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On Textile Fragments Found at Karadong, a 3rd to early 4th Century Oasis in the Taklamakan Desert (Xinjiang, China)

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In 1993 and 1994, the Sino-French archeological mission in Xinjiang led by Abdurassul Idriss and Corinne Debaine-Francfort,¹ excavated the site at Karadong in the heart of the Taklamakan desert, on a former delta of the Keriya River, whose headwaters are in the Kunlun Mountains at the Tibetan border, and which vanishes in the desert sands. At one time, it continued north all the way to the Tarim River, thus forming a communication link with the Kucha region. Older deltas visible on satellite images have been explored and two related archeological sites have been consecutively excavated to the northwest of Karadong: an Iron Age site, Djoumboulak Koum, and a Bronze Age site, the so-called Northern Cemetery (fig. 1).² Textiles were found on both sites, and especially at Djoumboulak Koum, where several cemeteries as well as a 'city', ringed by a thick rampart, revealed the types of woolen fabrics local people valued a few centuries before Karadong. These discoveries have provided important parallels for the interpretation of the textile fragments discovered in the ruins of Karadong dwellings, and in particular, in shedding light on their relationships with regions near and far.

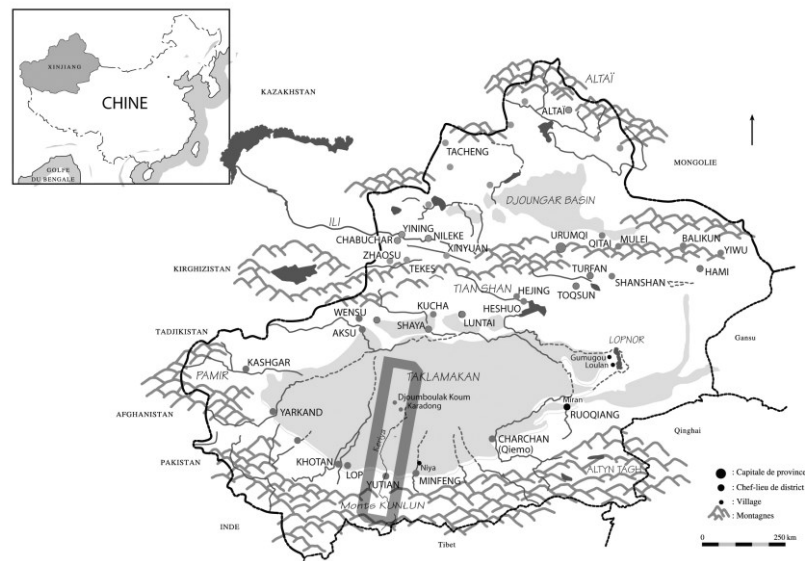


Fig. 1 – The Keriya River and Karadong in the Taklamakan Desert (Xinjiang, China)
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¹ Xinjiang Institute of Archaeology and Cultural Heritage and CNRS-UMR 7041. The Mission is supported by the French Ministry of Foreign Affairs.

² Early presentations of the sites can be found in C. Debaine-Francfort, A. Idriss and B. Wang, « Agriculture irriguée et art bouddhique ancien au cœur du Taklamakan (Karadong, Xinjiang, II^e-IV^e siècles) », *Arts Asiatiques* XLIX (1994), 34-52; C. Debaine-Francfort and A. Idriss, *Keriya mémoires d'un fleuve. Archéologie et civilisation des oasis du Taklamakan* (Paris: Findakly/Fondation EDF, 2001); D. Cardon, C. Debaine-Francfort, A. Idriss, K. Anwar and X. Hu, « Bronze Age Textiles of the North Cemetery. Discoveries made by the Franco-Chinese Archaeological Mission in the Taklamakan desert, Xinjiang, China », *Archaeological Textiles Newsletter* 55 (2013), 68-85; C. Debaine-Francfort, « L'âge du bronze dans le désert de Taklamakan : nouvelles découvertes dans les deltas fossiles de la rivière Keriya, Xinjiang, Chine », *Comptes Rendus des Séances de l'Académie des Inscriptions et Belles-Lettres*, fasc. 2013-1 (janvier-mars 2014), 313-341.

Our presentation is divided in three parts. Firstly, we will examine the archeological and historical context of Karadong in order to understand who was living there, and what kinds of relationships these people had with the outside world. Secondly, we shall describe the salient features of the forty-nine small and poorly preserved textile fragments found there. Thirdly, we will show how these textiles—quite sober in appearance—substantiate surprising evidence of the circulation of textiles and ideas over great distances.

Karadong, an Oasis in the Heart of the Taklamakan Desert

An agricultural settlement located in an irrigated oasis, Karadong yielded pottery remains not only related to other contemporary oases of the Tarim Basin, such as Niya and Loulan to the east, or Khotan to the west, but also linked to the Kushan Empire which then occupied Bactria—i.e. present-day Afghanistan, Uzbekistan and Tajikistan—and Northern India (fig. 1). The region's occupation by the Chinese, begun during the 1st century BC, was still ongoing (at least in Loulan) at the beginning of the fourth century.³ The mission excavated several houses—but no cemeteries—and two Buddhist shrines among the oldest discovered outside of India. The team restored their collapsed mural paintings and exhibited them in Paris in 2001.⁴

These exceptional finds, as well as several objects bearing Indian features, notably attest of the appreciable relations established with the South, and more generally with the Kushan world. At the dawn of the 2nd century, the Kushan Empire spanned the Tarim Basin to Khotan and, by the end of the century, according to Chinese historical sources, several hundred migrants settled in the regions of Niya and Loulan.⁵ They brought Buddhist teachings from India and their language—*Gāndhārī*—which seems to have been “the true *lingua franca* of the Tarim Basin until the 4th century”, as evidenced by the numerous tablets in *kharoṣṭhī* script discovered in the surrounding large oases.⁶ Unfortunately, the tablets' inscriptions found in Karadong have vanished, save one written in Khotanese. Finally, merchants of various origins were traversing the region, since in the first centuries of our era, the major trading routes between China and the West crossed the Tarim Basin, the high Indus and Bactria reaching India and, beyond the Indian Ocean and the Red Sea, the Mediterranean Rim (fig. 2).⁷ Indian, Chinese, Sogdian and Bactrian communities settled there. The presence of Sogdian merchants, from the area of Samarkand (in present day Uzbekistan), who played a decisive role in regional and long distance trade, is substantiated at Niya and Loulan, as well as Khotan, during the second half of the 2nd to the early 4th century.⁸

Forty-nine small and poorly preserved textile fragments found in Karadong

In order to gain an overall view of the situation, we added to the twenty-two textiles excavated by the team and housed at the Institute of Archaeology in Urumqi, fragments which had previously been collected. Which is to say: the six fragments found during the investigation lead in 1959 by Li Yuchun for the Xinjiang museum in Urumqi, and four packages comprising twenty-one inventory numbers collected by Sir Aurel Stein in 1906 and housed in the Far

³ V. Hansen, *The Silk Road: A New History* (New York: Oxford University Press, 2015), 42.

⁴ Debaine-Francfort and Idriss, *Keriya*, 82-105.

⁵ E. de La Vaissière, *Histoire des marchands sogdiens* (Paris: Collège de France/IHEC, 2004), 78-79; Hansen, *The Silk Road*, 25-32.

⁶ La Vaissière, *Histoire*, 79.

⁷ *Ibid.*, 36-38, 68-85.

⁸ *Ibid.*, 27-30, 50-54.

Eastern Collection of the Victoria and Albert museum in London.⁹ All in all, the corpus includes forty-nine references compounded by fifty-eight units, when the associated fragments are counted individually. Obviously, this set is limited and does not include all the types and qualities of textiles that were present at Karadong between the 3rd century and the beginning of the 4th. All are in poor condition, small, abraded by life and the desert sand. This explains why fiber and dye identifications have not always yielded results.¹⁰ The textiles were produced with three types of fibers: wool, silk and cotton. They demonstrate a manifest diversity.



Fig. 2 – The main trading routes between China and the West. <http://www.silkroutes.net/Orient/MapsSilkRoutesTrade.htm>

Sheep wool and other discontinuous animal fibers—cashmere, mohair, camel, goat and calf fibers—are present in forty fragments: twenty non woven textiles (felt, knotted net and cords) not examined in further detail here, and twenty woven textiles bearing simple weaves (tabby, basket weaves, and 2.2 and 2.1 twills). Ten of them—eight woven in tabby and two in 2.2 twill—are fine or very fine with 15 to 32 warps and 10 to 29 wefts per centimeter, all z-spun from fine wool fibers, save one in mohair and two presenting a mixture wool and cashmere (fig. 3a).¹¹ The cream color predominates, sometimes mixed with pigmented fibers, and the three

⁹ Xinjiang Weiwu'er zizhiqu bowuguan (ed.), *Sichou zhi lu. Han Tang zhiwu* (Beijing: Wenwu chubanshe, 1973), pl. 17-21; V. Wilson, « Early Textiles from Central Asia: Approaches to Study with reference to the Stein Loan Collection in the Victoria and Albert Museum, London », *Textile History* 26-1 (1995), 23-52; Aurel Stein, *Serindia*, vol. III (Oxford: Clarendon Press, 1921), 1241-1244; collection available on the V&A website:

http://collections.vam.ac.uk/search/?listing_type=&offset=0&limit=15&narrow=&extrasearch=&q=Loan%3Astein&commit=Search&quality=0&objectname=&place=&after=&after-adbc=AD&before=&before-adbc=AD&namesearch=&materialsearch=&mnsearch=&locationsearch=, search Karadong.

¹⁰ Penelope W. Rogers has identified the fibers of the fragments in London. Christophe Moulherat and Antoinette Rast-Eicher have done the same with the fragments discovered by the mission. See their reports, the article on dyes by Witold Nowik and Dominique Cardon, and the general article on Karadong textiles to be published in the final report on Karadong excavation (*Explorations archéologiques dans la vallée de la Keriya*, vol. I: *Le site et les sanctuaires bouddhiques de Karadong (époque Han-Jin)*, ed. C. Debaine-Francfort and A. Idriss, forthcoming).

¹¹ Some are visible at <http://collections.vam.ac.uk/item/O97306/the-stein-collection-fragments-unknown/>

finest pieces have been resist-dyed in red with madder (probably *Rubia tinctorum* L.) and in blue with indigo (maybe woad). Four fragments, also with z-spun warp and weft, have a specific appearance. Two of them are fine textiles with a grainy surface, one of which in basket weave with hard-spun warps. The other two in 2.1 twill are coarser, with over-twisted warps and paired wefts; dye-analysis detected the presence of lac-dye (fig. 3b). The last six wool fragments are 1.5 to 4 mm thick and weft-faced. All have plied S2z warps and z-spun wefts and were woven with a weft-faced tabby, except one, in 2.1 weft-faced twill with additional rows of tufts (fig. 4a).¹² A particular piece displays horizontal bands woven alternatively with z-spun or s-spun wefts that produce a visual spin effect in addition to two checkered self-patterned bands (fig. 4bc).¹³

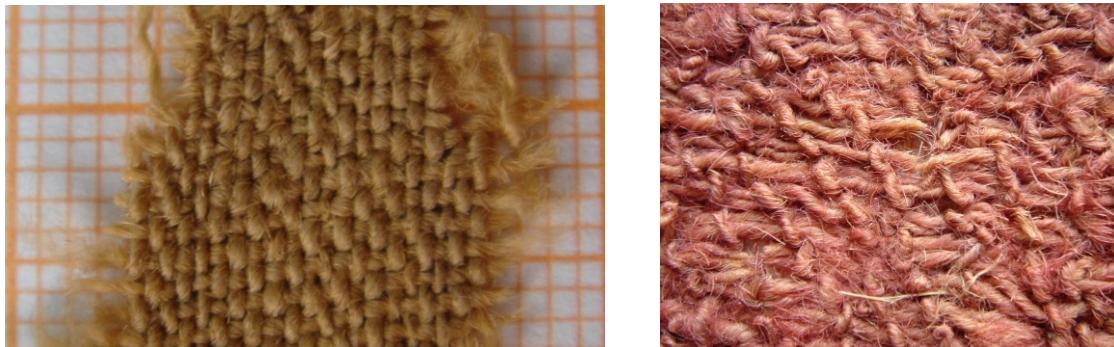


Fig. 3 – Woven with wool: plain weave (93 KRD 42(F5)-34) and 2.1 twill with over-twisted warps and paired wefts (93 KRD 42(F3)-04) dyed with lac-dye © MAFCX

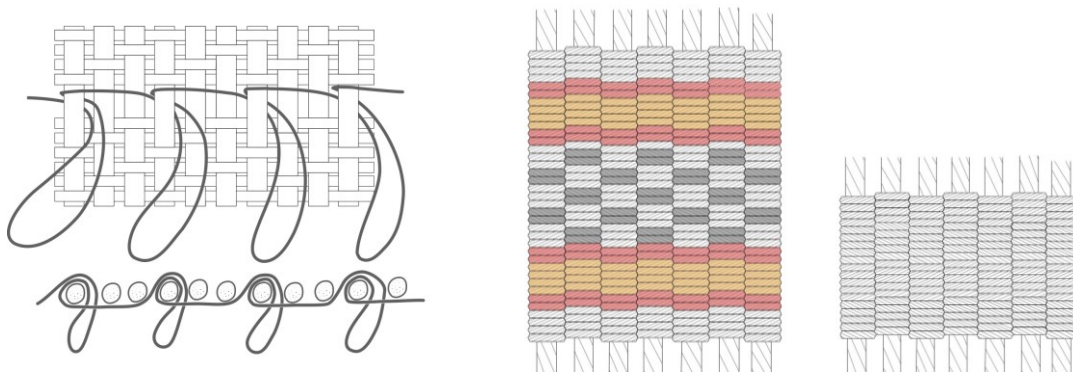


Fig. 4 – 2.1 weft-faced twill with additional rows of tufts (Ka.1.0016-LS.533, 537 and 538) and checkered self-patterned bands associated with spin effect on Ka.1.0016-LS.537 © MAFCX, dessin J. Suire

Surprisingly, of the fifteen silk fragments, nine pieces woven in tabby with z-spun warp and weft were initially thought to be wool, until fiber analysis demonstrated that they were in partially degummed *Bombyx mori* silk. (fig. 5a). They are as fine as the finest wool fragments and dyed in red, or resist-dyed red or blue, with the same dyestuffs used in this group. In one of these fragments, Antoinette Rast-Eicher recently surmised the probable presence of raw silk fibers, which will entail further in-depth research. The six other fragments have been woven with continuous silk yarns of two different qualities. Four of them, with regular threads, untwisted

¹² The last one is visible at <http://collections.vam.ac.uk/item/O90811/the-stein-collection-carpet-fragment-unknown/>

¹³ Visible at <http://collections.vam.ac.uk/item/O90936/the-stein-collection-carpet-fragment-unknown/>

yarns or over-twisted warps, have been piece-dyed or resist-piece-dyed in red or blue, using the same dyestuff as the fine wool cloths (fig. 5b). The last two have irregular silk yarns, clearly visible in a tabby (fig. 5c) and in a weft-faced compound tabby of which only one weft of the original two has been preserved. Its warps and its second weft have nearly disintegrated and its design cannot be reconstructed.



Fig. 5 – Tabby woven with discontinuous silk (93 KRD 60-02), continuous silk (94 KRD 60-17C) and irregular continuous silk (93 KRD 42(F1A)-07) © MAFCX

Of the three cotton fragments, all z-twisted in warp and weft, two have been resist-dyed with indigo and count 11 to 18 warps and 10 to 12 wefts per centimeter (fig. 6). Their designs were probably quite large given that not even one of their elements can be identified. The third is undyed and warp-faced with 26 warps and 13 wefts per centimeter.



Fig. 6 – Tabby woven with cotton (59 YW-103 (D16493): right, detail and backside (with almost no design visible) © MAFCX

This brief overview demonstrates that the textiles preserved in Karadong dwellings had been woven with simple weaves, except the weft-faced compound tabby fragment. Besides this particular fragment, several others have been decorated with resist dyeing. Two of them were partial or complete check fabrics, while others displayed particular effects due to the use of yarns with specific twists and/or colors, or adjusted to maximize the warmth and comfort with the adjunction of additional rows of tufts. Many are fine pieces and their materiality substantiates an obvious sensibility for the creative capabilities in the use of animal fibers. The rarity of preserved textiles from areas outside Xinjiang, along with the scarcity of studies pertaining to undecorated textiles found on sites in Xinjiang which are roughly contemporary to Karadong, such as Niya,

Loulan, Yingpan, Shanpula, and Zagunluk¹⁴ do not ease the task of distinguishing those woven locally from those that may have been imported. Fortunately, the pieces from the 1st millennium BC, found in Djoumboulak Koum, serve as a reference in understanding ancient local textile characteristics and are useful in differentiating possible foreign pieces.

Despite their sober appearance, some textiles infer remarkable evidence of the long-distance circulation of textiles and ideas

While fine wool, cashmere, camel and goat fibers, as well as madder and indigo dyeing were formerly common along the Keriya River, mohair and lac-dye denote textiles or raw materials imported from the west and the south, as long as contemporary samples have not been found.¹⁵ Finding uncommon raw material is an easy way of identifying imports, but it is not the only one.

Registered by Aurel Stein as Ka.I.0016, a thick wool piece elicited a surprise. It consists of three different textiles sewn together, two of them briefly examined in the thick weft-faced fragments.¹⁶ One element is the weft-faced tabby with a spin effect and self patterned checkerboard bands (fig. 4bc). It was sewn to the weft-faced 2.1 twill with rows of tufts on one side, and both sandwiching three layers of felt (fig. 4a). The tufted twill establishes parallels with Djoumboulak Koum, where the same type of fabric was used for blankets, and the colorful fragments found in Loulan¹⁷ were woven with exactly the same yarns and weave as the Karadong sample. Other much finer examples, presumed to have been used as cloaks, were found in several late Antiquity sites in the Middle East such as Masada in Palestine and Maximianon in Egypt's western desert.¹⁸ So far fewer comparisons occur concerning the weft-faced tabby. The surprise consisted in finding in Irak, in the At-Tar caves (1st to 3rd century AD), similar pieces using the same textiles— weft-faced tabby, tufted twill and felt—used as funerary mattresses for fifteen bodies.¹⁹ The weft-faced tabby has very similar warps of wool, cashmere and camel and almost identical checkerboard self-patterned bands, but the rush used for the weft produced a stiffer fabric, which isolated the bodies from the ground. The Karadong fragments are

¹⁴ Textiles from these sites have been published in English at several occasions, see for instance W. Li, "Silk Artistry of the Qin, Han, Wei, and Jin Dynasties", in *Chinese Silks*, ed. D. Kuhn (New Haven & London: Yale University Press, 2012), 114-165. A small corpus from Shanpula has been analyzed in details in *Fabulous Creatures from the Desert Sands*, ed. D. Keller and R. Shorta (Riggisberg: Abegg-Stiftung, 2001). See also *Western Imprints: Textiles from Han and Jin Dynasties in China*, ed. F. Zhao (Hong Kong, SAT / Costume Squad, 2008).

¹⁵ According to Penelope W. Rogers, "Fibers in the Karadong samples (Aurel Stein collection)" (in *Explorations archéologiques*, ed. Debaine-Francfort and Idriss), mohair has been identified in a 3rd-4th century carpet from northern Afghanistan. Lac-dye originates from India and South-East Asia (D. Cardon, *Le monde des teintures naturelles*. Nouvelle édition revue et augmentée (Paris: Belin, 2014), 591-592, 633-642.

¹⁶ See <http://collections.vam.ac.uk/item/O90811/the-stein-collection-carpet-fragment-unknown/>, <http://collections.vam.ac.uk/item/O90936/the-stein-collection-carpet-fragment-unknown/> and <http://collections.vam.ac.uk/item/O90901/the-stein-collection-carpet-fragment-unknown/>.

¹⁷ For instance <http://collections.vam.ac.uk/item/O93095/the-stein-collection-carpet-fragment-unknown/> shows a design obtained by weaving with discontinuous wefts as in tapestry.

¹⁸ A. Sheffer and H. Granger-Taylor, « Textiles from Masada. A Preliminary Selection », in *Masada IV, The Yigael Yadin Excavations 1963-1965. Final Reports*, ed. J. Aviram, G. Foerster, E. Netzer (Jerusalem: The Hebrew University/Israel Exploration Society, 1994), 203-205; D. Cardon, « Chiffons dans le désert : textiles des dépotoirs de Maximianon et Krokodilô », in *La route de Myos Hormos. L'armée romaine dans le désert oriental égyptien*, ed. H. Cuvigny (Le Caire: Institut français d'archéologie orientale, 2006), vol. 2, 635-637 and 653, fig. 333.

¹⁹ H. Fuji, K. Sakamoto, M. Ichihashi, M. Sadahira and Fibers & Textiles Laboratories, Toray Industries, « Textiles from At-Tar Caves: Part II-(2): Cave 16, Hill C », *Al Râfidan* XII (1991), 157-165, pl. 1-4.

all in wool, a more pliable material that is not unlike the 1st century tufted cotton sleeping mats found in Berenike, an Egyptian port on the Red Sea, where Indian sailors traveled to, with their belongings, and numerous commodities for trading.²⁰ All in all, the various comparisons show that these specific objects were used for the same purpose, from Mesopotamia to Xinjiang—and uncover common bedding practices over an extensive territory—albeit with local adaptations. Regarding the Karadong piece, its particular warps are so similar to those of the At-Tar samples, that a foreign origin seems plausible. The two-beamed vertical loom, which could explain its strongly twisted warps and beaten wefts, does not seem to have been yet imported to Xinjiang at the time. Written documents attest to the use of such looms, for weaving special cotton textiles, only later in the region of Astana (Turfan).²¹

Concerning silk cloth, its presence prompts some specific questions: firstly, *Bombyx mori* silk was new along the Keriya River; secondly, if cloth made of regular continuous silk was probably imported from China as were the numerous similar textiles found in the Xinjiang sites from the 1st century BC (fig. 5b), the other two types—made of discontinuous silk and of irregular continuous silk (fig. 5ac)—are early evidence of sericulture's development in the southern oasis of Xinjiang during the 2nd and 3rd century AD. Desiccated mulberry trees were found in Karadong, Loulan and Niya, and the remains of a cocoon were uncovered in Niya, supporting this view.²² Furthermore, this coincides with the legend of an eastern princess marrying the king of Khotan, and bringing mulberry seeds and silkworm eggs hidden in her headdress. This legend, recognized by Aurel Stein on a late wooden panel he found in Dandan-Uiliq near Khotan, may have been a true story that can be tentatively dated to circa 270-280 according to the foundation date of the monastery that was erected in commemoration of this event.²³ Xuanzang, the Chinese monk who chronicled the legend at the beginning of the 7th century, added that the princess prohibited killing the silkworm inside its cocoon, thus allowing the caterpillars' egress.²⁴ The resulting pierced cocoons are difficult to reel, and the easiest way to process the silk was to remove the gum, card the fibers, and spin them like any other discontinuous fiber.²⁵ Silk and cashmere filaments share a similar diameter, and it is hardly surprising that people who had appreciated very fine wool—including cashmere, at least since the 1st millennium BC—easily adopted discontinuous silk. They spun it with a z-twist and wove it in the same way as fine wool (with the same weave and thread counts, paired yarns on the

²⁰ J.-P. Wild and F. Wild, « Through Roman eyes: cotton textiles from Early Historic India », in *A Stitch in Time. Essays in Honour of Lise Bender Jørgensen*, ed. S. Bergerbrandt and S. H. Fossøy (Göteborg, Gotarc series A. Gothenburg Archaeological Studies, 2014), 227.

²¹ E. Trombert, « Textiles et tissus sur la route de la soie. Éléments pour une géographie de la production et des échanges », in *la Sérinde, terre d'échanges*, ed. J.-P. Drège (Paris: la Documentation française, 2000), 118.

²² Debaine-Francfort and Idriss, *Keriya*, 58; F. Zhao, *Treasures in Silk* (Hong Kong: ISAT/ Costume squad, 1999), 95, 125.

²³ See <http://www.bmimages.com/results.asp?image=00966949001&imagex=4&searchnum=0001> for the Dandan-Uiliq pannel; E. de la Vaissière, "Silk, Buddhism and Early Khotanese Chronology: A Note on the *Prophecy of the Li Country*", *Bulletin of the Asia Institute*, NS 24 (2010), 85-87.

²⁴ Xuanzang [S. Beal (ed.)], *Si-yu-ki : Buddhist Records of the Western World* (London, Kegan, Trench, Trübner & Co, 1884 [629]), 319.

²⁵ S. Desrosiers, « Looking as close as possible to the raw material between China and the West: The various processing sequences or *chaînes opératoires* for the production of *Bombyx mori* silk yarn and cloth », in *Threads of Global Desire: Silk in the Early Modern World*, ed. L. Molà and D. Schäfer (Oxford University Press, forthcoming).

selvages, plain and resist-piece-dyeing using the same dyestuffs).²⁶ Another possible consequence of the princess's rule are the two pieces which were woven with irregular continuous silk, that may have been produced there, using a challenging reeling process with pierced or inferior quality cocoons (those from which no moth had come to light).

If we dwell on such details, it is because the princess' rule demonstrates her Buddhist respect of animal life. Many of the princess legend's interpreters believed her to be Chinese—because it is a natural assumption—, but Xuanzang only wrote that she came from the East.²⁷ She may have been Chinese and a Buddhist, but she may also have come from Loulan where migrants from the Kushan Empire had arrived at the end of the 2nd century as noted previously.²⁸ In this regard, the adoption of sericulture in the oasis of southern Xinjiang bears the mark of beliefs that originated in India. If wild silk fibers had been entwined with *Bombyx mori* filaments, as Antoinette Rast-Eicher conjectured, the Indian influence might have been even greater. As shown in numerous archeological discoveries, discontinuous silk has not only been used in southern Xinjiang for the manufacture of simple cloth. It has also been identified in figured textiles found in sites ranging from Syria to China. For instance, the 3rd to 4th century weft-faced compound tabbies excavated in Dura-Europos (Syria), the Lop desert and Yingpan (near Loulan), Huahai (Gansu province, China), and the later examples (from the 5th to 8th centuries) from Munchaktepa (north Ferghana, Uzbekistan) where wild silk was also probably interlaced with *Bombyx mori* fibers.²⁹ So far, we haven't found any bibliographical references to other simple cloths woven with discontinuous silk. As they may be more often than not the reflection of a local production, it would be interesting to retrieve more data concerning their geographical dissemination in order to follow the progression of Buddhist influenced sericulture beyond southern Xinjiang of the type identified in Karadong.

The last group of textiles confirming a foreign influence in Karadong are the resist-dyed fabrics involving the use of already identified types of fibers. As detailed previously, the two small resist-dyed cotton fragments display large and unidentifiable motifs (fig. 6). Their size and the quality of the ground tabby require comparisons with the Niya fragments, whose design depicts an indianized goddess bearing a cornucopia, suggesting an Indian or Ghadhari origin.³⁰ The other

²⁶ It is remarkable that the word supposed to designate discontinuous silk in later Khotanese documents - *pe'ma* – meant 'wool' in Iran where the word came from (Y. Yoshida, "Notes on the Khotanese Secular Documents of the 8th-9th Centuries", in *Iranian Languages and Texts from Iran and Turan. Ronald E. Emmerick Memorial Volume*, ed. M. Macuch, M. Maggi and W. Sundermann (Wiesbaden: Harrassowitz, 2007), 463-472.

²⁷ Xuanzang, *Si-yu-ki*, 319.

²⁸ According to F. Zhao ("Silks in the Sui, Tang, and Five Dynasties", in *Chinese Silks*, ed. D. Kuhn (New Haven & London: Yale University Press, 2012), 207, 505 note 15), the same hypothesis has been presented by Lin Meicun ("Loulan gongzhu yu canzhong xichuan Yutian he Luoma" (The princess of Loulan [Kroraina] and the westward spread of sericulture to Khotan and Rome), *Wenwu tiandi*, 4 (1996), 12-15.

²⁹ For the Dura-Europos fragment, see <http://artgallery.yale.edu/collections/objects/5967>; W. Sylvan, *Investigation of silk from Edsen-Gol and Lop-Nor* (Stockholm: The Sino-Swedish Expedition. Publication 32, 1949), 69, 148; W. Li, "Silk Artistry of the Northern and Southern Dynasties", in *Chinese Silks*, ed. D. Kuhn (New Haven & London: Yale University Press, 2012), 173-177; F. Zhao, H. Wang, F. Wang, "Silk Garments Excavated from Tomb 26 in Bijiatan, Huahai Gansu", in *Western Imprints*, ed. F. Zhao, 107, fig. 8-1-2-3 ; B. Matbaev and F. Zhao, *Early Medieval Textiles and Garments of Ferghana Valley* (Shanghai, 2010), 257-288.

³⁰ M. Pirazzoli-t'Serstevens, "Pour une archéologie des échanges. Apports étrangers en Chine – transmission, réception, assimilation", *Arts Asiatiques* XLIX (1994), 21-33, fig. 2; F. Zhao, "Textile with deity", in *China: Dawn of a Golden Age, 200-750 A.D.*, J.C.Y. Watt (New York, The Metropolitan Museum of Art, 2004), 196-197.

resist-dyed fabrics display different small designs involving either rosettes combined with small disks or organized in diamond shaped frames, or small diamonds characteristic of tie-die and plangi (fig. 7a). These types of designs indicate an Indian origin, which has been confirmed by the discovery of similar small designs among the Indian cotton resist-dyed tabbies imported during the late 4th-5th century to Berenike, an Egyptian port on the Red Sea.³¹ However, various clues point to a local production developed after the introduction of this technique from India. One hint lies in the diversity of the textiles fashioned in wool, wool-cashmere, continuous and discontinuous silk that was resist-dyed after weaving. Complementary evidence consists in the use of identical designs and colors visible on the Buddhas' cloaks painted on the walls of the two shrines in Karadong: both the rosette and disk design on a blue background, and the diamond shapes on a red background, are typical of resist-dying (fig. 7).



*Fig. 7 – Two Buddhas with cloaks painted respectively on the walls of shrines A and B at Karadong and showing the same designs and colors as resist-dyed textiles woven with discontinuous silk: 59 YW-101 (D16072)(left) and 93 KRD 60-02 (right)
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³¹ Wild and Wild, “Through Roman eyes”, 223-224, fig. 8a, inv. Nr. BE98 1105 and BE01 2706.

In conclusion, far from being the pale reflection of a meager local history, the small group of textiles found in Karadong underscore some interesting evidence of the exchanges of raw materials, techniques, products and ideas that occurred over an extensive territory at the beginning of the 1st millennium. In the heart of the Taklamakan desert, Karadong bears out—with the textiles discovered in several of its dwellings—of both a Chinese presence, and a strong Kushan influence as evidenced by the other types of objects found there, as well as by written documents. And it emphasizes how Buddhism might have given impetus to this movement. Relations with the more westerly regions also appear to have taken place, but are less typified since they concern textiles used in daily life and whose origins are more difficult to pinpoint. The meticulous comparison of a thick woolen piece from Karadong with fifteen others found in the At-Tar caves in Mesopotamia gives credence to the existence of very similar bedding habits over a vast territory—and maybe some exchanges—if the vertical loom required for the weft-faced element was not available there at that time. We hope our paper demonstrates the role simple fabrics have played in medium to long-distance exchanges, and the necessity of taking them into account, if we want to outline a global history of textiles.