

# International Dunhuang Project: Working on Stein's Archaeological Legacy

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With eight full partners and over 30 collaborating institutions, the International Dunhuang Project (IDP) is an exemplar of using digital and web technology to bring dispersed archaeological treasures to all.<sup>1</sup> By the end of 2011 it offered free online access to almost 350,000 images and data on over 130,000 manuscripts, paintings and other artefacts from the remains of ancient Silk Road settlements skirting the Taklamakan, Lop and Gobi deserts in western China.

Over the past few years, IDP UK at the British Library (BL) has been working with the Xinjiang Institute of Archaeology (XJIA) to enhance the online resources specifically relating to the four Central Asian Expeditions of Aurel Stein (1862–1943). This article gives a brief introduction to the work of IDP before discussing this specific project.

## IDP: history, partners and activities

### *History*

IDP was established in 1994 following a meeting of curators and conservators from institutions worldwide holding major collections of archaeological materials from the explorations of Stein and his contemporaries. With the aim of sharing expertise, formulating international standards for conservation and making material more accessible through digitization and online access, they founded IDP. They agreed to set up a directorate in the British Library and to hold regular conferences and meetings.

Work started at the BL on creating a database suitable for holding information about the archaeological objects and their images and serving it online, and then on digitization of manuscripts from Stein's expeditions. The website, making several thousand images and data freely available, went online in 1998.

The use of 'Dunhuang' in IDP's name is somewhat misleading: its remit has always been the eastern Silk Road and not restricted to the site of Dunhuang. In fact, the first artefacts to be digitized were manuscripts from Stein's first expedition to sites in the Taklamakan. And, although IDP started with a focus on manuscripts, the whole range of archaeological artefacts is in scope, along with the related archives from the archaeological expeditions, including maps and photographs. For example, paintings, textiles and three-dimensional objects from the British Museum Stein collection started to become available on IDP from 2002.<sup>2</sup>

### *The Partnership Model*

After the first meeting, the founding members of IDP held conferences every two years focused on the conservation of the material, but also discussing the development of the database and digitization at the BL. IDP also produces a regular newsletter and is actively engaged in fundraising to expand its activities. Its staff at the BL and many of its international activities were, and continue to be, largely dependent on external funds.<sup>3</sup>

In 2001 the British Library signed a Memorandum of Understanding (MoU) with the National Library of China (NLC) to establish IDP China, a full centre with a digitization and cataloguing studio and a Chinese website served through a local server. The website, showing newly digitized images of

manuscripts from the NLC alongside those from the BL went online in November 2002, thanks to the support of the Sino-British Fellowship Trust (SBFT).

Other founder members followed to become full partners over the next decade, digitizing their own collections and hosting local language websites. As of 2012 there were IDP Centres in Beijing, Dunhuang, St Petersburg, Berlin, Paris, Kyoto, Seoul and, most recently, Stockholm. IDP partners are responsible for digitizing their collections and entering related metadata onto the IDP database. The data is synchronised across all servers so that users accessing the website in China, for example, see the same set of data and images as those accessing the data in Russia. But specific information, for example, details of local events, can be entered by partners onto their local website.

Partners might comprise collaborations by more than one institution: for example, IDP France consists of a collaboration between the Bibliothèque nationale de France and the Musée Guimet. In Berlin the Staatsbibliothek, the Berlin-Brandenburg Academy of Sciences and Humanities and the Museum of Asian Art all contribute. In addition, partners act as regional hubs, hosting data and images from other institutions or individuals with smaller collections. So, for example, the National Library of China will be responsible for collecting information and data on Dunhuang and Central Asian collections throughout central China while the Dunhuang Academy will act as host for Dunhuang material in Gansu Province. Currently, the British Library hosts material from the British Museum, the Victoria and Albert Museum in London, the Library of the Hungarian Academy of Sciences in Budapest, the Chester Beatty Library in Dublin and several institutions in the USA.

In 2012 a programme started to update the IDP technology and to implement APIs (Application Programming Interfaces) to allow wider access to IDP material (subject to agreement by the institutional holders) on other interfaces and for the IDP interface to give access to related material on other servers.

### *Activities*

#### *Conservation, Cataloguing and Digitisation*

IDP provides a model for an end-to-end workflow, from initial selection and conservation of the material through to cataloguing, digitization and online access, with quality control processes throughout. It aims to adhere to the highest standards where possible and, through onsite training, to enable the same standards to be implemented in all IDP Centres worldwide. Digitisation has the dual purposes of providing wider access while ensuring a digital archive for long-term preservation. The workflow ensures that the images become immediately available online with associated data.

#### *Education*

IDP has always hoped to bring the rich resources associated with Stein and others to as wide an audience as possible and, to this end, offers a range of educational resources.<sup>4</sup>

### *Research*

IDP has always had the long-term objective of providing a space where scholars can locate most of the resources they require for their research, whether images of ancient manuscripts, archaeological site plans, journal articles, unpublished expedition papers or scientific datasets. Not only was the interface designed with all this material in mind, but IDP has also actively sought to collect and, where possible, create data to enable it to provide a holistic resource for a wide group of scholars.

IDP also has an active research programme.<sup>5</sup> For example, in 2011 it completed a five-year research project, led by Dr Sam van Schaik and Dr Imre Galambos, Research Project Managers of IDP, on the palaeography of Tibetan and Chinese manuscripts from the Stein Collection at the British Library. Since 2008 it has been actively engaged on research on the archaeological sites of the southern Taklamakan, a result of which is the enhancement of the research resources on Stein's expeditions to this region. This project is described below.

#### **Stein's expeditions to the southern Taklamakan**

As part of its remit to set the artefacts in context, in 2008 IDP started an EU-funded project called 'Cultural Routes of Eurasia', with the aims of strengthening links with Chinese scholars and institutions and bringing the legacy of Stein and other contemporary European explorers to a wider European public.<sup>6</sup> One of the major parts of this project was a research programme with XJIA to review Stein's expedition photographs, plans and notes, and make them fully available on IDP with enriched metadata including GIS.

Stein took over 4000 photographs during his four expeditions to this region: these are mainly in the collections of the British Library and the Library of the Hungarian Academy of Sciences. They have all been digitized and are freely available with catalogues on IDP. The project included a field trip to Xinjiang to revisit and document sites unearthed by Stein a century ago. Part of this documentation consisted of taking modern photographs matching those of Stein, thereby adding value to the BL collections and providing a valuable record to scholars of changes in archaeological sites over the past century. In addition, general documentation – photographic and video – was taken of some of the sites originally excavated by Stein in order to provide a more complete record. This visit took place in November 2008. It also included a visit by two young scholars from Xinjiang to the British Library, funded by the Sino-British Fellowship Trust.

Following the success of this project, in 2010 IDP signed a renewed MoU with XJIA for further field trips, for six-month internships at the British Library (funded by the World Collections Programme and involving collaboration with the British Museum), and for other collaborative research activities. The first intern arrived in London in October 2011 and a second field trip, to Niya and Karadong, took place in November 2012. A report of both trips and their results is given below.

2008: *Karashahr, Miran, Endere, Rawak, Mazar Tagh and Khotan*  
The itinerary of the first expedition was restricted by budget and time to Stein sites that were reachable in a day in a four-wheel drive vehicle. A hundred years on from Stein and life for the traveller is easier in many obvious ways, not least among them the 4WD. Stein travelled by pony, with his supplies and finds packed on a camel train (Fig. 1). Such roads as existed were tracks often covered by sand. There was no telephone network or even telegraph in this region. A remarkably efficient postal network was, however, maintained by ‘dak runners’, who carried mail across the mountains to India and thence by ship to Europe.

In 2008 a programme of road improvement in Xinjiang resulted in newly tarmaced dual carriageway roads all around the Taklamakan and, at three points, across it. Three systems of stopping the sand dunes from burying the roads in their relentless movement are being tested and seem to be working. Wireless towers are found at regular intervals. There is a railway along both the northern and southern Taklamakan and numerous small airports, the former a development unwillingly foreseen by Stein, who anticipated ‘the day, happily still far off, when Khotan will have its railway, and when all this busy life of the road will be transferred to stations and trains.’<sup>7</sup> However, the Taklamakan itself has not changed and once the main roads are left there is no certainty of being able to reach any given destination by vehicle. The team had to get out and walk to several sites when the vehicles could no longer negotiate the dunes. This resulted in reduced time at the sites — we were on a much less flexible timetable than Stein.

Another major improvement from Stein’s time is the existence today of the XJIA and the Xinjiang Cultural Relics Bureau who have overall control of security and investigation of archaeological sites and the finds, as well as taking part in an ongoing programme of new excavations. Some of these are international efforts, such as the Sino-Japanese excavations at Niya (1988–97)<sup>8</sup> and the Sino-French explorations along the Keriya River (1991–4),<sup>9</sup> and have resulted in many new finds. The desert still has secrets to yield. The 2008 team was under the leadership of the XJIA Director, Idris Abdurusul, and it was thanks to the XJIA’s excellent planning and knowledge of the region that the team



Figure 1 Stein’s camel train on his Third Central Asian Expedition in 1913 (The British Library, Photo 392/28(252))

was able to visit so many sites so successfully.

Stein wrote after his first expedition (1900–1) that he hoped the region would one day have its own museum. For many years now there have been major museums in Urumqi, Turfan and Khotan and all have recently moved to new and larger buildings with space for impressive displays. Along the southern Silk Road, the focus of Stein’s attention and of this field trip, there are several new museums showcasing recent archaeological finds. A massive building in the rebuilt centre of Qiemo, for example, houses a museum on its ground floor that includes details of recent excavations, such as those of the cemetery at Zaghunluq. But a small museum has also been built over one of the tomb pits at the archaeological site itself a few kilometres outside the town, allowing visitors to see the mummies *in situ*.

Archaeological finds are not now automatically sent to the regional or national capital, some, at least, being kept at the places they were found to encourage local understanding and tourism. This was most noticeable at the site of Tuopukdun Temple outside Domoko. This miniature Buddhist temple was uncovered accidentally from its long burial in the desert sands by farmers in 2000. They contacted local archaeologists and a team carried out a careful excavation in 2002. Another temple was then discovered to its south and this was also carefully excavated. In 2007 a small museum was built on the site itself to house the remains of the temples and their finds.<sup>10</sup> Situated just south of Domoko, it is easily accessible and has captions in Chinese, Uighur and English. Stein would have been heartened to see these examples of the care taken to preserve and display archaeological sites and their artefacts today. He would also have been fascinated by these new discoveries that add to our understanding of life and culture in the ancient kingdom of Khotan.

The 2008 field trip took the combined team of fifteen from the XJIA and BL on a long drive south from Urumqi through the Tianshan (‘Heavenly Mountains’) to Korla, where we stopped to visit the temple site and caves at Karashahr. We then continued south across the desert road following the Tarim River before it disappears finally into the desert sands, and on to Ruoqiang (Stein’s Charklik). From here we spent a day at the ruins of Miran, comprising a large area of Buddhist monasteries and stupas dating from the 2nd–4th centuries and a military fort built and occupied by Tibetan soldiers in the 8th–9th centuries.

At large sites with many structures, such as Miran, we found it helpful when one team member went on ahead to scout the locations, and the members of the XJIA and the local guides provided invaluable assistance in the identification of locations at many sites. But even with original plans of the sites, subsequent sand drifting and erosion often made accurate correlation between early photographs and existing structures difficult.

Unlike many of his contemporaries, Stein did not take a specialist photographer on his expeditions: he valued independence and travelled with Indian surveyors and servants, along with local guides and diggers, but with no other Europeans. He had learned the skills of photography from his colleague, Fred Andrews, during previous expeditions in northern India in the 1890s, and throughout his career he kept in touch with the latest technology in the

field. By the time of his first expedition he had become a competent photographer (and, equally important, a meticulous recorder of his photographic data) and photography was to form an integral component of his recording methods. While cumbersome and time-consuming to operate compared to modern equipment, photographic technology was sufficiently advanced by the early 20th century to enable Stein to work with compact, sturdy and easily transportable folding cameras, producing negatives measuring 5x7 inches and smaller.<sup>11</sup> While cameras became increasingly miniaturised in the early decades of the 20th century, photography on an extended expedition still required a degree of effort and planning that is largely foreign to the modern digital photographer. Sufficient supplies of chemicals and glass plates (and later film) had to be transported for long periods over climatically and geographically demanding terrains, and negatives had to be processed in often difficult circumstances. Given the competing demands on Stein's time – surveying, excavating, recording finds and all the associated logistics of managing major expeditions – it is remarkable that he managed to produce such a comprehensive record of his travels and archaeological discoveries.

Following in Stein's footsteps a century or more later, we had two digital photographic teams, each consisting of a photographer, a scout, a note-taker and someone to record GPS. We also took had a video operator. Apart from Idris Abdurusul, the XJIA team included the Deputy-Director, Li Wenying, and two young scholars, Hu Xingjun (from XJIA) and Yu Jianjun (from Xinjiang Cultural Relics Bureau). Yu and Hu joined the photographic teams to help in identification. They subsequently visited IDP at the British Library in summer 2009.

From Ruoqiang we travelled westwards, along the southern edge of the Taklamakan, to the museums at Qiemo (Cherchen) and then to Endere, a stupa, fort and other ruins in the desert. Stein travelled across much of the Taklamakan, visiting Karadong and Dandan Uiliq, but we did not have sufficient time on this visit to make the long trek required for these sites. The roads only go so far. Even with 4WD and skilful drivers, we inevitably got stuck several times en route to desert sites and had to walk the final few miles. Specialist sand vehicles and camels are essential for longer forays into the Taklamakan.

The greatest problem for our photographic teams in the desert areas was the shifting sands. Additionally, in desert conditions assessment of distances can be extremely problematic. For future work, an electronic rangefinder for measuring distances between structures and landscape features would be of major assistance in relating the present-day environment to historical plans. Another major problem posed with the replication of the Stein photographs was caused by the time of day. Having identified the position from which the original image was photographed we were often required to shoot directly into the sun or into deep shadow due to the sun being at its highest point in the sky. Had more time been available it would have been preferable to plan photography for the most appropriate time of day for the best photographic results.

From Endere we moved on to sites around Khotan, still a

thriving jade town. One day was spent visiting Mazar Tagh, a three-hour drive along the new road north into the desert along the course of the Khotan River. This Tibetan fort, contemporaneous with the one at Miran, stands on the remains of what was possibly once a range of hills, but now consists of only a small bluff projecting over the river, thus commanding a strategic position to control the route south into Khotan. Because of the position of the remains on rock rather than sand and the distinctive and largely intact structure, some of the most effective matching photographs were taken here (**Figs. 2a and b**).

We also visited Yotkan, Melikawat, Aksipil and Rawak stupa, the last being another impressive Buddhist ruin among the shifting dunes, and one at which Stein left many statues for a future museum. He carefully re-covered them with sand only to discover on a subsequent expedition that they had been uncovered, possibly by treasure seekers, and largely destroyed. However, like most places we visited, the structure of the stupa has changed little since Stein's day (**Figs. 3a and b**). There has been some erosion, but very little. In some cases, there have also been repairs and rebuilds, but this is fairly rare.

The site at Rawak, as in other places in the area, is under the protection of the Khotan Bureau of Cultural Relics and Archaeology, and it is possible to acquire a permit to visit with a guide. The road leading to the site has a gatekeeper and it is clear that every effort is made to protect the site.

During our visits in Khotan we were joined by Matkasim Tomur of the Khotan Bureau who proved invaluable for his local knowledge of the sites. We had many opportunities to discuss Stein and his work during the trip with other team members and locals, and were surprised at the generally favourable response they gave to our questions. Although often vilified as an imperialist thief, there is also a respect among scholars and archaeologists for the value of his work and the documentation he left on the sites and their artefacts. His expedition reports are now available in Chinese and, at all the sites we visited, his site plans and numbering systems were familiar to the local archaeologists.

On our return, 410 new site images with metadata were added to the IDP database, thus making them freely available online.<sup>12</sup> They were linked to the original Stein photographs. A copy of the images and metadata was sent to the XJIA for their use. In addition to this, short videos were prepared of each site visited and added to the IDP YouTube channel.<sup>13</sup> Considerable additional work was also carried out on the structure of the IDP database to allow more information to be captured and made available on the sites.

#### *2011: Niya and Karadong*

The second field trip in November 2011 comprised a smaller team – five members from the British Library and five from XJIA – and visited Niya and Karadong, sites that are only accessible by sand vehicles or camel, requiring several nights' camping in the desert. The teams were again led by Idris Abdurusul, now retired as Director, and with Matkasim Tomur and Hu Xingjun from the 2008 team. The other members were Anwar Abdulkasim, XJIA Deputy Director, and Nijat Rozi, XJIA researcher. The IDP UK team was led by Susan Whitfield, Director of IDP, with Vic Swift and John



Figures 2a and b Mazar Tagh fort taken by Stein in November 1913 and by Vic Swift of IDP in November 2008 (The British Library, Photo 392/28(277) and Photo 1187/2(283))



Figures F 3a and b Rawak stupa taken by Stein in September 1906 and by John Falconer of IDP in November 2008 (The British Library, Photo 392/26(154) and Photo 1125/16(387))

Falconer as photographers, Rachel Roberts taking video and photography, and Alastair Morrison as project interpreter and researcher.

Based on the lessons learned from 2008, three teams were formed each comprising two people, a photographer (or video operator) and note-taker. One team concentrated on replicating Stein's photographs, while the other two teams prepared overall photographic and video documentation of the sites. The other members of the group helped scout Stein's photographs and provided general support. Since XJIA had GPS readings of all the sites, there was no need to take these. Existing GPS documentation also formed an important aid in locating specific sites in the desert.

The main point of focus for this visit was the ancient kingdom of Caḍota (Niya), visited by Stein on all four of his Central Asian expeditions. His first knowledge of it came from the account of the 7th-century Chinese pilgrim monk, Xuanzang, his guide throughout the Taklamakan. However, Xuanzang visited when it was the small eastern frontier post for the kingdom of Khotan, whereas Stein soon found the sites he excavated dated mainly from a period several centuries earlier when it had been a larger kingdom in its own right. His first sign of the richness of its history was from two inscribed wooden tablets shown him by one of his camelmen while en route. The man had picked them up near the Imam-Ja'far-Sadik shrine after they had been discarded as worthless by a man called Ibrahim, whom Stein describes as 'an enterprising young villager'. He, in turn, had acquired them after digging in a house in the ancient remains (N.I.).<sup>14</sup> Stein recognized them as containing Kharoṣṭhī script of a type prevalent during the Kushan period in the earlier centuries of our era. On reaching the site he established camp near the stupa (Fig. 4) and the next day set off at sunrise 'with the temperature still well below zero Fahr., I hastened to the ruined building where Ibrahim had a year previously picked up his ancient tablets ... I picked up at once three tablets inscribed with Kharoṣṭhī lying amidst the debris of massive timber which marked wholly eroded part of the ruined structure.'<sup>15</sup>

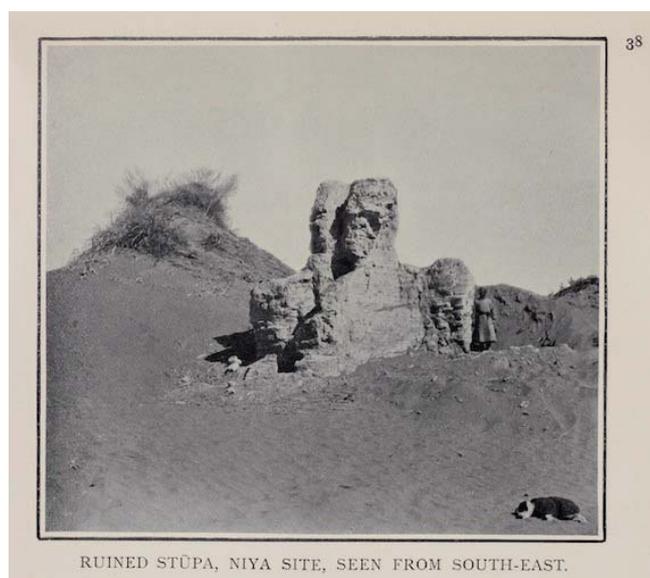


Figure 4 The stupa at Niya, where Stein camped on his First Expedition (Stein, *Ancient Khotan*, 1908, Fig. 38)

This was the start of a series of document finds that were to reveal the social and economic life of Caḍota's inhabitants (Fig. 5).<sup>16</sup> They are now in the collections of the British Library and the National Museum, New Delhi, and all the former are online on IDP. IDP continues discussion with the National Museum about making its share of these collections more accessible.

Niya is deep in the Taklamakan Desert and extensive, spanning 25km from north to south and 7km across. The terrain is very difficult. Specialist sand vehicle transport was therefore required. There is no shelter, water or, indeed, anything much apart from sand, at either site. Therefore all supplies, including tents, water, fuel, food, fodder and medical supplies, had to be purchased, packed and taken by the team. The initial days in Urumqi and Korla were occupied with planning, buying and loading supplies. This was excellently organised by XJIA.

Even in sand vehicles, travelling in the desert is slow (Fig. 6). Considerable detours are required to negotiate dunes, tamarisk cones and areas of soft clay deposits from spring and summer floods. Walking within and between adjacent areas in the sites was challenging because of the dunes.

From Korla the team took sand vehicles across the desert road, stopping one night at the Tarim River before arriving on the second evening at the village of Kapak-Askan (marked on Stein's maps) just south of the Imam-Ja'far-Sadik shrine. Here we stayed a night at the guesthouse of Kaysar Mahmut, guardian of the Niya site, before travelling with him to the centre of the Niya site (west of the stupa) and setting up camp (Fig. 7). During our five days at Niya, the first three were spent in the northern area and the final two in the south. Over twenty sites were documented, all but two of them being sites excavated by Stein. Locating and identifying the sites was helped greatly by the knowledge of Kaysar Mahmut and the GPS documentation prepared by the Sino-Japanese team.<sup>17</sup>

The nature of the Niya ruins was different from most of the sites visited in 2008. Apart from the stupa, the buildings had wooden frameworks with rush or tamarisk walls. All that can be seen of most of these are the much-eroded wooden wall posts, with an occasional horizontal roof beam and the remains of woven rush walling. The sand levels were often markedly different from those in Stein's photographs: where Stein had taken a photograph from the top of a dune, for example, there was now a depression. This made the matching of photographs very difficult. However, what was striking was the unchanging nature of the tamarisk cones over a hundred years, whose root systems create an effective binding resistance to the desert winds. In the south where they were most frequent, it was often possible to match views by recognizing the profile of a cone, for example, in the large site with vineyard that Stein numbered N.XLIV (93A24 in XJIA system). Stein had obviously also found them a useful vantage point: in several places his pictures are taken from the top of a cone, most noticeably in the panorama of N.XLI. (93A23) (Fig. 8).

It was a custom of Stein's to use people to provide scale in his photographs, and many were locals employed to help the excavations. These images were of great interest to Kaysar Mahmut who recognized at least one person whose

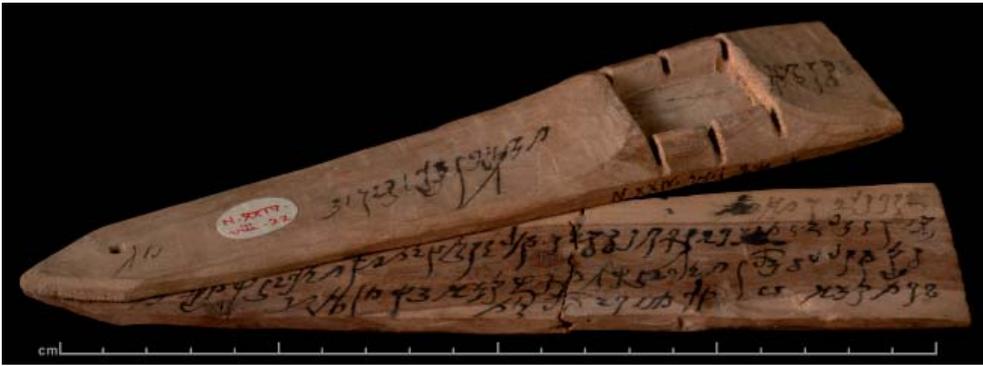


Figure 5 A typical manuscript from Niya excavated by Stein (The British Library, Or.8211/1415)



Figure 6 Sand vehicle negotiating the dunes in the northern part of Niya, taken by John Falconer, November 2011 (The British Library, Photo 1235/1(206))



Figure 7 Camp at Niya, November 2012, taken by John Falconer (The British Library, Photo 1235/1(269))



Figure 8 Panorama of Niya site N.XLI (93A23), taken by Vic Swift of IDP from the vantage point used by Stein (The British Library, Photo 1235/3(161))

descendants continue to live in his village (**Fig. 9a and b**).

On day three we drove through higher dunes to the east and, where they became impassable for the sand vehicles, got out and walked for a couple of kilometres. This took us to a cemetery, mostly hidden by the dunes but with scattered remains in the eroded depressions where robbers had been. This had been discovered by Kaysar Mahmut in 2005. The robbers had left the skulls, bones and pieces of the wooden coffin scattered carelessly on the surface. There were only a few pieces of silk and cotton textiles left of the grave goods for which, presumably, the robbers had come. But despite the circumstances of its uncovering, the continued discovery of new sites in the area is a potent reminder of the archaeological wealth which still remains beneath the sand.

The nature of the site and the terrain make it impossible to prevent such incidents, but the work of the Sino-Japanese team in recording the sites and the continued vigilance of Kaysar Mahmut ensure that they are reduced. Stein discovered over forty ruins, mainly dwellings with associated orchards and animals sheds. The Sino-Japanese team discovered some 250 ruins including temples, cemeteries, dwellings, manufactories, earthen walls, animal sheds, orchards, reservoirs and lines of trees. These included the cemetery of the royal family. Details of all of these are being entered onto IDP.

Karadong, our next destination, was also visited by Stein on his first expedition, following the accounts by Sven Hedin of his visit in 1896 and those of Stein's guide, Turdi, 'whose "treasure-seeking" expeditions had twice extended to this place.'<sup>18</sup> It lies 150km from Keriya up the Keriya River, and the journey it took Stein six days on long marches, stopping en route to hire labourers. We covered his first five days of the journey in one, by 4WD vehicles for the 200km drive up the course of the Keriya River to the village of Daheyang or Darya Bai, visible from a distance thanks to its newly erected China Mobile transmission tower. Although the river has reduced considerably at Daheyang it was still not possible to ford it and we crossed by a bridge, making our way to the house of Matsaydi Abla, guardian of the Keriya sites (**Fig. 10**). Stein noted here that he could discern three dry river beds spreading out in different directions 'like the fingers of a hand'<sup>19</sup> but he saw little on his march owing to the wind. The next day we slowed down to Stein's pace: the 15 camels hired for the trek to Karadong were loaded and we set out up the branches of the now dry river bed, passing farmsteads and herds of sheep and goats. At one place we were warned of wolves, but saw only deer and a remarkably fearless hare. Like Stein, we set out west across the dunes for the final few kilometres and set up camp near the ruin Stein called K.I.

The next day we were able to walk to all the sites noted by Stein, although only the quadrangle that he identified as a fortified frontier post or caravanserai, was from his first expedition. It was the most impressive, but also the most greatly changed, of all the sites we visited. Here, Stein had excavated a large wooden gateway with roof and door intact (**Fig. 11**). Only the frame remains today, with signs of a more recent fire showing the problems of preventing damage (**Fig. 12**).

The telecommunication mast signal did not penetrate the dunes so we only started receiving mobile signals on re-

approaching the village. Stein received momentous news on his march back: his mail, brought by a mail runner from Keriya, told him of the death of Queen Victoria, filling him with 'deep emotion ... with the disappearance from this worldwide scene of the greatest ruler of England.'<sup>20</sup>



**Figure 9a** Kaysar Mahmut at Niya site N.XXXVI, in November 2011, taken by Rachel Roberts of IDP (The British Library, Photo 1235/2(358))



**Figure 9b** The same site taken by Stein in 1906 with a villager recognized by Kaysar Maymut (The British Library, Photo 392/26(191))

#### *Ongoing Work*

Following the two field trips, it became apparent that the richness of the data would necessitate a redesign of the IDP user interface, for efficient searching, displaying and reusing of the complex and interlinked data. Planning for this started in early 2012, the first step being to raise funds to enable the work. Further activities under the MoU will also take place and full reports are given in *IDP News*.<sup>21</sup>

#### **Conclusion**

A century on and it seems as if Stein's hopes that the kingdoms of the Taklamakan deserved international attention and serious scholarship are finally being realised and, just as importantly, his own role in making this possible is also acknowledged.



Figure 10 The house of Matsaydi Abla, guardian of the Keriya sites, in Daheyuan village, taken by Rachel Roberts in November 2011 (The British Library, Photo 1235/2)



Figure 11 At Karadong Stein excavated a large gateway with roof and door intact (The Library of the Hungarian Academy of Sciences, Stein Photo 5/2(90))



Figure 12 The gateway at Karadong today, taken by Rachel Roberts in November 2011 (Photo 1235/2(431))

## Notes

- 1 <http://idp.bl.uk>
- 2 See Michaelson's paper in this volume.
- 3 The archive of newsletter is online ([http://idp.bl.uk/pages/archives\\_newsletter.a4d](http://idp.bl.uk/pages/archives_newsletter.a4d)). For details of funders see [http://idp.bl.uk/pages/about\\_funding.a4d](http://idp.bl.uk/pages/about_funding.a4d)
- 4 <http://idp.bl.uk/pages/education.a4d>
- 5 [http://idp.bl.uk/pages/education\\_research.a4d](http://idp.bl.uk/pages/education_research.a4d)
- 6 [http://idp.bl.uk/idp\\_crea/index.htm](http://idp.bl.uk/idp_crea/index.htm)
- 7 Stein, *Ruins of Desert Cathay*, 2 vols, London, 1912 vol. 1, p. 166.
- 8 中日日共同尼雅遺跡學術調查隊 *Chū-Nichi Nitchū Kyōdō Niya Iseki Gakujutsu Chōsatai. 1996–2007*, 中日日共同尼雅遺跡學術調查報告書 *Chū-Nichi Nitchū kyōdō Niya Iseki gakujutsu chōsa hōkokusho*, Kyoto.
- 9 C. Debaine-Francfort and Idriss Abduressul, Keriya, *Mémoires d'un fleuve: archéologie et civilisation des oasis du Taklamakan*, Paris, 2001.
- 10 See *IDP News* 32 ([http://idp.bl.uk/archives/news32/idpnews\\_32.a4d](http://idp.bl.uk/archives/news32/idpnews_32.a4d))
- 11 On his first expedition, this was the recently introduced Sanderson Hand Camera. By 1906, he had acquired the Sinclair Una, a smaller camera which had come onto the market two years earlier.
- 12 Put 'Photo 1187' into database search box on [idp.bl.uk](http://idp.bl.uk) to show all photographs. Click to see with Stein matches where applicable.
- 13 <http://www.youtube.com/user/IDPUKvideo>
- 14 M.A. Stein, *Ancient Khotan*, London, 1907, p. 312.
- 15 Stein, *Ancient Khotan*, p. 316.
- 16 Transcribed and translated originally by T. Burrow, *A Translation of the Kharosthi Documents from Chinese Turkestan* (James G. Forlong Fund, Vol. 20), The Royal Asiatic Society, London, 1940, see <http://depts.washington.edu/silkroad/texts/niyadocts.html>. For use of the documents to reconstruct the life of Caḍota's inhabitants see Mariner Ezra Padwa, 'An archaic fabric: Culture and landscape in an early Inner Asian Oasis (3rd–4th century C.E. Niya)', Dissertation for a PhD at Harvard University, 2007.
- 17 See endnote 8 above.
- 18 M.A. Stein, *Sand-Buried Ruins of Khotan*, London, 1903, p. 426.
- 19 *Ibid.*, p. 427.
- 20 *Ibid.*, p. 433.
- 21 [http://idp.bl.uk/pages/archives\\_newsletter.a4d](http://idp.bl.uk/pages/archives_newsletter.a4d)