QUENTIN DEVERS

Charting Ancient Routes in Ladakh: An Archaeological Documentation

The usual image of interregional trade between Ladakh and its neighbours is that Leh was the main central market.[1] Major routes led in one way or another to Leh, and it is in Leh that merchants and travellers met to trade. From the study of historical sources, five main routes can be described (Fig. 1): one led to Lhasa for the ritual trade with Tibet (*chaba* [T. *ja sbag*] and *lopchak* [T. *lo phyag*] caravans) and for the purchase of pashmina in markets along the Indus such as Garthok (route 1); another route led to Kashmir to sell the pashmina (route 2); a third route led to Baltistan (route 3); a fourth to India (route 4); and a fifth to the Tarim Basin (route 5). The location of Leh at the centre of these main routes is usually given as the reason why the second dynasty moved its capital to Leh. However, was Leh truly a natural centre for trade?

My work on ancient routes is based on a comprehensive corpus of archaeological sites. In the past two decades, various scholars, including, and not limited to, Martin Vernier, Tashi Ldawa, Viraf Mehta, Gerald Kozicz, Laurianne Bruneau, Robert Linrothe and myself, as well as various organisations, such as NIRLAC (Namgyal Institute for the Research on Ladakhi Art and Culture), INTACH (Indian National Trust for Art and Cultural Heritage) and the ASI (Archaeological Survey of India), have conducted extensive surveys throughout the region, resulting in the inventory and study of a large array of heritage sites. The variety of remains include fortifications, temples (ruined and intact), and chortens (T. *mchod rten*), deserted settlements, funerary sites, rock art, stone tools, etc. This corpus counts over 800 archaeological sites. It covers well over 5,000 years of history, from prehistory up to the present day. Finally, the sites are spread throughout Ladakh. This corpus provides a unique representative view of the region both over time and space.

The analysis of the location of these sites provides valuable information for the study of the evolution of regional dynamics on one hand, and of the itineraries of ancient trade routes on the other. In what follows, I will introduce the part of my work dedicated to ancient routes. I will present evidence of a trade network prior to the 17th century much more diverse than that described in historical sources (which date mostly from the 19th century onwards),[2] in which Leh had probably only a minor role, and in which the main channel for east-west trade did not follow the Indus but passed through a parallel corridor formed by a series of valleys centred on the Markha.

CROSSING THE LADAKH RANGE

In the 19th and 20th centuries, the main valley used for crossing the Ladakh range was that of Leh. However, in former times, fortified remains point to a different reality. Whereas in the Leh valley there is only one fortress, important concentrations of fortifications are found

[1] This paper investigates ancient routes linking Ladakh and its neighbours. Routes used for local travels within Ladakh are outside the scope of this study. For details on modern local trade routes see the excellent work of Rizvi (in particular Rizvi 1983, 1985, 1999).

[2] The modern interregional trade network between Ladakh and its neighbours, in the 19th and 20th century, has been carefully studied and documented by Rizvi. See for example Rizvi 1983, 1997, 1999.

in other valleys such as Sabu, Chemre and Shera (Fig. 2: a, b and c). For instance, in the Sabu valley there are five fortifications, in Chemre fourteen and in Shera six—including three of the largest fortified settlements of Ladakh. The Leh and Chemre valleys are comparable for their agricultural resources: about 743 hectares for the first, 903 for the second.[3] But if in Leh the safety of the valley does not appear to have been a main concern, in the Chemre valley defensive sites are by far the most numerous remains.

For the Sabu valley the difference is even more important: there are five times as many fortifications whereas the valley has an agricultural capacity almost three times smaller than that of Leh (260 hectares). Both valleys being neighbours and with similar cultural remains, this difference cannot be explained by regional differences. However, a very important feature differentiates them: the pass to cross the Ladakh range. The pass from the Leh valley, the Khardong-la (5,390 m),[4] is said by all early explorers to have been very difficult; it was covered by a glacier on its northern side. Instead of facing this difficulty, many merchants and travellers preferred the much easier pass from the Sabu valley, the Digar-la (5,380 m). Before Leh became the capital of Ladakh, and as such an essential stopover, the Sabu valley was probably a far more natural stage to cross the Ladakh range.

But the easiest pass by far was from the Chemre valley, the Chang-la (5,300 m). It was also the only one open both in summer and in winter. This pass not only gave access to the route towards the Tarim Basin, but also to that towards Rutog. The valley has another easy pass, the Wuri-la (5,280 m). Combining two of the easiest passes to go north, an additional access to the east (the Chang-la can be used to go both north and east), as well as among the most important agricultural resources of the region, it is not a surprise that the Chemre valley is the one with the most ruins of fortifications north of the Indus. The fact that the Chemre and Sabu valleys were more concerned about their safety, being easier to access and so more exposed to intruders, is quite logical.

Unlike the Sabu and Chemre valleys, the Shera valley and its pass (the Shera-la, 5,500 m) are not mentioned by any explorers or in any historical sources. The valley, with even less agricultural capacity (253 hectares) than Sabu, has one more fortification. And three are among the largest fortified settlements of Ladakh. Considering the size and number of the fortifications found in the Shera valley compared to its agricultural resources, it is reasonable to form the hypothesis that it might also have been a corridor of choice to cross the Ladakh range.[5] Passing through this valley could have been advantageous for several itineraries, especially when coming from Gya: when coming from there and going to Tangtse or to Shyok village, it is indeed shorter to go through Shera than through Chemre. Gya is further known to have been one of the main powers of Ladakh in ancient times, and its valley a major corridor to go to the Indian subcontinent. The Shera valley could thus have been advantageous for numerous merchants and travellers. Finally, the access to one of the fortified settlements of Shera, the Tsemo Khar, is marked by an entrance chorten that contains delicate wall paintings enhanced with gold painted pastiglia, which can be dated from the 13th century.[6] As a comparison, neither the Sabu nor the Chemre valleys have any Buddhist remains of this quality. Such costly construction is quite compatible with former wealth in the valley, wealth that could reasonably be assumed to have derived from trade.

To summarise, the main valleys to cross the Ladakh range, as it appears from the study of archaeological remains, were Sabu, Chemre and probably Shera (Fig. 3). On the other hand, with only one fortification and one of the most difficult passes to cross, the Leh valley does not appear to have played an important role: it was not a natural centre for travel to the north.

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3 The surface area of cultivated fields was measured using Google Earth imagery. The actual surface area of the fields may differ from the figures presented in this paper, but the method used being the same for all parts of Ladakh, the comparison between regions is representative of the actual differences between these places—in this paper I only compare areas, I never use figures for their absolute values.

4 Abram Pointet rightly pointed out to me that the pass on the original route was at an altitude of 5,390 m. When the drivable road was built, a slightly lower neighbouring pass was selected (5,340 m), and the name Khardong-la was applied to it as well (private communication, 29 September 2014).

5 It should be remembered that altitude is only a relatively minor factor for the crossing of a pass. Other factors need to be considered, like the gradient of the path, the orientation of the valley, the configurations of the surrounding mountains (which can influence the presence of glaciers), etc. As an example, based on the difficulty of crossing the Khardong-la (5,390 m), the altitude of the pass was for a long time over estimated by explorers, who considered it to be about 5,600 m. The pass of the neighbouring valley of Sabu, the Digar-la (5,380 m), was thought to be much lower as it was much easier to cross. Modern telemetric data show otherwise: the original Khardong-la was not particularly high with an altitude comparable to that of the Digar-la, and not so far from that of the Chang-la (5,300 m), which was open almost all year long. Altitude is only one of several factors for the crossing of a pass, and only experience can show whether a pass is easy to cross or not.

6 Dating was kindly provided by Nils Martin, who is preparing a PhD on the wall paintings of Ladakh from the 14th-15th century at the École Pratique des Hautes Études (Paris) under the direction of Charles Ramble and Christian Luczanits (private communication, 30 July 2014).

THE SHAM ROUTE

To go from Khaltse to Basgo, the modern road follows the Indus all the way to Saspol. This road was made possible only by the blasting of large rocks (Duncan 1906: 144), probably under the Dogras. Before that, the route left the Indus valley at Balumkhar and went through Tingmosgang, Hemis Shugpachen, Yangthang, Saspotse and Likir crossing six low passes.[7] Though several of the villages along this route have limited agricultural resources (19 hectares in Yangthang, 38 hectares in Saspotse, 147 hectares in Hemis Shugpachen, 208 hectares in Likir, 305 hectares in Tingmosgang), most saw the construction of temples between the 10th and 15th centuries: Likir, Saspotse, Hemis Shugpachen and Tingmosgang.[8]

In Saspotse, the Buddhist complex is composed of two temples, one intact and the other in ruins. The interior of the former is richly finished with murals. Numerous wooden statues are also stored inside the temple, suggesting a former portico or an ancient elaborate sculpted structure. Other areas with similar agricultural resources, like several of the side valleys between Domkhar and Hanu (for example the valley of Urbis), do not have any temples or ruins of temples from this period. The presence of these ruins along the Sham route suggests a significant past additional income.

This phenomenon is even more noticeable with the temples and painted chortens located on the other side of the Indus, in Sumda Chenmo and Sumda Chung. Whereas these two villages have even scarcer agricultural resources (respectively 14 hectares and 4 hectares), Sumda Chenmo has the ruins of two temples datable from the 12th to the 15th century, and Sumda Chung has three temples (one intact and two in ruins; see Devers, forthcoming) and one painted chorten from the same period. Wanla, Alchi and Saspol are other examples of such a disconnection between available agricultural resources and richness of Buddhist constructions. The common point between these different villages is that they belong to the same network of unavoidable routes connecting the regions located to the west of Ladakh to those located on the east. Indeed, the villages in this part of Lower Ladakh cannot be avoided when going from one side of Ladakh to the other, whereas Upper Ladakh could be fully circumambulated by way of a major and yet little known route: the "Markha corridor".

THE MARKHA CORRIDOR

Accessing the Markha Valley

One valley stands out more than any other for its fortified remains: the Markha valley (Fig. 2: d). The valley has one of the lowest agricultural capacities of the region, only 82 hectares. But the ruins of no less than seventeen fortifications are found there. Furthermore, the ruins of three settlements are located in places with almost no surrounding fields. One of these, Chalak, has the remains of a small temple of which the last standing wall bears the marks of a former sculptural ensemble (Devers and Vernier 2011: 72), a sign of a certain former wealth. Without proper food resources, these sites necessarily depended on other economic activities in order to subsist.

The fortifications of the Markha are all of modest size. Their number and location can be explained in part by the shape of the valley: most of them are built at the bends in the valley, and appear to constitute a visual link between the previous site and the next. However, other valleys, with similar shapes and similar agricultural resources, have only a few and sometimes no fortified sites. The valley between Wanla and Honupata is one such example: whereas it is more winding, there is only one fort. Another example is the valley downstream of Bod Kharbu, between Khangral and Sanjak: also very sinuous, it has only two forts. This section of the valley has even more fields than Markha, 172 hectares altogether. From these two examples we can see that the concern of screening a valley from end to end is peculiar to Markha. To understand this concern, and to understand the number of ruined settlements without proper agricultural resources, one has to consider the valley in its larger geographical context.

The Markha valley has four main known access routes (Fig. 4). The first is through the side valley of Skyu, reaching the Indus valley near Phey (Fig. 4: access 1). The second is at the junction with the Chacham valley near Teacha (Fig. 4: access 2). This route, known under the name Jumlam, leads to Zangla in Zanskar. The last two access routes follow the two streams whose confluence near Hankar form the Markha stream: the route that goes towards south leads to the Tsarap valley in Zanskar by way of Kharnak (Fig. 4: access 3), the

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7 These passes are the Bongbong-la (3,520 m), Lago-la (3,820 m), Metbak-la (3,820 m), Tsarmangchan-la (3,870 m), Charatse-la (3,650 m) and Lhalung-la (3,550 m).

8 Nothing remains of the temple in Likir but a statement of its construction in the chronicles of Ladakh (Francke 1926: 95). Near Tingmosgang, the ruins of a temple in Teya are made out of bricks whose size (40x27x10cm) is characteristic of constructions built before the 15th century (on the subject, see Devers 2016). Finally, according to Vernier, in Hemis Shugpachen are the ruins of a temple associated with chortens inside which are found tsatsas with sarada inscriptions (private communication, 10 June 2013).

other leads either to Hemis in upper Ladakh or Rong in the Gya valley (Fig. 4: access 4).

From South to North: the Jumlam Axis

Of these access routes, only the Jumlam route is known to have played a significant role in the past, especially for the trade in butter and barley (Devers and Vernier 2011: 61, 78). Its importance can be seen in the remains. The confluence of the Chacham and Markha valleys (where route 2 reaches the Markha near Teacha on Fig. 4) is locked down by six defensive structures. Nowadays there is no habitation or any ruins of habitations in the area, not even a single field. But no less than six defensive structures can be found there: it appears that people in the valley were quite concerned about watching who or what was coming from this direction. The other end of the itinerary also bears witness to the past importance of the route. In Malakartse the remains of a fort are impressively situated, and an exceptional painted chorten, one of the oldest (11th century) and most sophisticated of Zanskar and even Ladakh in general (Linrothe 2007: 41). And yet this site is completely isolated, located about an hour upstream of Zangla, in a very narrow gorge, far from any food resources. Furthermore, in Zangla, the path leading to the fort is marked by an entrance chorten with wall paintings that can be dated from the 11th century as well (Linrothe 2013). The chortens of Malakartse and Zangla contain the oldest murals found so far in Zanskar, and are among the very few painted structures preceding the Alchi Dukhang still preserved in Ladakh. They are located at the mouth of a route at the other end of which is the highest density of fortified remains in the region: these elements converge to suggest an important former use of the Jumlam route.

The function of Malakartse can be further understood in light of the path between Zangla and Tsazar (Fig. 5). Between the two villages, the Zanskar river comes directly against the cliffs of the mountain (Fig. 5, D). In the past, there was no direct passable trail between the two places. The regular path started at Malakartse, went up the mountain—where there are the ruins of several habitations (Fig. 5, B)—and then descended towards Tsazar near the ruins of Pamogon Gonpa. Establishing a post in Malakartse was the only chance for Zangla to get a grip on the Jumlam route and its trade, which otherwise completely avoided the village.

This north-south axis from Zanskar to upper Ladakh may also have been more used. According to Cunningham, the itinerary privileged by the Dogras to go from Jammu to Leh was to go by way of Zanskar, Jumlam and Markha. This was supposed to save them up to two days as compared to the Suru itinerary (Cunningham 1854: 150–51). One cannot rule out that, in the past, other travellers and merchants coming from or going to the region of Jammu could also have preferred the Jumlam and Markha route. In a more general way, these travellers could have used this route not only to go to upper Ladakh, but also to Nubra, the Tarim Basin or Rutog.

From West to East: The Case of Yaru Bridge

Another major axis, parallel to the Indus and passing through the Markha valley, has never been mentioned to my knowledge except by Vernier (Vernier and Devers 2012: footnote 14). This axis connects, among others, Wanla and Gya, without passing through the Indus valley. This itinerary is composed of two sections (Fig. 6): the first one is the Markha valley, the second is made of the succession of the Sumda valley with those of Hinju and Wanla. A key site links these two sections: Yaru or Waru. This route has never been studied before because no bridge was known to cross the Zanskar river to go from one section to the other. However, in 2007, during a survey carried out with Laurianne Bruneau and Martin Vernier, the ruins of a bridge were found in Yaru, along with those of a tower and rock-art site among which were two inscriptions written in Brahmi. These are the eastern-most Brahmi or Kharoshti inscriptions found so far in Ladakh. They shed light on the past importance of this bridge, and reveal a whole network of unexpected routes.

With the exception of the inscriptions in Yaru, Brahmi and Kharoshti inscriptions are located exclusively along the Indus, i.e. along the route going to Gilgit-Baltistan (Fig. 4). The site with the most inscriptions was in Khaltse. Its location, next to the bridge above the Indus, is very important for us (Fig. 7). When coming from Gilgit-Baltistan, the only reason to stop at this place to carve something on a boulder is that one is waiting to cross the river. If going east, for example to Basgo or Leh, one would only walk past this spot to go to Khaltse village; one would not randomly stop there where there is nothing but a bridge. Once on the other bank, there are three main destinations: Kashmir, Zanskar and Markha. Kashmir would not be an intended destination, as when coming from Gilgit-Baltistan there are more direct routes. Of the two remaining destinations, there are other Brahmi inscriptions only in the direction of Markha, at Yaru bridge. The inscriptions in Yaru indirectly link the Markha valley to the route from or to Gilgit-Baltistan.

To summarise, the Markha valley was used to go south to Zanskar and beyond (towards Jammu) (Fig. 8). Through the bridge in Yaru the valley could also be used to go west to Gilgit-Baltistan. Through the

same bridge it was possible to go to Kashmir as well, the route being the same all the way to Wanla. The valley could also be used to go to Gya or Hemis, and, from there, to go north to Nubra and beyond (the Tarim Basin) or east to Rupshu and beyond (Upper Tibet). There are thus two main axes: one from south to north, and one from west to east. For the former it is easy to understand why the Markha route would have been used: it was shorter than other itineraries. However, in the case of the latter, why would people go by way of Markha instead of simply following the Indus? Part of the answer lies in the section of the route between Ubshi and Mahe (Fig. 6).

Ubshi to Mahe: Along the Indus or Through Rupshu?

Between Ubshi and Mahe the Indus valley is very narrow, especially upstream of Shera (Fig. 6). In several places the river comes directly against the mountain, and it is questionable whether a path was possible when the level of the Indus rose. This observation in the field is confirmed by one of the maps of the Wise Collection at the British Library (Lange 2013). On sheet 3014-f4, which belongs to a series mapping the itinerary from Leh to Lhasa in the 19th century, a short note about the village Kiari states that the "road [is] not passable here in summer when the river is very large". An alternative itinerary then would be to leave the Indus valley in Ubshi to go through Gya valley, then along Tsokhar lake and finally through the Phuga valley, which leads straight back to the Indus valley at Mahe. This itinerary further has the advantage of having no bridge to cross, whereas the route along the Indus has at least two bridges. Fewer bridges to cross means less time wasted unloading animals, waiting for crossing, crossing, finding new animals on the other side and repacking animals (unless of course the bridges were in wood). When coming from the east and going west, from Mahe to Khaltse for example, when the route along the Indus is not passable and when one has to go through Rupshu and Gya valley, once in Gya it is then shorter to go through the Markha valley than to return along the Indus from Ubshi to Khaltse (Fig. 6). If going to Kashmir, it is even shorter.

To summarise, between Kashmir or Gilgit-Baltistan on the one hand and Upper Tibet on the other, going along the Indus river implies crossing two to three major bridges over the Indus (two between Ubshi and Mahe, one at Khaltse if coming from Kashmir) and numerous secondary ones above the multitude of torrents from the side valleys. These torrents cannot be ignored: the Indus valley is characterised by side valleys with important catchment areas, with torrents in places that have created deep incisions through the glacial terraces that delineate the river. Most of these torrents cannot be forded and require a bridge. The floods in 2010 reminded us of the weak point of a route along the Indus: all the bridges above these side torrents were carried away from one day to the next. The route became then completely impassable, and in the past it is not certain that all bridges could have been fixed in only one week as was the case in 2010. The itinerary parallel to the Indus, through the Markha, offered a considerable advantage. Only one major bridge had to be crossed above the Zanskar in Yaru, and none of the other streams required a bridge: they could all be forded. Not only was this itinerary safer, as no bridge could be swept away by sudden floods, but it was likely to save a considerable amount of time for the merchants, as animals had to be unpacked only once, in Yaru. This means that for centuries the Markha valley was probably naturally used for all the trade between Upper Tibet and Kashmir. This represents considerable wealth going back and forth through the valley: we can now begin to understand why such a small valley with so little food resources has such a rich archaeological heritage. It was not only shorter from south to north, it was also at the centre of trade between east and west.

LHASA AND PASHMINA: THE ONLY GOALS OF TRADE ROUTES TOWARDS THE EAST?

We usually consider the routes going east to have been used for two main purposes: to go to Lhasa—as with the *chaba* and *lopchak* caravans—and for the trade of pashmina. For a long time, Upper Tibet was indeed regarded as a vast semi-arid expanse travelled only by nomads and their herds. Until relatively recently, the ruins of only eight residential sites were known, all located in Ngari, justifying this image of uninhabited high plateaux. However, the surveys conducted by Bellezza showed that it was quite different in the past: a variety of valleys and lake shores were scattered with numerous residential sites, over 270 (Bellezza 2010: 652–665). If we take into account all these remains (residential sites, ceremonial sites, rock-art sites, etc.), the image of the Tibetan high plateaux is very different from that which prevailed before (Fig. 9): the region had important human activity. Historical sources also refer to more important resources than just pashmina: Rutog was known for its gold mines, and musk was one of the most prized commodities during the medieval period. Before the region underwent severe climatic desiccation and turned into a human desert, the number of ancient residential and economic sites probably made it a choice destination for travellers and merchants. It is in this light that a number of routes in Ladakh have to be understood (such as the Markha corridor or the valleys

of Chemre and Shera), leading not only towards the Tarim Basin but also to Pangong lake and, beyond it, Rutog and the great lakes of the high plateaux.

SUMUR MARAL: A ROUTE TOWARDS THE UPPER SHYOK VALLEY

In the side valley of Sumur (Nubra) is the fortress of Sumur Maral (Fig. 2: e, Fig. 10), the largest in Ladakh. It is over 200 m in length and features a double rampart flanked by round towers (Devers, Bruneau and Vernier 2015). The height of the fortress above the valley floor, 500 m, is the greatest in Ladakh. Below the fortress are the ruins of another small fort, probably older. A further 500 m above the fortress there is a watchtower, at by far the highest altitude in Ladakh: it is a full 1,000 m above the valley floor. The view from the watchtower over the Nubra valley is magnificent. However, from the fortress the view is already impressive, similar to that from the watchtower, and so the use of a tower at such height for a comparable view is not very apparent. On the other hand, the view in the other direction, i.e. towards the side valley, is completely open all the way to the pass: this is a major difference with the fortress, from which there is absolutely no view in this direction because of a bend in the side valley.

The valley on the other side of the pass runs into the upper Shyok river. At this confluence are the ruins of a fort known as Yarghuluk (Quarter Master General's Dept. Intelligence Branch India 1890: 100), Jurgolok (De Filippi 1932: 312) or Yurgolak (Kapadia 2003: photograph 24) (Fig. 10). Located 90 km away from the closest village—which makes it the most isolated fort in Ladakh—this fort could not have been used for the defence of a settlement. Nor can it be understood as being linked to known routes, as the regular Saser-la route passes 60 km further north, and the Changchenmo route passes 50 km further south. The winter route along the Shyok cannot explain the location of this fort either, as it does not control any specific known junction, village or even inhabited valley: it is simply isolated. However, if one considers the side valley of Sumur where there is a small fort, the largest and most highly situated fortress of Ladakh and the highest watchtower with an open view of a pass, and on the other side of which is the most isolated fort of the region, it is logical to ask whether a route might have existed linking Sumur to the upper Shyok valley. Kapadia recently recorded an oral tradition that the side valley of Sumur was indeed used as a route when the Saser-la was closed (Kapadia 2003: photograph 24). Considering that the latter route was not protected by any fort, it can even be asked whether, at some point in the past, the Sumur route was not the major one to the Tarim Basin.

FROM TIBET TO BALTISTAN OR THE PAMIRS: LADAKH, NUBRA OR BETWEEN KUNLUN AND KARAKORAM?

During the second half of the first millennium AD, the armies of the Tibetan Empire controlled or passed through Gilgit-Baltistan on several instances.[9] From these, it was inferred that during these periods central Ladakh must have been part of the Tibetan Empire. But this was not necessarily the case.

The most direct route from Upper Tibet to Baltistan follows the Indus (Fig. 11: route 1): from Tashigang to Skardu is about 565 km. This route has at least three major bridges over the Indus, and five low passes for a total ascent of about 900 m.[10] However, in places where the valley is narrow the path can be obstructed when the level of the Indus is too high: between Mahe and Ubshi, and between

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[9] The presence of the Tibetans in Gilgit-Baltistan and the Pamirs can be summarized as follows:

In 661–663 Balur seems to have been under Tibetan influence (Beckwith 1987: 30). Tibet being the main power in the Tarim from 670 to 692, it is reasonable to suppose that Balur remained under Tibetan influence until the latter date.

In 696 (or perhaps before) until a date between 717 and 727, Great Balur was pro-Chinese. In 696, the ruler of Great Balur sent his respects to the Chinese court (Petech 1977: 9), and received a title in return in 717 (*ibid*.: 9; Beckwith 1987: 87). In 727, Great Balur was under Tibetan control, but we do not know since when (Petech 1977: 10). Little Balur had a similar position until 737. The Tibetans briefly occupied it in 722 (Beckwith 1987: 95). During that period, the Tibetans were seen in Tokharistan and in the Pamirs on several occasions. They went to Tokharistan in 704 and 705 (*ibid*.: p.67–69). The presence of their armies was then attested in western Central Asia in 729 (*ibid*.: 108). The following year they were again seen in the Pamirs (*ibid*.: 110).

Between 727 (and perhaps before) and 753, Great Balur seems to have been under Tibetan control. From 737 to 747 they also occupied Little Balur (Petech 1977: 10–11; Beckwith 1987: 114, 123, 132, 141).

From 753 to 755-756, Great Balur appears to have been under Chinese control (Petech 1977: 11; Beckwith 1987: 141).

In 755–756, following the partial Chinese withdrawal from Central Asia, the Tibetans accepted requests of allegiance from several forces in the Pamirs, but we do not know which forces these requests came from (*ibid*.: 144–145).

Between 756 and 794, we have little information on Balur or the Pamirs. We only know that in 794, or perhaps before, the Tibetans re-conquered the Pamirs (*ibid*.: 157), suggesting that they had lost them before.

From 794 to 815, the Pamirs seem to be under Tibetan control. The Tibetans are defeated in Balur by the Arabs in 815 (*ibid*.: 162).

From 815 to 866, the situation of Balur and the Pamirs is uncertain. However, in 866, following the collapse of the Tibetan Empire in 842, several regions of the Pamirs are still under Tibetan control (*ibid*.: 172)— but we do not know when they would have re-conquered them after the defeat against the Arabs in 815.

[10] Two bridges are located between Kyungyam Do and Ligtse (Rong), and one near Skardu. The five passes are the Lhalung-la, the Charatse-la, the Tsarmangchan-la, the Mebtak-la and the Lago-la, all located between Likir and Tingmosgang in Lower Ladakh.

Dah and Skardu. The itinerary then has to go through Rupshu, the Markha valley and the Chorbat-la (Fig. 11: route 2). One has to walk about 620 km to reach Skardu, to cross at least three major bridges above the Indus and Zanskar, and to go over eight passes that represent a total ascent of 4,820 m.[11] Another route is possible, however: rather than going through central Ladakh, one can go by way of Nubra (Fig. 11: route 3). It is also a bit quicker. Indeed, from Tashigang one has to walk only about 580 km to reach Skardu. This path has the advantage of only one major bridge over the Indus and four passes that represent only a total ascent of 1,700 m.[12] Going by way of Nubra is therefore advantageous in summer time. The difference in distance combined with the low number of bridges further makes it similar to the route along the Indus in winter time: probably only about a day more on a journey of over a month. And this is if coming from along the Indus in Tashigang. One has to keep in mind that Rutog and the regions of the great lakes were then scattered with important settlements. For troops coming from these districts the route by way of Nubra was even more advantageous. So in all seasons it was not necessary for the Tibetan armies to go through central Ladakh to reach Gilgit-Baltistan: Nubra offered a similar or even shorter alternative solution. It can also be noticed that Tangtse is significantly located on this route (Fig. 2, f). This village appears to have been an important centre during this period, as indicated by the numerous inscriptions written in scripts (Arabic, Chinese, Kuchean, Sarada, Sogdian and Tibetan) from the regions crossed by the Tibetan armies.[13]

However, in case of major problems, neither region was necessary to the Tibetans. At the end of the 7th century and at the beginning of the 8th century, the Tibetans lost control of the Tarim Basin to the Chinese, and Gilgit-Baltistan was openly hostile. And yet, Tibetan armies were reported in the Pamirs on several occasions during this period (Beckwith 1987: 67, 69, 108, 110). This has been interpreted as being a sign that Tibetans could freely pass through Gilgit-Baltistan, in spite of the hostility of its rulers (Fig. 11: route A).

In the 16th century, Mirza Haidar (1499–1551) faced a similar situation. When he had to leave Ladakh in 1535, he had lost the major part of his forces—only twenty-two soldiers remained with him, most of them injured. He wished to go to Afghanistan to reach more friendly territory. However, Purig and Baltistan were openly hostile towards him, and he did not have the means to go through these regions. The Tarim Basin was also closed to him: the sultan Abdur Rashid in Yarkand had made him *persona non grata*. Mirza Haidar accordingly decided simply to go between the three regions by a route that one of his soldiers had heard about. He took a path between Kunlun and Karakoram, through uninhabited or scarcely inhabited valleys (Fig. 11: route B) (Elias and Ross 2009: 408–410). By doing so, he avoided the forces of the raja, of Purig and of the Baltis, and he reached the Wakhan valley safely.

For the Tibetan armies, from Tashigang to the Wakhan valley, this itinerary represents about 1,000 km. The more traditional route, i.e. by following the Indus all the way, is about 1,050 km. Both itineraries are thus similar, although the route by way of Baltistan was probably easier. But the fact that Mirza Haidar was able to successfully go between Kunlun and Karakoram without any prior knowledge of the exact itinerary or of the available food resources on the way is probably the clue that with appropriate logistics and with uninjured soldiers this route could have been a viable alternative for the Tibetan troops going to the Pamirs.

To summarise, central Ladakh was never necessary for the Tibetan armies in order to control Gilgit-Baltistan or to go to the Pamirs. The route by way of Nubra was a perfect alternative for both objectives. For the latter, the Tibetans did not need Nubra either: the route followed by Mirza Haidar about eight centuries later was just as suitable. These considerations are only if coming from Tashigang: if the troops were stationed in Rutog, for example, then the Nubra route or that between Kunlun and Karakoram were even more interesting.

CONCLUSION

We go from the image of an interregional trade network centred in Leh (Fig. 1), to a decentralized and more diverse one (Fig. 12). It served a more diverse set of destinations, in particular on the Tibetan high plateaux where numerous settlements were found. A greater variety of goods was also exchanged; gold and musk were other

11 The first bridge is over the Zanskar river at Yaru (Central Ladakh), the second over the Indus at Khaltse (Lower Ladakh), and the last over the Indus again near Skardu. It can be noted that the Indus near Nyoma can be crossed on foot. The eight passes are the Polo Kongka (4,970 m, Rupshu), the Tanglang-la (5,300 m, Rupshu), the Poze-la (4,950 m, Upper Ladakh), the Chagtsang-la (5,200 m, Upper Ladakh), the Lhalung-la (5,320 m, Upper Ladakh), one pass between Skyu and Yaru (*c.* 4,780 m, Upper Ladakh), the Konzke-la (4,950 m, Lower Ladakh) and the Chorbat-la (4,150 m or 4,160 m).

12 The bridge is near Skardu. It can be noted that the Shyok river in Nubra can be crossed on foot upstream of Udmaru. The four passes are the Tsaka-la (5,630 m, Pangong area), the Kongla-la (5,020 m, Pangong area), the Chumig-la (4,400 m, Nubra) and the Lagopa-la (4,840 m, Nubra).

13 The importance of the variety of scripts used in Tangtse was noticed by Laurianne Bruneau in her dissertation about the petroglyphs of Ladakh. The possible gateway role of the settlement for a northern route emerged during a discussion we had in 2013.

key products exported from Upper Tibet in addition to pashmina. Other merchandise such as salt, soda and other metals and minerals can probably be added to this list. The main channel for this trade was not along the Indus, but went through a set of secondary valleys parallel to the Indus, the "Markha corridor". The valleys crossing the Ladakh range were also quite different. In all likelihood, Leh had only a minor role in the ancient trade network; the main valleys were those of Sabu, Chemre and probably Shera as well. To go from Nubra to the Tarim Basin, a major route appears to have gone through the Sumur Maral valley instead of crossing the much-feared Saser-la. Finally, Central Ladakh was not a necessary stage to go from Tibet to Gilgit-Baltistan or the Pamirs. An alternative route was to go by way of Nubra, or, in case of conflicts, to go by way of an itinerary passing between Karakoram and Kunlun, as Mirza Haidar did in the 16th century.

In the second half of the second millennium, a variety of factors led to profound changes in this route network. One of them is the climatic desiccation of the Tibetan high plateaux. This slow process, at work at least since the first millennium if not before, led to a gradual depopulation of Upper Tibet. The numerous centres that could originally be destinations for travellers and merchants were progressively deserted. As a consequence, the routes leading to these disappeared as well. The importance and the number of itineraries towards the east must have greatly decreased.

The signing of the treaty of Tingmosgang in 1683–1684 was another major factor in the alteration of the existing trade network. Indeed, a number of rules surrounded this treaty: all the pashmina produced in Upper Tibet had to be sold to Ladakh, which in turn had to sell it only to Kashmir; only four Kashmiri merchants based in Spituk (Leh valley) could go to Upper Tibet; and they could not go to Kashmir themselves with the prized wool (Francke 1926: 116). The trade between Ladakh and Lhasa was similarly ritualised with the institution of regular caravans, *chaba* and *lopchak*, which had to carry a certain number of articles between the two regions (Francke 1926: 115; Bray, forthcoming). Trade was structured by precise rules that put it in the hands of a limited number of intermediaries, who would operate on a large scale and who would go only to a limited number of destinations (Lhasa, the main markets for the trade of pashmina such as Gartok along the Indus, Srinagar, Khotan and Yarkand). There is thus a transition from a system where a multitude of small merchants and travellers could come from or go to a myriad of villages and economic centres, to a system where only a handful of them would only go to a limited set of destinations. The number of routes used for this standardised trade must have been far more restricted than before. These led to the creation of a particular network of commercial highways, institutionally centred in Leh-Spituk.

Finally, one more factor is to be considered: the probable diminution of the types of merchandise. Originally, Upper Tibet was known for its gold mines, as in Gog.[14] These mines were apparently one of the motivations for the repeated raids conducted by the Turks (Petech 1997: 244; Howard 2005: 134, 138). Recent studies also refer to musk, a resource apparently more precious and more coveted than pashmina during the medieval period (King 2011). Finally, one can wonder if other metals or minerals could have been the objects of significant trade as well. I noticed that several fortified sites, located in places now deserted and where there are no fields or ruins of fields, are surrounded by rocks apparently rich in metal ore or minerals. Further studies on these rocks need to be undertaken, in order to determine whether former mining activities could have been carried on at these sites. Of these various articles, only pashmina was still the object of significant trade in the 19th century when the first European explorers were interested in Ladakh. Such a decrease in the type of products exchanged must have had an impact on the network of routes, many probably becoming progressively disused.

These different factors led to profound changes in the trade network of Ladakh and in its territorial dynamics. At the time when the desertification of Upper Tibet brought about a drastic reduction of the number of possible eastward destinations, the second Ladakhi dynasty of the Namgyals reorganised its newly unified territory to centralise it in Leh. The treaties signed in 1683–1684 subsequently defined rules clearly in favour of a network centred in Leh. Finally, the reduction of transactions to the sole trade in pashmina probably made a set of routes formerly used for the transportation of gold, musk and perhaps other metals and minerals obsolete. These led to the creation of the network of interregional routes that we have known and studied from historical sources in the 19th and 20th century: only archaeology can document the routes in use previously.

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[14] Francke 1926: 94, 110; Howard 2005: 133–134; Mohammed 2005: 151–152, 157; Elias and Ross 2009: 354, 356.

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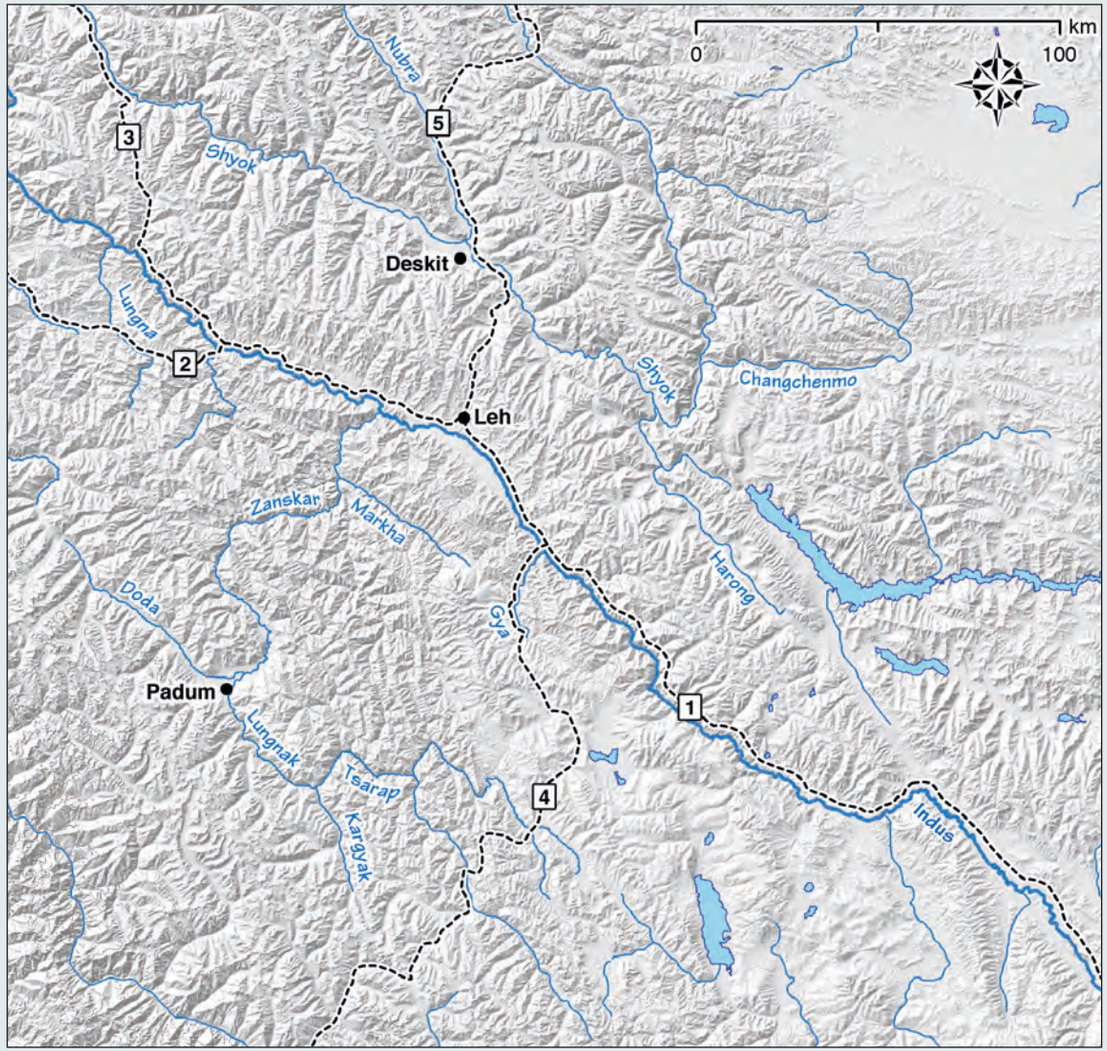

Fig. 1: Main interregional trade routes in use in the 19th and 20th centuries.

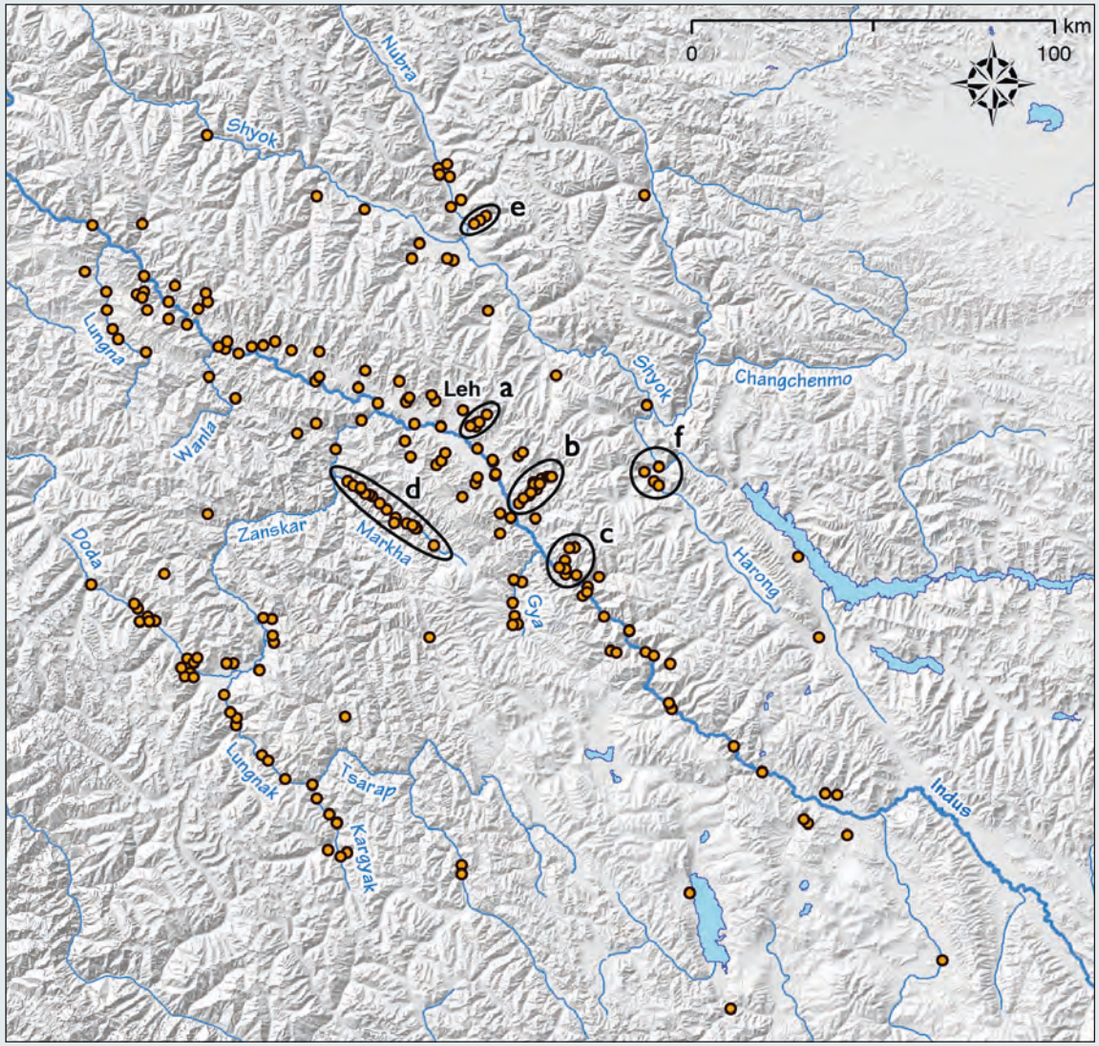

Fig. 2: Maps of the fortifications of Ladakh, with highlight of special concentrations: a) Sabu valley, b) Chemre valley, c) Shera valley, d) Markha valley, e) Sumur valley, f) Tangtse.

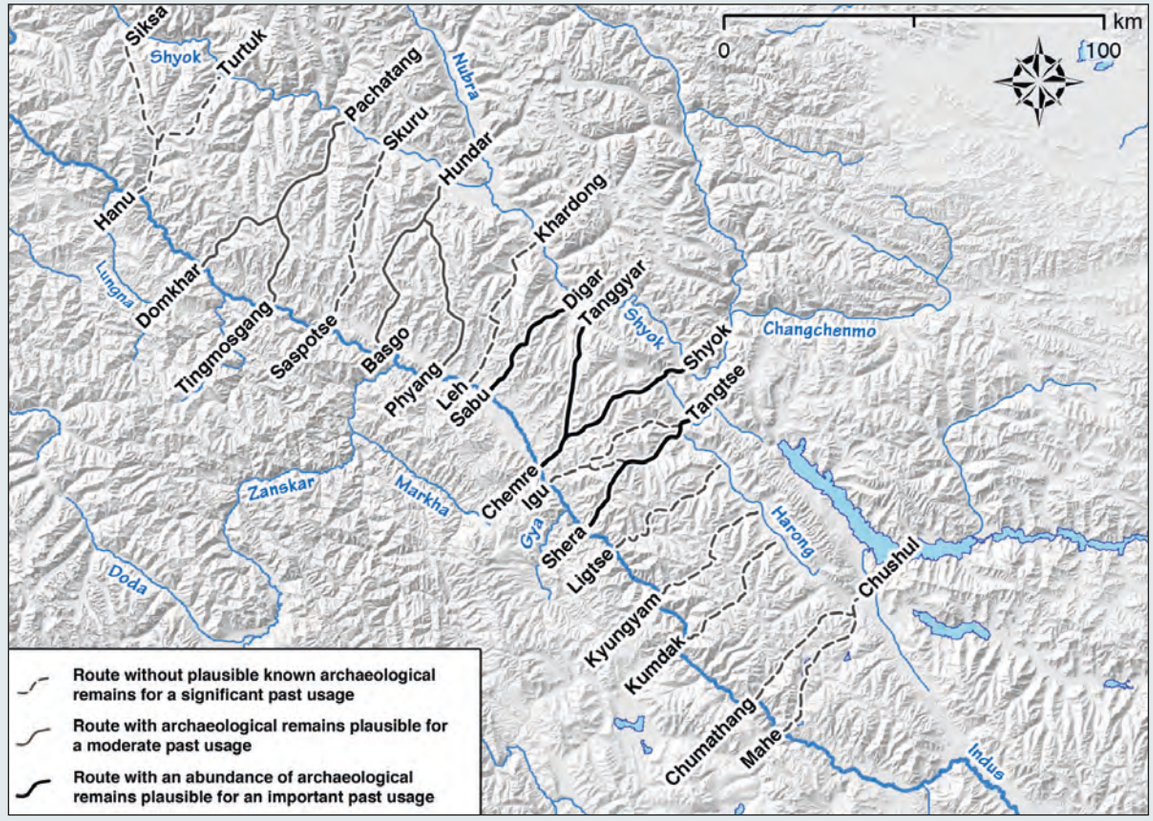

Fig. 3: Routes formerly used to cross the Ladakh range according to the study of archaeological remains.

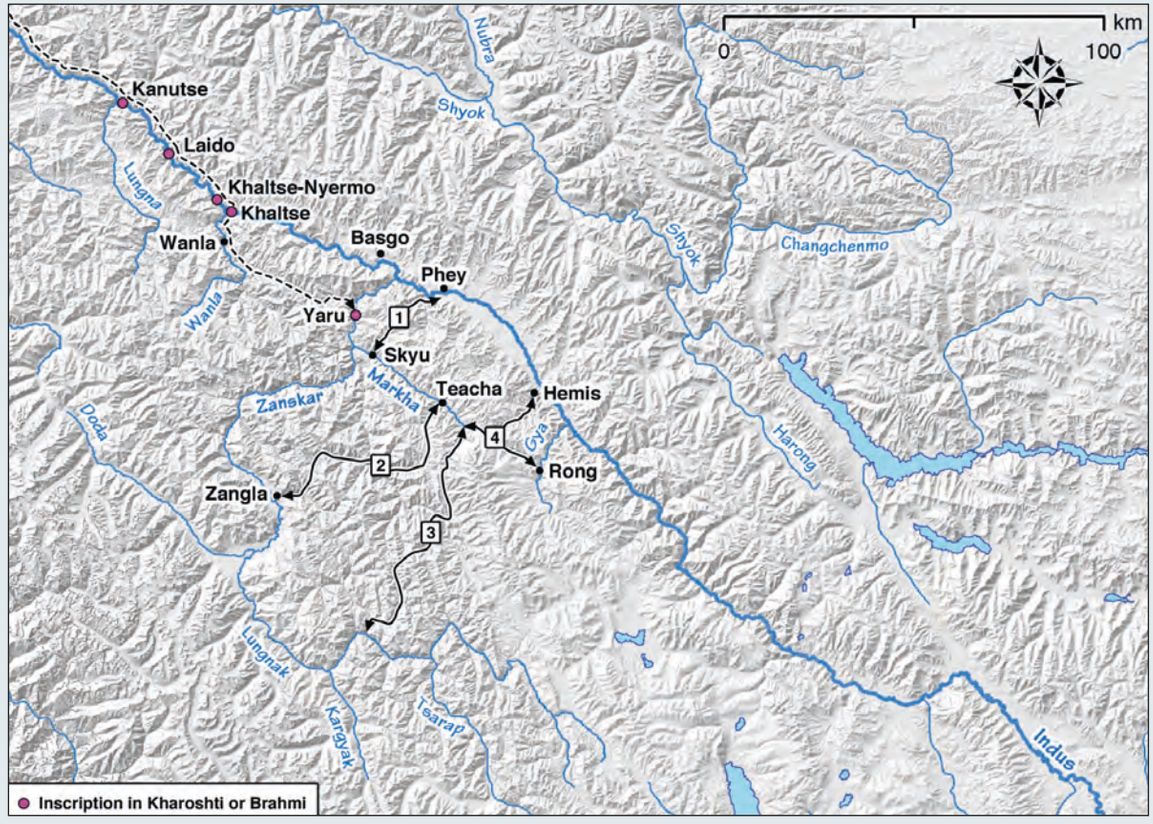

Fig. 4: Known routes to access the Markha valley (1 to 4), and location of known Kharoshti and Brahmi inscriptions.

Fig. 5: Route between Malakartse and Pamogon in Tsazar. A) fort of Zangla; B) remains visible in the mountain between Malakartse and Pamogon; C) fort known as Abi Chu Thung Khar; D) area where the Zanskar river comes directly against the cliffs of the mountain. Aerial view source: Google Maps 2014.

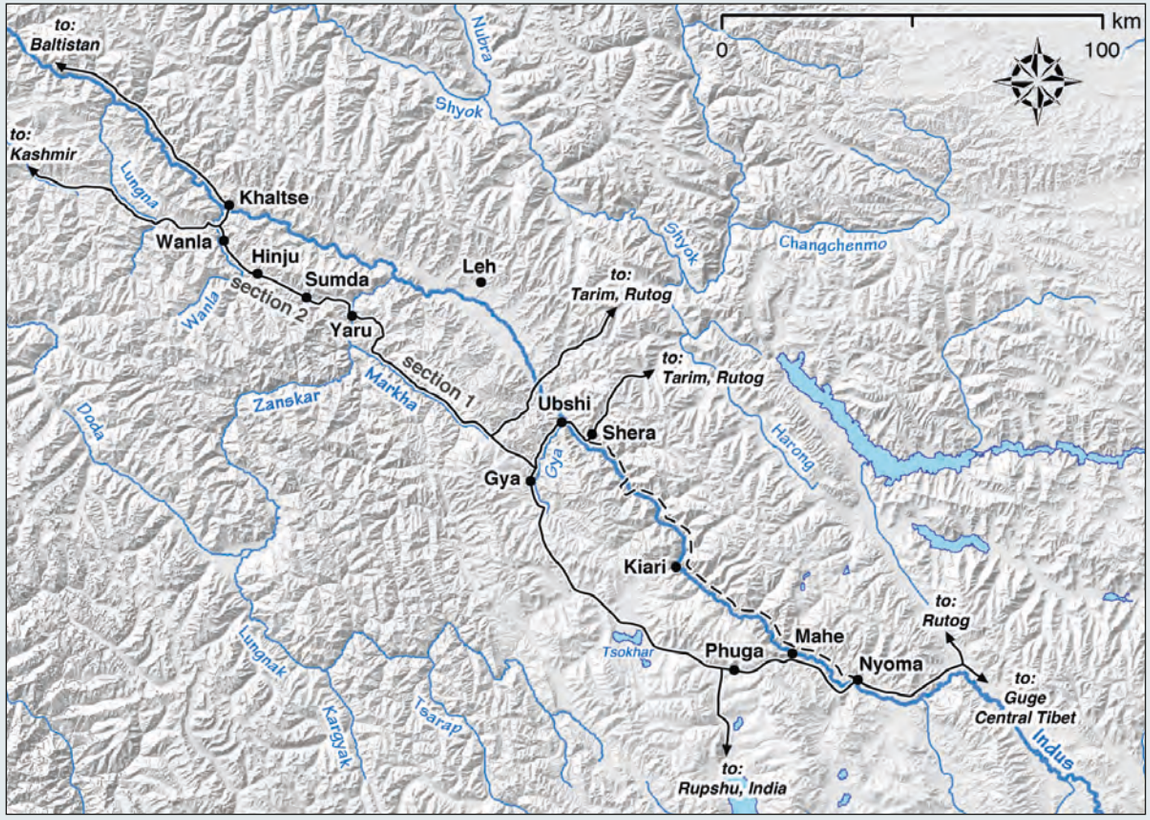

Fig. 6: The "Markha corridor" for east-west travels.

Fig. 7: Routes intersecting at Khaltse.
Aerial view source: Bing Maps 2013.

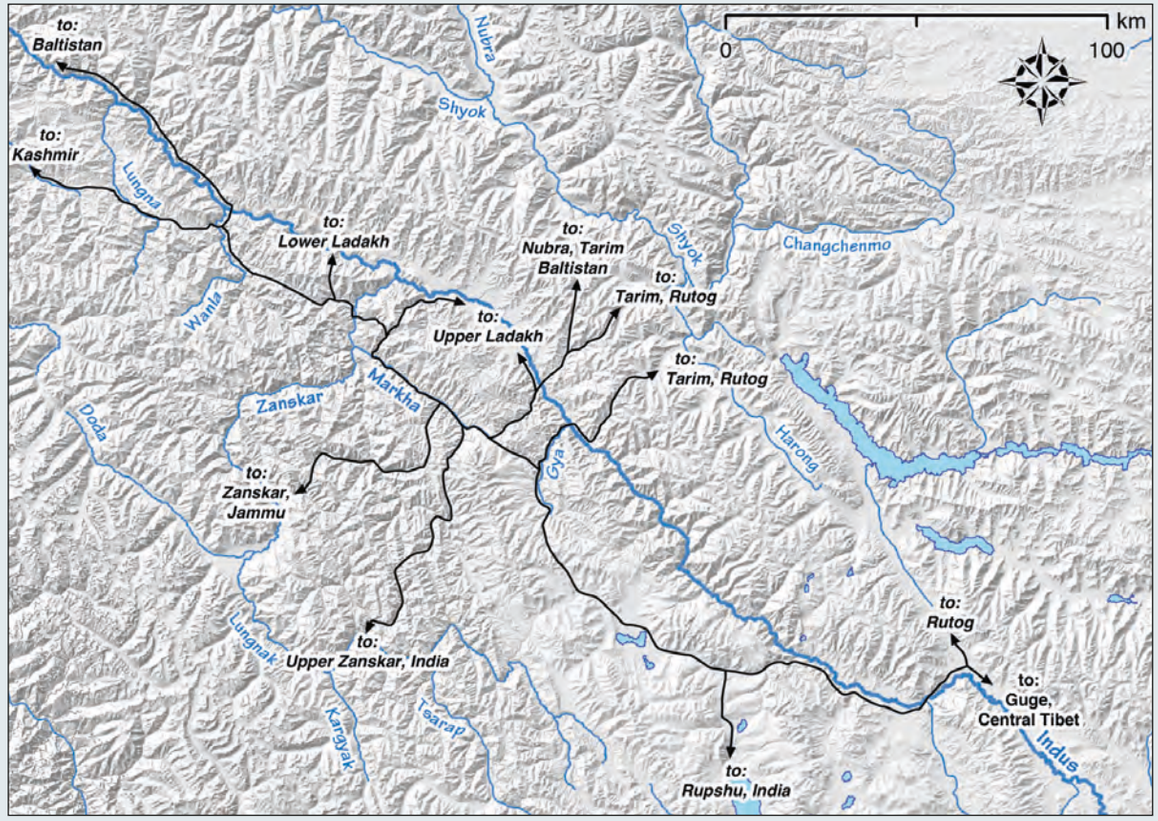

Fig. 8: Summary of the routes going through Markha.

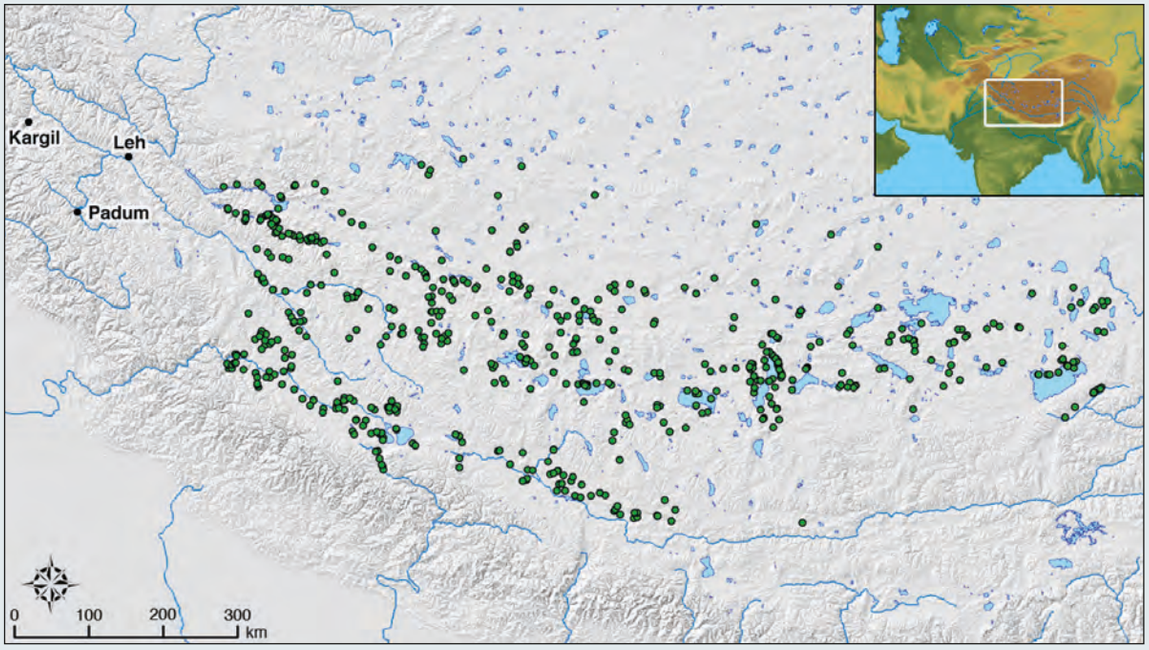

Fig. 9: Archaeological sites surveyed by John V. Bellezza in Upper Tibet. Dataset kindly provided by John V. Bellezza.

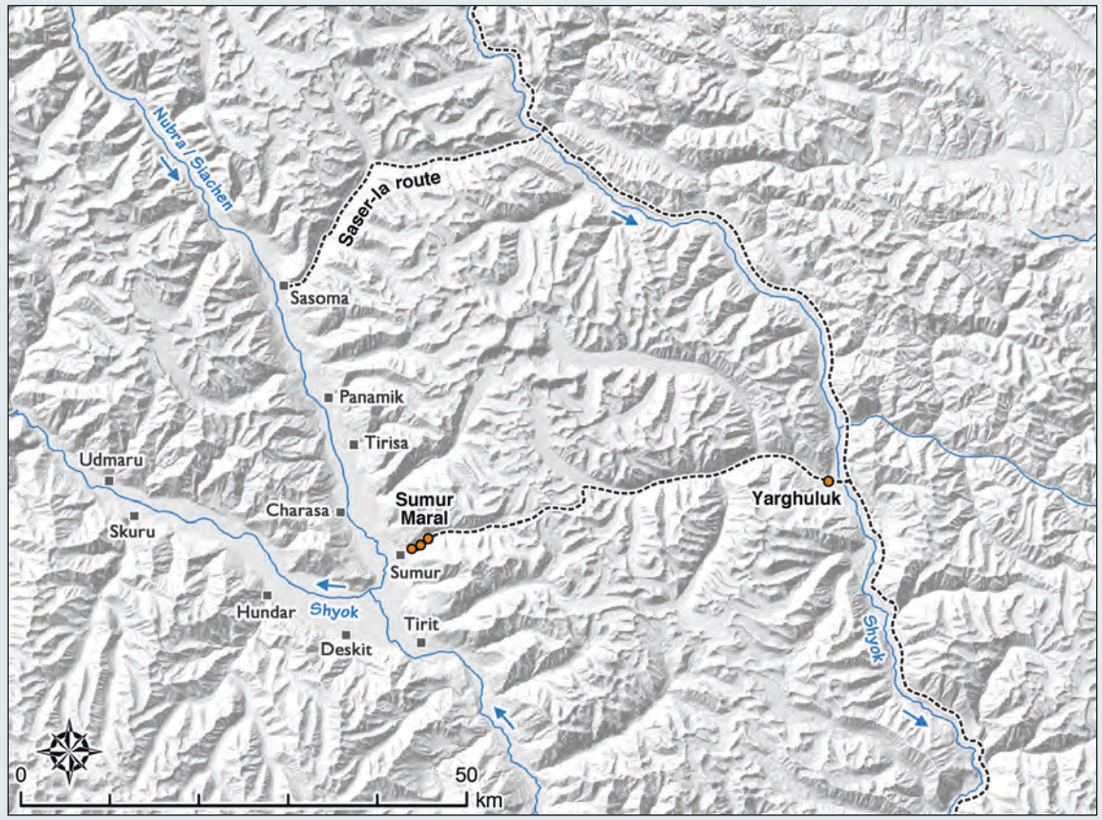

Fig. 10: Sumur route to Upper Shyok valley.

Fig. 11: Alternative routes to go from Tashigang to Skardu or to the Wakhan valley.

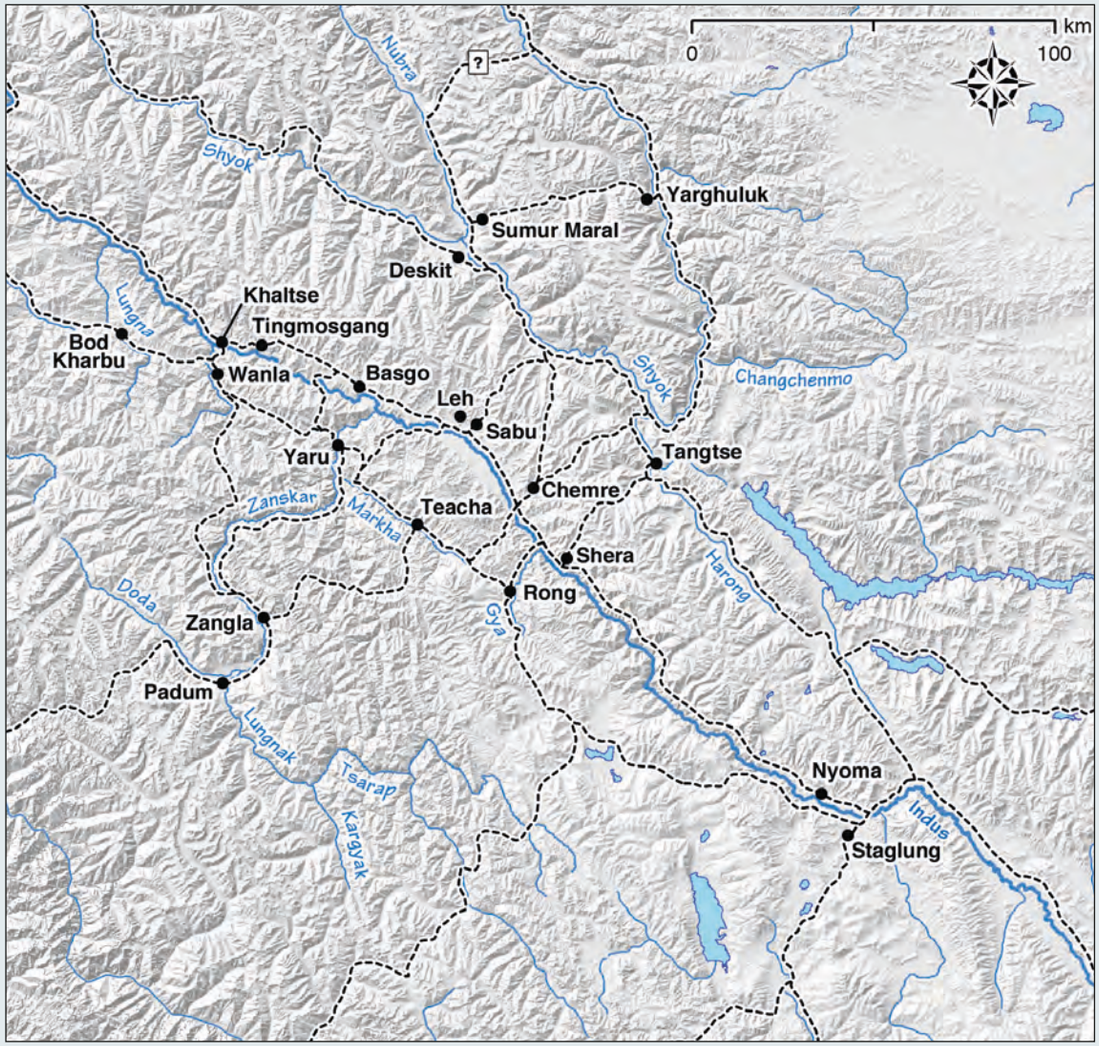

Fig. 12: Summary of the routes in use before the 17th century according to the study of archaeological remains.