taste seems to be an acquisition worth having. This glutinous rice is grown in the district to a limited extent. It is whiter and more opaque than the ordinary rice and is a good article of food for a change and is somewhat dearer. Sugar is also extracted from it, by mixing it with ground barley and allowing it to ferment. As an adhesive dressing for the material used for making the bricks it is used in two ways. The broken tea referred to above, as being put aside when handling the bulk and when 'sorting' the leaf, is used



A hide covered package of Bricks

as a medium for its application. This is well mixed up with sufficient to make it a soft mass, and is then put out in the sun and dried and stored away. When wanted it is mixed up with the finer kinds of leaf used for *Chin-u* chiefly and occasionally for *Chin Tsang*. The first quality *Chin-Jien* is generally soft enough after being steamed to ensure sufficient cohesiveness without its use. The coarser kinds of *Chin Tsang* and *Lao cha* require a special dressing of the rice applied direct; and for this purpose the material is spread in a large stone trough, set at a slope sometimes for convenience, and sufficient rice is mixed with it to give the stalks and twigs, a thin coating all over, and to make them 'sticky' in a double sense. It is applied cold as a rule. The material is then dried and stored away and is often not chopped up till after this process. The apparatus used for drying this material is a somewhat ambitious and a more substantial structure in connection with tea manufacture than anything I had seen in China or Formosa. It has as usual some peculiarities which though very simple, puzzled me at first, but as it is not likely to be used in India I need not describe it further than to indicate that wood is the fuel used and the heat goes direct to the material, the result being that a distinct and strong flavour of smoke is added to its other attributes. The broken tea, when dressed with rice flour, gains a burnt and somewhat bitter flavour, and probably the only reason why it is dried in the sun instead of over the dome of this heating chamber, is because it would fall through the perforations which admit of the heated air passing up through. But why the coarser material is not also dried in the sun I do not know, though strange to say, I did not notice a single instance of this being done. It looks as if the smoky flavour were intentionally provided, but in any case it is a feature we can afford to neglect. It would seem as if the trouble and expense involved in making such material palatable would counteract the benefit of its original cheapness, but the fact is, there are not sufficient tea plants, even within the extensive area from which the supply is drawn, to satisfy the demand with a finer material if it could be delivered at the price, and hence it is a case of having to make the most of a bad article. The glutinous rice adds a certain food value to the material as well as flavour.

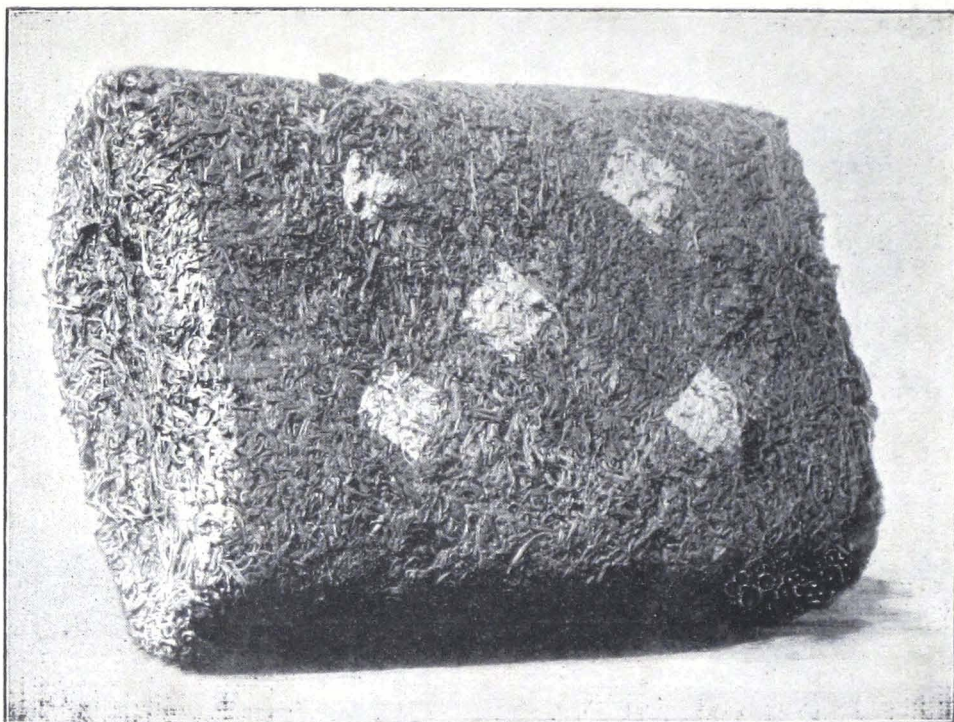
STEAMING.

The steaming apparatus has already been described, as well as its use in propagating heat in a mass of coarse material with the object of 'colouring' dry old leaf. A similar process of steaming is necessary

in the manufacture of all kinds of bricks. It may in fact be considered as the essential feature, and any variation in it is merely the slight difference in time required to heat the finer and coarser material sufficiently. Two bundles of leaf are put on the steamer, one above the other ; and the time required for the finer kinds is from 1 min 5 sec. to 1 min. 20 sec., and its temperature when taken out should be between 150° and 170°. When the lower bundle is ready it is taken out and the top one put in its place, with a fresh one on top but the time noted covers the whole operation. Under the steaming process the finer leaf becomes soft and glutinous, but does not get very damp. If by any chance any of it gets wet it is set aside. The chief danger is from 'foaming'. The pans or boilers are mere shells of an eighth of an inch thick only, and beautifully cast, and the fires are kept strong and brisk so that 'foaming' would be frequent and troublesome if not checked. To counteract this tendency half a catty, (about $\frac{3}{4}$ lb) of raw pig's fat, is put in the pan and this should be sufficient for a day. "It also improves the flavour of the tea" one of the workmen remarked, and if this is to be taken into account in addition to the burnt taste of the glutinous rice and the smoke from half green wood, it is little wonder that the infusion takes some "getting used to" of our part, and that we may find difficulty in catering for an acquired taste? The bricks are not dried in any way but become dry while cooling.

THE MOULDING FRAME.

The moulding frame may now be described. It consists of a strong wooden crate or frame, composed of four uprights about 3" x 3" on a solid wooden base. These are braced at top, middle and bottom by battens about 1½" x 3" on three sides, but only at top and bottom on the fourth side, to allow of the enclosed box to be opened, the top bar on this side being made to slip on and off for a similar reason. This frame is about 4 feet high over all, and is approximately of sufficient dimensions to hold four thick planks set on end which, when fitted together form an oblong box or tube about 3' 10" deep and 9¼" x 4¼" inches open at the top. The planks are somewhat loose in the frame, but three of them are jammed tight with wedges, and the fourth is made to open to the front, so as to allow the case of bricks to be taken out, but fits up tightly again when the top bar is slipped on. Inside this wooden case are placed four corner pieces, fitting each corner from top to bottom and grooved along the third side the other two sides being about 1½ inch broad. This forms



A Brick of Chin Tien, 1st quality.

an oval or flat cylindrical tube of the dimensions given above which, when packed, will contain four bricks measuring approximately $10\frac{1}{2}$ inch long and 9 inch and 4 inch in their long and short diameter, $19\frac{1}{2}$ inch in circumference and weighing a little over 5lb. each, with often a "packer's cake" at bottom and on top. These dimensions vary slightly in every Hong, and the worn state of the boards made precise measurements impossible. For convenience of working, the frame is set in a square excavation in the floor about 1 foot to 1 foot 3 inch deep so as to be a suitable height for the workmen to use the rammer, etc. Before the work is begun, however, this wooden mould is lined with a long ready made oval shaped casing, composed of bamboo matting. These are evidently woven over a block of oval section and are open at the top. They are easily fitted in as they contract and expand, either in length or circumference without becoming loose in texture. They are made of strips of split bamboo from $\frac{1}{2}$ inch to $\frac{3}{4}$ inch broad, in the usual way, and if they have become dry and stiff they are steamed a little and so made flexible to contract or expand as may be necessary, to fit the mould loosely at first, when the ramming does the rest, and the result is a neat tight package by very simple and inexpensive means, and one which exactly suits the conditions of the trade. These cases cost less than a $\frac{1}{2}d.$ each.

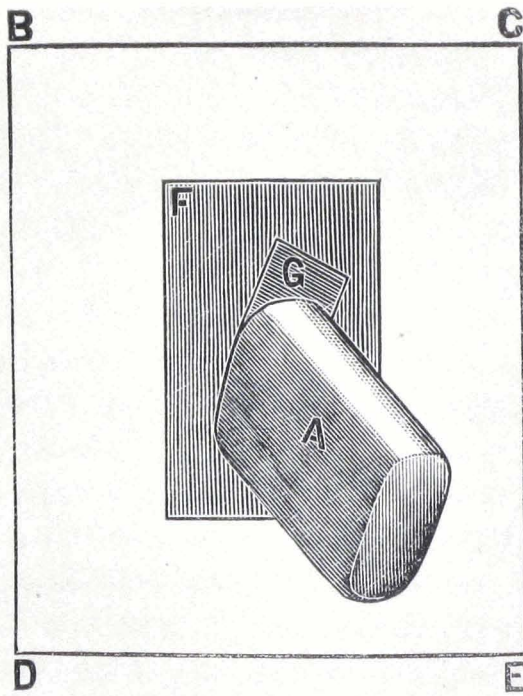
MANUFACTURE AT A HONG.

I may now give a detailed account of the process of making brick tea as seen during the routine of manufacture at one Hong. The material was second quality *Chin-u* thoroughly dry somewhat open leaf with very few stalks. In a large basket, at one side of the moulding frame, was a quantity of small broken leaf and dust which had been dressed with glutinous rice as described above. In another large basket near by, was a quantity of coarse twigs and stalks of varying lengths from 2 inch to 5 inch and some not much thinner than a lead pencil. This had also been treated with glutinous rice and was 'sticky' in a double sense. The bulk leaf was in a godown close by, and was forked out on the floor as required. A saucerful of the broken tea was put into the weighing scoop, which was then filled up with the bulk leaf and the total weight was $4\frac{1}{2}$ *Catties*. The two kinds were thoroughly mixed, and then emptied on to a square piece of tough fine open-texture cloth, which had a piece of string attached to each corner for lifting it into and out of the steamer. Meanwhile a mat packing case had been fitted into the mould, and a handful of the coarse twigs thrown into it to make a "Packer's cake." This was

spread evenly at the bottom, with a stick, which was kept handy for the purpose, and a thick block of wood fitting the case loosely was dropped down on it by a string, and the rammer or pounding bar was dropped on it somewhat lightly. This rammer is about 17lbs. in weight. The small block of wood having been withdrawn, a piece of bamboo matting, its edges turned in to fit the case, or a bracht or sheath of a young bamboo doubled up and stitched through three times in three places by strips of the same material to keep it flat, was inserted, fixed on the sharpened end of a stick, and pressed down level with another stick on the top of the "Packer's cake." A sprinkling of fine first quality leaf was next thrown in for appearance sake only! and then the bundle of leaf, which in the meantime had been steamed. This was pounded down by the cylindrical rammer but not very heavily; another piece of mat was inserted on top of it, and another fill of similar bulk material, and so till four bricks were made. On the top one, a sprinkling of fine leaf was scattered, then a piece of mat inserted, and above it a handful of twigs, to which the wooden block and rammer were applied as before lightly. The ragged ends of the casing were next doubled over and folded, and beat down at the sides to make them lie flat and a bamboo staple was driven in on the top to hold it firm. The package was taken away and stamped with the Hong mark and name of the grade of tea and piled with others to lie for at least three days for the bricks to set before being opened up and finally repacked. It is impossible to indicate the amount of ramming that is necessary; practice alone will teach that, but it must be done harder on the coarse quality than on the fine. There was no delay or waste of time in this work; it was being very smartly done. The men were engaged "by the job" and turned out 200 packages per day easily; and were restricted to that number. There were two men at the mould, one at the steamer, one weighing, one mixing and putting the leaf in the cloths, and one marking, besides one forking out the bulk leaf from the godowns, and seeing to the fire etc between times. Each kept the others busy, and they were all expert hands. The seven men were moulding 52 mds of tea per day. There is little else to be added under this heading. The packers' cakes are not often included with the coarser quality bricks which are themselves used as payment for transport work.

MARKING AND FINAL PACKING.

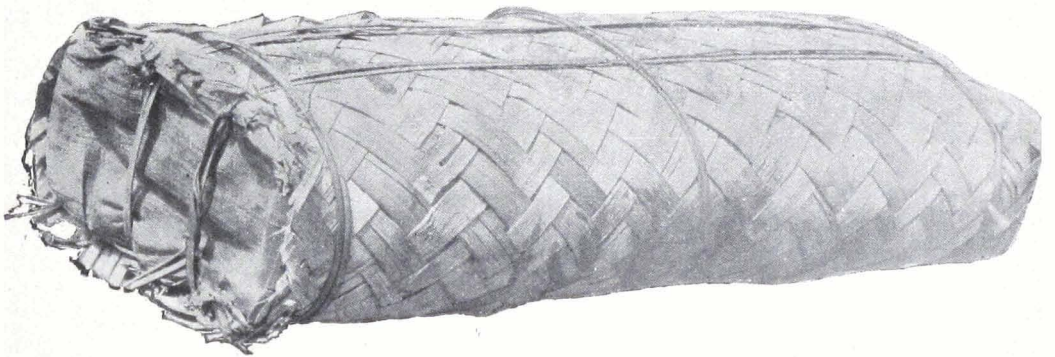
When the packages have lain at least three days to cool and harden, the bricks are taken out and trimmed and marked. The



A. brick. B. C. D. E Sheet of yellow paper.

F. Sheet of red paper. G Hong label.

E. is folded over end of brick. B. is folded over the whole brick. The spare paper D is folded together, and laid along the narrow edge, and similarly with C along the other edge.



Half package, 1', 10" low 1', 19" cir. divided for easier transport The severed end closed with bracht of Bamboo.

usual custom is to stamp each on one side with the Hong trade mark in red ink or paint, and to paste a small piece, or small pieces, square generally, of gold leaf in the centre of the other side but sometimes both marks are put on one side and sometimes white metal, tin foil, or pale brass is used especially for inferior qualities. For the first and second qualities the gold leaf is about 1" square and for the third a small square $\frac{1}{2}$ " and sometimes two of these while for the coarser quality four small specks forming the sides of a square are often seen. There is no uniformity however, but for the three main classes almost invariably, and the fourth generally, a piece or pieces of gold leaf distinguish Ya-chou teas probably in accordance with their names *Chi* meaning gold.

The bricks are then wrapped up in the following way. A piece of yellow paper, measuring 3' x 2', is folded up to measure 2' square. A piece of red paper, bright red on one side and only showing through on the other and measuring for reasons mentioned hereafter, about 1' 7" x 10" is placed on top of the yellow piece reddest side down and usually so that when the brick is laid on top it will cover only about half of it. Another red piece stamped with the trade mark of the Hong or some device representing a dragon or other animal or Buddha, with the name of the Hong and often Tibetan writing on some part of it is put on top of the larger red sheet in any position. On the top of all these the brick is laid diagonally as to the yellow wrapper with one end about 4" from one corner and the other end pointing towards the opposite corner which is then taken and folded over that end until it meets the opposite one at the other end. The spare paper at each edge of the brick is then *folded together and laid along each edge* or narrow side of the brick and a string is tied round the middle and generally along the narrow sides. This seems to be the invariable way of packing the bricks in the wrapper but I cannot see why it should be so except that things are always done differently here from how they would be done elsewhere. Anyhow I have not come across any other style of wrapping yet. The yellow wrapper is marked with the name of the tea and generally also with the Hong stamp. This paper is made at Chuug-chow half way between Ya-chou and the capital, which is also a centre of the tea trade and the measurements given are the standard ones for this make. It is said to be slightly waterproofed. The red paper is mere show, unless it is meant to indicate that the tea is as much a present as anything to the Tibetans, a piece of red paper on an article being the invariable accompaniment of any present. It is made in

sizes 2' 2" × 1' 7" and the sheet is cut up so as to make say 2 large and 2 smaller pieces about 9" × 4½" or 9½" × 5" on which the trade mark or label is stamped.

The bricks are now put back into a case with a 'packers' cake at the foot, which is sometimes wrapped in yellow paper, and a similar one on the top, and the loose ends of the mat are folded over and partly interwoven. Two thin strips of the skin of bamboo nearly ¼" broad are then bound round the packet lengthwise, about 2½" to 3" apart, each one going twice round, and similarly its circumference is girded in 4 places, the top and bottom binding being near each end.

SPECIAL MAKE OF BRICKS "MUNG CHA."

I have alluded to some small bricks of best quality and special 'make' being turned out. The material was fine even 'bulk' consisting of tips, open buds, and young leaf with opening bud, without coarser leaves. This is the quality commonly called Ya-dze Cha or bud tea and though some of it is sent to Tibet the quantity is so small that I decided to treat it as a special 'make' which in fact it is, though the name is sometimes given as a euphonism to the Chin Jien or ordinary first quality in the Tibet trade. It was of a pale green colour and only lightly rolled. A small quantity of this was put in the steamer in a coarse cloth and some bundles of No. 3 quality leaf which was being treated at the same time, as an aid to 'colouring' or fermentation placed above it. After between two and three minutes it was taken out and a measured quantity put in a small wooden box or frame 5" × 3¾" and 10" deep without a bottom. This frame was set on an ordinary long narrow sitting bench. At about quarter of its length from one end of this bench it was pierced with two holes into which a piece of rope was put, forming a loop through which a pole about 6' long had its thick end inserted. This was the lever. As each measured quantity of hot leaf was put in the frame a thin wooden plate with the Chinese characters for "Mungcha" engraved on it was placed over it and pressed down by hand each plate fitting the frame closely and having been first smeared on both sides with Rape seed oil. When the frame was full a block of wood with a broad base fitting the frame was put on top and the lever pressed down on it by hand. This made more space, and one or two more lots were put in and hand pressure applied to the lever again, and then a piece of rope fastened to the end of it was run round a wooden roller, which was fixed to the legs at the other end of the bench, and which was worked by inserting a couple of pegs in holes

in it and making it revolve. The pressure was applied as tight as the lever would bear, and kept so for some five minutes when it was taken off and the frame lifted and put on two pieces of wood with its edges resting on them, and pressure was again applied forcing the cakes out at the bottom, nine of them, firm and solid and of dark, brown colour with glossy surface each stamped with the character Mungcha and measuring about an inch thick and $5'' \times 3\frac{3}{4}''$ superficial. The cakes would be very hard when dry but are not dried artificially, being merely put aside to dry as they cool. They had a sweet tea smell. No juice exuded under the pressure. These bricks were made to give to some patron of the Hong as a present I think, but they are made of somewhat similar size and composition at several of the Hongs, and are sold to a limited extent. Similar bricks made from nice mild China jat of leaf and well matured or fermented, might be useful as complimentary samples to be given to the leading traders and lamas who come to Kalimpong or Darjeeling or sent as presents through the commercial agent at Gyantsi to the monasteries.

HANKOW BRICK TEA.

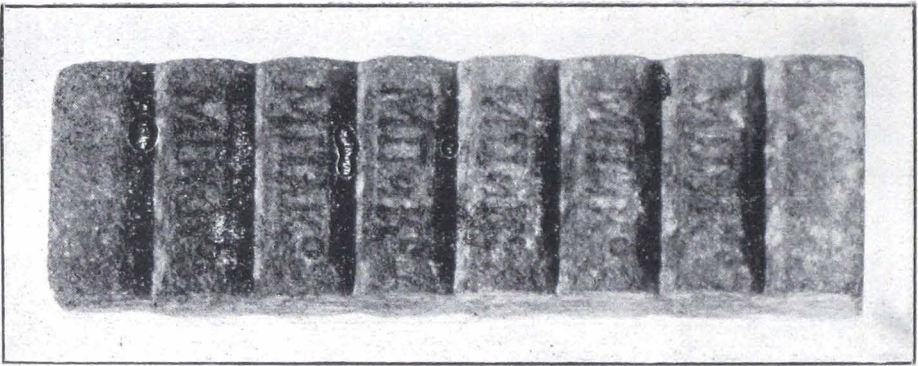
I took the opportunity, while passing through Hankow, where I had to stay 3 days for a steamer, to enquire into the brick tea business as carried on there. There are two large factories there, and one at Kinkiang engaged in this trade or business, all under Russian control. The two at Hankow turn out some 20,000 tons of brick tea in the season and all in execution of orders. This business may be considered as a non-speculative one, merely a factory turning out an article more or less similar in general character for all its patrons but varying in details, such as weight and quality, to some extent according to instructions from those who place orders. These orders run in three main lines *viz* :—

1. A thin oblong brick weighing about 2 lbs. 9 oz., made of medium quality tea as a rule for the Siberian market.
2. *Tablet Tea* small cake of about $\frac{1}{2}$ lb. dented so as to be easily broken into pieces made of the better quality tea for the Russian market.
3. *Green leaf* bricks of whole leaf for the Mongolian market. This is the cheapest kind and the material is almost similar to what is used for the two better qualities for the Tibet market at Ya-chou.

The chief feature in this manufacture is, that the tea used for the first two kinds is dust either bought as such, or, if bought as assorted teas, ground down fine before being used. This dust however is not

like what is turned out in India, but is a comparatively clean fine broken tea passed through a No. 14 sieve or thereabouts. A fair amount of Ceylon dust is used for giving extra strength. In some cases this dust is broken finer, ground down by a disintegrator made by Carter, a London firm, into a fine grey powder for some special orders. The name of the maker of the machine may save me giving a description of it as particulars can easily be got. An ordinary sifter is used to separate the grades, and the coarser kinds are again put through the disintegrator if necessary. It comes out quite warm to the touch when put through the disintegrator. The further treatment of this kind of tea consists in steaming for a few minutes, about two or three, after having been weighed, and it is then pressed. The pressure exerted is about 25 tons on the surface of the brick, which on the average measures $9\frac{1}{2}$ inches by $7\frac{1}{4}$ inches by $\frac{7}{8}$ inches and weighs about 2 lbs. 9 oz. The power is steam and the pressure about 60 lbs. Each brick is made in a separate box or frame, which is screwed down to retain the pressure, and stowed away for two days at least in a warm room till it hardens and sets. Each brick is stamped as desired by the firm which places the order this being effected by an embossed plate placed over it when being pressed. The steaming is done over a series of circular holes in the top of a metal tank encased in wood, and the heating medium is a series of about $1\frac{1}{2}$ " pipes laid throughout it and perforated underneath so as to eject steam into the surrounding water which covers them to a depth of about 9 inches and they are about 6 inches from the bottom. To protect the tea from getting wet by saturated steam or spurting water, a fine sieve is put under the circular opening and the tea is put over this in a cloth of fine open texture. Water on the dust spoils it. When the bricks have been in the moulds for two days they are taken out and stacked about 6 feet high so as to admit air through between each in an artificially heated room for two or three weeks and then packed in bamboo baskets and tied with bamboo rope. These bricks are very hard and polished. The moulds are very strong, iron bound and of hard wood which does not emit any flavour when heated and wet.

Tablet tea is made of very fine quality tea as a rule and it is ground down very fine but it is not steamed. The pressure exerted is hydraulic and is about $2\frac{1}{2}$ tons to the small tablet, which measures 5 inches by $1\frac{1}{2}$ inches by $\frac{3}{4}$ inches and weighs $\frac{1}{2}$ lb. The machine used for this purpose is a very fine one and is made by Predmore of London. Three men work on the round metal polished table simultaneously filling the cases. I have a sample of this kind of tea also and further



Tablet of tea made at Hankow.

description is unnecessary, as similar tablets have been manufactured in India recently.

Green tea bricks are made similar to the first kind, but the leaf being coarse more steaming is required. There were arrangements for drying dust on tables under which were pipes carrying waste steam, a very convenient and economical arrangement.

GENERAL SUMMARY OF MANUFACTURING PROCESSES.

I now propose to enumerate the chief characteristics in the production and manipulation of tea for this trade, noting briefly the salient features in each process for easy reference.

1. *The Bushes* planted irregularly and far apart in the fields where the usual and necessary food crops are grown, sometimes in rows along the boundaries of the plots and generally on the higher slopes of the out-of-the-way valleys where food crops are precarious.

2. *General treatment of Bushes.*—Either allowed to grow up naturally, and only kept in check by plucking, or cut across at about 18 inches when the crop is *ready to be reaped* or, as seems to be more generally the case, when the people have leisure from their other crops to attend to this one, which seems to be treated as a subsidiary one.

3. *Plucking.*—When the bushes are not cut down plucking is done as usual by hand. A good growth is allowed and then everything is stripped off roughly leaving long bare stems. This is done three or four times a year. When the knife process is adopted, two or three crops are reaped the first one in middle to end of June. Occasionally *finer* plucking is adopted early in the season, but not *close* plucking, and the leaf made up into tippy tea for local consumption, and some of it finds its way through small dealers as middle men to the Hongs for Tibet 1st quality. This does not interfere with the main crop much, which is allowed to grow to six to nine leaves or more and plucked or cut back into the red wood as a rule.

4. *Panning.* This is generally, if not invariably, carried out, but probably some of the old leaf and twigs of the autumn crop are not treated. The leaf turns olive green under the process, and becomes tough and flaccid and retains these characteristics for some time. It does not easily ferment and even when heaped up and fermented does not readily become sour. Panning is always done on the estates, and is carried out as soon as convenient after plucking and without any intervening manipulation.

5. After the leaf is panned it is generally rolled, but it is by no means an invariable custom. The rolled leaf brings a slightly higher price as the sorting is easier afterwards. Much of the material is however too coarse to be rolled.

6. *Marketing the material.*—The best leaf, *i.e.*, the younger green shoots is generally brought to the various Honggs in huge bags while the coarser stalks and twigs are tied round in bundles. Sometimes these latter are quite bare green stalks and grey barked or brown twigs, the leaves having been stripped off and sold to other Honggs. The finer quality, mixed leaves and stalks, is generally soft and damp and is preferred not very dry although it is always partially dried after rolling or panning by being put in the sun.

7. After arrival at the Honggs the finer material is subjected to *Fermentation*. It is heaped up in compartments generally in open verandahs to the depth of three to five feet and kept for an indefinite time, but for about five days if the weather is favourable *i.e.*, if it is sunny at the end of that time so that it may be spread out and dried. I saw some that had been so stored for ten days and it was white-mouldy in spots but not sour. It was said to have got wet in parts. This fermentation is to colour the leaf and give a darker infusion. If the material is old or too dry some of it is occasionally steamed to a temperature of 150 or 170 and mixed up with other dry material so as to generate heat in the mass. Average temperature during the fermenting process 100 to 112.

8. *Drying.*—When fermented it is spread out on flagged courts and thoroughly dried in the sun.

9. *The dry leaf is stored* away in godowns piled up to the roof and may be there for months or even a year “and improves.”

10. *Sorting.*—When brick moulding begins (say about August) the finer material is picked over, the stalks taken out and the leaves sorted into two classes according to the twist they have taken and the colour; the opener and browner going along with chopped up stalks to make No. 3, Chin Tsang quality, and the rest making No. 2 Chin-u quality. Some of the finest may be kept for making No. 1, Chin Jien, but the material for this is partly purchased separately. The coarsest stuff has not been fermented and is chopped up and mixed with old red leaves and rubbish for 4th quality and for packers' cakes.

11. *Glutinous Rice Process.*—Glutinous rice is ground into a fine flour after being soaked in water. The paste boiled thoroughly,

sometimes with fermented leaves added ; generally burnt and seemingly for choice, to give extra flavour and colour, it is dark brown-semi-liquid. It is applied in two ways, mixed with broken tea separated during the handling of the leaf and kept aside for the purpose. This mixture is dried in the sun and a saucerful mixed with the material for each brick of the 2nd quality chiefly (the 1st quality not requiring it as a rule) and the 3rd being too coarse to be affected sufficiently. This latter quality generally, and the 4th always are dressed with it direct till fairly covered or coated, and then dried over the conical stone built stove, when a good flavour of smoke is absorbed as an additional characteristic, whether advantageous or otherwise does not seem to matter.

12. *Weighing*.—Weights of bricks vary for different qualities and at different Hongs and centres of manufacture from $4\frac{3}{4}$ lbs. to $5\frac{1}{2}$ lbs. The average is between 5 and $5\frac{1}{4}$ lbs. of dry leaf, one large Hong turns out $6\frac{1}{4}$ lb. bricks of the coarser kinds. If any broken tea and glutinous rice mixture is necessary, it is mixed in before ; and after weightment the material is put on a square piece of open texture cloth with strings attached to each corner to lift the bundle into and out of the steamer.

13. *Steaming*.—Material steamed over an inclosed pan or boiler for 1 to $1\frac{1}{2}$ minutes and heated up 140° - 170° . Any unnecessary wetting being avoided by putting half a catty of raw pigs fat in the boiler per day as water on the leaf spoils the brick.

14. *Moulding*.—All bricks are similar in shape, flat cylindrical, but not exactly in dimensions. The length is about $10''$ to $10\frac{1}{2}''$; the long diameter $7\frac{1}{4}''$ to $8\frac{1}{2}''$, and the short diameter $3\frac{1}{2}''$ to $4''$ while the circumference is about $19\frac{1}{2}''$. The moulding box is $\frac{1}{4}''$ to $\frac{1}{2}''$ larger each way and is about 4' deep inside and consists of 4 thick boards enclosed in a frame which can be opened and closed at one side. Four bricks are made at one time with a packers cake at bottom and top of the two best qualities. Experience alone will teach the requisite amount of ramming necessary. Four grooved corner-pieces are used to give the rounded shape to the mould and a flat cylindrical Bamboo mat case is lined into it and a small piece of bamboo mat is put between each brick,

15. *The drying and setting*.—Three days at least are allowed for the brick to dry and set in the original cases. They dry as they cool down.

16. *Marking*.—After being trimmed each brick is stamped on one side with the Hong mark in red ink or paint, and a piece or

pieces of gold leaf 1" square for the best kinds is pasted in the middle of the other side with smaller squares, one or more for the inferior kinds.

17. *Packing*.—Each brick is wrapped in yellow paper inside of which is inclosed a sheet of red paper (a mere formality) and a red label stamped with Hong trade mark setting forth name of Hong with Chinese and Tibetan writing and illustrated with some fantastic figure. The yellow wrapper is marked on the outside with the name of the tea, and tied round with string and the bricks put back into their cases.

18. The ends of the cases are closed, the loose ends of the bamboo strips being doubled over and woven through each other, and the case is tied round lengthwise twice with strips of outer skin of bamboo nearly $\frac{1}{4}$ " broad and similarly girded 4 times round its circumference. Each case contains four bricks

19. The marks on the outer cases are Hong stamp and name of tea on one or both sides.

PRESENT CONDITIONS BEARING ON A TEA TRADE WITH TIBET AND PROSPECTS OF INCREASING IT.

Under the surprisingly changed conditions that have occurred in our relations with Tibet since this Report was in the hands of the Printer, the remarks I would have made a couple of months ago would now be obsolete. Yet as late as 4th November 1905, in reply to a letter, the Revd. M. McKenzie of Kalimpong wrote as follows, and I may add that he purposely delayed writing till he had interviewed the Tibetan traders who had recently arrived. "It seems that at present there is no prospect of pushing the sale of Indian made brick-tea beyond Pharijong. The reason for this is, that the Chinese are all powerful *still* beyond that point, and so are in a position to frustrate any attempt made to oust their tea trade. This reduces your field of operations to the Chumbi Valley, Bhutan, and parts of Sikkim. The total amount these places could take would approximately be about 400 mds. per annum." It would seem therefore, that the hitherto immovable obstacle, the opposition of the Chinese is still to be reckoned with, and the break down of the treaty negotiations with what the British Government recognized as the Suzerain Power, may delay any advance in that particular trade for some time. The other opposition, *viz.*, that of the Lamas, who are supposed to control the trade for their own benefit would soon vanish, as they could participate in the profits of the trade from this side just as easily. The visit of the Tasha Lama to India can scarcely fail to remove most of the

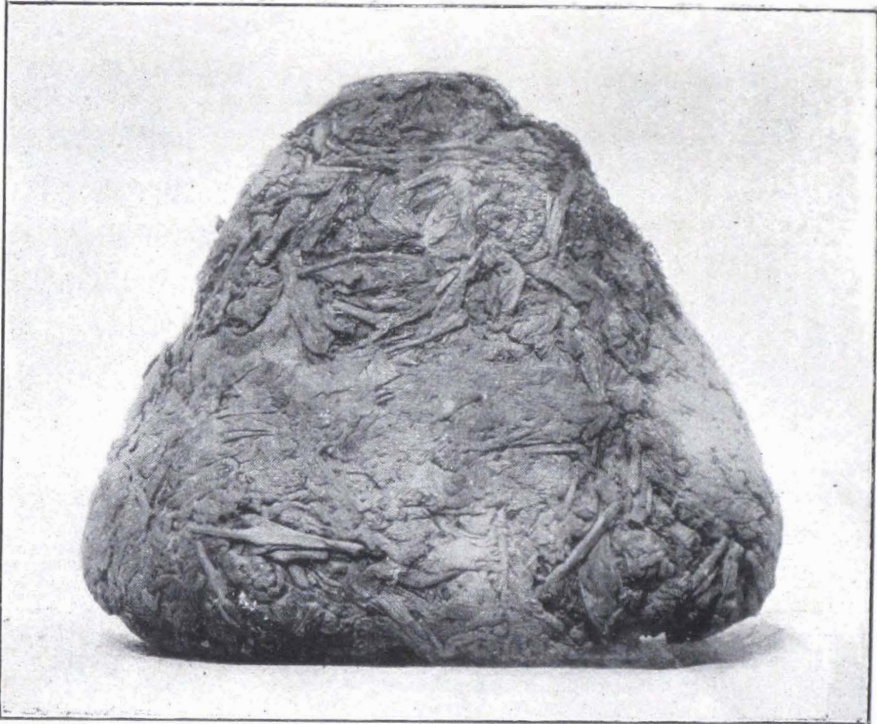
prejudices and other sentimental barriers as far as Tibet and the Tibetans are concerned, and the same beneficial result may accrue from the experiences of the Rajah of Sikkim and the Tongla Penlop of Bhutan during their trip ; and as these countries lie along the borders of both India and Tibet, trade with them would eventually extend to Tibet itself. The shortest route between the borders of British territory and Tibet, would seem to be up the Brahmaputra Valley, and the outlet of that great river would seem to point to a natural inlet to the country. It is strange, that an insignificant tribe of savages should still stand in the way of that part of the world being mapped out in detail though it is so near civilization and is traversed by such a splendid river. The residents of Bhutan and Sikkim would make the best intermediaries in a trade between India and Tibet, and as at first that trade, on the Tibet side at least, would take the form of barter, it would be a great advantage to get it begun through them.

At present the conditions of transport and barter must rule the trade and restrict it even if all other barriers are removed, but it is impossible to gauge these exactly yet. It is evident, however, that if tea can be introduced now at a price that may merely cover the cost, there is every probability in the near future of being able to dispose of a considerable quantity at a fair profit. Even now the wool trade is evidence of what can be done in spite of the difficulties of transport and it is a comparatively bulky article. It would probably be very great advantage in the originating and fostering of the Tea Trade, if a special agent were engaged and maintained at Pharigong or Gyantse by the Tea Cess Committee. Trade samples could be sent to him for distribution, and a small stock could be placed with him for disposal, at rates sufficient to cover expenses and allow a margin of profit with the almost certain prospect of such rates showing an increased profit as communications are improved. As regards trade with the frontier tribes, Mr. Skinner, Chairman of the Assam Branch of the Indian Tea Association, has already been taking steps to find out how best to encourage and foster it, and there is every prospect of a largely increased exchange of products across the border, among which tea is likely to take a prominent place. Besides such external obstacles to the trade as are above alluded to (the most potent of which being undoubtedly the persistent and apparently effective resistance of the Chinese) the peculiar tastes and prejudices of the Tibetans must be taken into consideration.

Attention to some of the details of the constituents and process of manufacture of the bricks will, as hinted at in the previous pages counteract or obviate these, but as an instance of what apparently

trivial points are looked on with disfavour, I quote again from Mr. McKenzie's letter. Referring to the fact that the previous attempt at introducing local made bricks was a failure he says, "on enquiry as to the cause of this failure, I learned the following facts:—(a) The flavour was not the same as the Chinese article. (b) The paper in which it was made up (wrapped) was unsuitable (I enclose samples of the proper kind to use for the purpose). (c) The bricks were too light and had not been pressed hard enough. They weighed only about 1 seer each, whereas the Chinese brick weighs $2\frac{1}{2}$ seers. (d) For wholesale purposes they would require to be made up into bundles of 12 bricks and sewn up in cow hide like the Chinese tea so as to facilitate transport." Mr. McKenzie adds that he will be glad to distribute sample bricks among the traders who come to Kalimpong in the cold weather. Mr. J. L. Lister, of Pashok, who has been experimenting in this line for some years, writes:—"It is impossible to say how much coarse brick-tea is used in this district as the Bhotas make a large quantity from prunings for local use." Among the bricks and samples of tea received by the Secretary of the Tea Cess Committee recently from the Foreign Office, was a cone-shaped ball, an illustration of which is given. This ball is evidently of local manufacture and hand made. It would be difficult to arrange such balls in a packet for long transport, and I neither saw nor heard of any such being made in Ya-Chou district. It was got at Shigatse weighs $\frac{1}{2}$ lb. and cost Re. 1. It is just possible that it may have been made by hand from bricks of good quality, that had got broken in transit, but as no particulars are given, its origin must be surmised. With reference to the Tibetans' supposed objection to our brick-tea, Mr. Lister writes:—"So far as I can ascertain the only objection to our brick-tea is due to its being fresh and of inferior leaf. I think you will find the Tibetans will take readily to ordinary black tea if they can get it at a moderate price. Unfortunately large quantities of factory sweepings are being disposed of locally instead of being used as manure. The demand for black tea will increase as it is less expensive than brick-tea, in districts where milk and butter are scarce."

The main fact in this is, that there is a certain demand for tea among the border tribes, and, that if cheap enough the demand is likely to increase, but that the sale of inferior rubbish may create a prejudice against our tea of a better class. On the western side of Tibet a better class of tea is consumed than on the eastern side, and there is little doubt but that if a fair standard of our tea can be put on the market in proper condition and at a moderate price, it will make its own way



A hand made brick from Shigatsi, $3\frac{1}{2}$ " high, $1' 1\frac{1}{2}$ " cir. $\frac{1}{2}$ lb weight, Price Rs. 1

That this can be done seems probable, but it must not be concluded hastily than any coarse leaf can be dumped down on the border and be snapped up at Re. 1 per lb. I have examined two lots of bricks from Lhasa and Shigatse and compared them with those I got in Ya-Chou. The condition they have kept through the long journey (and some of them have been lying in an open case all through the rains in the Chamber of Commerce) is wonderful, even the true China tea aroma not being dissipated, and the conclusion forced on one is, that the method of treatment adopted in its manufacture implies more than we would be inclined to give it credit for.

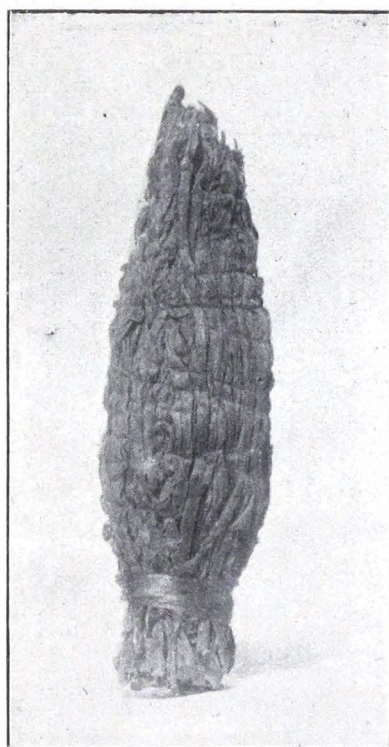
The samples are similar to what I have described as standard ones and the prices of one lot are Rs. 5, 4 and 3 for the 1st, 2nd and 3rd qualities respectively per brick of a little over 5 lbs. in weight. The prices of the first lot from Lhasa were considerably higher.

It is impossible to say at what price similar qualities of our tea could be delivered at Pharijong for until the experiment has been tried, but at first sight it seems absurd to think that, with such a difference in distance in our favour from the source of production to the terminal market, there should not be a fair margin of profit even if our product should cost, as it is almost sure to do, a penny or even two pence per lb. more to make than the Chinese article.

Under the circumstances, however, it would seem advisable at first to content ourselves with treating the business as merely a means of disposing of a by-product evolved during the routine of garden work or at such times as labour may be available and when any income may be considered a gain. This would imply of course that the manufacture would be confined to the coarser qualities of bricks like Chin Tsang to begin with, but it would be very advisable to have some of the better class both of the standard size and of the small special 'make' produced under the auspices and with the financial support of the Tea Cess Committee for presentation to some of those in authority in Tibet and to the leading merchants who visit Kalimpong. If all external or physical obstacles are removed, there is little to fear from the prejudices of the people. They will take the best article they can get at the price, once they are convinced that it is the best, but they may hesitate about paying for the experiment. We on our part must offer them a *suitable* article, and to do so we must be prepared to take as much care in the manufacture of it on the lines indicated as would be given to what we consider is a very superior grade. Small bulk and good keeping qualities are essential features of

the Tibet Tea trade, and it must not be taken for granted, that the different climate may account for the latter attributes in the China article being so persistent compared with our black tea which has advantages in respect of the packing cases. The process is simple enough, but many of the details are such as we are inclined to neglect if not despise. It would be unwise to use high class *jat* and leaf of a strong pungent character, and whatever is made would be none the worse for being stored in the godown for some months. No tea is fit for consumption under six months if one has any respect for one's internal economy, and if 'made' by the Tibet method, our raw fresh Assam *jat* would act as an irritant poison and disturb digestive organs. This I have always heard mentioned as one of the greatest objections on the part of the Tibetans to Indian tea. The China tea seldom reaches the consumers in Tibet under nine months, and most of it can't be used before it is one year to eighteen months old, or even two years.

One other point must be impressed on any one intending to cater for this market, and that is, the adoption of and after adherence to a particular stamp and mark for his produce. A number of sheets of the special paper used for wrapping are available, and it can possibly be produced in any quantity in this country. It is slightly water-proofed and that must be an advantage over ordinary paper.



Fancy tea.

A P P E N D I X.



OTHER TYPES OF TEA MET WITH.

芽
子
茶

I have already alluded to Ya-dze or Bud tea as being made into bricks but it is also sold loose for consumption locally by the wealthy classes. There are several grades of this tippy tea, and they fetch good prices in the local markets. The better samples are composed of tips only, of a grey colour the down having been carefully preserved during manufacture. This tea is panned over a slow fire with a sprinkling of water over it during the process. It is very lightly rolled and fired over a slow fire with a sheet of paper under it on a 'chahnie.' It fetches fancy prices from 1/6 up to 2/-but some choice samples realise much more.

The finest sample of tea, representing the acme of manipulation, that I saw was given to me by Mr. Reynell, Messrs Jardine Matheson & Co's representative at Hankow. It is made up in very neat bundle, measuring 2 inch in length and is composed of top shoots carefully prepared and tied together round the stems by a brilliantly coloured silk thread. This tea is not to be bought in the market but is generally given as presents. A few of these fancy bundles are occasionally put on the top of a small box of particularly good tea, and are not sold or even given as presents alone to any extent.

The tea that is most in use in western China among the middle classes and the kind that is very generally given as presents is a partially fermented tea made up in circular cakes 8" in diameter, 1" thick, with a circular dent in the centre on one side $\frac{1}{2}$ " deep and $2\frac{3}{4}$ " in diameter. Each cake weighs about $\frac{1}{2}$ lb and 7 cakes comprise an original package. It is a medium coarse quality, whole leaf tea, of a brownish colour with some greenish yellow tinged leaves and some stalks. This custom of giving presents of tea is a very common one in China and I have no doubt but that the convenience of handling these cakes combined with the better keeping qualities of tea so treated makes the demand for them greater.

Besides the kinds of tea mentioned, and many other grades of the pure article, there are two or three substitutes in fairly common use where tea is not grown and where there is uncultivated land or forest. Two of these substitutes I got through the kindness of Mr.

Vale of the China Inland Mission at Chengtu. They were got in the Bazaar at Kuan Hsien north of Chengtu and are in fairly common use in that part of Sechuan. One of the kinds is composed of leaves of the *Ma-sang* a kind of mulberry and the other of these of *tsi-li-tsi* a kind of bramble. The common name of this class of tea is *Ku-ting-cha* or bitter tea. The leaves are steamed and mixed with Rape seed oil and pressed into flat cakes about $1\frac{1}{2}$ " thick. It is of a dark brown colour but I have not had the curiosity to taste it.

At several of the Temples on O-mei-shan I saw and procured samples of what is called a "sweet tea". This is also a substitute for tea and not a variety of it. The plant from which it is made is said to grow on stony river beds and the leaves look like those of an alder. The leaves are panned and rolled loosely generally taking the form of round loose soft pellets. It has not a disagreeable taste and is said to be good for the bowels.

There is no more common remark made by writers on Tibet tea than about its adulteration, and it is a common joke throughout the whole district, whenever tea for that trade is mentioned, but in no instance could I detect any adulteration being carried on, nor could I see any signs of the trees having been plucked from which the leaves are said to be taken. I did notice at one place a heap of miscellaneous forest leaves in suspicious proximity to the shed where brick making is carried on and I secured a pocketful. The proprietor afterwards confessed that when tea leaves ran short these were mixed up with them; and I heard of another case where one man could not get tea so he used the leaves of the '*Ching-Mo*' instead, and the following year was surprised to find that enquiries were being made for more of a similar article. This he suppld and retired on a fortune. The '*Ching-mo*' is a common tree very easily grown on any kind of soil, and is generally planted on waste stony land on river beds. The leaves are like those of the alder. The tree is fast growing and lanky, but when young it branches out when the main stem is kept short and flushes very nicely for plucking. The leaves are not unpleasant to taste and are gummy when pressed which is another attribute in their favour. When there is a brisk demand at the end of the season I have no doubt that the short supply of tea is eked out with the leaves of this and other trees. The only part of the enquiry I entrusted to my "Boy" was in connection with this subject when I was about to visit a Hong which was said to be notorious for adulterating. Whether out of pure simplicity or with malice aforethought I do not know, but he confidentially at the first chance, asked the proprietor to show him

the false tea. I noticed something was wrong directly, and on inquiry as to what he had been saying, he informed me. Needless to say we did not get much more information there. My object in inquiring into this matter was to learn if there was any extraneous flavour or principle imparted to the tea by such means which might account for the apparent necessity for having a daily dole of it by the Tibetans such as the tannin in it to supply which one writer asserts that oak leaves are used. I could find nothing in support of such a theory. The district cannot supply the necessary quantity when trade is brisk and when the supply runs short recourse is had to the most amenable substitute viz the leaves of ' *Ching-mo* ' chiefly. The larger and better class Hongs do not adulterate in any way. Whatever may be the peculiarities of the trade this point in favour of their method of manipulating the material must not be overlooked viz., the absence of any artificial dissipation of the inherent attributes of the leaf by first expressing the juice by heavy rolling which also breaks up the cells of the leaf and apparently has a marked effect on the keeping qualities of the tea though advantageous otherwise and then dissipating some of the constituents by a forced draught of hot fresh air. In my letters from Formosa, I pointed out the contrast between our methods and those in vogue there as bearing on this subject, and drew attention to the difference in quality produced by different drying machines from the same raw material. This has been counteracted by one machine to some extent, and one planter has adapted the principle in a crude way to another machine with benefit apparently as regards retention of 'quality,' and certainly with great advantage in the economy of fuel. The object aimed at being to use the same hot air continuously but to deprive it of its moisture after each passage through the machine.