

QUEST FOR THE SOURCE OF THE MEKONG RIVER

Notes on a Controversial Issue on the True Source

Tamotsu Nakamura - The Japanese Alpine Club, August 2001

“-----”. Then I took an altitude reading (4,975 meters, or 16,322 feet); and, most important of course, the exact latitude and longitude.

Lat. 33 ° 16' 534 N.

Long. 93 ° 52' 929 E

On the surface these numbers were the entire purpose of our venture, the figures necessary to be able to pinpoint the source on any map of the world. This was what geography and exploration were all about. Just a few numbers, yet what a struggle to record them how much bloodshed, tears, and sweat so that what had been spelled out in 1866 as the goal of the Mekong Committee of the French Societe de Geographie could at long last be fulfilled. Suddenly it became important to record the day, September 17, 1994. Twenty-five years after man had set foot on the moon, here we were recording for the first time the source of the third-largest river of Asia.”

This is the mention of Dr. Michel Peissel, a leader of Franco-British Expedition to the source of Mekong River that appears in his book, *THE LAST BARBARIANS - The Discovery of the Source of the Mekong in Tibet* (Henry Holt, New York 1997). Needless to say, he is one of the world's foremost Tibet experts. When I read it, however, I had a feeling that something was not correct with Dr. Peissel's claim since I acknowledged that Japan-Sino Joint party had reached another source of Mekong a couple of days earlier than the Peissel's party did. The issue seems controversial. It would be worthwhile, therefore, to look into a chronicle of the exploration of the upper Mekong and to follow the footsteps of the current expeditions to have searched the source of Mekong.

A brief history of the exploration 1866 to 1894

In succession to the death of Henri Mouhot, a discoverer of Angkor Wat, who had first led a French expedition to the Upper Mekong in 1866, Doudart de Lagree of French Navy took over Mouhot's post. The newly appointed leader crossed the border to Yunnan

Province of China and further continued their march northeastward to the Upper Yangtze on the way to head for Tali Fu together with Francis Garnier, a famous explorer of Northwest Yunnan. The same tragedy fell on Lagree too. He died of a disease at Huitse in 1868, while Garnier could arrive at Tali Fu being helped by a missionary, M. Leiguilcher.

1868 was a notable year for the chronicle. In this year no less than three attempts from three points were made to penetrate the obscurities of the unknown region. One was by Lagree's party which had started from Saigon; a second was by Mr. T.T. Cooper from Sichuan to East Tibet; the third by an English party of Major Sladen from Bhamo (Burma) on the Irrawaddy river. The great effort of the Lagree's expedition had been the exploration of the Mekong, which they ascended and surveyed from the delta, as far as a point of latitude 22 ° 00'. From there they traveled through Southern Yunnan and reached the provincial capital, Yunnan Fu (Kunming) at the end of 1867, the first time in my knowledge that any European traveler (not being a missionary priest) since Marco Polo visited in 1283.

In July 1890, the French Government entrusted Dutreuil de Rhins, who had been a distinguished explorer to Congo, Indo-China and Central Asia as well, with a scientific mission to Upper Asia. In October of the same year Fernand Grenard was appointed to the mission. The small party calmly left Paris on February 19, 1891. It was a start of the long journey over three years across the Caucasus, Russian Turkestan, Chinese Turkestan, Karakoram Pass to Ladakh, again back to Chinese Turkestan, Taklimakan Desert, Kun Lun and then desolate Changtang high plateau towards Lhasa of their destination from the northwest. Three months of the uninviting hardship to struggle against a desolate wilderness of the northern Tibet brought the travelers to Nam Co Lake (Tengri Nor), and here they were but a week's march to Lhasa. After Bonvalot, they were the first Europeans to touch the shores of the lake since the day of Huc. However the officials of the Lhasa deputation stopped them to further proceed to Lhasa. So they turned northward as Bower, Littledale, Rockhill, and Bonvalot had to turn, and as far as Nakchu-ka they were following the usual Mongol pilgrim and caravan route bound for the Chinese frontier at Sining Fu (Xining).

In early March of 1894, from Nagchu de Rhins and Grenard left the direct pilgrim road and struck into the northern trade route between Lhasa and Batang, eastward. But subsequently they made a long detour to regain the direct route to Xining, on the way of which they traveled through the source of the Mekong River. They explored a part of the upper Salween River and, having crossed Tangla range, they found themselves on a marshy plateau crossed by the Dam Chu, the longest branch of the Yangtze River. They

made what was, from the geographical point of view, the most interesting discovery in their journey, but it resulted in the misfortune of a fatal accident that de Rhins was brutally murdered by local Khambas near Jyekundo.

On April 8 they entered from the Yangtze River basin into the Mekong River basin. Grenard described "At nine o'clock in the morning, we had the satisfaction, in crossing the Zanag Lungmug La, to achieve one of the objects which we had set ourselves to accomplish. From this pass, which is 16,760 feet high, runs the Lungmug Chu, the most westernly of the source of the Mekong. The joys of discovery, which are enough to make any good explorer forget the sufferings of a journey were increased two-fold for us by the fact that this humble stream of water, now motionless under ice, but soon to flow over mountains and plains to French territory, -----." in his book *TIBET; The Country and Inhabitants* (Hutchinson, London 1904). They followed the Lungmug Chu down to Zanag (Current Chinese name: Zanaqu river), one of the two main headwaters of the Upper Mekong and rather hastily congratulated themselves for having discovered the source of the great river. The head of Lungmug Chu which, they claimed, they had reached first was not exactly a pinpoint of the real source of the Mekong. This is shown in the attached sketch map which is drawn being based on the topographical maps of both the Chinese Peoples Liberation Army (1:100,000) and the Russian mapping agency (1:200,000).

Franco-British expedition 1994

"One of the last great geographical mysteries of the world solved" *THE GEOGRAPHICAL*, The magazine of The Royal Geographical Society. Dr. Peissel wrote in his book that the tacit approval and publicity of the Royal Geographical Society convinced the skeptics at last who had been a suspicious about the performance of the Franco-British party. The following is the Record of *THE GEOGRAPHICAL JOURNAL*, Vol. 161 Part 2, July 1995.

The source of the Mekong identified

Explorer – Tibetologist Michel Peissel FRGS accompanied by DR. Jaques Falck and the Hon. Sebastian Guinness has just returned from China after having located and surveyed the principal source of the Mekong River. They reached the source on the 17th September, 1994 at the head of the Rup-sa pass at an elevation of 4975 metres. The Rup-sa pass is on a saddle which links the Drug-di and Sag-ri ranges which frame the last forty kilometres of the course of the Dza-nak (Current Chinese name: Zaqu river),

or Black-Dza as the upper Mekong is called in Tibet.

The Rup-sa pass marks the watershed between the Mekong and the Yangste River system. The exact location of the source is at latitude 33 ° 16'N; longitude 93 ° 52'E.

Over the past century a dozen expeditions failed to reach source of the Mekong. 1894 the French explorer Dutireuil de Rhins was assassinated by Tibetan Khambas just two months after having erroneously recorded the source of the Mekong to be that of the Lung-Mog (Lungmug of Grenard) river, a tributary on the right bank of the Dza-nak.

To the best of our knowledge there is no other record or claim of the source having been reached by other foreigners (underlined by T. Nakamura). Of the early explorers who travelled the region, Kozloff, Teichman and Rockhill never reached the source. The reasons for this being both political and geographical.

The source of the Mekong is located in the very inner heartland of the highest and most inhospitable portion of the central Asian highlands, hundreds of kilometres from any settlement. The region was part of the far-flung realm of the kings of Nangchen, the home of 200,000 Khamba nomads who still live today a life very similar to that of their earliest ancestors. Nomadic mounted warriors, these Nangchen Khambas are divided into 25 semi-independent tribes who ferociously opposed the Chinese takeover, in the same manner in which they had, in the past, opposed all those who attempted to penetrate their territory. To complicate matters further they were never under the jurisdiction of the Dalai Lamas. Most of these nomads still today escape Chinese control, as a result the Chinese Government has been reluctant to authorize foreigners to travel into southern Qinghai.

Last year (1994), as part of a two-year study of Tibetan horse, Dr. Peissel was exceptionally allowed into western Nangchen where he identified a new breed of hot-blooded horse with enlarged lungs. I was in continuation of this research that he was allowed to travel to the source of the Mekong in 1994 under the auspices of the Qinghai Mountaineering Association.

THE GEOGRAPHICAL, April 1995 introduced that Peissel acknowledges the possibility that Chinese Military may have recorded the true source of the Mekong. "Alas any such information, if it exists, was never published." And this, he say, would be the necessary requirement for them to claim its discovery.

Regarding this question Dr. Peissel himself mentions in his book only what he heard from a staff of the travel office of the Chinese Academy of Science in Zadoi, who had organized the Japanese party composed of 6 members from the Agricultural University of Tokyo, under the leadership of Mr. Junichi Nakanishi assisted by Mr. Masayuki

Kitamura , say, Peissel was told by the staff that the Japanese party had not been looking for the source of the Mekong after all. Dr. Peissel should have contacted either the Chinese Academy of Science or the Agricultural University of Tokyo in order to obtain their record of having reached the real source of the Mekong just five days earlier than Franco-British party stood on the head of Rup-sa pass.

Japan-Sino Joint Expedition 1994

We should say that it was merely a coincidence that the two expeditions entered simultaneously into the source of the Mekong in September 1994 with the same mission to search and survey the real source of the Mekong.

According to the latest data being issued by the Chinese Academy of Science, the name of the Mekong River varies in the four stages as under:

- (1) Mekong-----The lower stream in Myanmar, Laos, Cambodia, Thailand and Vietnam.
- (2) Lancang Jiang-----The middle and lower stream from Qamdo (Chamdo) to the border between China and Myanmar/Laos.
- (3) Zaqu (Dza Chu)-----The upper stream- the Upper Mekong - from Ganasongdou to Qamdo.
- (4) Zayaqu (Dza Kar)-----The upper stream of the northernmost source to Ganasongdou which is a confluence with Zanaqu.
- (5) Zanaqu (Dza Nak)-----The upper stream of the westernmost source to Ganasongdou.

Here is raised a question which of Zayaqu or Zanaqu should be recognized as the true source of the Mekong if the only one source is selected to be more authentic from a geographical point of view. It is understood, however, that this question has been resolved by the survey of the Japan-Sino Joint party in 1994 and the other two parties in 1999, both of which were expedited separately in collaboration with the Chinese Academy of Science. The report on the Japanese part is summarized as under.

Japan-Sino Joint expedition of the Agricultural University and the Chinese Academy of Science, six Japanese and four Chinese members departed from Sining on August 20, 1994 and arrived at Zadoi via Yushu (Jyekundo) on August 25. Zadoi is the remotest county of the Qinghai Province where is the source of the Mekong. On the following day they drove from Zadoi village (4100m) to Moyun (4539m), the last settlement on the right bank of Zanaqu that was a starting point of the caravan with yaks and horses.

September 2 to 4: Moyun to Ganasongdou, a confluence of Zayaqu and Zanaqu where they measured a discharge (the flowing water volume) of the both streams. A discharge of Zayaqu was proved five times of that of Zanaqu accordingly. With the result they judged Zayaqu must be the real source of the Mekong and chose the way up to search the watershed of Zayaqu.

September 5 to 12: Caravan and survey from Ganasongdou to Lasagongma. On September 12 they discovered the geographical source which was flowing out from a glacier. The location is in a latitude 33 ° 42' 41" and longitude 94 ° 41' 37" (recorded from GPS) at 5160m above sea level.

September 13 to 17: Climbing a peak of 5632m, the highest in the vicinity and moving to one of the legendary sources, Zaxiqiwa Lake in a latitude 33 ° 34' 15" and longitude 94 ° 18' 14" at 4650m.

September 18 to 20: Searching the other legendary ("spiritual") source, a sacred mountain of Zanarigen in a latitude 33 ° 19' 20" and longitude 94 ° 13' 40" at 5550m 17km north of Moyun, and upon returning to Moyun their field works were completed. They specifies two categories of the source of the Mekong.

I, Zayaqu: A. Geographical source-----Lasagongma

B. Legendary source-----Zaxiqiwa Lake

2. Zanaqu: A. Geographical source-----Chajialima Mountain

B. Legendary source-----Zanarigen and other two places

(Notes It cannot be confirmed whether Chajialima Mountain corresponds to Rup-sa pass of Dr. Peissel.)

On November 9 the Xinhua (the national press agency of China) released the news that the expedition team of the Chinese Academy of Science and the Agricultural University of Tokyo surveyed Zayaqu, a left tributary of Zayu in early September, and the experts of the both institutions confirmed a head-spring of Zayaqu to be the source of Lancang Jiang (Mekong River).

The following is an abstract in English version of *GEOGRAPHICAL RESEARCH*, Vol. 14 No. 1, March 1995 issued in China on an outcome of the 1994 Japan-Sino Joint expedition.

THE SOURCE OF MEKONG RIVER

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Abstract

By a field survey it is decided that the source of Mekong River is the Zayaqu river which starts from the end of a small glacier on the Lasagongma Mountain in Zadoi County, Qinghai Province. The altitude of the source is 5167m and the location is $94^{\circ} 41' 35''\text{E}$ and $33^{\circ} 44' 13''\text{N}$.

Mekong River is the 7th biggest river in Asia and the 12th biggest river in the world. From the source to its first bigger tributary point, Ganasongdou ($94^{\circ} 36' 40''\text{E}$ and $33^{\circ} 12' 33''\text{N}$), Zayaqu river has a length of 93.9km, an area of 2,560k m², a discharge of 54.9 /s, a width of 40.0m, a mean depth of 0.726m and a mean flowing speed of 1.89m/s which was measured on September 4, 1994. From Ganasongdou to Qamdo in Tibet Autonomous Region, the river is called Zaqu River which has a length of 518km. Down from Qamdo to the outlet of the river inside China, the river is called Lancang Jiang River which has an area of 164,766 k m², a length of 2,354km and a mean annual discharge of 2,180 /s.

The research report also describes the figures of Zanaqu having been measured at the same time for comparison. From the source to Ganasongdou, Zanaqu has a length of 90.7km, an area of 1,983k m², a discharge of 10.6 /s, a width of 30.0m, a mean depth of 0.33m and a mean flowing speed of 1.067m. This indicates that Zayaqu should be the principal tributary of the Mekong in all respects.

[Writer's note]

Differences are found between the Japanese record and the above Chinese record. The difference in an altitude is negligible but the difference in location is too large and the Chinese figure cannot be justified because the Chinese members except a interpreter did not go to the headwater.

In the other report of the Chinese Academy of Science, the Chinese part has turned down the Dr. Peissel's claim to have first discovered the source of the Mekong at Rup-sa pass of Zanaqu, as it is not scientific.

Two Chinese Expeditions 1999

The Chinese national geographical magazine *GEOGRAPHY, October 1999* reported an outcome of the two parties having conducted extensively a survey of the source of the Mekong in June to July of 1999. A chapter sub-titled **【Two expeditions going upstream the source have triggered a controversy】** opens with the following writing. “Too many opinions prevailing on the source of the Mekong have had the scientists and explorers feel, day by day, an urgency and importance to go up the source of Lancang Jiang (Mekong) and consider that the source must be searched and identified by the Chinese themselves.” Both the parties were composed chiefly of the Chinese Academy of Science.

A. Dexiang Party: Large expedition sponsored by Dexiang Business Group of Tianjin.

Professor Guan-Zhijia led the team of eight scientists accompanied by several pressmen.

B. Dr. Liu-Shaochuang Party: Small team though supported by several institutions.

Actual work was conducted only by Dr. Liu-Shaochuang. He was belonging to the Remote Sensing Office of the Chinese Academy of Science.

The two parties came to the different conclusions that drew an attention of the mass media, and consequently, if the authentic source is to be only one, an argument has inevitably carried on. Dexiang Party concluded the head (5224m) of Lasagongma, a stream flowing out from a glacier on the eastern slope of Guozongmucha Shan (5514m) to be the real source. The location is a longitude 94 ° 41' 44" and latitude 33 ° 42' 31". They installed here a stone monument to indicate “The Source of Mekong”. In the other hand, Dr. Liu-Shaochuang declared a stream from a snowfield of Jifu Shan (5552m) to be the source that is just 6km north of the Dexiang's source. The location is a longitude 94 ° 41' 12" and latitude 33 ° 45' 35".

Dr. Liu-Shaochuang's Survey

According to *GEOGRAPHY, October 1999*, Dr. Liu focused his survey points mainly to the following three places.

(1) Zaxiqiwa Lake (Legendary source)

Zaxiqiwa is a most popular legendary source of the Mekong that local Tibetans have long believed. It locates in an area of small lakes and marshes of the upper tributary which flows into Zayaqu from northwest at a longitude 94 ° 26' 00" and latitude 33 ° 27' 20". A length of the longest tributary of Zaxiqiwa from Ganasongdou to the head

is 76.7m whilst that of the main stream of Zayaqu from Ganasongdou to Jifu Shan is 101.5km.

(2) Lasagongma (Geographical source)

His field survey decided the source of Lasagongma to be in a glacier end (5160m) at a longitude 94 ° 41' 37" and latitude 33 ° 42' 39". These figures are almost similar to those of The Agricultural University of Tokyo in 1994. The doctor refers to the lengths of the two streams of Zayaqu from Ganasongdou to Lasagongma (99.4km) and Jifu Shan (101.5km).

(3) Jifu Shan (Geographical source)

The two upper streams of Zayaqu, of which one is Gaoshanxigu being originated in Lasagongma and the other is Gaodepu from Jifu Shan join at Yeyongsongdou. The doctor surveyed lengths of the both streams. The former was 21.5km and the latter was 23.6km. He measured twice a discharge at the junction, but no differences to take note had been observed. He turns his attention to the fact that a stream of Gaodepu flows northward following the same flowing direction of Zanaqu. From the points of view of the length and flowing direction, Dr. Liu squeezed Jifu Shan to the true source of the Mekong. He measured also a length, an area of the basin and a discharge of Zanaqu and compared with Zayaqu. The result has convinced him that the source of the Mekong should not be in Zanaqu but in Zayaqu.

Dexiang Party's Survey

This party fully equipped with the newest model of tools and instruments carried out the most scientific survey in a large scale. For the purpose of calculating river lengths and areas of water collecting basin, they took advantages of not only topographical maps of 1:100,000 but also TM Satellite Pictures. The collected data were analyzed and duly corrected by a computer. They employed a special instrument in order to measure a discharge and flowing velocity of river water. Needless to say, they used GPS, GIS (Geographic Information System) and SRS. An official report written by the three members of Commission for Integrated Survey of Natural Resources, China Academy of Science in 2000 is available. The title is "Identification of the Source of Lancang Jiang (Mekong River)", a summary of which is introduced herein as under:

1. Criteria for evaluation

In general the following factors are taken into accounts to decide the river source.

River length

Discharge

Area of basin

Legend

Direction of stream

Geological history

Among the above, a river length is the most important and has a first priority. The sources of the major rivers of China such as Chang Jiang (Yangtze River), Huang He (Yellow River) and Yalung Tsangpo-Brahmaputra were identified in accordance with the said criteria. In case no substantial difference is found in the river length and discharge, etc. a consideration for solution could be given to a similarity of the flowing directions.

2. Evaluation on Zayaqu and Zanaqu

The report quotes first a comparison of Zayaqu and Zanaqu surveyed by Japan-Sino Joint expedition in September 1994 and then describes Dexiang Party's survey that was conducted at Ganasongdou, a confluence of the both tributaries on July 12, 1999.

The results of Dexiang Party are:

	<u>Zayaqu</u>	<u>Zanaqu</u>
River width-----	62.0m	51.0m
Max. depth of water-----	1.30m	0.65m
Mean depth of water-----	0.73m	0.38m
Velocity of river flow		
Max. velocity-----	4.89m/s	2.52m/s
Mean velocity-----	2.63m/s	1.81m/s
Discharge-----	119.0m ³ /s	35.1m ³ /s

(The velocity of river flow was measured by a flow meter of propeller type, Model LS25-3A.)

A discharge of Zayaqu was 3.39 times of that of Zanaqu.

Meanwhile, an analysis of TM Satellite Photos of September 1998 and a calculation by computers after correction present the following figures.

	<u>Zayaqu</u>	<u>Zanaqu</u>
River length-----	97.83km	92.96km
Area of basin-----	2,457.9k m ²	1,999.3k m ²

The above figures are self-explanatory and provide an evidence in all respects to claim

that Zayaqu is the principal tributary going up toward the source of the Mekong.

3. Identification of the true source

The main stream of Zayaqu further separates into two tributaries of Gaoshanxigu and Gaodepu at Yeyongsongdou. The greatest concern of Dexiang party was to confirm which place of Guozongmuchu Shan or Jifu Shan is duly identified to the true source of the Mekong. With an utmost care they calculated lengths and areas of basin in details and measured a discharge of the both streams at Yeyongsongdou on September 14, 1999. The result contradicted what Dr. Liu-Shaochang had surveyed.

	<u>Gaoshanxigu</u>		<u>Gaodepu</u>	
	<u>Dexiang</u>	<u>Dr. Liu</u>	<u>Dexiang</u>	<u>Dr. Liu</u>
River length-----	22.59km	21.5km	21.62km	23.6km
Area of basin-----	97.25k m ²		78.83k m ²	
Glacier-----	2.78k m ²		0.60k m ²	
Discharge-----	9.55m ³ /s		7.94m ³ /s	

The above figures clearly indicate that Gaoshanxigu has a longer stream than Gaodepu (1.04:1), larger area of basin (1.23:1) and larger glacier (4.63:1) and accordingly an annual discharge from the basin of Gaoshanxigu would inevitably be greater. Another point to be noted is the fact that the glacier of Jifu Shan is distributed chiefly in the side of Yangtze River basin and melting water from the glacier naturally flows down to Yangtze River.

In conclusion, Dexiang Party of Professor Guan-Zhihua has recognized Guozongmuchu Shan to be the real source of the Mekong. Melting water from a glacier is being supplied to the source of the Mekong. An area of the glacier to cover is 0.67k m². The geographical location is a longitude 94 ° 41' 44" and latitude 33 ° 41' 44" and at an altitude of 5224. From the glacier there a humble and narrow stream gathers to Lasagongma and then flows down to Gaoshanxigu/Zayaqu.

Who should decide the source of the Mekong? “It would draw a widespread attention to the source of the Mekong that the two parties of the China Academy of Science have brought up different survey results.”, the *GEOGRAPY, October 1999* emphasizes. It comments in continuation that the leaders of the both expeditions have expressed that the decision must have a strictly scientific basis and the relevant arguments should be welcome.

The writer feels, however, that the Dexiang Party's claim is more convincing as their survey was conducted more widely and in a more scientific method as above-mentioned. The writer is also of the opinion that the true source of the Mekong must locate at the point having been identified by Dexiang Party in Lasagongma Creek of the upper Zayaqu in 1999 and that Tokyo University of Agriculture first discovered and reached the true source in 1999. The writer referred whole the story to a great expert of river rafting, Mr. Pete Winn of Earth Science Expeditions (NPO organization) in Colorado with a view to have his comment and assessment. He kindly appreciates the writer's study and has taken a trouble to confirm the relevant fact through his channel. The following is a summary of the conclusion incorporating Mr. Winn's opinion and judgement.

“By international geographic convention, the source of a river is the furthest source of water from the mouth of river, typically a spring or glacier. The agency of the country responsible for official surveys makes the final decision regarding geographic sources of rivers within its boundaries.

The geographic source of the Mekong River (Langcang Jiang) was officially recognized by the Commission for Integrated Survey of Natural Resources of the Chinese Academy of Sciences in October 1999 as being located at an altitude of 5224 meters (17,135 feet) at the foot of the glacier that discharges into Lasagongma Creek on the north side of Guosongmucha Mountain (5514 meters or 18,086 feet), **94 41 44 E** longitude and **33 42 31 N** latitude. The actual survey was conducted in July 1999 by the team of the Chinese Academy of Sciences under the sponsorship of Dexiang Business Group of Tainjin.

A special attention must be drawn, however, to the fact that the above geographic source had already been first discovered and reached by a Japan-China Joint party on the 12 th September 1994, then due to conflicts with another Chinese survey, the source was more precisely located by a Chinese team.”