

THE SOURCES OF THE BRAHMAPUTRA, INDUS, SUTLEJ,  
AND KARNALI: WITH NOTES ON MANASAROWAR AND  
RAKAS TAL

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“**L**AKE MANASAROWAR is famous in Hindu mythology; it had in fact become famous many centuries before the lake of Geneva aroused any feelings of admiration in civilized man. To the north of Manasarowar stands the sacred peak of Kailas, revered in Sanskrit literature as the paradise of Siva. Before the dawn of history Manasarowar had become the sacred lake, and such it has remained for four millenniums. Its inaccessibility has enhanced its sanctity, and has enshrouded it in mystery.”<sup>1</sup>

The “Kangri Karchok”—the Tibetan Kailas Puran—says that the four great rivers called Langchen Khambab, or the Elephant-mouthed river (Sutlej), on the west, Senge Khambab, or the Lion-mouthed river (Indus), on the north, Tamchok Khambab, or the Horse-ears-mouthed river (Brahmaputra), on the east, and Mapchu Khambab, or the Peacock-mouthed river (Karnali), on the south, have their sources in Tso Mapham, the lake unconquerable (Manasarowar). The water of the Sutlej is said to be cool, the water of the Indus hot, that of the Brahmaputra cold, and that of the Karnali warm. It is also said that there are sands of gold in the Sutlej, sands of diamonds in the Indus, sands of emeralds in the Brahmaputra, and sands of silver in the Karnali, and that these rivers encircle Manasarowar seven times before taking their courses towards west, north, east, and south respectively. There has long been a controversy over the sources of the first three of these rivers. Dr. Sven Hedin gave his final verdict in 1907–08.

I had the good fortune in 1928 to travel in western Tibet on a visit to the Holy Kailas and Manasarowar. I went from Srinagar, through Ladakh, Demchok, Gartok, Tirthapuri, Gyanyima Mandi, round Kailas and Manasarowar, to Taklakot, again to Gartok and back to Rishikesh by the Niti pass. In 1935 I made a second journey from Gangotri and Bhaironghati, by the Jelukhaga pass, Tuling, Gyanyima Mandi, Kailas, Manasarowar, and back to Rishikesh by the Damjan-Niti pass. In 1936–37 I travelled from Almora by the Lipu pass and returned by the same route. During the third visit I stayed for a year in the Thugulo monastery, on the southern shore of Manasarowar, when I had the rare opportunity of visiting the sources of the four great rivers of the Holy Lake. I feel therefore that I have something to say on the verdict of Sven Hedin regarding the sources of the Sutlej, the Brahmaputra, and the Indus.

At the very outset I would like to ask geographers, geologists, and surveyors how the source of a particular river is to be fixed. If the river in question happens to have more than one headstream, which of them is to be considered the main river? Is it decided by the quantity of water that it brings down, or by the length of the particular headstream, or is the source

<sup>1</sup> S. G. Burrard and H. H. Hayden, ‘A sketch of the geography and geology of the Himalaya mountains and Tibet.’ Delhi, Survey of India, 1934 (Part III, p. 228).



located from the traditions of the local people? If all three factors are to be taken into consideration, it will be impossible to locate the sources of the four great rivers of the Holy Kailas and Manasarowar, and other Himalayan rivers, inasmuch as none of the headstreams fulfils all the three conditions. If all the three conditions are not fulfilled, which of them should be given the greatest weight?

The Sutlej, the Indus, the Brahmaputra, and the Karnali are considered sacred by the Tibetans, and their sources are regarded as even more sacred. In Tibet it is the custom to erect a monument in holy places, and on the tops of passes wherefrom some holy place is first seen. The monument may take the form of a *chorten* (a pagoda-like structure), *mani*-wall, some *mani*-stones or slabs (on which the Tibetan sacred *mantra*, "Om ma ni pad me hum," is carved), cairns, coloured flags and festoons, or even heaps of stones (known as *laptche* in Tibetan). It is not strange to expect such holy monuments at the sources of the four rivers of the Holy Manasarowar, and Sven Hedin gives detailed descriptions of them at the sources of the Indus, at the spring Langchen Khambab on the banks of the Tage Chu, at the spring Chakko (its correct name is Chumik-Thongdul), and at several other places. When he describes the source of the Brahmaputra, he makes no mention whatsoever of these symbols, which are so common in Tibet.

According to Tibetan tradition, the source of the Brahmaputra lies not in the Kubi glaciers, as claimed by Sven Hedin, but in the Chemayundung glaciers. While locating the sources of the Indus and the Sutlej, Sven Hedin refers to all the Tibetan traditions at his disposal in support of his findings. When the question of the source of the Brahmaputra comes in, he does not give any authority but that of a vague quotation from the 'Elements of hydrography,' by the Chinese professor Chi Chao Nan, which runs thus: "Langchen-kabab lies south east of Kailas. On the east of this mountain stands the Tamchok-kabab mountain which is the source of Tamchok-kabab or the Brahmaputra." Even this single quotation gives more support to my findings than to those of Sven Hedin, because the Chemayundung glaciers are east of and nearer to the Kanglung Kangri glaciers (the source of the Sutlej), whereas the Kubi Kangri glaciers (where Sven Hedin places the source of the Brahmaputra) are on the south-east of the Kanglung glaciers, and not on the east, as has been suggested by the Chinese professor. Taking the Tibetan traditions into account, we have a monument (called Tamchok Khambab Chorten in Tibetan) at the source of the Brahmaputra near the Chemayundung glaciers, shown to me by my Tibetan guide. There is a big boulder about 12 feet high, on the top of which are the footprints of a Buddhist deity, and over the footprints a small hut has been erected with loose stone walls and roof, with the horns of a wild yak placed on the top. Adjacent to the boulder are three *donkangs* (*dharmashalas*), of which one was roofed. My guide told me that the Nyakora tribe of nomads go over there for yak-hunting at the end of summer, as there are a good many wild yaks there.<sup>1</sup> All round the boulder there are hundreds of cairns.

Sven Hedin should have pondered over the meaning of the name "Tamchok Khambab": *ta*=horse, *amchok*=ears, *khambab*=mouth. So the literal trans-

<sup>1</sup> Cf. T. W. Webber, 'Forests of upper India' (London, 1902), chap. xi.

lation of the name Tamchok Khambab is "horse-ears-mouthed" river. The sources of the four Tibetan rivers are located by Tibetans in certain springs, to which they attribute the appearance of the mouths of various animals, just as the Hindus call the source of the Ganges "Cow mouth"—Gaumukh. There are two glaciers, called Chemayundung-phu and Tamchok Khambab Kangri, with a broad-faced peak separating them. The monument or the shrine is situated on the left bank of the Brahmaputra (where it is called Chemayundung Chu) between these two glaciers, opposite the broad-faced peak. The two glaciers are the two ears, and the boulder is the mouth. Both these glaciers put together go by the general name of Chemayundung-phu, or simply Chemayundung. The distance between these two glaciers is about  $1\frac{1}{2}$  or 2 miles. A little north or north-west of the Tamchok Khambab glacier is another smaller glacier or snow-field, behind which is the Angsi glacier.

Sven Hedin places the source of the Brahmaputra in the Kubi Kangri glaciers, giving us figures to show that the Kubi Tsangpo discharges more water than the Chemayundung. But he totally forgets this "theory of greater discharge of water" when he locates the source of the Indus. "At this point the Singi Kampa is born. But the infant river which is a mere brook is shorter than either the Lungdep or Munjam.' "The problem cannot be settled,' Sven Hedin writes, 'in any more satisfactory way than to accept the Tibetan view and to regard the Singi-Kabab as the source of the Indus in spite of its being the shortest and one of the smallest of the several source branches.'"<sup>1</sup>

If, as argued by Sven Hedin in fixing the source of the Brahmaputra, the quantity of water be taken into consideration, the source of the Sutlej must be placed not in the Kanglung glaciers (the source of the Tage) but somewhere in the Zaskar range. The Langchen Tsangpo, which joins the Sutlej a few miles below Tirthapuri, carries much more water than the Sutlej itself. This Langchen Tsangpo has three headwaters, two of which, the Guni Yankti and the Darma Yankti, are each bigger than the Tage Chu where it falls into Manasarowar. So the source of the Darma Yankti, which is somewhere near the Darma pass, should be the source of the Sutlej, as was remarked by Henry Strachey.<sup>2</sup> Surely the decisive point is that of the Tibetans and Chinese: that the two lakes, Manasarowar and Rakas Tal, lie on the Sutlej source stream like pearls on a string. When Rakas Tal is finally cut off from the Sutlej and its water begins to turn salt, then must the two lakes be regarded as an isolated hydrographic system.

"Some writers define the source of the river as the point of its course, that is most remote from its mouth. Colonel George Strahan has shown that if this definition be applied to the Ganges, its source will not be Himālayan at all, but will be near Mhow in Central India at the head of the Chambal."<sup>3</sup> In fact according to the Tibetan tradition the source of the Chemayundung is the source of the Brahmaputra, and the Chemayundung is the actual Brahmaputra; it is also longer than the Kubi. Whether length or traditions

<sup>1</sup> Burrard and Hayden, *op. cit.*, p. 241.

<sup>2</sup> *Journal Asiatic Society of Bengal*, 1848, p. 157.

<sup>3</sup> Burrard and Hayden, *op. cit.*, p. 184.

be taken into consideration, the source of the Brahmaputra cannot be placed in the Kubi glaciers, but must be placed in the Chemayundung glaciers. But if the source of the Brahmaputra be placed in the Kubi glaciers on the ground of the quantity of water, the location of the sources of the Indus and the Sutlej must be shifted elsewhere. If the sources of the rivers are to be fixed according to local traditions, as is done in the case of the Ganges and several other rivers, the source of the Brahmaputra should be shifted from Kubi to Chemayundung. Whichever theory be followed, Sven Hedin should not claim to be the discoverer of the sources of the Brahmaputra, the Indus, and the Sutlej. If any one wishes to verify my findings, I am ready to accompany him to the various sources of these three rivers. If any other theory but that of tradition be accepted in fixing the sources of these rivers, the sources of all the three rivers, the Sutlej, the Indus, and the Brahmaputra, must be shifted from their present positions as given by Sven Hedin and placed elsewhere after fresh exploration.

Besides the discussion about the sources of the three rivers, I would like to note down the following few points connected with the three great rivers, together with other information which may be of some use for future explorers.

*Ganga Chu (channel between Manasarowar and Rakas Tal).* When Sven Hedin visited Manasarowar he found "the highest point of Ganga Chu lying more than 6½ feet above the level of the Manasarowar." There were heavy rains that year, yet he found that the bed of the Ganga Chu was dry. I crossed the Ganga Chu itself near Jiu (Chiu) Gompa, about 100 yards from Manasarowar on 4 September 1928. That year was exceptionally dry, and there were very few rains, yet the Ganga Chu was 3½ feet deep and the flow was very rapid. I crossed it a second time on 21 August 1935, 2 miles from Rakas Tal. The current was gentle, but it was nearly 3 feet deep. I crossed it a third time half a mile from Manasarowar on 5 September 1937, and it was nearly 2½ feet deep. I again crossed the Ganga Chu on six other occasions near Jiu Gompa early in the winter of 1937, when I was doing the circumambulation of the Holy Manasarowar. The stream of water 1½ feet deep was frozen solid in the bed of the Ganga Chu. But near the hot springs (about 2 furlongs from Manasarowar) there was flowing water 6 inches deep. I followed closely the 6-mile winding course of the Ganga Chu along its left bank from Rakas Tal right up to Manasarowar on 14 April 1937, and I found ice and snow throughout the bed of the Ganga Chu, although at several places a regular slow flow of water towards Rakas Tal was seen. The water was very muddy where the Ganga Chu was flowing into Rakas Tal (Langak Tso of the Tibetans). I crossed the Ganga Chu again on 26 June and 17 July 1937, when there was flowing water about 10 inches deep. I crossed it again for the thirteenth time on 27 July 1937, and the water was about 16 inches deep.

There are sufficient grounds for believing that a rise in the level of the water of Manasarowar, and the consequent flow of water into Rakas Tal through the Ganga Chu, make the flow continuous into the now so-called "Old bed of the Sutlej" from Rakas Tal. The rise of water in Manasarowar and the consequent overflow into Rakas Tal through the Ganga Chu may be caused not

only by heavy rains but also by melting snows due to bright sunny days. I made circuits of Manasarowar, and found the Ganga Chu to be the only outlet of the lake.

Almost parallel to the Ganga Chu at a distance of about a mile on the south there is a line of gold diggings extending from Rakas Tal right up to Manasarowar. They were mined some years back, but nothing is done to-day. During the mining it was said that there had been an outbreak of smallpox, which was attributed by the Tibetans to the wrath of the presiding deity of the mines, and consequently the work was stopped. During the last operations, it was said one gold nugget as big as a dog (according to some, a dog-like nugget) was found.<sup>1</sup> At the place where that nugget was found, a *chorten* has been erected, which is called Serka-khiro (gold dog). This place is about a mile south of Jiu Gompa.

Some fifteen days' march northwards from the source of the Indus are the bigger goldfields at Thokjalung, Anglung, and elsewhere, which are being worked by the most primitive methods, scarcely worth the name of mining. About twenty years ago Tibetan gold was sold at Lhasa at the rate of Rs. 10 per *tola*, according to the account given to me by the officiating Governor of Taklakot.

Tseti Tso, 3 miles away from Gussul Gompa, by the side of Manasarowar, has large deposits of borax both on the shores and on the island in it. The Tibetan Government has now stopped the working of borax there because of the belief that a deity became enraged. There are very big borax fields at Langmar and elsewhere in western Tibet.

*The Sutlej.* That part of the Sutlej described on the maps as "Old bed of the Sutlej" contained water, and there was continuous flow from Rakas Tal up to Lejandak, which is a day's march. I noticed it in August 1928, and also in August 1936. So the phrase "Old bed of the Sutlej" might be deleted from the Survey maps.

About 3 miles below Tirthapuri, a river called Langchen (by the same name as the Tirthapuri branch, coming from Rakas Tal) joins the Sutlej. When I asked my guide why this river was called Langchen, he told me that both this and the Rakas Tal branch go to make up the Langchen Khambab (the Sutlej), and so this branch also is called Langchen. This river Langchen is a combination of the three rivers Guni Yankti, Darma Yankti, and the Gyanyima branch. The Gyanyima branch carries much less water than the first two. Guni Yankti (called Chu Minjung in Tibetan) and the Darma Yankti (Chu Minjing) each carry more water than the Tase Chu where it falls into Manasarowar. Of these two rivers, the Darma Yankti carries the more water.<sup>2</sup> The Darma Yankti also carries more water than the Tirthapuri branch. So if the quantity of water is taken into account, the source of the Darma Yankti would be the source of the Sutlej; that is, in the Zaskar range somewhere near the Darma pass.

*The islands in Rakas Tal.* There are two islands in Rakas Tal: Lacheto and Dopserma (or Topserma). I visited them on 15 and 16 April 1937, when the lake was completely frozen. I traversed the frozen lake from east to west

<sup>1</sup> Cf. C. A. Sherring, 'Western Tibet' (London, 1906), p. 270.

<sup>2</sup> *Geogr. J.* 33 (1909) 427. So also Henry Strachey, *loc. cit.*, p. 157.

and from south to north on a yak. The island of Lacheto is shaped like a tortoise, with the neck stretched out towards a peninsula on the southern shore. The distance between the neck of the island and the cape of the peninsula is about half a mile. The circumference of the island is nearly a mile, and its surface is rocky and hilly. On the top of the hill there is a *laptche*, a heap of stones with *mani*-slabs, and on the western and the eastern sides of the hill there are the walled enclosures of the egg-collectors. There were wild geese on the level ground on the eastern side of the island. The egg-collectors of Kardam Goba were expected there in the last week of April, when the geese begin to lay eggs.

Dopserma, the southern part of which is named Tumuk, is rocky and hilly like Lacheto, but much bigger. The island is about a mile from east to west, and about three-quarters of a mile from north to south. On the eastern projection of the hill is a walled house in ruins, in which a Khampa Lama was said to have lived for seven years some time ago. Below the projection there are two or three walled enclosures. This island is under the jurisdiction of the Goba of Shungba. There were no aquatic birds on the island when I visited it. I could find only two islands in the Rakas Tal, and not three as shown in the maps of Sven Hedin or of the Survey.

*Freezing of Manasarowar and Rakas Tal.* The circumference of Manasarowar is about 54 miles. It froze on 28 December 1936 and melted again on 7 May 1937. It took three days to freeze completely, and the same number of days to unfreeze. Rakas Tal always freezes fifteen or twenty days earlier and melts again fifteen or twenty days later than its eastern neighbour, Manasarowar, but never earlier, as Sven Hedin states. The lakes freeze into opaque ice in the beginning, and then the ice becomes transparent. The thickness of the frozen ice in Manasarowar was 2-6 feet near the banks. Near the rocky banks the bottom of the lake, frozen fish, and water reeds could be seen through the transparent ice as if in an aquarium. The thickness of the ice on Rakas Tal appeared to be 2-4 feet. The peculiarity of Manasarowar is that there are tremendous cracks and fissures in the ice, whereas there are practically none in Rakas Tal. In Manasarowar terrible sounds are heard on occasion, and there are eruptions in the lake and along its shores. Nobody dares to go on Manasarowar when it is frozen, whereas men, flocks of sheep, loaded yaks and ponies traverse the frozen lake of Rakas Tal, as there are no cracks and fissures in it. On Manasarowar heavy blocks of ice of 20-50 cubic feet in volume are thrown by the eruptions 10 yards or so on to the shore. Sometimes the ice in the lake bursts and fountains of water gush out, forming small pools which are frozen again on the following night. The minimum temperature in winter 1937 was  $-18.5^{\circ}$  F., and the lowest maximum was  $2^{\circ}$  F. Never was there a snowfall of more than  $1\frac{1}{2}$  feet on the southern shore of Manasarowar.

About a month after Manasarowar and all its feeders were frozen (with the exception of the Ding Tso and the mouth of Tage Chu), I found that the level of the water in the lake fell by about 12 inches below the ice, which consequently cracked and fissured. The disturbance beneath the ice due to the hot springs in the bed of the lake may also be the cause of cracks, noises, and fissures in Manasarowar. The absence of fissures in Rakas Tal may be



*Cairns and mani-stones at the source of the Indus*



*Chemayundung glacier at the source of the Brahmaputra*



*Mapcha Chungo spring forming the source of the Karnali*





*Kangling Kangri glaciers at the source of the Sutlej*



*Unfissured ice of Rakas Tal, seen from Lacheto Island looking towards Dopserma*



*Manasarowar frozen, with fissures and rafted ice on the shore*

due to the fact that the water filtered out of it by subterranean paths is compensated by the subterranean supply from Manasarowar. As no appreciable vacancy is created beneath the ice on Rakas Tal, no heavy fissures are to be found in it.

*Hot springs of Manasarowar.* There are three hot springs on Ganga Chu, 2 furlongs from Manasarowar. One spring is on the left bank, one on the right bank, and one boiling spring on a small rock in the middle of Ganga Chu. About three-quarters of a mile south of the mouth of Ganga Chu, 40 or 50 yards from the shore, I saw an oval patch of water, about 10 yards in diameter, in the frozen lake of Manasarowar, on 28 January 1937, when the minimum night temperature in the verandah of my room was 2° F. Some aquatic birds were swimming and playing in the pool and on the ice nearby. This makes me believe that there must be hot springs in the bed of Manasarowar.<sup>1</sup>

About 3 or 4 miles from the shore of Manasarowar, upon the left bank of the Täge Chu, there are several hot springs at Tagpotong varying in range from lukewarm to boiling temperatures. There is a regular stream of hot water flowing into the Täge. Opposite these springs on the right bank of the Täge are some caves called Chuphuk, where a few monks live in winter. There are some *chortens* and *mani*-walls. Just near the caves there are the foundations of a ruined monastery. Some shepherds from Nonokur camp here in early spring and autumn for a couple of months in each season. Near the cave and a mile farther down there are more hot springs. About three-quarters of a mile above the caves, at a place called Tomomopo on the left bank of the Täge, there are hot springs, some boiling and bubbling and some lukewarm. It is interesting to note that there are hot springs at Tirthapuri and some at Kyunglung 10 miles down, on the banks of the Sutlej. Like beads on a string, there is a series of hot springs on the Sutlej, at Tomomopo, Tagpotong, Chuphuk, Iphuk, Manasarowar, Ganga Chu, Tirthapuri, and Kyunglung.

*Source of the Indus.* Of the different source streams of the Indus, the Tsethi Chu, the Lungdhep Chu, the Munjan Chu, and the Bokhar Chu, the Lungdhep Chu carries most water and is the longest of all the streams. I went to the source of the Indus by Lhe La and returned by Topchen La; therefore I did not see personally the Tsethi Chu, but my guide informed me that the Lungdhep Chu is bigger than the Tsethi Chu. Next come the Munjan and the Bokhar Chu, both of which appeared to be almost of the same size; some shepherds hold the Bokhar to be bigger than the Munjan, but my guide said that the Munjan is bigger than the Bokhar, and I cannot be definite about it. The Lungdhep Chu is certainly the biggest and the longest, and as such its source, which is in the Topchen La, should be considered the source of the Indus if the quantity of water is taken as criterion for fixing its source.

*Source of the Brahmaputra.* Of the three headwaters of the Brahmaputra, the Kubi, the Chemayundung, and the Mayum Chu, the Kubi is by far the biggest, and as such its source in the Kubi glaciers should be regarded as the source of the Brahmaputra if the quantity of the water is taken into

<sup>1</sup> Noted by Colonel Ryder in 1904.

account. But if length be the deciding factor, the Chemayundung branch, which is 6 or 7 miles longer than the Kubi (Sven Hedin admits this), should be the main branch of the Brahmaputra. The Kubi glaciers are nearly four days' march from the Chemayundung glaciers. Then again, Angsi Chu is longer than the Chemayundung, and the Angsi glaciers are equally massive. It seems therefore that we may have to shift the source of the Brahmaputra to the Angsi. The Indian merchants, who go from Manasarowar beyond the Kubi Tsangpo for wool purchases, consider the Tamlung Tso to be the source of the Brahmaputra, inasmuch as a stream from it flows into Angsi Chu and subsequently into the Chemayundung, which is considered by them to be the main stream of the Brahmaputra. As such the Indian merchants call the Tamlung Tso "Brahmakund," and consider it sacred and bathe in it.

*Source of the Map Chu, or Karnali.* After two days' march from Taklakot up the Karnali, I reached a place called Mapcha Chungo on the right bank of the Map Chu. At the edge of the bank is a big *mani*-wall with several *mani*-slabs and streamers. On descending a few yards towards the bed of the river I was shown the big spring of Mapcha Chungo (peacock mouth) gushing out from the wall of the steep bank of the river. There are some *mani*-stones and a few streamers near the spring. The water from the spring flows down a beautiful green velvety moss, which has some resemblance to the neck of a peacock, into the Karnali below. This spring is the traditional source of the Map Chu (peacock-mouthed river, or Karnali), and the actual source of the Map Chu or the Karnali is therefore somewhere near the Lampiya Dhura pass, whence flows the main stream of the Karnali.

*Conclusion.* Taking local Tibetan traditions into account, the source of the Sutlej lies in the Kangling glaciers, east of Manasarowar, 65 miles from Barkha. The source of the Indus is in the springs of Senge Khambab (half a mile north of Bokhar Chu), north of Kailas, 53 miles from Barkha. The source of the Brahmaputra is in the Chemayundung glaciers, two days' march east of the Kangling glaciers or 92 miles from Barkha, and the source of the Karnali is at the Mapcha Chungo spring, about 23 miles north-west of Taklakot. If one takes other facts into consideration, the sources of all the four rivers must be shifted elsewhere after systematic and scientific exploration and survey. I leave the matter for serious consideration to the seekers of truth, who may draw their own conclusions in the light of the few facts I can place before them.

*Note by T. G. Longstaff*

Sherring's 'Western Tibet' (1906) contains very apposite information on the Manasarowar problem. I would particularly draw attention to Sherring's panoramic photograph of the channel between Manasarowar and Rakas Tal on p. 271, a copy of which is in the Society's collection. In the *Journal* for February 1907 is a short paper by myself of which pp. 207 and 208 may usefully be compared with the Swami's interesting account. In general I am in full agreement with him in accepting the traditional sources of the four rivers. If length is to be the criterion, then further survey is required. If volume is taken as the test, then, with glacial sources and an Arctic winter

climate to contend with, flow must be measured throughout the year. It savours of impertinence for Europeans to assert their views against the usage of other civilizations.

I think that the cracking of the winter ice on Manasarowar and the "rafting" on the shore, shown in photographs sent by the Swami, indicate that there is active water-flow into Manasarowar even in the winter season. This goes far to justify the claim of the author that the true source of the Sutlej is in the Tage Chu, which flows from the Kanglung Kangri glaciers to the east of Manasarowar. Such water can only escape by the channel (the Ganga Chu of the Swami) at Jiu, connecting Manasarowar and Rakas Tal, thence to enter the "Old bed of the Sutlej" either above or below ground, according to the season. A flowing stream was found in this channel by Henry Strachey in 1846; by Sherring and myself in 1905; and by the author in 1928, 1935, and 1937.

Those who have travelled in Tibet must admire the character of the Swami, displayed by his omission of all reference to the hardships he must have suffered during his winter journeys in these inhospitable regions.