MAFIL

Mission Archéologique Franco-Indienne au Ladakh

FRANCO-INDIAN ARCHAEOLOGICAL MISSION IN LADAKH

(INDIA)

Activity report 2017

L. BRUNEAU

with inputs from C. SADOZAÏ, M. VERNIER, and J.-L. EPARD.

www.mafil.org

In 2017 the activites of the mission were supported by the:

-the French Ministry of European and Foreign Affairs (through the Advisory Commission for Archaeological Research Abroad), Paris;

- the East Asian Civilisations Research Centre, Paris, (CRCAO/UMR8155);

- the French Institute in India, Delhi;

- EPHE-PSL Research University.

MISSION BACKGROUND and PRESENTATION

The Franco-Indian Archaeological Mission in Ladakh (Mission Archéologique Franco-Indienne au Ladakh, hence MAFIL) was created in 2012. It was founded on the French side by Dr Laurianne BRUNEAU (associate professor in Central and Indian Studies at the Ecole Pratique des Hautes Etudes-PSL Research University, and permanent researcher at the East Asian Civilisations Research Centre in Paris) and on the Indian side by Mr Simadri Bihari OTA, who was joint director of the Archaeological Survey of India (ASI, New Delhi) until November 2017. The MAFIL project was approved in autumn 2012 both by the Central Advisory Board of Archaeology (CABA, Ministry of Culture and Archaeological Survey of India) and the Advisory Commission for Archaeological Research Abroad of the French Ministry of European and Foreign Affairs (MEAE).

The MAFIL is the first large scale-research oriented archaeological mission in Ladakh. This Western Himalayan region is a high mountain desert and the most northern region of the Republic of India (Jammu and Kashmir State). It borders Pakistan to the west (Gilgit-Baltistan Province), the People's Republic of China to the north (Xinjiang Autonomous Region) and to the east (Tibet Autonomous Region). Due to its geographical position, Ladakh is ideal for studying the cultural contacts between the Indian subcontinent and Central Asia (including the Tibetan Plateau).

Fig.1: location of Ladakh in Asia. ©MAFIL / M. Vernier.

Keen to develop archaeological research in the Himalayan region of Ladakh, the ASI opened an independent local office in Leh, the present-day capital of Ladakh, in 2011. In 2016, Mr Tsering PHUNCHOK, Deputy Superintending Archaeologist, was appointed head of the Leh Mini Circle and co-director of the MAFIL project. Martin VERNIER (associate researcher, ArScAn/UMR7041) acts as joint director on the French side since 2015.

The second phase of the MAFIL project (2018-2020) gathers specialists of Trans-Himalayan Archaeology. The project is directed by Prof. Vinod NAUTIYAL and co-directed by Prof. Pradeep SAKLANI from the Department of History, Ancient Indian History, Culture and Archaeology of the Hemvati Nandan Bahuguna Garhwal University (Srinagar, Uttarakhand).

Phase 2 of the project merges the experience and expertise of the French and Indian members to conduct research in the neglected Himalayan border areas. It aims at continuing the work initiated by the MAFIL at the Buddhist archaeological site of Leh Choskor[1] in 2015 and 2016.

RESEARCH PROJECT 2018-2020: DEFINING EARLY BUDDHISM IN LADAKH

Several art historians recently called attention to the numerous remains scattered all over Ladakh that could, if thoroughly studied, throw light on an early phase of Buddhism (before the mid-11th century) for which we have no texts, whether historic or religious (Klimburg-Salter 2016; Linrothe 2015; Luczanits 2004). The only written sources at our disposal are votive rock inscriptions in *śāradā* (the script used in Kashmir) and in Tibetan accompanying engravings of *stūpas* or stone images of Bodhisattvas. An 8th-11th century period is proposed for these rock inscriptions on the basis of vocabulary and palaeography (Denwood; Takeuchi). We should also mention the Buddhist content of a Sogdian rock inscription (9th century) in vicinity of which is engraved a rock inscription in Tokharian (7th century). Although the sources are scant (about 100 Tibetan rock inscriptions and 50 rock inscriptions in total for all the other scripts) they demonstrate that Buddhism had found its way to Ladakh in the last quarter of the first millennium AD and that the region was in contact with Kashmir and Central Asia. We do not know, at the present state of research, the historical background for these connections but we can form an idea of the penetration of Buddhism into Ladakh by looking at the numerous, uninscribed, stone images scattered all over the region in form of stele or bas-reliefs, sometimes on monumental scale. These Buddhist remains have been mentioned for the first time by August Hermann Francke a century ago but no systematic analysis has yet been accomplished (Francke). To date, only two comparative iconographic and stylistic studies relying on a small number of pieces (about 30 in total for the whole of Ladakh) have been carried out. A 7th -11th

[1] The site was refered to as Khardong Choskor in MAFIL's 2015 and 2016 report. Although the site is located at the foot of the Khardong pass administratively it belongs to Leh area.

century period is assigned to these stone sculptures based on iconography and style (Dorjay; Linrothe).

Fig.2: rock inscription in sarada on a stela with the representation of a Bodhisattva (broken) site of Dras, Ladakh (7th century AD). ©M.Vernier.

Fig.3: Tibetan rock inscription inside the representation of a *stūpa,* site of Tangtse, Ladakh (9th century AD). ©L. Bruneau.

During their last decade of fieldwork, some members of the MAFIL noticed the frequent proximity between Buddhist stone images and architectural remains such as ruined settlements, *stūpas* and temples. About forty mud-brick ruined temples, scattered over Ladakh have been documented by M. VERNIER, joint director of MAFIL. Except for two sites (Basgo and Nyarma), they have not been the object of scholarly attention since Francke's time (Luzcanits 2005). The ruined temples of Basgo and Nyarma have been architecturally studied (Luczanits 2005; Neuwirth). The latter is well-known since it is attributed, in historiographic (Chronicles of Ladakh and Guge-Purang) and biographical texts (namely those of Rinchen Zangpo), to the royal patronage of the West Tibetan king Yeshé Ö. According to textual sources the monastery of Nyarma was built under the supervision of Rinchen Zangpo (958-1055), the most influential religious master at the court. Nyarma is nowadays an extensive field of ruins: besides surviving *stūpas*, one of these being painted inside, there are five mud-brick temples in an advanced state of decay. Their ground plan and construction technique have been studied and their sequence of building is fairly certain (Neuwirth). However, none has been excavated nor securely dated. The site of Nyarma testifies to the spread of the West Tibetan kingdom (or kingdoms of Guge-Purang) into Ladakh, or rather to parts of the region known today under that term, that spurred what Tibetan literature call the 'Later Spread of Buddhism' (*byi dar*) (Petech; Tucci 1933; Vitali). This formative period (*byi dar*) for Tibetan Buddhism implemented a tantric or Vajrayana form of the doctrine as state religion, strongly influenced by Kashmir and northeast India and manifested concretely in the building of monasteries and temples (Heller; Jahoda & Kalantari).

Fig.4: aerial view of the ruined temples of Nyarma, Ladakh. Google Earth.

At most early Buddhist sites, ruined *stūpas* are found in association with the ruined temples. Until very recently no secure date could be forwarded for any of the *stūpas*. In 2013 the MAFIL thoroughly documented a large *stūpa* of Tirisa (Nubra valley). Erected on a rectangular terrace (about 20m x 25m) and delimited on its four sides by an enclosure wall, this *stūpa* in an advanced state of decay, presents a base and platforms of uncertain shape. Stairs of the ladder type are descending from a ruined dome to the ground on all four sides. By its size and ground plan, this *stūpa* is unique for Ladakh. However, such monuments are known in Central Asia and in Kashmir where they are attributed to the second half of the first millennium AD. Therefore, we proposed a similar time period for the *stūpa* of Tirisa. Our hypothesis was confirmed by C14 datings obtained in July 2015: the wooden sample taken from the terrace was dated 710-745 (calibrated dates, 8,5% probability) and 764-894 (calibrated dates, 86.14% probability) whereas the sample from the main pole was dated from 425 to 579 AD (calibrated dates, 95,4% probability).

Fig.5: view of the ruined *stūpa* of Tirisa, Nubra valley, Ladakh. ©MAFIL

These results show, in an irrefutable manner, that Buddhism was present in Ladakh in the last quarter of the first millennium AD and maybe as early as the middle of the first millennium. The only other material evidence from that period consists in rare rock inscriptions mentioned above. Since the *stūpa* of Tirisa is still the object of worship it was not possible to lead excavations there. As a consequence, the MAFIL started investigations at the site of Leh Choskor, another ancient Buddhist site.

Located north of the oasis of Leh, the site of Leh Choskor was surveyed for the first time by M. Vernier in 2003. An exploration was conducted in 2014 altogether with L. Bruneau. It was first reported by Francke who describes as a town (Francke). The site is today locally known under the name as *Lotsava Choskor* (NIRLAC) and as Snellgrove and Skorupski pointed out the term *choskor* suggests a religious place of some importance. The term 'Lotsava' pinpoints the fact that the place is traditionally associated with Rinchen Zangpo.

The archaeological area of Leh Choskor (34°12'.01.74"N / 77°35'41.10"E**)** measures about 24ha and is located at an average altitude of 3800 m: 137 built structures were inventoried and mapped in course of the MAFIL's 2015 campaign. Among these are three ruined temples (identified as such on the basis of their ground plan as well as plugholes and clay halo remains of deities visible on their inner walls) and 45 ancient *stūpas.* Not only is the site of Leh Choskor one of the largest Buddhist archaeological site of Ladakh but it is also unique with remains of

residential buildings, landscaping works and possible funerary structures. In 2016 the MAFIL led the first ever excavations in Ladakh in opening the main Buddhist temple of Leh Choskor (Co1). Identified as such by its location at the centre of the archaeological site, the temple's ground plan and building technique are similar to the ruined mud-brick temples of Ladakh mentioned earlier and to preserved Buddhist buildings (11th-13th centuries) not only in Ladakh but also in the state of Himachal Pradesh (Indian) and the Tibetan Autonomous Region (China). The remains of clay statues and mural paintings unearthed match the Buddhist art known in some surviving temples of the Western Himalayas, and in particular Tabo's Main temple (founded c.996 and restored c.1042) (Klimburg-Salter 1997).

Thus, we propose that the main temple of Leh Choskor was in use at the beginning of the 11th century. However, two building phases were identified (a verandah was added to the temple's original ground plan that was rectangular with an apse) and an earlier foundation of the temple is not be ruled out. Samples taken in course of excavations in 2016 have been submitted for C14 datings (see below). The temple of Leh Choskor is the first irrefutable material evidence of cultural connections with the Western Tibetan kingdom (or kingdoms of Guge-Purang). Until MAFIL's 2016 excavations at Leh Choskor these connections were known only through late textural sources (i.e, through the Chronicles of Ladakh and Guge-Purang and Rinchen Zangpo's biographies).

The results obtained by the MAFIL confirm the crucial role of archaeology for the understanding of Buddhism. (Coningham; Fogelin) We propose an interdisciplinary study of the site of Leh Choskor in order to bridge gaps in the history of early of Buddhism in Ladakh (in between the last quarter of the first millennium AD and the Later Spread, c.950-1050).

Details of future excavations (2018-2020) are given below: see **Action Plan**.

In order to fully grasp the importance of the site of Leh Choskor the MAFIL will expand exploration to the oasis of Leh, where the early presence of Buddhism seems to be indicated by other types of remains. Special attention shall be drawn to the ruined temple of Gyamtsa (reported by Francke) in a valley adjacent to the site of Leh Choskor. Other remains in the Leh valley, namely Buddhist stone sculptures (Alexander/van Schaik; Dorjay; Francke; NIRLAC) as well as the *chorten* of Mane Tsermo and the caves of Trakhung Kowache will be investigated. The latter caves are most probably corresponding to the earliest phase of Spituk monastery said to have been founded by the Western Tibetan king Ol-de in the first half of the 11th century (NIRLAC, van Ham 2011). These various remains point to Leh as being an important centre for Buddhism at the turn of the 2nd millennium. Some stone sculptures may suggest that this was the case from an earlier period (Linrothe).

Fig.6: location of the archaeological site of Leh Choskor (red dot) north of Leh valley.

Google Earth.

Fig.7: topographical map of the archaeological site of Leh Choskor.

©MAFIL/J.Suire and M. Vernier.

Fig.8: general view of the archaeological site of Leh Choskor looking north-east. The main temple (Co1) is in the foreground (right corner, bottom). ©MAFIL/Sadozaï.

Fig.9: general view of the main temple (Co1) of Leh Choskor looking north-west.

©MAFIL/Bruneau.

Fig.10: fragment of clay sculpture, main temple (Co1) of Leh Choskor, excavations of 2016. ©MAFIL/Poux.

Fig.11: fragment of mural paintings, main temple (Co1) of Leh Choskor, excavations of 2016. ©MAFIL /Poux.

ASSESSMENT OF MAFIL'S 2017 ACTIVITIES

Research programme "Archaeology, Arts and Material Culture of the Tibetan Cultural Realm", CRCAO/UMR8155, 2014-2018

MAFIL's activities are part of the research programme "Archaeology, Arts and Material Culture of the Tibetan Cultural Realm" of the CRCAO (Paris).

Since spring 2014, Laurianne Bruneau, together with Matthew Kapstein (EPHE) and Françoise Pommaret (CNRS), has been coordinating this 5-year research programme (2014-2018). This unique programme aims to develop a promising field of research in Tibetan studies: the material analysis of monuments and objects. So far, numerous studies have focused on iconographic and stylistic aspects, as well as use and purpose, but very little research has been conducted in the technical domain. Another key feature of the programme focuses on vestiges of the pre-Buddhist Tibetan world, which remain largely unexplored to date. Special attention is given to the conservation and development of the cultural heritage. Research is conducted by members of the CRCAO in collaboration with renowned French and foreign specialists.

- A more detailed presentation of the programme is available here: http://www.crcao.fr/spip.php?article614

A report for this research program was handed over by L. Bruneau to the CRCAO's direction for the autoevaluation report submitted by the research centre to the HCERES in September 2017.

Research programme "Defining early Buddhism in Ladakh, Western Himalayas: a pioneering archaeological project", Institut Universitaire de France, 2017-2022

In Spring 2017 L. Bruneau was appointed junior member of the Institut Universitaire de France (IUF). She submitted a collaborative research project on early Buddhism in Ladakh for which MAFIL's activities at the site of Leh Choskor will be the main source of data. L. Bruneau will act as coordinator for the project. Various specialists (archaeologists, architects, restorers, art historians, tibetologists) will work together on the following themes:

-Understanding the religious, social and economic roles of the Buddhist site of Leh Choskor;

-Ascertaining Buddhist religious practices at the turn of the 2nd millennium AD;

-Defining early Ladakhi Buddhist architecture and art.

Being an IUF junior member from October 2017 to September 2022 L. BRUNEAU is partly released from teaching, enabling her to focus on research activities. The annual subsidy granted by the IUF for the project will, in part, fund excavations at Leh Choskor.

Material analyses

C14 dating

Fifteen samples have been submitted for dating through the AMS technique. As stated in the *National Policy on Archaeological Exploration and Excavation* of the Archaeological Survey of India: "No archaeological samples shall be sent outside the country for scientific analysis or dating without the approval of the Director General. Archaeological Survey of India" (Archaeological Survey of India, p. 10). Permission to export samples for dating, collected during Summer 2015, was granted by the Director General of the ASI in April 2016.[2] The CNRS-SHS commission granted MAFIL the authorization to submit six samples for C14 dating using ARTEMIS, an accelerator mass spectrometer (AMS) in Saclay (France). The samples (five from Leh Choskor and one from Hundar Brog) were received by the *Centre de Datation par le RadioCarbone* (UMR 5138) in January 2017.

Regarding samples collected during 2016 campaign they will be submitted to the Inter-University Accelerator Centre (IUAC) in New Delhi by Mr S.B. OTA, the Indian director of the project (2013-2016), in November 2017.[3] Nine samples (2 from the *stūpa* of Tirisa, 5 from the excavated temple of Leh Choskor (Co1) and two samples from the ruined Buddhist temple of Gyamsa will be submitted.

Results from both laboratories are expected by the beginning of 2018.

Analysis of wood sample

In order to deepen the study of the *stūpa* of Tirisa, documented in Nubra in 2013 and for which we obtained datings in 2015 that will be published in the volume under preparation (see below) a sample taken from the central pole of the monument was submitted for wood identification. The identification is currently carried out by Mechtild MERTZ (associated researcher, CRCAO/UMR8155 and at the University of Kyoto (Research Institute for Sustainable Humanosphere), a specialist of wooden sculptures in East Asia.

[2] We would like to describe the protocol followed. All samples remained in the custody of S.B. OTA, the project's Indian director. As required by the Archaeological Survey of India, a request to date samples was submitted for approval to the ASI Director General in Delhi. In order to export the samples, S.B. OTA had to obtain a certificate from the department of pest control. Once the clearing documents were obtained, the samples were sent by private post directly to the Radiocarbon Dating Centre (*Centre de Datation par le RadioCarbone*, UMR 5138 "Archéométrie et Archéologie", Lyon: http://carbon14.univ-lyon1.fr/p1.htm), which prepared them for analysis. Finally, the samples were processed for C14 dating using the ARTEMIS accelerator (at the C14 measurement laboratory, the *Laboratoire de Mesure du Carbone 14*, in Saclay: http://www.universite-paris-saclay.fr/en/node/408).

[3] The IUAC is an autonomous research centre of the University Grants Commission. Datings are done free of cost after the presentation of the research project and approval of the board : http://www.iuac.res.in/

Analysis of clay samples

In order to better understand the mud brick architecture of early Buddhist monuments and especially that of temple Co1 of Leh Choskor various geological samples were analysed. Six samples were collected: one from Spituk's quarry (*markala katpa*), one from a ruined mud-brick structure at Tirisa, one from Stok ruined temples 1, 2 and 3 and one from Leh Choskor main temple (Co1). X-ray diffraction was carried out by Jean-Luc Epard (professor, Faculté des géosciences et de l'environnement, Institut des Sciences de la Terre, Université de Lausanne, Switzerland). Results identified 3 groups of clay-mineral assemblages. In the case of Tirisa's ruined structure (located in vicinity of the ruined *stūpa* and interpreted as a possible monastery on the basis of several rooms identifiable on the ground) analyses demonstrated that the bricks (characterised by a high proportion of kaolinite and the presence of K-feldspars) were made locally, using a material found in proximity of the hot springs still existing at Panamik, the nearest village. In the case of the source material used for building Leh Choskor temple (Co1) and Stok temples' 2 and 3, the absence of smectite points to a low-quality type of clay. Most probably bricks were made directly at the site using the material available nearby. It seems that only Stok temple 1 corresponds to the type of clay found at the quarry of Spituk that is still in use (presence of smectite and absence of kaolinite).

Preliminary results tend to show that the clay material used for the construction of Buddhist monuments differs from place to place. X-ray diffraction analysis points to several characteristic clay-mineral assemblages. The clay material was probably mostly sourced at the sites and no special type of material was used. A systematic sampling and analysis of the clay-mineral assemblages found in bricks and in the possible nearby sources is necessary to confirm this hypothesis.

Research dissemination

Academic and public dissemination

Uploading fieldwork reports

A summary of the 2013-2017 fieldworks, in French and English, as well as a visual presentation of MAFIL are available online on the website of the East Asian Civilisations Research Centre (CRCAO), Paris. Laurianne Bruneau, the project's French director is a permanent member of the CRCAO:

French version: http://www.crcao.fr/spip.php?article464&lang=fr

English version: http://www.crcao.fr/spip.php?article640&lang=en

Detailed reports of the 2013-2017 campaigns are available for download on the Academia page of Laurianne Bruneau: https://ephe.academia.edu/LaurianneBruneau

Fieldwork reports are also available on the MAFIL's website.

Website dedicated to the project and Facebook page

A bilingual website (French-English) dedicated to the MAFIL is online since June 2016. Since the project relies mostly on public funding its visibility is very important. The website enables anyone interested in the archaeology of Ladakh, at an international and local level (in India and Ladakh especially), to be informed about researches initiated by the project. Over the last year (October 2016-October 2017) about 850 unique visitors surfed through MAFIL's website.

Aroud 200 pictures and drawings are online, along with detailed fieldwork reports, educational documents (on archaeology and rock art). A complete list of papers published and events organized within the frame the project is also available online.

- www.mafil.org

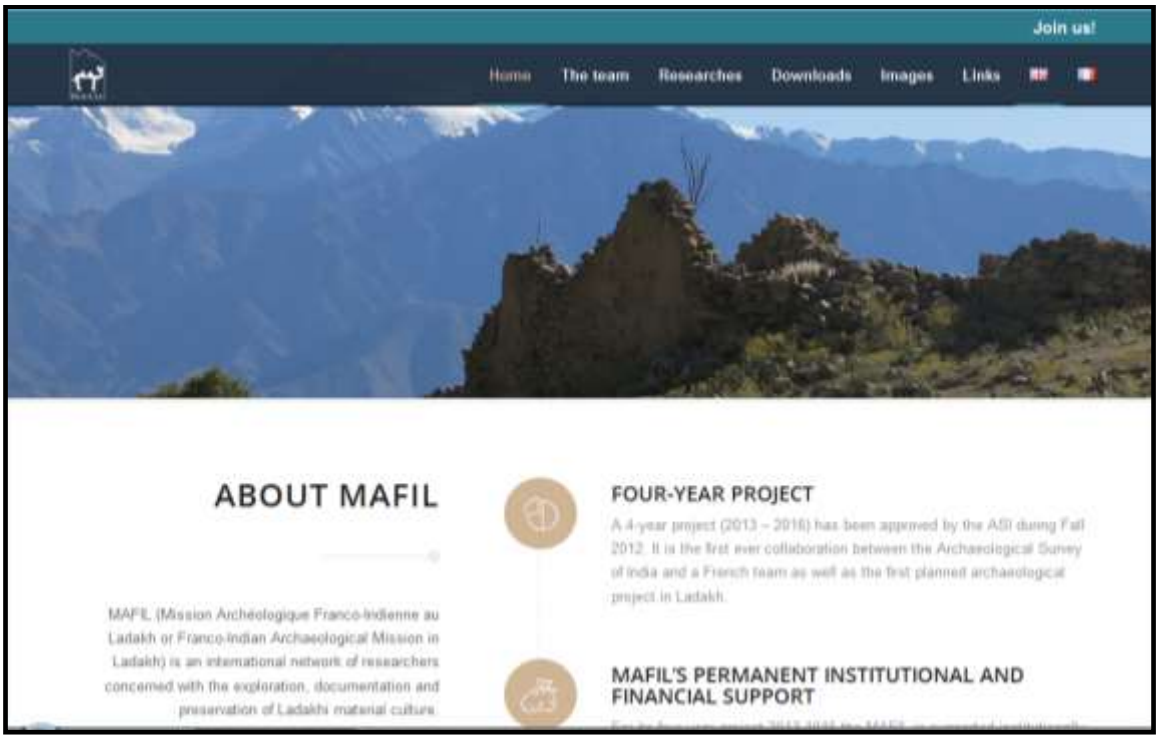

Fig.12: Home page of the MAFIL's website. ©MAFIL

Along the website, a Facebook page in the name of the project was opened in October 2016. The page enables to keep people informed about the project, especially at the local level. Most of the information in Ladakh is made through Facebook where it is the preferred social media. Since its creation, over a year, the MAFIL's page gathered 69 followers and 24 events were posted. Each post reaches about 300 persons. Some posts are shared by official institutional pages that have a larger audience (for instance the CRCAO/UMR8155 Facebook page sharing some of MAFIL's post counts 644 followers).

- https://www.facebook.com/mafil.org/

Public dissemination

TV documentary

In August and September 2016, a team of French journalists, working for the Delhi office of France 2 (one of the main French national TV channels) filmed the excavations conducted by MAFIL's team at the Buddhist temple of Leh Choskor (prior necessary permission for shooting was obtained from the Tourism Department of J&K).

The MAFIL's work was included into a five-part documentary entitled 'Dans les pas de Bouddha' (*Following Buddha's footsteps*) aired on French national TV (France 2) the first week of January 2017 (from Monday 2nd to Friday 6th) during the mid-day news (Journal de 13h) with a daily average of 2 500 000 viewers.

The episodes are available on the You Tube Channel of France 2 New Delhi (the MAFIL's excavations are shown in episodes 1, 3 and 5):
https://www.youtube.com/channel/UCoZOefloyQ_Ir8P8JJ0hRTw/videos

- A video (kindly edited by the France 2 office in New Delhi) showing MAFIL's activities only is available here:
  https://drive.google.com/open?id=0B4t9BXYhgiZkV05kR3JzY1JhNFk

Fig.13: team of French journalists filming on site,

7th of September 2016. ©MAFIL

Bonjour India: An Indo-French Moment, A Tale of Two Countries

At the request of Mr Bertrand DE HARTINGH, director of the French Institute in India (Institut Français en Inde, IFI) and curator of the event, MAFIL's provided documents (short texts, videos, photographs) so that the mission activities could be included within *Bonjour India*, a Franco-Indian platform dedicated to innovation, creativity and partnership that will tour India from the 1st of November 2017 to 25th of February 2018.

BONJOURindia

INNOVATION • CREATIVITY • PARTNERSHIP

➢ For a presentation of Bonjour India: http://www.ifindia.in/bonjour-india

Academic dissemination

Papers and Conferences

L. Bruneau, the French director of the project, delivered 4 papers in connection with the MAFIL project during the year 2017, both in France and India and at international conferences:

- "L'introduction du Bouddhisme au Ladakh (Himalaya occidental, Inde) : nouvelles données archéologiques", SEECHAC (Société Européenne pour l'Etude Des Civilisations de l'Himalaya et de l'Asie Centrale), Musée Cernuschi, Paris, 24th of January 2017.
- "The introduction of Buddhism into Ladakh based on archaeological data", Museum of Himalayan Archaeology & Ethnography, HNB Garhwal University, Srinagar, Uttarakand, 27th of March 2017.
  For images of the conference:
  https://www.facebook.com/mohan.naithani/videos/10211659407656147/
- "A report of recent archaeological investigations in Ladakh: the Central Asian Connection over time (Bronze Age-10th century AD)", Centre of Central Asian Studies (CCAS), University of Kashmir, Srinagar, Jammu & Kashmir, 6th of July 2017.
- "Archaeology of Ladakh: new data for the history of Buddhism in the Western Himalayas", 18th Congress of the International Association for Buddhist Studies (IABS), Toronto, 20th-25th August 2017.

A fifth paper was delivered jointly with Martin Vernier:

- "New discoveries for the history of Buddhism in Ladakh: the MAFIL's excavations at Leh Choskor", 18th conference of the International Association for Ladakh Studies (IALS), Bedlewo, 2nd-6th May 2017.

Fig.14: L. BRUNEAU delivering a conference at the CCAS, Kashmir University, 6th of July 2017 ©MAFIL/Sadozaï.

General publications

A summary of the MAFIL's 2016 excavations was published in the Spring 2017 issue of the East Asian Civilisations Research Centre Newsletter (CRCAO: Lettre d'information janvier-février-mars 2017), p.2.

- https://drive.google.com/open?id=0B4t9BXYhgiZkOHF4TGhzaGZRRTQ

An interview of L. BRUNEAU about the genesis of the MAFIL and its activities was published into issue n°10 of *Éphéméride*, the bi-annual magazine of EPHE (Ecole Pratique des Hautes Etudes-PSL Research University), p.31-33:

- https://www.ephe.fr/actualites/ephemeride_le_magazine_de_l039ephe_-_mai_2017/ephemeride-n10-mai-2017.pdf

Forthcoming book

As requested by the ASI, the Indian partner of the project for 2013-2016, a volume dedicated to the results of 2013 and 2014 campaigns is under preparation. The *National Policy on Archaeological Exploration and Excavation* of the Archaeological Survey of India (point M, p.10) stipulates the time schedule for the publication of archaeological reports and states that the renewal of permits for exploration and excavations is subject to the submission of reports and publication of previous works.

The content of the book, entitled **The Nubra from Prehistory to History: results of the Franco-Indian Archaeological Mission in Ladakh,** was discussed together by L. BRUNEAU and Mr S.B. OTA, the French and Indian directors of the project. The book will present the work conducted in Nubra in 2013 and 2014 in an exhaustive manner in the form of an archaeological memoir and will be edited by L. BRUNEAU. The chapters are produced by the various collaborators of the MAFIL.

Contents

1. Introducing the MAFIL project and the Nubra region (*L. Bruneau)*
2. Pre-historic human occupation (*S.B. Ota, C. Gaillard, H. Forestier)*
3. Petroglyphs and rock inscriptions (*L. Bruneau, M. Vernier, D. Schuh)*
4. Ruined Buddhist monuments and settlements *(L. Bruneau, M. Vernier, C. Faggionato, A. Heller)*
5. Conclusive chapter: a new history for Nubra (*L. Bruneau, S.B. Ota*)
6. References
7. Plates
8. Inventory
9. Appendices
10. Index

The book will be published in France in digital format, in the newly created CRCAO online collection at the Collège de France: http://books.openedition.org/cdf/3712 The online version will benefit from the financial and editorial support of the CRCAO/UMR8155.

A printed version shall be proposed to the publication office of the Archaeological Survey of India (New Delhi).

In order to prepare the publication L. BRUNEAU dedicated 10 sessions (25 hours, November 2016 to January 2017) of her weekly seminar at the EPHE to the researches conducted in Nubra. Three contributors to the volume (M. Vernier, ArScAn/UMR7041; Claire Gaillard, CNRS-MNHN and Samara BROGLIA DE MOURA, Phd student, EPHE-CRCAO) delivered presentations during the seminar thus providing an opportunity to discuss particular aspects of the research and publication.

L. BRUNEAU was granted a sabbatical semester (*CRCT, Congés pour Recherches ou Conversions Thématiques*) by her institution (EPHE). Released from teaching activities from February to July 2017 she focused on the preparation of the volume. M. VERNIER, MAFIL's French joint director, went to Nubra in May 2017 to crosscheck data for the publication.

It is hoped that the book will be published online by the end of 2018.

ENSURING MAFIL's FUTURE FIELDWORKS

Renewal of Franco-Indian cooperation

Collaboration with the French Institute in India

The French Institute / IFI (*Institut français en Inde)* is a section of the Embassy of France responsible for connecting and implementing Indo-French human exchanges. IFI supports the MAFIL project since 2012.

In 2016 Mr Jean-Yves COQUELIN (Deputy Director of IFI and Deputy Cultural Counsellor) spent about 10 days in Leh. Noticeably it was the first time ever that a representative of the French government paid an official visit to Ladakh. Since Mr COQUELIN was posted outside India in summer 2017 several meetings were organized before his departure to ensure the follow-up of the project at IFI. Prof. Adèle MARTIAL-GROS, attachée for academic and scientific cooperation at the Institut Français, is now in charge of following up MAFIL's project.

On 30th of March 2017 a meeting was organized in New Delhi with B. DE HARTINGH, director of IFI, J.Y. COQUELIN, Prof. A. MARTIAL-GROS and the directors of MAFIL, Mr S.B. OTA and L. BRUNEAU. Since Mr OTA, the co-founder of MAFIL, retires in November 2017 scientific and administrative issues regarding the continuation of the project were discussed.

The Leh office of the Archaeological Survey of India does not have the required human and material resources to become the new scientific partner of the project. Mr Tsering PHUNCHOK, the director of the office, is the only archaeologist posted in Leh. However, he expressed his wish to continue to be a member of the project (he has been a member since its creation in 2013). Therefore a new institutional partner was needed to continue the project.

From an administrative aspect, it was made clear that any person or institution wishing to carry out exploration and/or excavations in India must submit a proposal to the Archaeological Survey of India, the only authorized instance to deliver excavations and exploration permits. After being submitted to the CABA (Central Advisory Board of Archaeology, Ministry of Culture and Archaeological Survey of India), the proposal is either accepted or rejected by the Central Indian Government. In case of participation of foreign members in the exploration and/or excavations, clearances from the Indian Ministries of Foreign and Home Affairs must be delivered prior the issuing of the archaeological permit. The process to obtain the excavation permit and clearances from the Indian Ministries of External and Home Affairs (MEA and MHA) was discussed in details during the meeting.

On the same day (30th of March) a meeting with Prof. MARTIAL-GROS and Mr COQUELIN took place at IFI together with L. BRUNEAU and Dr. Sonam WANGCHOK. Dr. S. WANGCHOK took part in the meeting as secretary of the Pethub Khangtsen Education Society of Leh, the owner of the site of Leh Choskor. The plot of land where the archaeological remains stand was recently given to the Pethub Khangtsen Education Society of Leh by the villagers of Gompa in order to build a meditation centre. As committed in 2016 the report of the MAFIL's 2016 excavations was handed over to Dr WANGCHOK and future archaeological works at the site were discussed in with a special focus on conservation issues.

On 10th of July 2017 a meeting took place at the headquarters of the Archaeological Survey of India, New Delhi, in presence of the Director of Exploration and Excavation (E&E) at the ASI; Prof. MARTIAL-GROS from IFI, L. BRUNEAU and PROF. Vinod NAUTIYAL, the Indian director of MAFIL from 2018 on. The Franco-Indian cooperation project in Ladakh was presented to the director of E&E and the various official documents mandatory to be able to carry out fieldwork were discussed. It was specified that a MoU (Memorandum of Understanding, *convention scientifique*) must be signed between the French and Indian institutions prior submitting the proposal to ASI. Also, it was specified that a NOC (No Objection Certificate) is needed from the state department (in MAFIL's case from the Secretary of Culture of the State of Jammu and Kashmir) before ASI issues the excavation and exploration permit.

- The various regulations are stated in the *National Policy on Archaeological Exploration and Excavation:* http://asi.nic.in/pdf_data/Final_National_Policy.pdf

The CABA approved MAFIL's proposal on 12th of October 2017 for excavations at the site of Leh Choskor and exploration of Leh valley in 2018. The procedure to obtain clearances (see above) from the ministries will be supervised by Prof. A. MARTIAL-GROS as well as by L. BRUNEAU and Prof. NAUTIYAL. The procedure to obtain the NOC from the government of Jammu and Kashmir is also supervised by Prof. NAUTIYAL together with Dr. Mohammed AJMAL SHAH from the Central of Central Asian Studies (CCAS) from the University of Kashmir. This university is another partner of the MAFIL for 2018-2020. Partnerships with both universities are discussed below.

Cooperation with HNB Garhwal University Srinagar, state of Uttarakhand

A new cooperation was put into place with Dr. Vinod NAUTIYAL, professor in archaeology at the Department of History, Ancient Indian History, Culture and Archaeology of the Hemvati Nandan Bahuguna Garhwal University (HNB Garhwal University Srinagar, Uttarakhand).

After several exchanges in writing in course of 2015 and 2016, Prof. NAUTIYAL came to Delhi in June 2016 to attend L. BRUNEAU's lecture about the MAFIL project organized by IFI at the Centre for Scial Sciences (CSH). Prof. NAUTIYAL has been directing excavation in Garhwal (Central Himalayas) for the last 30 years and for the last four years has been conducting exploration in Kinnaur district of Himachal Pradesh where he led the excavations of the burial site of Lippa. Prof. NAUTIYAL is one of the rare Indian archaeologists interested in the neglected Himalayan border areas and possible collaborations were discussed during this first meeting in Delhi.

In order to discuss collaboration further Prof. NAUTIYAL came to Paris for 3-weeks in November 2016 as a visiting professor at the EPHE, Dr BRUNEAU's home institution. During his stay Prof. NAUTIYAL delivered four lectures presenting his researches on the archaeology of the Central Himalayas. A meeting took place at EPHE headquarters with Prof. Christophe VALIA-KOLLERY, in charge of international relations for Asia, to discuss the possibility of a MoU between EPHE and HNB Garhwal University. Dr BRUNEAU and Prof. NAUTIYAL were accompanied by Prof. Annpurna NAUTIYAL, dean of the School of Humanities and Social Sciences of HNB Garhwal University.

In March 2017, Dr BRUNEAU was hosted by HNB Garhwal University where she met Prof. NAUTIYAL's colleagues and students. She was invited to deliver a lecture at Museum of Himalayan Archaeology & Ethnography standing on the campus. Possible collaborations in the field of Himalayan archaeology were discussed further.

Fig.15: left: L. BRUNEAU and V. NAUTIYAL, March 2017.

On the invitation of L. BRUNEAU and M. VERNIER, Prof. NAUTIYAL visited Ladakh in May 2017. He was welcomed by M. VERNIER, the French joint director of MAFIL. Toegther they paid a visit to various sites, including that of Leh Choskor. Further excavations at the site were discussed as well the possibility of leading exploration in Leh valley. Prof. NAUTIYAL and M. VERNIER met with T. PHUNCHOK the director of the Leh ASI office.

Following Prof. NAUTIYAL's visit to Ladakh it was decided to sign a MoU between EPHE and the Department of History, Ancient Indian History, Culture and Archaeology of HNB Garhwal University. Prof. Laurence FRABOLOT, head of international relations office at EPHE supported this proposal and a MoU was signed by both parties in June and July 2017 for a duration of three years (2017-2020). Besides general terms for scientific cooperation (exchanges of students and teaching staff, co-supervision of theses, etc…) a specific agreement for the MAFIL project was agreed upon. Prof. Pradeep SAKLANI, professor of archaeology at HNB Garhwal University, will act as joint director of MAFIL for that period on the Indian side. Prof. SAKLANI has been conducting exploration in the Western Himalayan valley of Spiti (Himachal Pradesh) since 2014. Students from the archaeology department of HNB Garhwal University will participate in MAFIL's fieldworks.

<u>Cooperation with Centre of Central Asian Studies (CCAS), University of Kashmir, Srinagar, state of Jammu and Kashmir</u>

Dr Mohamad AJMAL SHAH, associate professor-cum-curator at the Centre of Central Asian Studies (CCAS) of the University of Kashmir, got in touch with Dr L. BRUNEAU via e-mail in 2016. After a preliminary meeting in New Delhi in March 2017 during which they shared their interest in Trans-Himalayan archaeology, Dr BRUNEAU was invited by the CCAS in July 2017. She delivered a lecture and a MoU was signed between the CCAS and EPHE for a period of five years (2017-2022). In summer 2017 a Department of Archaeology within the CCAS was opened and for the first time, archaeology will be taught as a discipline in the state of Jammu and Kashmir. The MoU signed will support this newly created department. Dr AJMAL SHAH will be a member of the MAFIL project and MA students from the department will take part in fieldworks.

The scientific cooperations signed with HNB Garhwal University and the University of Kashmir will be highly beneficial for all parties. Archaeology departments at Indian universities do not have specific budgets for excavations. Individual researchers or research teams are required to apply for external funding, the main one being the University Grants Commission (UGC). However, grants are very competitive and the budget is often limited to lead large scale archaeological operations. Consequently, universities rarely have the opportunity to offer practical training to students. Students' participation into the MAFIL's campaigns in Ladakh will provide field experience for a selected number of students of Phd and MA from HNB Garhwal University and the University of Kashmir.

As MAFIL's main scientific partner HNB Garhwal University provides administrative support to submit the proposal to ASI and obtain the excavation permit (as well as the

mandatory clearances from the Ministries of External and Home Affairs). Scientifically, the project will benefit from the department's skills in digital techniques applied to archaeology (3D scanning) and GIS. The CCAS of the University of Kashmir, with the involvement of Dr AJMAL SHAH, is the secondary partner of the project. Being located in Srinagar, the capital of Jammu-and-Kashmir, to which Ladakh belongs, Dr AJMAL SHAH is acting as facilitator to obtain the NOC from the state secretary of culture, a mandatory document for the excavation permit to be delivered by the Central Government in Delhi.

Local cooperation, Ladakh

As detailed in the MAFIL's reports of 2014 and 2015 besides academic cooperation, the support of ladakhi stakeholders is crucial to ensure the progress of the project.

As stated above the archaeological site of Leh Choskor is located on a plot of land recently given to the Pethub Khangtsen Education Society of Leh by the villagers of Gompa in order to build a meditation centre. Our interlocutors are Prof. Geshe Konchok WANGDU, president of the society, and Dr Sonam WANGCHOK, secretary. The former is also director of the Central Institute of Buddhist Studies (CIBS) located in Choglamsar, a few kilometers from Leh, and the latter is the founder of the NGO Himalayan Cultural Heritage Foundation (HCHF, Leh). Meetings took place in May and July 2017, respectively with M. VERNIER and L. BRUNEAU. As committed in 2016 a full copy of the documentation (maps, drawings, photographs, etc…) gathered during 2016 fieldwork by the MAFIL at the site of Leh Choskor was hander over to Prof WANGDU.

Fig.16: L. BRUNEAU (left) discussing the future works of MAFIL at Leh Choskor with Prof. Geshe WANGDU (middle) and Dr WANGCHOK (right), July 2017. ©MAFIL/Sadozaï.

After discussion it was agreed that MAFIL would continue archaeological works at the site of Leh Choskor under the following conditions: that the artefacts retrieved from future excavations remain in custody of Pethub Khangtsen Education Society and that there is no interference with the other projects of the society (meditation centre, library, museum, guest house) in vicinity of the archaeological site.

The society wishes to develop a conservation plan for Leh Choskor and make it accessible to the public. Conservation related issues were discussed in details in July altogether with Mrs Chamsia SADOZAÏ (CRAterre, Grenoble), an archaeologist specialized in the conservation of earthen architectural remains.

Fig.17: locations of MAFIL's partners for 2018-2020 in the Trans-Himalayan region.

©MAFIL/Vernier.

The partnerships put into place in course of 2017 shall ensure a smooth running for the MAFIL's future fieldworks in Ladakh (2018, 2019, 2020). Also, they provide a scientific network on Trans-Himalayan archaeology into which the MAFIL plays a leading role.

Logistical preparation

The archaeological site of Leh Choskor is located at the extremity of Leh oasis. Altough there is a motable track going through the site it is not in use and there is no road leading to the site. The team has to walk 15 mn up from the motorable road to reach the archaeological area that is enclosed by several houses and cultivated fields. In order to reach the site the team members must enter a private door, cross a private land, step over loose stone fences and irrigation canals.

During campaigns 2015 and 2016, the team was renting land from the nearby villagers of Gompa and pitched a campsite. There was neither current water nor electricity and the team was extremely vulnerable to weather conditions. The camp being located at an altitude of about 3800m, climatic conditions were very demanding some days, with snow and temperatures around 0° in the early morning.

Fig. 18: MAFIL campsite at Gompa village, in proximity to Leh Choskor site, 2016. ©MAFIL

As a consequence the MAFIL's directors wished to improve living and working conditions. In the years to come the team will be made of up to 20 researchers, 4 local workers for daily logistics (meals, water, etc…) and 15 workers for excavation and conservation works.

Several possibilities were explored in course of 2017 to accommodate the team during future fieldworks. One of the options was to rent a house for three years and have a home keeper living inside when the team is not on duty in Ladakh. Several old houses in the rural neighbourhood next to the site, but also more urban ones near the city-centre, were visited.

Fig.19: left and right: some of the houses visited for rent in Leh, July 2017.

However, due to the lack of space (traditionnal houses are small) and the costs of refurbishment, rental and furniture the possibility of renting a guesthouse from June to October every year was explored. Leh is a popular tourist destination and there are dozens of guesthouses. Some could provide enough rooms to accomodate the team. Nevertheless, the owners met were not interested in renting their guesthouse to the MAFIL since a more substantial amount of money could be earned in renting it to tourists.

Finally an intermediary solution was decided upon : MAFIL will rent three or four common rooms (for cooking, dining, office space and storage) in one of the houses at the village of Gompa that will provide warm spaces and each team member will sleep in his/her own individual tent. Negotiations are still ongoing with several house owners in the vicinity of the archaeological site.

One point to be discussed further with the Pethub Khangtsen Education Society is the storage of artefacts retrieved from the site. In the long-term the artefacts will be stored and displayed at the site museum that will be constructed by the society. In the short-term it is wished that the artefacts remain in custody of MAFIL to enable research and analysis.

Logistical issues will be dealt with in June 2018, during the yearly preparatory mission lead by the MAFIL's directors, to ensure the smooth running of the team fieldwork in September.

From a health and safety point of view, the team is equipped with a pharmacy, suitable first aid kits and cell phones compatible with the different local operators. Lastly, the mission directors make sure that they have insurance details and emergency contacts for all team members before the start of fieldwork. Ladakh's main hospital and airport are located half an hour drive from the archaeological site of Leh Choskor.

CONSERVATION DIAGNOSIS

Dr BRUNEAU and Mrs SADOZAI spent several days in Leh in July 2017 to conduct a state of conservation of Leh Choskor in order to adapt the excavation plan for the years to come to conservation needs. Mrs SADOZAI's conclusions are presented below.

General assessment

As stated above the site is not accessible by road. This remotness affects the organization of archaeological fieldwork but protects the site from human-made damages. Very few people are coming to the site: the most visible anthropic traces are graffiti on the outer walls of the main temple (Co1). Leh Choskor is quite virgin from anthropic damages, the only source of damage being natural. Animals grazing at the site are causing minor damages such as moving stones. The main problem affecting the whole site, and in fact whole Ladakh, is climate change. This region used to be very limitedly concerned by rain as it is a high altitude desert but over the last decade heavy rains are observed every year, causing major damages on modern infrastructures.

The most recent disaster being the flash floods of 2010 and the exceptionnaly heavy rain fall of 2014 (that shortened MAFIL's fieldwork in Nubra that year.[4]) Mr VERNIER, who has spent almost every summer in Ladakh for the last 30 years has personally observed this phenomenon and raised awareness on this matter, especially concerning the main temple made of earth.
Considering that the archaeological remains of Leh Choskor have been exposed for a millennium or so, their general condition is relatively good.

As stated above the archaeological site of Leh Choskor is located on a private land ownership. Therefore the site is not currently under any protection (local, state or national). However with the new investigations coming up, a plan of the archaeological works is needed to keep this rare state of conservation and prevent further effects on the structures. During 2016's excavations at the main temple (Co1) preventive measures consisted in berms (40 cm wide) left at the foot of the inners walls and a plastic coat laid on the original floor before backfilling it with soil from the rubbles.

Technical diagnosis

When the site was in use ten or nine centuries ago tenall structures were most probably presenting mixed materials. Some were made exclusively in stones pointed with earthen mortar and finally covered by an earth plaster and several layers of lime paint. Today, after the abandonment of the site and the erosion processes, we can divide the buildings in three categories:
1/ Mixed *stōpas*: these structures are usually composed of a stone basis, with mortar or dry stones and a superstructure made of mudbricks with ranks of stones. A thick coat of plaster, painted or whitewashed, with sculpted patterns was probably covering them all.
2/ Stone structures: there are either buildings, *stōpas* or underground structures (possible graves) and have very few remains of other material such as earth (used for mortar or plaster). Some have been realised exclusively with stones.
3/ Earth building: there is only one building at the site (Co1, main temple) where the ratio of earth material is much more important compared to stone.

Mixed stūpas
Among the 137 structures documented at Leh Choskor, numerous *stōpas* that have come down to us over the ages were made of a combination of different materials but today very few bear testimonies of their original aspect.

On the map, we have marked some interesting examples: # 17 is the biggest and the best preserved of them. The size of the earthen superstructure is much higher than the stone basis, a feature rather uncommon at the site. #104 #107 and #117 are also composed of more earth than

[4] About rainfall and recent meteorological conditions in Ladakh: Bhan *et al.* 2015.

stones, and they have the peculiarity of having beautiful remains of sculpted patterns on the plaster.

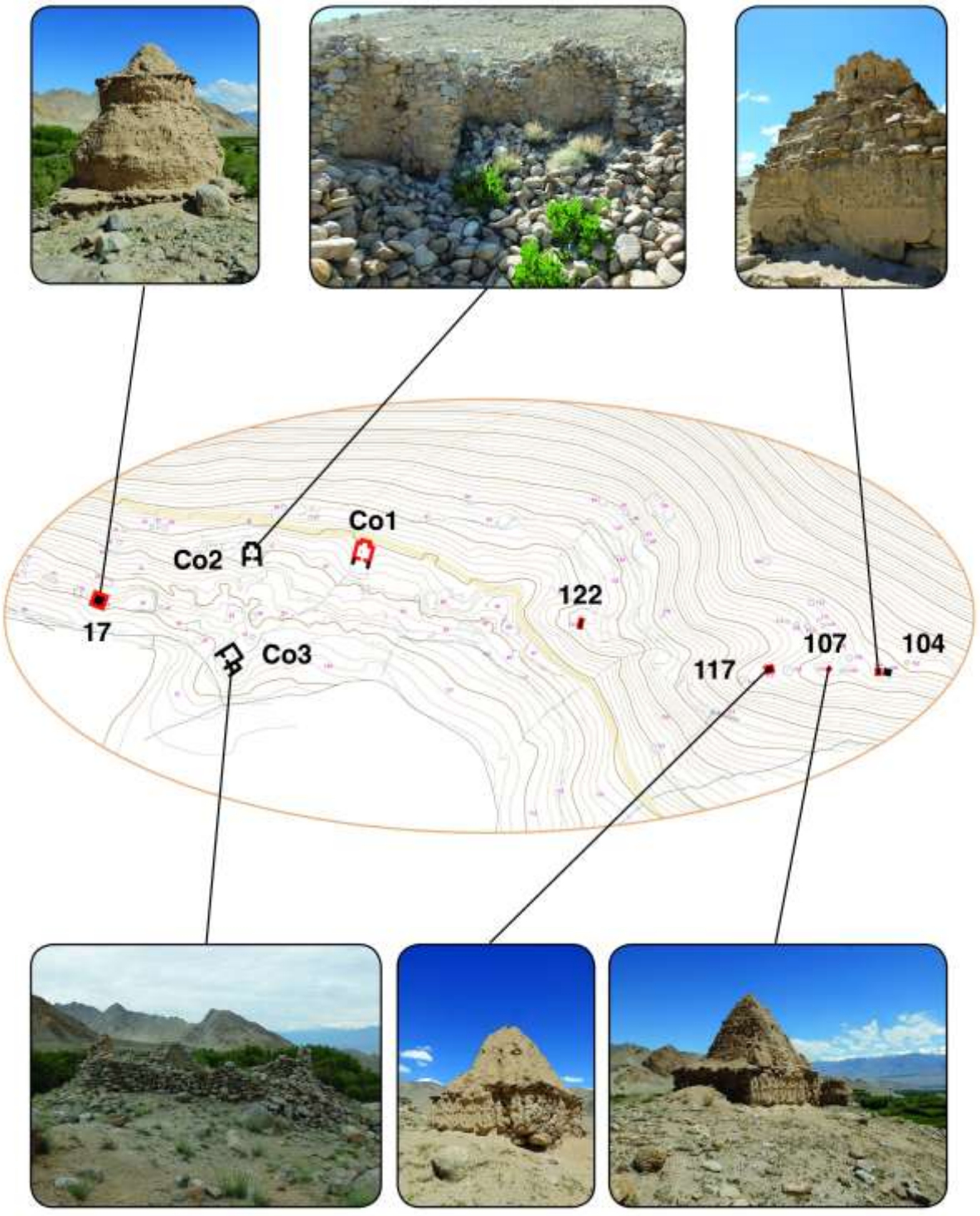

Fig.20: location of stupas and temples at the site of Leh Choskor. ©MAFIL/Sadozaï and Suire.

The main pathologies are very common for this type of architecture:
- erosion of the top gives a rounded aspect;
- washed clay is revealed by the mineral inclusions on the surface;
- mortar erosion favors loose stones;
- plaster vanished;
-undercut (also called « sillon destructeur ») at the wall basis is the symptom of drainage problem;
-collapse of the superstructure is noticed on most *stūpas*. Some of them had an inner cupola creating a weakness point.

These few examples have been noticed but a more systematic study needs to be carried out to get a better idea of the global state of conservation of *stūpas* at Leh Choskor and also to choose the structures to preserve for site presentation.

Stone structures

Mortar erosion is the main problem affecting the stone buildings at Leh Choskor. After centuries of abandonment and natural erosion, mortar between stones has disappeared. Stones are collapsing inside or outside the buildings and create piles of dismantled elements. Their innerstructure is broken and security is not ensured anymore. The main stone buildings presenting these are temples Co2 and Co3 and building Co99 (possible monastery) but also the majority of remaining *stūpas*.

Earth building: temple Co1

The only earth building at the site of Leh Choskor (temple Co1) was deeply studied because of ongoing excavations and because of its fragility due its material. Each face of the walls, internal and external, has been documented with pathologies. The main problems discerned are detailed below.

Western wall

Structurally, the inside wall presents fragility caused by the holes of former clay statues. Two major cracks are lurking the stability: one is visible from the inside and the outside of the temple, which is a very dangerous clue, more than 50 cm deep, is situated on the northern corner. If nothing is done, the corner will fall down very soon, especially if there is weight on it (snow for example). The second crack, certainly caused by statue n°6, is only marked on the outer face of the wall. Because of its proximity with the angle it will certainly follow the same scheme as the first crack described, resulting in a short-term collapse. The top of the wall is washed, having a round eroded shape and visible mineral inclusions. Gullies are appearing from here. Lots of them are visible from the inside, creating cracks and causing plaster to fall down. Some pieces of the second coat of plaster, with a reddish paint, are still remaining but very fragile (they are indicated on the drawings). At the basis of the wall, an undercut (or « sillon destructeur ») is clearly marked inside all along the wall and deeply damaged by the excavation. On the northern part, its depth is reaching 20 cm. The soft coat on the edge of the undercut is friable and sensitive to moisture. This capillarity also encourage falling plaster. Outside the

building no such pathology was notified. However, the close proximity of a track suitable for vehicles is a threat and could create a similar pathology. The inside floor looks stable, and the slopes from the wall to the center of the room are helping water to flow down without stagnation.

Northern wall

Structurally, the two big gullies inside the temple are not threatening the stability of the wall. The one on the right side of the inner wall is deeper (40 cm) but there is no fragility on the outer face. However, the corner at the right end of the outer face is showing a major crack and weaknesses at its base. This observation added to the cracks on the western wall is alarming. Even in the apse, the crack seems minor but considering the one on the western wall, a collapse could happen soon. As for the walls, the top is washed and eroded, creating lots of gullies. They weaken the pieces of plaster still remaining, inside and outside. Some graffiti were made with blue paint on the inner face of the wall but have almost disappeared. The undercut at the bottom of the inner wall is noteworthy, presenting lack of mortar between stones on the outside and dampness on the inside. It is more important where excavations have been carried out (left side). The floor is stable, with gentle slopes directing the rainwaters at the opposite of the wall basis.

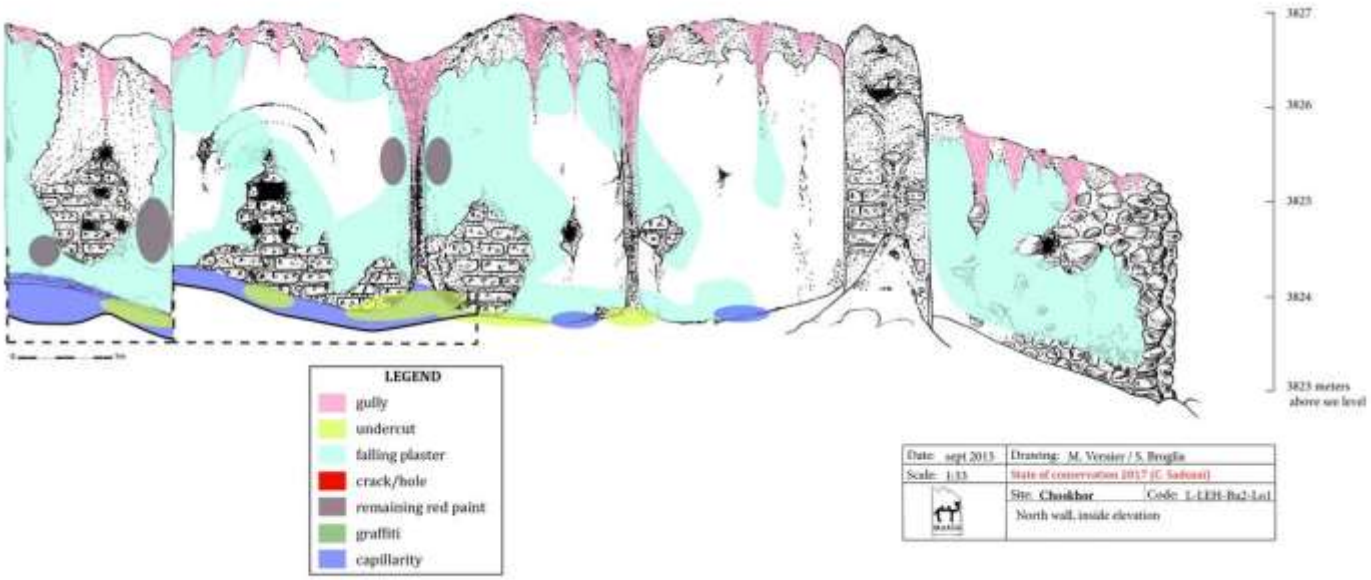

Fig. 21: pathologies on the inner side of the northern wall, temple Co1, Leh Choskor. ©MAFIL/Sadozaï, Vernier and Broglia de Moura.

Fig. 22: pathologies on the outer side of the northern wall, temple Co1, Leh Choskor. ©MAFIL/Sadozaï.

Southern wall

As for the northern wall, gullies are obvious but are not threatening the wall too much. Even if the cracks need to be monitored and fulfilled, the stability is not endangered on this side. The outer face seems to be more exposed to rain and wind, due to lack of plaster and a more visible undercut on the stone basis, compared to the other faces. There may be also a problem of drainage. Altough graffiti are clearly visible and altering the integrity of the building there are easily removable. The inside wall basis is showing the same pathologies as the previous wall, for the same reasons (excavations).

Eastern wall

The eastern wall is quite preserved from any pathology affecting the other walls. Its perpendicular position may have protected it. Also, no trial pit or excavation were opened yet on this side. The structure is not altered except some undercut on both sides of the entrance. The material deposit resulting from the top of the wall erosion is somehow protecting the wall basis. The only concern are the falling plasters.

ACTION PLAN FOR 2018-2020

Following the diagnosis carried out at Leh Choskor in summer 2017 an action plan for future excavation and conservation works at the site was designed.

Excavation

The aim of future excavations at the site of Leh Choskor is to understand when the Buddhist site was founded, how long it was occupied and when it was abandoned. We will also try to answer questions as such as why and by whom it was founded, occupied and abandoned. Besides completing excavations of the main temple, clearance and trial pits will be carried out at the other two temples, some of the residential buildings and some underground structures. An architectural and typological study of the 45 ruined *stūpas* will also be carried out.

2018
Photogrammetry on the temples (Co1, Co2 and Co3) is planned before clearance and conservation works. Extensive excavation on Temple Co1 will be carried out to reach the occupation floor level on all parts inside the temple leaving security berms along the walls. The study of the building techniques (outside and inside) and technical study of mural paintings and clay sculptures' remains will be carried out. Temples Co2 and Co3 will be cleared of stones to study their plan. Untouched underground structures Co80 and 81 (possible graves) will be excavated.

2019
The portico and the berms left inside of the temple Co1 will be excavated with the support of restorers specialized in clay scuptures. Trial pits at Co2 and Co3 will be done. Photogrammetry is planned on structures Co69 (supposed funerary area), C084 (residential building) and Co99 (possible monastery) before clearing them. An architectural study of the *stūpas* (typology, building techniques and collect of samples for dating) will be conducted.

2020
Trial pits will be dug into the structures cleared in 2019 (Co69, Co84 and Co99) according to previous results. The architectural study of the *stūpas* will be completed.

2021
A campaign of artefacts study (ceramic sherds, bones, statue fragments, etc…) is planned.

Conservation plan

Even if the site is under private property, national and international charts on cultural heritage preservation need to be respected.

In order to do so:
- the integrity of the site will be preserved,

- no voluntary destruction of standing building will be done,
- all interventions will respect the original material, be visible and reversible.

Conservation works are taking place in parallel to archaeological excavations implying that emergency measures of stabilization to ensure the archaeologists' security could delay the ideal scheme described below.

To ensure Ladakh's local and sustainable development by the mean of the preservation of Leh Choskor, partners have been identified and contacted to start programmes of training. Based on local know-how about construction techniques and available materials, it is important for trainees to follow conservation works from the soil preparation to the conception of a museum.

Overall decisions have been and will still be discussed between the local community, the owner and the MAFIL directors. Responsibility is shared, however technical choices are inherent to the conservator.

Regarding the diagnosis described above and the vision for the conservation, different scales of interventions will take place:
- Preventive conservation;
- Mid-term stabilization;
- Site presentation.

Preventive conservation and stabilization

During excavations campaigns in 2018 and 2019, preventive conservation will be implemented on Temples Co1, Co2 and Co3 to ensure security for the archaeologists but also to stabilize the architecture and prevent damages or possible collapses.

The architectural remains will be stabilized and covered by sacrificial layers in order to prevent natural and anthropic erosion. It will be declined in terms of:
-capping sacrificial layers of earthen mix on the edge of the walls;
-pointing masonry weaknesses with earthen mix;
-refilling holes and gullies with earthen mix;
-repairing undercuts with mudbricks;
-backfilling trial pits and exposed floors with compacted soil and a geotextile interface.

Of course, preliminary to all these works, vegetation cleaning is necessary and surfaces need some preparation (removing dusr and falling pieces). In order to find the most appropriate earthen material and plan larger scale conservation tests need to be conducted.

Site presentation

In order to present the archaeological site and its various remains to the public, specific paths and infrastructures will be executed in combination with drainage mesures. The access

needs to be improved without passing by the private lands of Gompa villagers. Paths for visitors must also take into consideration the numerous structures on the site and their fragility, as well a Buddhist pratices such as circumambulation.
It is clear to all stakeholders that no reconstruction will be carried out, neither temple structures nor *stūpas*.

Arrangements such as parking area, platform to offer a general view of the building and shadowed benches are considered.

Educational material is also essential to enhance and help understanding the site:
-explanatory boards along the paths;
-flyer with a map of circulation and some informative elements;
-a booklet with the history of the site, the excavation and conservation project;
-a training program for local guides.

Other activites during this phase will related to the exhibition of the artefacts in the museum and its physical link with the remains.

Meditation centre

Since the beginning, the plan of building a meditation centre was strongly expressed by the owner. Following discussions, a land for constructing the meditation centre further north in the valley, away of any archaeological remains, was identified. The meditation centre will have several buildings: rooms for meditation trainees, a museum displaying findings from Leh Choskor, a library and a guesthouse. There may be some extra rooms to store and work on the artefacts. The owner proposed that the rooms could be used by MAFIL during fieldwork. However, to this date the construction work of the meditation centre have not started. Paperworks are undergoing and fundraising is carried out to fulfil this ideal goal.

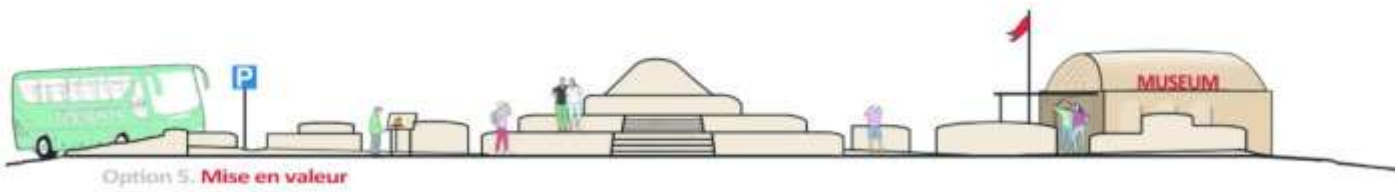

Fig.23: sketch of a Buddhist archaeological site after presentation works, Sébastien Moriset/CRAterre.

2018-2021 schedule

Besides excavations and conservation, photogrammetry will be carried at the site of Leh Choskor in 2018 and 2019 to record the original state of the various structures before disturbance caused by the MAFIL's works.

Year	Zone	Excavations	Conservation
2018	Temple Co1	Floor on the S-E part. Study of building techniques; technical study of painted and sculptural remains.	Consolidation of wall edges, refill gullies and repair structural problems. Backfilling of the new floor.
	Temple Co2	Clearing.	Study for consolidation.
	Temple Co3	Clearing.	Study for consolidation.
	Underground structures Co80 & Co81	Excavation.	Backfilling.
2019	Temple Co1	Portico and berms.	Undercut repair, stabilization of the floor, drainage system. Consolidation of excavated parts.
	Temple Co2	Trial pits.	Implementation of consolidation.
	Temple Co3	Trial pits.	Implementation of consolidation.
	Co69, Co84, Co99	Clearing.	Study for consolidation or backfilling.
	Stūpas	Architectural study.	Study for consolidation.
2020	Temples Co1, Co2, Co3	Completed.	Site presentation (paths and boards).
	Co69, Co84, Co99	Completed.	Implementation of consolidation.
	Stūpas	Architectural study.	Implementation of consolidation
2021	All site	Material study.	Site opening to the public. Opening of the museum.

The excavation goals presented in the table are ideal. They will probably have to be adapted yearly according to various parameters (discoveries made, unexpected difficulties, local constraints, etc…). The financial ressources available for the project will also play a significant part in its realization.

Training in archaeology and conservation

As stated above, MA and Phd students from the University of Kashmir and HNB Garhwal University will take part into MAFIL's excavations. Two Phd students from EPHE-PSL Research University (Paris), L. BRUNEAU's home institution, will also continue to take part in the fieldwork.

To ensure Ladakh's local and sustainable development by the mean of preservation at Leh Choskor, local partners have been identified and contacted to conduct training programs. Based on local kow-how of constructions techniques and available materials, ideally, trainees will follow conservation works from the soil preparation to the construction of the museum.

Sustainibility of research

In 2017, the French directors (L. BRUNEAU and M. VERNIER) started to draw a plan for MAFIL's archives. After 5 years of fielwork a large amount of data has been gathered.

In Spring 2017 two meetings took place with Elisabeth BELLON in charge of the archives of the Maison René Ginouvès-Archéologie et Ethnologie in Nanterre (France).[5] Mr VERNIER is an associated researcher of the ArScAn (UMR7041) research laboratory located there. The archive department deals with a large amount of archives (notebooks, drawings, photographs, maps, databases, scientific letters, article and conference drafts, working documents, reports, digital data…) from more than 60 French archaeological missions over the world. The inventory of archives for each mission is available online.[6] In some cases the documentation is fully accessible online. After ensuring that the Maison René Ginouvès-Archéologie et Ethnologie was a legal repository for the MAFIL's archives (since Dr BRUNEAU's belongs to another institution) it was decided to take the appropriate steps to deposit the mission's data there. In

[5] For information about this archive department : http://www.mae.u-paris10.fr/wp-content/uploads/2015/04/mae-archives-anglais.pdf

[6] https://www.google.com/maps/d/viewer?mid=1M1jflj2LIaLfv_PuhjZQsddhe5s&ll=19.06722557407244%2C8.0598904&z=3

the years to come MAFIL's French directors will try their best to follow best pratices for excavations' archives[7] (Zanella *et al.* 2017).

A copy of the data gathered needs to be deposited in India. For the period 2013-2016, since the mission was working in cooperation with the Archaeological Survey of India, the MAFIL's archives may be deposited to the National Archives. In case of our future work with HNB Garhwal University the location for depositing the mission's archives still needs to be discussed. Also, as commited, the documentation will be deposited in Ladakh as well. Further discussion will be needed to identify a proper institution.

It is the directors' responsability to ensure that the mission's archives will be available to other researchers in the future, especially since the project relies on public funding.

[7] About best practices for handling archaeological archives: Zanella *et al.* 2017.

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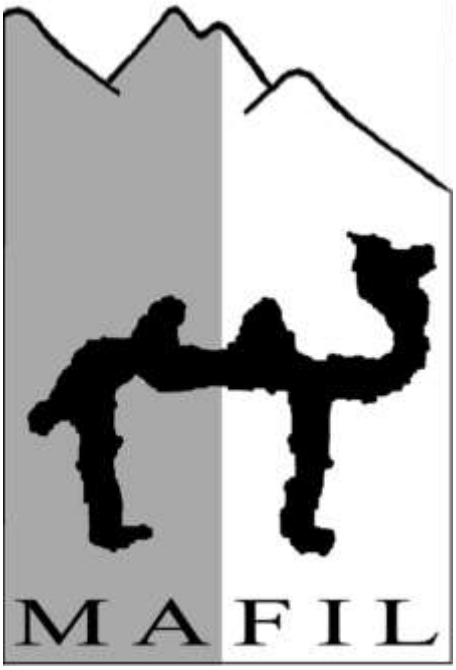

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