

## THE MOUNTAINS ABOUT TATSIENTLU

IN the charming map which illustrates the 'Trail of the Giant Panda' the Messrs. Roosevelt have shown south-west of Tatsienlu a Mount Koonka with the attractive height of 30,000? We naturally ask whether there is the more virtue in the 30 or the mark of interrogation, for the accompanying photograph shows a hillside with little evidence of permanent snow, and the text is not quite so bold as the map; the authors say:

Early one morning we got our first glimpse of mysterious Mount Koonka, rising high in white majesty. At Yungning, Rock had told us of his ambition to put in three or four months studying its flora, and once more we regretted the lack of time that made it impossible for us to make a reconnaissance of its fauna. The altitude of this mighty peak is unknown, but there are those who claim that it rises more than thirty thousand feet and is the highest in the world. A geologist from Chengtu made a special expedition to establish Koonka's height, but after he had taken his observations he refused for some entirely unaccountable reason to divulge them. When any one questioned him he merely imitated the beaver and "looked unaccountably shy" (*Trailing the Giant Panda* (1929), p. 129).

As we reflected on this matter we received a visit from Mr. Herbert Stevens, who had been a member of the Kelley-Roosevelts Expedition, but had been detached on a separate collecting trip, and passed through Tatsienlu some days behind them. He had been favoured with exceptionally clear weather, and brought sketches of several remarkable snow-peaks seen from the passes in the neighbourhood: peaks evidently rising several thousand feet above their neighbours, and clothed for at least that height with permanent snow and ice. But Mr. Stevens had made no surveys, and could throw no light on the question of their absolute height.

Remembering then that Mr. Kingdon Ward had once worked around Tatsienlu, we asked his opinion on the probability that there might be very high peaks in that country, and have his permission to print the following reply:

I have now been a little into the question of the snow mountains round Tatsienlu. One must admit at the outset that as there are no certain facts to go on, we have to argue from analogy, and draw conclusions from circumstantial evidence; but I think you will agree that there is not much hope of finding a second Mount Everest here. The line of argument I take is this. Several travellers have commented on the great height of the peaks round Tatsienlu; but one must remember that it is the suddenness of the appearance of great snow ranges that is the most remarkable feature. One is immediately prone to exaggerate their height (coming from the Szechwan plain). Few if any peaks south of Tatsienlu are fixed. Davies shows one or two, height under 17,500 feet. Legendre shows one or two, height 6000 metres. Not much help there.

Now the snow line may be taken as 17,000 feet, possibly 17,500. This agrees with my experience round Muli; Wilson says definitely, "the snow line cannot be less than 17,500 feet"; on the other hand Johnstone says he crossed many passes from 12,000 to 17,500 feet high, "some of them above the line of perpetual snow." Put it at 17,500. If the average height of the peaks were 20,000 feet, the view of snow peaks from any vantage point would be stupendous; and although Gill is almost lyrical about the view, he is not stunned into any wild calculation. He concentrates chiefly on the view to the north of Tatsienlu, and says quite soberly

that the peak called Ja-ra (Ja-ri?) rises 4000-5000 feet above its neighbours; he saw it from 30 miles distant, at a height of 14,454 feet himself. Now any mountaineer knows that a peak 5000 feet above its neighbours is, at the right distance and the right angle, a pretty conspicuous object. Namcha Barwa rises perhaps 4000 feet above the surrounding peaks, as seen from the north; and it is like a church steeple surrounded by cottage roofs. Ka-kar-po (Kagurpu) is perhaps 2000 feet higher than its neighbours, and Gregory guessed its height at 24,000 feet, though I believe I hazarded 22,000 feet. But suppose we do allow 20,000 feet for the Tatsienlu peaks, which is very generous, then a peak 25,000 feet high would be a stupendous sight. There would be over 7000 feet of snow, and the glaciers would descend to 15,000-16,000 feet, if not much lower; at least they might reasonably be expected to descend 2000 feet below the snow line.

Therefore it seems to me quite impossible that there can be anything of the order of Mount Everest near Tatsienlu. Had there been, every traveller must have raved about it. Pratt, who spent some time in the neighbourhood, says little about the snows. Cooper says nothing. Wilson says little. Davies says little, and so on. Hence I maintain that it is extremely unlikely Minya Gongka exceeds 25,000 feet at the outside. I hope I may be wrong.

Meanwhile we had been visited by another traveller from the same country, Mr. G. S. Stavely Gordon, who discussed the problem and afterwards wrote thus:

In October last year I travelled down the caravan route from Yachow to Ningyuan via Ch'ing Ch'i, Fulin, Yeuhsi and Luku. Just north of Ch'ing Ch'i we crossed the Ta Hsiang Ling (Great Elephant Pass) at an elevation of approximately 10,000 ft. (Aneroid height as Boiling Point instrument failed). The weather on top of the pass was somewhat overcast and visibility not of the best. The general elevation of the mountains south of Tachienlu and west of my route appeared to be about 5000 feet higher than the Ta Hsiang Ling—*i.e.* about 15,000 to 16,000 feet, and these mountains were visible all over an arc extending from about N.W. to S.W. One particular mountain S.W. of the pass seemed to rise isolated from out of the general mass of 15,000-ft. mountains and to stand up several (say 4000 or 5000 ft.) thousand feet above them, but the top was not visible. I reckon this peak to have been about where Tzumei is indicated on the Survey of India 1/Million sheet (Kiatingfu), *i.e.* about 45 to 50 miles S.W. of the Ta Hsiang Ling. An attempt to get another sight of this peak from the Hsiao Hsiang Ling (Small Elephant Pass) situated about half-way between Yeuhsi and Luku (elevation about 9000 feet) failed owing to the pass being covered with mist and sleet. Photographs taken from the Ta Hsiang Ling do not show any distant snow mountains, owing to the poorness of the visibility. The above is all I can give as first-hand information. I was informed both by Mr. L. A. Lovegren of the American Baptist Mission at Kiating (and a keen geographer and traveller) and by Dr. R. L. Crook of the American Baptist Mission at Yachow that during the summer of 1928 some American members of the staff of Cheng Tu University spent a considerable time (say four to six weeks) in triangulating and getting sights of Tzumei Shan (which is considered to be the highest mountain in the district), and that the result seemed to show that Tzumei was certainly over 28,000 feet—probably over 29,000 feet. The results of this survey were not however being published for the present, as it was intended to make further observations; and for one thing the final elevation depended a good deal on the true elevation of Cheng Tu University standard barometer, to which the triangulation of Tzumei had been tied.

Here we had fuller reference to what was probably the same attempt at survey, for it had the same feature that the result was not published, but it referred to a different mountain. Examination of the not very numerous maps of the region then revealed the curious fact that our knowledge seemed to have been going backwards during the last fifty years. The earlier maps showed names and heights that had been gradually dropped, and this demanded examination. We have therefore put together the following notes, as bearing upon a problem that demands solution:

In Volume II of 'The River of Golden Sand' Captain Gill describes two peaks Ja-ra and Ruh-ching, and on the accompanying route-map, opposite p. 117, marks Kung-Ka, which is not in the index and which we do not find in the text. He says:

[Starting south from Tatsienlu in August 1877] . . . right in front a fine snow-field on Mount Ru-ching glittered in the bright sun; and to the south-east another mountain every now and then showed in patches of snow, as the clouds came and went from its lofty summit (*River of Golden Sand* (1880), vol. ii, p. 119).

[Turning west to the Cheh-toh-shan pass (Jeddo of Cooper)] The morning was beautifully fine: there was a delicious feeling in the air, and looking back down the valley, there was a glorious view of a snowy mountain, whose edges were just lit up by the rising sun, and whose glittering pinnacles of ice and snow shone like points of brilliant light (p. 121).

[Continuing westward on the road to Batang, after a descent:]

The first crest we reached is called in Tibetan Ka-ji-La, or in Chinese Ko-Erh-Shi-Shan, 14,454 feet above the sea. The view when we reached the summit was superb. Looking back in the direction from which we had come, range after range of mountains lay at our feet, culminating at last in the most magnificent snowy heights, one of which raised its head about 4000 or 5000 feet above its neighbours. It was a magnificent peak, and at this distance looked almost perpendicular. Its name in Tibetan is Ja-ra (King of Mountains), and I never saw one that better deserved the name. Never before had I seen such a magnificent range of snowy mountains as here lay stretched before me, and it was with difficulty I could tear myself away from the sight (p. 133).

Closely following Gill came the expedition of Count Szechenyi in 1877-80. His account, published in three volumes in Hungarian between the years 1890-97, was translated into German, illustrated by an atlas of fifteen sheets of routes and topographical sketches (3 vols., Vienna, 1893-97), and seems to be the only systematic account of the country we possess. The surveys were made by Lieutenant Kreitner of the Austrian Army, who gives on p. 60 the following account of his methods, as translated by Mr. G. R. Crone:

A precise triangulation during our journey in Eastern Asia was obviously impossible. Hence I determined the position of conspicuous peaks and summits of mountains and other prominent objects by compass bearings, and, as far as practicable, from several, or one other, similar bearings, plotted the angles graphically. I thus obtained a distance, within the possible limits of accuracy, for the fixed object from my position, in order to ascertain the relative difference of height by measuring the vertical angle. On a rapid journey on public roads, it is

possible only occasionally to set up the theodolite, so a few only of the determined heights were measured with that instrument. I generally used for sighting the corners of my rectangular survey-box, on the reverse side of which I had constructed a quadrant with a 5° scale, or else the compass of the expedition's geologist, fitted with a contrivance for reading vertical angles. Since the distance of the measured point or the approximate vertical angle can in accuracy by no means approach the components of the barometrical determinations, I have in most cases, after correction for refraction and for the difference between apparent and true horizon, rounded them off to the nearest hundred metres. Regarding the heights determined by eye, I admit freely that they have no positive scientific value, but nevertheless they should not be rejected, until a Chinese survey comes into existence. To estimate heights correctly is rather luck than skill, and I can only record that during the journey through the loess region I already doubted my critical faculty for height judging (*Die wissenschaftlichen Ergebnisse der Reise des Grafen Béla Széchenyi in Ostasien 1877-1880* (Wien, 1893-98, vol. 1), p. 60).

and on pp. 265-6 an account of the country which may be translated thus:

On the south and east the valley [of the Tar-Kjo] was bordered by high mountains, sharp, steep and conspicuous, which, in the main west-east chain, attained over 6000 metres. A mighty glacier, 7 km. long and wide in proportion, invested the imposing mountain and its jagged rock peaks and abysses with special interest. On it were ranged several small glaciers. The snow-covered portion of the main range extended for 65-70 km. from the central "knot," Bokunka, to beyond the meridian of Ta-tsjen-lu on the east. While the upper parts of the mountain are bare rock, the spurs are covered with a thin layer of humus, on which sparse brushwood grows. Between Ta-tsjen-lu and Tscheto only a few pasturing grounds were seen. The range west of Ta-tsjen-lu is less steep and, in the summits near the Tar-Kjo valley, reaches a height of 4500-5500 m. . . . The wayleads from here (Tscheto) up the north-west valley, and one reaches after four hours, without much strain, the 4499 m. pass, the Dje la, or the divide between the Ya long kiang and the Tatu ho. Right up to the head of the pass dwarf trees grow on the sides (sloping 25-45°), and some 100 metres higher sparse grass. To the north of the Dje la, the rock summits of the Tscheto san tower like a gigantic, completely bare wall, whose relatively low saddles are filled with snowfields. The highest peak lies about 30 km. north-west of the pass, and reaches with a 1000-metre relative elevation above the main chain, the magnificent height of 7800 metres. Its name is Dschara, or "King of mountains." Some 30 kilometres farther north I caught sight a few days later from the pass Dorka La a second peak dominating in equal majesty the main chain. This peak marks the (administrative) frontier of China. Both, with dazzling white snow-covered peak, have a sharp cone-shaped form.

South of the Dje-la pass the rocky chain stretches with increasing height and wildness to the pinnacled Kunka massif, broken by gorges and precipices, which is dominated by the wonderful 7600-metre (absolute) rock pyramid Bokunka. This summit towers about 1300 m. above the angular snow chain, which runs like a half-moon from west by north to east. The chain itself extends still farther, though with less imposing peaks, its grey rock pinnacles also shooting up above the snows (p. 265-6).

The names have been left in the German spelling. In the geological results of Loczy (vol. i, pp. 703-5) we have a little more on Bo-Kunka:

Dson-go lies on a spacious valley bottom. . . . In the southern opening of the valley a high cone stands up, which is very like the Matterhorn, and, to conclude from its shape, formed of granite: its flat surroundings must apparently be formed of such clays and sandstones as are to be found on the similarly formed hills at Dson-go. This stone pyramid which rears itself like a monolith bears the name Bo-Kunka, and on its abrupt slopes snow lies only in a few places. In Fig. 125 the Bo-Kunka is drawn as seen from the Dson-go valley. The snow-covered range lying E.N.E. from it, the Kunka mountains, appears to be gneiss. . . . The triangular mountain group of the Ta-t sien-lu can be overlooked in its whole extent [from Kaschi-La pass], and we can recognize its structure and even its rocks at a great distance with sufficient certainty. In the north-east the panorama is dominated by the gneiss-granite mass of Dschara (Loczy, *Geological results*, vol. 1, pp. 703-05).

These heights for Jara (7800 m.) and Kunka (7600 m.) are, so far as we have been able to discover, the only instrumental heights ever published for these peaks. The details of the observations are given on p. 88. They are evidently the authority for the heights given by E. Bretschneider in his "Map of China . . . to illustrate the author's History of Botanical Discoveries in China, 1896," which shows a mountain south of the Dabo Pass and 30 miles north-north-west of Tatsienlu as 25,592 feet, and another about 25 miles south-west of Tatsienlu as 24,900. But already in the "Second thoroughly revised edition" of this map published in 1900 Bretschneider has dropped the former height, and the latter has since disappeared from later maps, such as the Kiatingfu sheet of the India 1/1,000,000 published in 1922.

Kreitner's maps on 1/1,000,000 are drawn in the style of the old Austrian 1/750,000, with hachures so heavy that the map is almost illegible. They are full of detail extending about 20 miles on each side of the route of the expedition, and there are many spot heights rounded to the nearest hundred metres. It would seem unfair, in the absence of any equally detailed maps, to conclude that all this detail is unreliable; yet if we make a tracing and superimpose it on the Survey of India compilation of the same scale we observe that Bokunka is very much out of position, and Mr. Stevens is clear that his sketch of Minya Gongka from Yingkwanchai (No. 2) is of the same mountain and in nearly the same aspect as Kreitner's sketch of Kunka from Dsongo (p. 703), which it much resembles. But Mr. Stephens is also certain that the high peak on the extreme right of the panorama from the Haja La (No. 3) is the same Minya Gongka, and the Haja La is south-east of Kreitner's position for Bokunka. That is, he was turning his back on the place of Bokunka when he drew No. 3, and it seems certain that Kreitner's Kunka was much farther from Dsongo to the south-east than he supposed. But this does not help us to diminish the height assigned by Kreitner to the mountain. On the contrary, if the mountain that Kreitner observed was really farther away than he thought, his angular elevation of over 14 degrees would make it much higher than the 7600 metres which he calculated for it; but we are no nearer the solution of the curious fact that Kreitner's figures have gradually, or perhaps rapidly, faded away from later map compilations.

Since his time many travellers have passed through Tatsienlu. Some have been favoured with clear weather as they crossed the high passes which lead from one deep valley to another, and make brief reference to the snows; others

seem to have been less fortunate and have scarcely mentioned them. In the following extracts we have collected most of these references from the more obvious sources, and shall be glad to receive others.

[Rockhill, coming from the north-west from Tailing.]

On the eastern side of this valley rose precipitous mountains, the summits of several of them deep in snow; and at its head was the huge, rugged mass of the Ja-ra ri, with deep beds of snow and ice extending several thousand feet down its steep flanks.

The Ja-ra ri is composed of a cluster of three peaks, and must reach an absolute altitude of about 16,500 feet; its southern continuation forms the Jeto la, over which passes the southern route to Ta-chien-lu. Along its eastern flank are the Ché ch'u and the road we were to follow; the country bears the name of Girong. This name [Ja-ra ri] cannot have the meaning given it by Captain Gill. It appears to me to mean "Horn of China," marking from afar where China commences; or else it is *Chalari*, "mountain of Ta-chien-lu" (W. W. Rockhill, *The Land of the Lamas* (1891), pp. 268-9).

[Johnstone, coming from the east from Hualinping.]

For the remaining three days of my journey to Tachienlu the scenery was of great beauty and grandeur. I have seldom seen anything more magnificent than the view of mighty mountains that greeted me as I left Hua-lin-p'ing, and continued to face me nearly all the rest of the way. The lustre of the snow, the rich azure of the sky and the sombre shadows of the gorges and ravines combined to make a series of pictures which no words can describe (p. 123).

There are times, of course, when the glories of the scenery are hidden by clouds or dimmed by rain and mist, and many a traveller must have gone through this country with very little idea of the wonderful sights that were hidden from him (p. 124).

After Ta P'eng Pa there is a long upward climb, followed by a short and sudden descent to a wooden bridge crossing a mountain stream. From here there is a magnificent view of the snowy mountains in the south-west (p. 127).

Tachienlu is a long, narrow little city which has had to adapt its shape to that of the mountains by which it is hemmed in. The summits of these mountains are covered with snow all the year round, and some are very lofty. According to Bretschneider's map, one of them is estimated at 25,592 feet, and another at 24,900 (p. 129).

The road from Chê-to rose steadily, but not steeply, through a confined valley, following the left bank of a stream. About midday we were picking our way laboriously through deep snow, and early in the afternoon we reached the summit of the pass of Chê Ri La, 17,400 feet above sea-level. The pass is a double one, the two summits being divided by a long valley which appears to have been at one time the bed of a glacier. High as we were, there were peaks in the north-east that still towered several thousand feet above us, and to the south and south-west we saw nothing but a vast ocean of billowy mountains with innumerable trough-like valleys (R. F. Johnstone, *From Peking to Mandalay* (1908), p. 155).

[Wilson, coming from the east from Kweiyung.]

With the weather conditions so favourable the view from the summit of the pass far surpassed my wildest dreams. It greatly exceeded anything of its kind that I have seen, and would require a far abler pen than mine to describe it adequately. Straight before us, but a little to the right of our viewpoint, was an enormous mass of dazzling eternal snow, supposed to be, and I can well believe

it, over 22,000 feet high. Beneath the snow and attendant glaciers was a sinister-looking mass of boulders and screes. In the far distance were visible the enormous masses of perpetual snow around Tachienlu. In the near distance, to the west-north-west of the pass, another block of eternal snow reared itself. Looking back on the route we had traversed we saw that the narrow valley is flanked by steep ranges, the highest peaks clad with snow, but in the main, though bare and savage looking, they scarcely attain to the snowline (p. 200).

The mountains on either side of the valley in all their higher parts range above the snowline; their lower slopes are covered with grass, small conifer trees, and brushwood (p. 201).

During the day, which was beautifully fine, we had grand views of the snow-clad peaks around Tachienlu and the steep ranges with pinnacled peaks to the east-south-east of that town (E. H. Wilson, *A Naturalist in Western China* (1913), p. 202).

The frontier town of Tachienlu, where I was stationed for nearly two years, is the gateway through which the teas and silks of Western China enter Tibet. Here, in a narrow ravine hemmed in by steep mountains whose summits are clothed with glaciers, converge the two highways which unite Lhasa with China, the official highway through Batang and the caravan road through Jyekundo (p. 231).

On the way up one catches a glimpse of the magnificent peaks and glaciers to the south-east of Tachienlu, the highest summits of which rise to over 17,000 feet. . . .

Just below the pass we parted from the Batang main road and turned north-west across a stony waste at the foot of a barren range of mountains trending in much the same direction. At its farther end is a fine snow-capped peak called Zhara Ri by the Tibetans (in Chinese Hai-tzu Shan, "Lake Mountain"). Among the tarns which lie at its foot is a beautiful turquoise lake fed by a waterfall issuing from a glacier (Oliver Coales, "Eastern Tibet," *Geogr. Jour.*, 53, 233, April 1919).

Another very prominent mountain feature in Kam is the big range which runs parallel to, and on the right-hand side of, the main road from Jyekundo to Tachienlu. It is a huge and imposing barrier wherever seen. South of Jyekundo it forms the divide between the basins of the Yangtze and of the headwater streams of the Mekong, and is here crossed by the Shung La, a high pass on one of the roads from Jyekundo to Chamdo. Proceeding south-east, it is pierced by the gorges of the Yangtze below Chunkor Gomba (Tengko) and thence serves as the Yangtze-Yalung divide down to below Kantze. On this stretch of its course it contains some very high peaks and glaciers behind Dzogchen Gomba, below which it is crossed by the Tro La on the main road to De-ge. Farther down it appears as the magnificent snow-capped range which stretches along the southern side of the Yalung plain from Rongbatsa to below Kanze; in this neighbourhood it is crossed by the Tsengu La and the Hön La on the road to Beyü and Southern De-ge, and by another high pass on a road to Nyarong. Below Kanze it is pierced by the gorges of the Yalung, which are overlooked by a giant snow-peak, Kawalori, a sacred mountain of Nyarong. From here it continues south-east to Tachienlu, where it serves as a clear-cut ethnographical boundary between Chinese and Tibetan inhabited country; it is here split into two by the valley of the river of Tachienlu, which is overlooked by snows on both sides. From Tachienlu it continues south, containing here some very big peaks, towards the Yunnan border. I suspect this great range to be a south-easterly continuation of the Dang La

mountains north of Lhasa, and to be therefore one of the principal features of the mountain system of Tibet.

There are some very high mountains on both sides of the Yangtze between De-ge Gonchen and Batang, including the giants immediately east of the latter; but I have not been able to distinguish the continuity of particular ranges in that neighbourhood.

It is to be hoped that the heights of the principal mountains of Kam will some day be ascertained by scientific measurement, the results of which will probably show the existence of some very high peaks. I believe that amongst the highest will prove to be the group of peaks behind Dzogchen Gomba (bearing roughly north from the Mizo La near Beyü); Kawalori on the Yalung below Kanze, some of the peaks on the Mekong-Salween divide between Chamdo and the latitude of Atuntze; the peaks east of Batang; and the peaks north and south of Tachienlu (Eric Teichman, "Journeys through Kam," *G. J.*, 59, 1 January 1922).

Mr. A. E. Pratt ('The Snows of Tibet,' 1892) remarks that on the way to Tatsienlu from Wassu "views up various ravines disclosed snow-capped mountains," and that north of Tatsienlu the snow-line is at about 16,000 feet.

Dr. A. F. Legendre (*La Géographie*, 15 Dec. 1911) gives heights of passes but little about peaks and no heights or names of peaks on his map. Mr. Edward Amundsen (*G. J.*, 15, 620), going S.S.W. from Tatsienlu, speaks of a succession of mountain ranges clothed with luxuriant pine forests, but makes no mention of any high peak.

Major H. R. Davies (Yunnan: C.U.P. 1909) came over the Gi La to Che-to and descended "a narrow green valley to Tachienlu . . . shut closely into a narrow valley by high steep hills," but neither in his book nor the accompanying map (T.S.G.S. 2112) are there any high peaks.

One may gather from these extracts why our knowledge of the mountains about Tatsienlu is very defective. The valleys are deep; the passes are often wrapped in cloud; the visibility is generally poor. If so good a traveller as Mr. Oliver Coales could be stationed two years at Tatsienlu and afterwards write a paper on the country with such slight references to these peaks, they must be very inaccessible, and seldom seen.

Mr. Herbert Stevens had better weather than usual, and we are much indebted to him for the following note, which gives the best account of this country since Szechenyi's journey more than fifty years ago. He cannot assign any height to these peaks, but his sketches show that they are of striking form; and we may hope that they will inspire a survey of the ranges at the first opportunity.



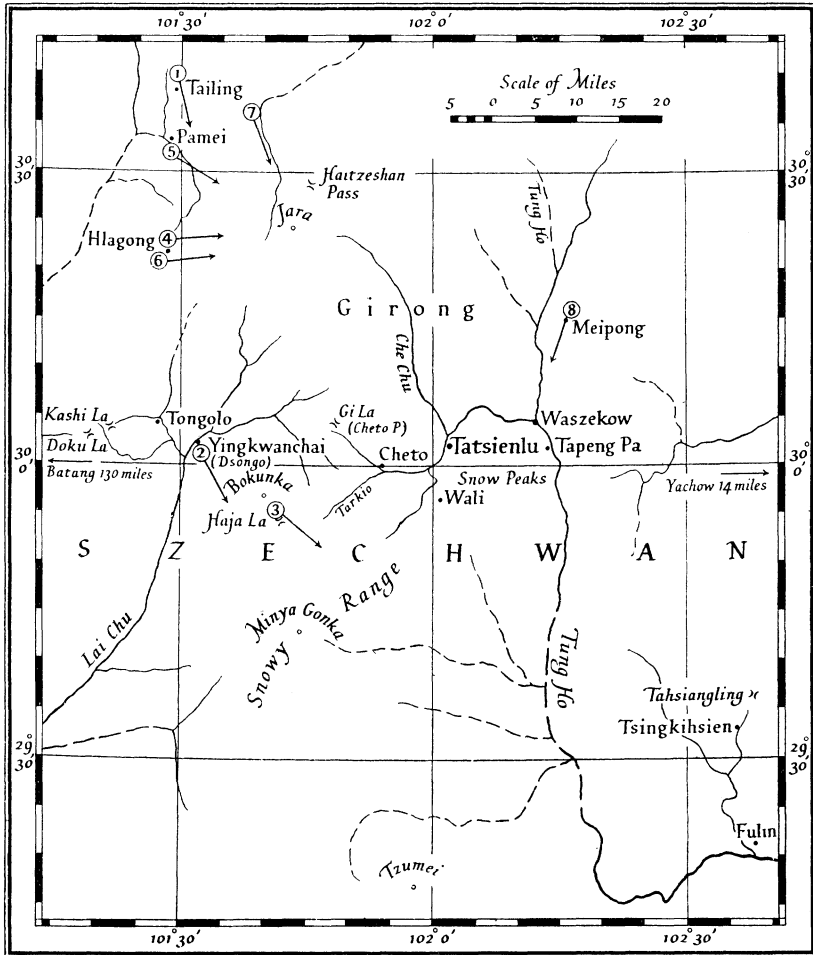
## SKETCHES OF THE TATSIENLU PEAKS

HERBERT STEVENS

IT was my good fortune to be a member of the Kelley-Roosevelts' Expedition to Yunnan and Szechwan. To enable our party to work to the best advantage, in accordance with pre-arranged plans we separated en route and, for me, finally at Likiang, owing to my missing connection at Tatsienlu. The collection of zoological and botanical specimens was my first consideration; but, owing to the time required by these duties, and exceptional climatic conditions giving good visibility which must have been phenomenal for a time of year under the influence of the south-west monsoon, I saw much of the country traversed to perfection. Our party left Bhamo on 26 December 1928, arriving in nine days at Tengyueh. I left this place a day later than my companions, and after crossing the Mekong struck easterly to Mingshih, taking fourteen days to reach Tali, where our party was again united. It took five days via Kienchwan to reach Likiang. On March 7 I left Likiang, spending fifty-five days en route in camp and thirty-eight days on the march, via Yungning, Muli, Kopadi, Kulu, Kon La 14,600 feet, Yonka La 15,000 feet, Tiyu 12,900 feet (Gompa), Yatsu 11,200 feet, Baurong 8000 feet (Rope ferry below village), Patei (Pass 15,300 and 15,000 feet), Wushi 12,000 feet (Pass 15,000 feet, descent to 12,700 feet, Pass 15,600 feet), Kusata (Gompa), Chentze 13,100 feet, Laila hamlet 12,400 feet, Chaulu 13,600 feet (Gompa), Lai Chu (Bridge), Zamba Ku 11,600 feet (bridge, stone towers, open valley), Trazya 12,100 feet, Haja Tungu 13,000 feet (Gompa), Haja La 15,300 feet, Cheto, to Tatsienlu, where I arrived on June 1. After work at two camps near at hand, Cheto and Wali, I was joined by my friend Huston Edgar on two journeys. The first was through the Tibetan Borderland via Cheto (Pass 15,000 feet), Anyangpa 12,900 feet, Yingkwanchai 12,400 feet, and Tongolo 12,500 feet, where we left the Batang track and struck north to Pehsang 12,500 feet, Chengmengka 12,700 feet, Hlagong 13,300 feet (Gompa), Pamei 12,300 feet (Gompa), Tailing 12,600 feet (Gompa), Kwanchai 13,700 feet, from which place on our return we went south with a diversion east to Tailing, crossing the Haitzeshan at 15,000 feet on the eastern side of the Jara mountain, Sintientze, Tsongku, to Tatsienlu: time on march eighteen days. The second journey was east to Waszekow, where we turned north following the right bank of the Tung Ho to Kutsa (Gompa), crossing the river by ferry-boat at Chingshui 6000 feet, stiff ascent of 3800 feet to ridge circ. 8500 feet overlooking Meipong 7900 feet, descent followed by stiff ascent of 3800 feet to ridge overlooking the Tung Ho gorge at 10,800 feet. From this point our route continued north-easterly with descent to Tienta 9000 feet, river crossing above hamlet 7400 feet, small gorge, perpendicular crags on right, Kochaihopa 7500 feet, Trashichoten 8300 feet (Gompa), Shwang Yu 8900 feet, Tongling 8800 feet, the last house to the west of the watershed; camp in river-bed 9800 feet, Santochai camp 11,500 feet, Lianghokow (remains of single house, open grasslands 12,200 feet), gradual rise to 13,100 feet, followed by a sharp descent in a south-easterly direction to Tupakö 7400 feet, Laoyingkö 6500 feet, Pashku 5400 feet, Moaten 4400 feet, to the town of Muping 4000 feet, thence to Yachow via Lingkwang, Renjaba and Feih sien. (Innumerable hanging plat-

forms, tree-trunk bridges, and one rope crossing.) Time on march twenty-one days. I reached Shanghai on 6 November 1929.

Early in the year, when traversing Yunnan, distant snow-capped mountains had been seen to the north; and when I arrived at Likiang and camped during February in the village of Ngulukö, some 12 miles north at the base of the mountain Satsetö, the glaciers and snow-capped peaks of the Likiang Range



*Sketch-map showing positions from which Mr. Stevens' sketches were made*

were seen at comparatively short range, the summit of Satsetö being visible from the narrow street in the village. Another peak Ginalakö is visible from the track which runs north and south over the plain about half a day's journey to the north.

On the evening of March 25, from my camp at 12,000 feet, two and a half days' journey south of Muli, this range could be clearly seen on the horizon 80 miles to the south. On the morning of April 23, after leaving Kulu, an impressive

view of a massive snow-capped range, somewhat obscured by clouds, was obtained from open country at 12,500 feet looking west-north-west, which range the lama who was accompanying me called the Shola Gonka; while on the afternoon of the 30th, when between Yatsu and Baurong before the descent to the gorge of the Yalung, I had an impressive view to the east of snow mountains, which the lama and carriers spoke of as the Minya Gonka, evidently a portion of the same range which I was later to see to perfection: the culminating mountain admits of no error in identification under favourable circumstances. On May 31 my caravan, comprising villagers, yaks and ponies, left the village of Haja Tingu and were laboriously traversing a long ascent on a track with an execrable surface little better than that of a moraine, when I decided to forge ahead. On reaching the narrow gap on the summit of the Haja La, with the first gust of wind over came a butterfly (*Parnassius*), a genus I had not met with up till then. On coming through the gap I was held spell-bound by the utter solitude and sterility of a range of mountains, fantastic in shape and outline. I had immediately to make the most of a double opportunity. Leaving my boys to the difficult task of netting as many insects as they could catch on the screes in a high wind, I ascended the ground on my left, where a blue *Meconopsis* was sparingly in evidence, working in the direction which would be likely to disclose a more extensive view to the south-east. After gaining some 200 feet I was amply rewarded with the view of the pyramidal snow mountain shown in sketch No. 3. My camera had failed me before reaching Yungning, but my sketches are substantially accurate to the best of my ability. My altitudes are only approximate from aneroid readings.

From above Wali, some 15 miles south of Tatsienlu and north of the Yajajen Pass, on June 30, I had hoped to get a view to the south-west of the dominating peaks of this same range, but the weather was not propitious, and though I obtained a momentary glimpse of what was most likely this particular peak, from this direction it showed a slightly inclined summit with a steep face on my left while the opposing face was almost perpendicular. [Perhaps the Ru-ching of Gill.]

It was not until the afternoon of July 15, when at Yingkwanchai, that Edgar and I saw to perfection the same mountain, figured in sketch No. 2, showing from this viewpoint as a pyramid completely covered with snow, in a southerly direction; a rough guess would place it about 30 miles away. Again from Tailing about 2 miles north of the monastery, on the morning of the 26th the whole range was visible as in sketch No. 1. There was every indication of an extensive glacier to the left of the culminating peak.

Another imposing mountain, at the extreme end of this bend of the Himalaya to the north of Tatsienlu, is Jara, which was seen first from the west of Yingkwanchai at an elevation of 14,500 feet, a portion of the summit being disclosed in a north-north-easterly direction; but it was not until we reached a point south of Hlagong monastery on July 19 that the whole mountain mass above the perpetual snow-line was revealed to the east in all its majesty, and though less of it was seen from our camp July 19-22, to the north of Hlagong, later at Pamei on the evening of the 23rd it was seen to perfection. The Tibetans speak of this mountain as higher than the Minya Gonka, probably owing to its isolation. Judging by the amount of perpetual snow,

some of these mountains are very high, and in shape are eminently beautiful. On the evening of August 3 from our camp at 13,000 feet Jara appeared to block our route to the south, and the following evening when we camped on the Haitzeshan pass at 15,000 feet, we had nearer views of its glaciers and snow when we pitched camp in a perishing blizzard. Early next morning a few glimpses were obtained, but soon the clouds settled, and in our descent south it was soon lost to view. Nearing Tatsienlu on the evening of August 6, a snow-peak of this same range was visible from one viewpoint some 7 miles north of Tatsienlu in a south-south-westerly direction, which would be a peak of the same group as seen from our mid-day halt on August 20, after leaving Meipong, on the mountains above the left bank of the Tung Ho looking south-west  $200^{\circ}$  (Sketch No. 8). These mountains are visible from water-level at certain points on the Ya river, and there is also an excellent view from Omeishan; but whether the commanding Minya Gonka is visible from the summit of Omeishan I am unable to say. It was blocked by a shoulder of the mountain when I stayed at Shihshahshu on October 5 to 9; but I did manage to obtain a fleeting glimpse of the peaks in a west-north-westerly direction.

[The sketch-map is based upon the Survey of India 1/M sheet Kiatingfu, with additions depending on rough compass traverses. The positions from which the sketches were made are shown by numbered circles, and arrows show the general direction. The bearings given in the titles of the sketches are magnetic, but the variation at Tatsienlu in 1929 was very small, about  $0^{\circ} 25'$  west by the Carnegie Institution Survey brought up to date with approximate secular change. Mr. Stevens had the assistance of Mr. Edgar in recording the names, and considers that Minya Gonka is near the correct spelling. The name Tatsienlu of the Chinese Postal Guide is pronounced Dachienlu.]

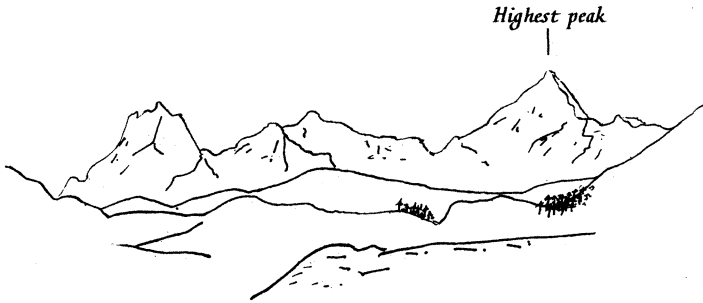
## CANADIAN GEOGRAPHICAL SOCIETY

THE newly formed Canadian Geographical Society held its inaugural meeting at Ottawa on 17 January 1930. The President, Dr. Charles Camsell, was in the chair, and the Governor-General (Lord Willingdon) honoured the proceedings with his presence.

Dr. Camsell, in opening the meeting, said that for some years past Canadians had had in mind the formation of a Geographical Society for the advancement and diffusion of geographical knowledge, more particularly relating to Canada. Such a Society had now been formed, and he looked forward to its being of great service to Canada. He also read out a telegram of greetings to the Canadian Geographical Society from the President and Council of this Society.

Lord Willingdon congratulated the Society and said he hoped it would enable Canadians to know more of Canada. He had had to travel much about the country, and he was surprised to find how little those living in one part knew of other parts of their own country. This deficiency the Society should help to make good.

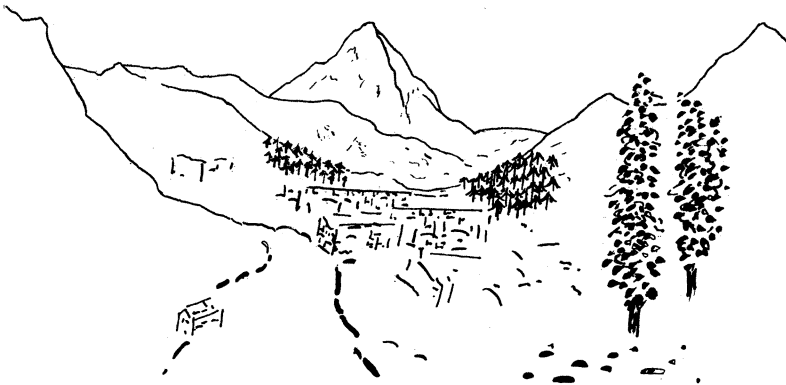
Dr. Isaiah Bowman, Director of the American Geographical Society of New



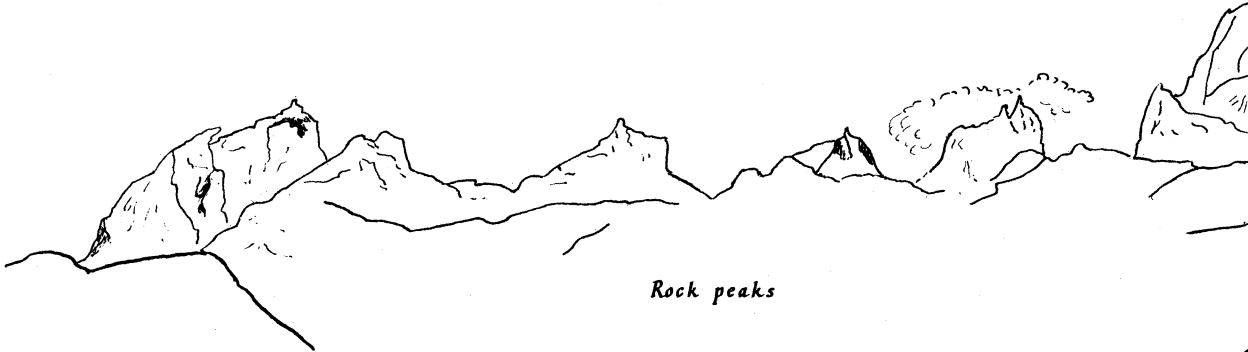
1 *Minya Gonka from a point (12,900 ft.) two miles north of Tailing Gampa, looking S.S.E. Peak N. 165° E. 26 Jul. 1929.*



4 *Jara from camp (13,000 ft.) Hlagong Gampa, looking S.W.*



2 *Minya Gonka from Yingkwanchai (12,450 ft.). 15 Jul. 1929.*

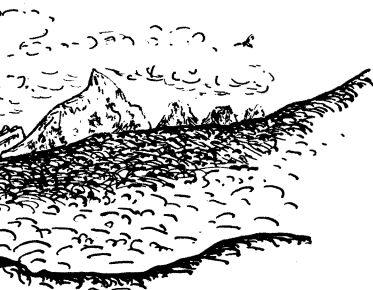


Rock peaks

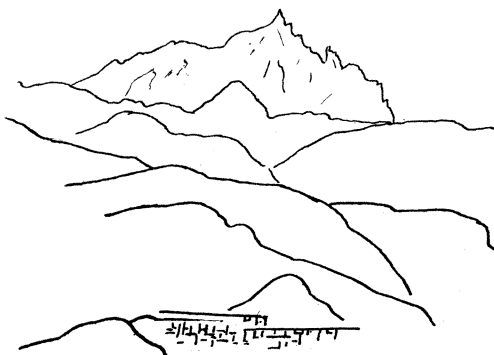
3 *Range S.W. of Tatsienlu from Minya Gonka on extreme right*

# SKETCHES OF THE TATSIENLU PEAKS

By Herbert Stevens



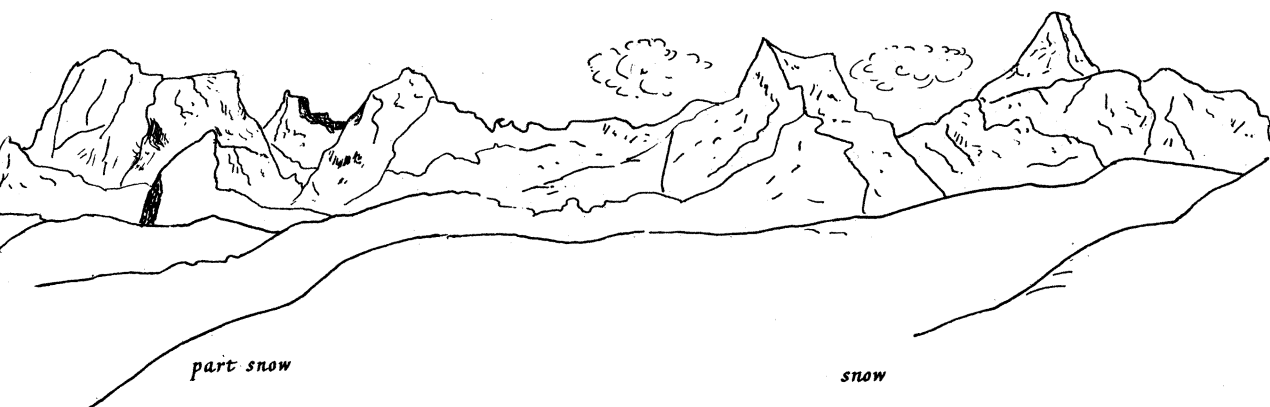
4 Camp (13,500 ft.) a little north of  
Gompa, looking east. 19 Jul. 1929.



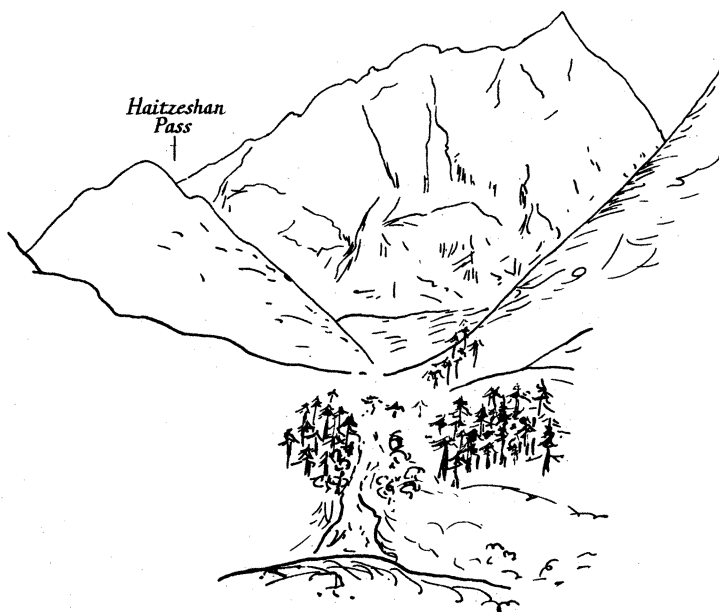
5 Jara from camp (12,300 ft.)  
south of Pamei Gompa. 23 Jul. 1929.



6 Jara from a point (13,600 ft.) south of  
Hlagong Gompa, looking east. 21 Jul. 1929.



7 Tasienlu from Haja La (15,300 ft.)  
extreme right. 31 May 1929.



7 Jara from camp (13,000 ft.) about 10 miles east of Tailing, looking S.E. 3 Aug. 1929.



8 Mountains S.E. of Tatsienlu from north of Meipong, looking S.S.W. 20 Aug. 1929.