

THE GRAVEYARD AND THE BUDDHIST SHRINE  
AT SAIDU SHARIF I (SWAT, PAKISTAN):  
FRESH CHRONOLOGICAL AND STRATIGRAPHIC EVIDENCE

Luca M. Olivieri

*ISMEO Italian Archaeological Mission in Pakistan; University of Bologna, Italy*  
e-mail: lucamaria.olivieri@unibo.it; act.fieldschool@gmail.com

With contributions by Filippo Terrasi, Fabio Marzaioli, Isabella Passariello  
and Manuela Capano\*, and notes by Aatif Iqbal\*\*

\* *Center for Isotopic Research on the Cultural and Environmental Heritage (CIRCE), University of Naples 2, Italy*

\*\* *Swat University, Saidu Sharif, Pakistan*

*Abstract.* The archaeological site of Saidu Sharif I in the Swat Valley (1<sup>st</sup>–4<sup>th</sup> cent. CE) was excavated in the 1970s and 1980s by the Italian Archaeological Mission of the former ISMEO under the direction of Domenico Faccenna. During the final stage of the excavation of the Saidu Sharif I monastery, several graves were found below the Buddhist structures. It was inferred that there was a direct physical overlap between the graveyard and the monastery, and almost no chronological interruption between the two phenomena. New fieldwork (2011–2015) and radiocarbon dating have instead revealed a consistent chronological gap, and that the physical overlapping of the two phenomena was artificially caused by vast leveling works undertaken for the establishment of the sanctuary at the beginning of the Current Era.

*Key words:* Saidu Sharif I, Buddhist sacred areas, pre-Buddhist graveyards, Gandhara, Swat

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*Данные об авторе.* Лука Мария Оливьери – руководитель Итальянской археологической миссии ISMEO в Пакистане, научный сотрудник Болонского университета (Болонья, Италия).

Филиппо Террази, Фабио Марцайоли, Изабелла Пассариелло и Мануэла Капано – сотрудники Центра изотопных исследований культурного и природного наследия (CIRCE), Второй Неаполитанский университет (SUN, Неаполь, Италия). Ими написан раздел “New <sup>14</sup>C data”.

Аатиф Икбаль – руководитель Института культурного наследия и менеджмента в сфере туризма и гостиничного дела университета Свата (Сайду-Шариф, Пакистан). Ему принадлежат прим. 30 и 31.

НЕКРОПОЛЬ И БУДДИЙСКИЙ ХРАМОВЫЙ КОМПЛЕКС  
САЙДУ-ШАРИФ I (СВАТ, ПАКИСТАН).  
НОВЫЕ ХРОНОЛОГИЧЕСКИЕ И СТРАТИГРАФИЧЕСКИЕ ДАННЫЕ

Л. М. Оливьери

При участии Ф. Террази, Ф. Марцайоли, И. Пассариелло и М. Капано,  
с примечаниями А. Икбала

*Аннотация.* Итальянская археологическая миссия ISMEO под руководством Доменико Фаччены проводила раскопки археологического памятника Сайду-Шариф I (I–IV вв. до н.э.) в долине Сват в 1970-х и 1980-х годах. Во время последнего этапа раскопок монастыря Сайду-Шариф I под буддистскими постройками были обнаружены несколько могил. Тогда предполагалось, что некрополь прекратил функционировать примерно в то же время, когда начали возводить монастырь, и, таким образом, между ними не было заметного хронологического разрыва. Однако новые полевые работы (2011–2015 гг.) и радиоуглеродный анализ показали значительный временной разрыв между захоронениями и строительством буддийского храмового комплекса, а также объяснили тот факт, что некоторые из построек монастыря возведены непосредственно на территории более древнего некрополя: это пересечение возникло искусственно при работах по выравниванию площадки для строительства святилища в начале новой эры.

*Ключевые слова:* Сайду-Шариф I, буддистский храмовый комплекс, добуддистские некрополи, Гандхара, Сват

In 1993, in this journal, with regard to the Early Historic acculturation phases of the Northwest Frontier of the Sub-Continent, Pierfrancesco Callieri wrote as follows:

Some final and partly obscure evidence can perhaps be included in this overall picture: in the area of the Buddhist monastery of Saidu Sharif I, in Swat, a graveyard was found underneath the monastery structures which is characterized by a totally different funerary rite compared with that of the protohistorical Swat graveyards and with a close resemblance to the cemetery of Sarai Khola, near Taxila. On the strength of C14 analysis for this cemetery [...] the anthropologist who studied the bone remains [...] proposed a dating of around the 3<sup>rd</sup> cent. BC; he also identified Western some features in the anthropological characteristics [of the deceased] that led him to envisage a possible attribution [of the remains] to colonists from the Hellenistic world (Bernhard 1981)<sup>1</sup>.

The archaeological site of Saidu Sharif I in the Swat Valley (N-W Pakistan) was excavated in the 1970s and 1980s by the Italian Archaeological Mission of the former IsMEO under the direction of Domenico Faccenna<sup>2</sup> (Fig. 1). Major archaeological evidence is represented by a magnificent Buddhist religious complex built on different levels on two artificial terraces inside a small alluvial valley at the foot of the Shararai mountains, today situated on the outskirts of Mingora-Saidu Sharif, the largest urban agglomeration in Swat.

It is precisely the wealth of artistic and archaeological evidence related to Buddhism that has largely contributed to the present-day fame of the Swat Valley (where the Italian

<sup>1</sup> Callieri 1993, 134.

<sup>2</sup> Callieri 1989; Faccenna 1995; Noci *et al.* 1997.



Fig. 1. The Buddhist sanctuary of Saidu Sharif I at the end of the excavations in the 1980s. To the left side of the Stupa Terrace is still visible the area which was mechanically excavated in the late 1990s (photo: Italian Archaeological Mission)

Mission has operated uninterruptedly starting from 1955), which is only a pale reflection of the fame which the region enjoyed for the same reason in the ancient world. In addition, Swat is the place where the earliest evidence of the artistic phenomenon known as ‘Gandhara art’ is to be found. The variability of the toponym ‘Gandhara’ in the sources and of the associated ethnonym are indications that, on a number of occasions, in the course of history and in a variable fashion the political boundaries of the region spread beyond its stable nucleus in the Peshawar plain.

The geographic fluctuation of the toponym and a degree of cultural neutrality led researchers, albeit in full awareness of its limitations and related problems, to use the term ‘Gandhara art’ to define a huge artistic production that, with certain local distinctions, takes in Afghanistan to the East, the Punjab (Taxila) to the West, Swat to the North and Bannu and Kohat to the South.

In addition to the Buddhist connotations, the feature around which the identity of Gandhara art coalesced *a posteriori*, there is the Hellenistic-Roman visual impact made by much of the product, the origin of which nevertheless remains that of the Indian frontier, which abounds in features deriving from well-defined localisms as well as from variously shared features of Iranian and Central Asian origin. The better known peculiarities of Gandhara Art are featured in Buddhist reliefs having a narrative subject, which nevertheless seem to be more characteristic of the earlier phases and the sites located between the Peshawar plain and the Swat valley.

The Italian excavations in Swat introduced novel features into Gandhara Art, which, precisely because of their differences vis-à-vis conventional schemata, still encounter difficulty regarding their inclusion in works of synthesis<sup>3</sup>. In particular, they alter the conventional chronological reference in which Gandhara Art is made to coincide with the Kushan Empire (1<sup>st</sup>–3<sup>rd</sup> cent. CE, one of the four major Eurasian political blocs of the time, together with Rome, Iran and Han China), and its golden age with the 2<sup>nd</sup> century,

<sup>3</sup> Faccenna *et al.* 2003.

contemporary with the reign of Kanishka I, considered to be the major representative of the dynasty. In fact, the onset of a 'Gandharan' art language dates to the previous Saka-Parthian age, and more precisely to the late 1<sup>st</sup> cent. BCE and the early 1<sup>st</sup> cent. CE. In Swat, archaeological investigation covering this period has revealed a grand creative season, the patrons of which are the local dynasties linked to the Saka-Parthians – those of Odi and Apraca. What also changes with regard to the recorded chronology, is the perception of the cultural dynamic accompanying the first appearance and growth of Gandhara Art, in which the Indian contribution is most apparent, and, above all, the intrinsic aspects of Gandhara Art. When its context and development are observed, it can no longer be regarded as a direct offshoot of Hellenistic models, but only as an autochthonous creation in which the Hellenistic models, which had already passed through numerous filters as they circulated through Asia, were deliberately re-elaborated and placed at the service of an original and coherent art form.

#### *The site*

The Saidu Sharif I complex (Fig. 1) consists of a square plan monastery with a large central courtyard on the upper (raised) terrace; the lower terrace is occupied by an area of worship dominated by a Main Stupa rising, that is, on a square podium (here with a side length of 21 m) enhanced by four columns in the corners; around it, added at a later date, are other smaller monuments (small stupas, shrines and isolated columns). The whole complex covers an area of just under 5,500 sq. m, more or less equally divided between the monastery and the area of worship. To the West it overlooks the plain of the Saidu river (a left hand tributary of the Swat) and is bounded to the East by the monastery, to the North by the (artificially cut) rocky cliff face, to the South by the deep erosion gully of a stream running westward and lastly to the West by an enclosure wall.

The importance of this complex, one of the few actually excavated and documented in a scientifically valid way in the whole region, lies among other things in the fact of having revealed the existence of a continuous sculpted frieze decorating the drum of the main stupa<sup>4</sup>. This frieze of great artistic and historico-cultural interest narrates the life of Buddha, from his birth as prince Siddhartha to his *parinirvāṇa*, physical death corresponding to the supreme liberation, that is, the final extinction of the *karma* (law of retribution), which condemns feeling beings to the cycle of rebirth.

The archaeological interest resides in the fact that the frieze represents the only known case of a stone decorative ornament that is (a) clearly commissioned for a monument of worship in the Gandhara area and, as indicated by the system of assembly and housing, laid down at the same time as the construction of the monument itself and is (b) found *in situ* in the collapsed layers of the latter. The structural relationship between the monument and the frieze allows us to declare them contemporary with certainty. The exceptional nature of the archaeological evidence is thus two-fold, as the Main Stupa of Saidu Sharif I represents the only known example of a Gandharan monument that can be dated with certainty. The monument and its frieze, that is the Main Stupa together with the monastery and several of the lesser stupas on the lower terrace, actually belong to Period I of the site which has been dated consistently to the second quarter of the 1<sup>st</sup> cent. CE<sup>5</sup>.

The special historico-artistic value of the frieze is due to the fact that it is the result of a planned decorative programme carried out by one and the same workshop under the guidance of a single hand, identified as that of a master sculptor, whom Domenico

<sup>4</sup> Faccenna 2001.

<sup>5</sup> Callieri 1989, 117–120; Faccenna 2001, 15, 196.



Faccenna christened the ‘Master of Saidu’ and whose creative genius and sophisticated technical skill resulted in the felicitous achievement of a fertile season of artistic experimentation. Furthermore, the certain placing of the frieze within a precise chronological, geographic and cultural range and in a context abounding in homogeneous comparative evidence both from earlier and later periods, make it an essential landmark for appreciating the genesis and development of Gandhara Art.

Between 2011 and 2014 the site was subjected to a conservation and restoration campaign focused on the Main Stupa and carried out by the Mission within the framework of the ACT-Field School Project (Cooperazione Italiana allo Sviluppo–MAECI/Economic Affairs Division, Government of Pakistan)<sup>6</sup>.

### *The graveyard*

In the 1980s, during the final stage of the excavation of the Saidu Sharif I monastery, several graves were found with an E–W alignment (with some approximation, see below). They were documented either during the excavation of the foundation levels of the monastery walls or by means of specific sondages carried out below the monastery courtyard level. 18 burials were documented, 11 graves and a secondary inhumation in the foundation pit of one of the monastery walls (G 5) (see below) were fully excavated. The tombs consist of simple rectangular graves ranging in size from 1.60 and 2.10 m (long), 0.35 and 0.90 (wide), 0.20 and 0.50 (deep; with a maximum of 0.90 in G 4). Male bodies were found lying supine with arms extended along the body, the head facing West (uphill) the face turned towards the North (to the left). The female bodies (with one exception, G 9) lay on their right side. The graves were filled with soil; in two cases (G 12 and G 13, both female tombs) large flat stones were found inside the grave, which had fallen in the vicinity of the corpse’s plexus. They were interpreted as external *sēmata* that had collapsed into the grave. Two smaller flat stones were found also inside G 1 (male grave) but near the legs.

Stratigraphically speaking, the graves were dug in a layer of light-coloured (yellowish) compact clay with few inclusions (5)-(5a)-(5b)<sup>7</sup> and covered by a thin levelling and filling layer produced in the course of the monastery’s construction (4)-(4a)-(4b)<sup>8</sup>. The only burial found in layer (4a) is in grave G 5. A case of superposition was found in graves G 11 and G 12 (Fig. 2): grave G11 partially cuts into grave G12, which must not have been visible at the time when the former was excavated. No mound was found over the graves or any floor level corresponding to them. Faccenna’s final contribution makes the following points<sup>9</sup>:

1. The graveyard covered only a small area and was used by a small community.
2. The graveyard continued to be used until the time of the monastery’s construction.
3. Considerable free space remained between the graves.
4. The graveyard was partially cut by the terracing work and remained exposed.
5. Traces of bones were found in the foundation pits indicating the fact that they were filled with soil taken from the partial cutting of the graves.
6. There was a direct physical overlap between the graveyard and the monastery.
7. There is deemed to be no chronological interruption between the two phenomena.

However, as the only evidence offered by <sup>14</sup>C analysis performed on a bone fragment from grave G 11 (1<sup>st</sup>–11<sup>th</sup> cent. CE)<sup>10</sup> could not be used, Faccenna called for new tests

<sup>6</sup> Olivieri 2014.

<sup>7</sup> Callieri 1989, 55–61; Noci *et al.* 1997, 26–27.

<sup>8</sup> Callieri 1989, 57; Noci *et al.* 1997, 27.

<sup>9</sup> See Noci *et al.* 1997, 105–111.

<sup>10</sup> Noci *et al.* 1997, 109.

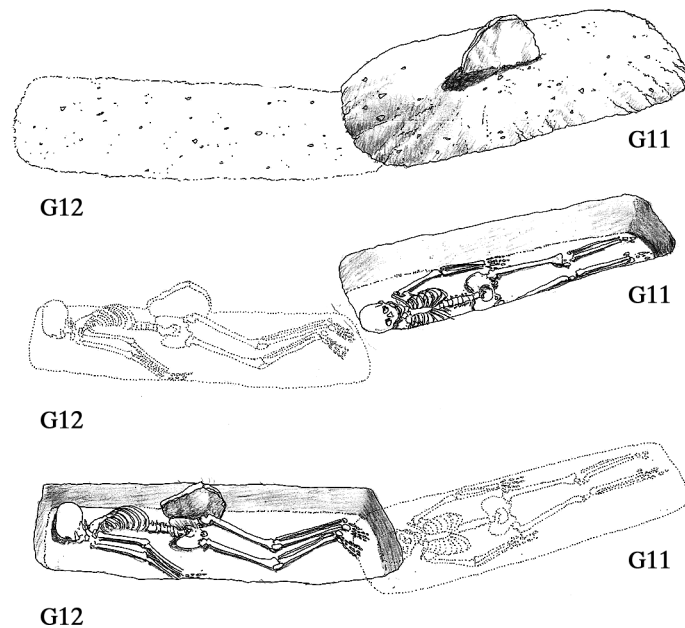


Fig. 2. Superimposition phases of G 11 on G 12

(drawings by F. Martore; after Noci *et al.* 1997, Pl. 9a-b and 10a-b)

to be carried out, above all on the remains of the physically latest two graves (G 11 and G 12), and grave G 5. In the case of the latter, it should be noted that its characteristics are not clearly defined: an intentional burial (as proposed by Faccenna<sup>11</sup>), or a secondary inhumation (according to Noci<sup>12</sup> and Macchiarelli). In the latter case it was likely a reburial carried out by the monastery builders as an act of *pietas*<sup>13</sup>. Whatever the underlying reason, the reburial hypothesis seems the more probable.

The interest of this graveyard is also represented by the fact that its characteristics are completely different from all the other graveyards in pre-Buddhist Swat:

1. The graves are simple pits and have no stone or pressed mud walls, no flat level, no stone covering, and no upper chamber<sup>14</sup>.
2. The male corpses were laid supine while the female bodies were laid on their right flank. In any case the bodies are not placed in a semi-foetal position (generally on the right side) as in the earlier graveyards<sup>15</sup>.
3. There are no grave goods whereas the earlier graveyards always had rich pottery grave goods and the corpses were buried with ornaments.
4. The anthropological and physical characteristics of the deceased differ from those of the corpses buried in the earlier graveyards (according to Macchiarelli<sup>16</sup>).
5. The graves were tentatively dated by the excavators to a period that is much later than the other graveyards (ca 1<sup>st</sup> cent. BCE/1<sup>st</sup> cent. CE *contra* ca 11<sup>th</sup>–7<sup>th</sup> cent. BCE)<sup>17</sup>.

<sup>11</sup> Noci *et al.* 1997, 108.

<sup>12</sup> Noci *et al.* 1997, 27.

<sup>13</sup> Noci *et al.* 1997, § 2. 4.

<sup>14</sup> Compare data from Silvi-Antonini, Stacul 1972, and from the recent Vidale *et al.* 2016.

<sup>15</sup> Silvi-Antonini, Stacul 1972; Vidale *et al.* 2016.

<sup>16</sup> Noci *et al.* 1997.

<sup>17</sup> See Vidale *et al.* 2016.

### New $^{14}\text{C}$ data

After work carried out as part of the ACT Project (see above), involving not only conservation and restoration but also the excavation of several sanctuary sectors left unexcavated by Faccenna, it was decided to fill the gap in the graveyard's dating. Following Faccenna's indication it was decided to analyse the samples of human remains taken from graves G 11, G 12 and G 5. The material comes from the Mission's anthropological collection conserved in its Saidu Sharif storehouse. Exportation of the samples was granted by the Department of Archaeology and Museums, Government of Pakistan, with the approval of the Directorate of Archaeology and Museums of Khyber-Pakhtunkhwa Province. Sample analysis was performed at the CIRCE (Center for Isotopic Research on the Cultural and Environmental Heritage) facility<sup>18</sup>.

The three bone samples were chemically treated in order to extract the collagen fraction, using a specific protocol, known as gelatinization<sup>19</sup>, which is effective in removing contaminants on samples younger than 20,000 years. Initially the sample was crushed and pulverized and then treated with acid and basic attacks. The aim was to remove carbonates and contaminants as humic acids. The obtained collagen was transformed in gel fraction by heating to 70 °C in a pH 3 solution for 20 hrs<sup>20</sup>. Finally the gel was freeze-dried and underwent combustion and graphitization processes<sup>21</sup>. The ultrasensitive measurement of the  $^{14}\text{C}/^{12}\text{C}$  isotopic ratio was performed by Accelerator Mass Spectrometry, using a 3MV tandem accelerator<sup>22</sup>. Conventional radiocarbon ages were then extracted and the calibrated ages were obtained by the Oxcal v4.2.4 program<sup>23</sup> and INTCAL13<sup>24</sup> calibration curve.

Table 1

Results obtained in this work shown with their laboratory code, the archaeological name, the  $^{14}\text{C}$  age with standard deviation of 1 and the calibrated ages for 1 $\sigma$  and 2 $\sigma$  ranges

Circe code	Sample name	RCage $\pm 1\sigma$ (BP)	Calibrated age (1 $\sigma$ , BCE)	Calibrated age (2 $\sigma$ , BCE)
DSH6524	SSI_G5_4	2296 $\pm$ 19	398–378	403–360 (94%) 269–264 (1,4%)
DSH6525	SSI_G12_12	2292 $\pm$ 31	401–360 (65,8%) 268–265 (2,4%)	406–353 (71,3%) 292–231 (24,1%)
DSH6526	SSI_G11_8	2346 $\pm$ 21	407–395	474–443 (3,7%) 431–381 (91,7%)

Radiocarbon and calibrated ages are reported in Table 1 and displayed in Fig. 3 as individual calibrated dates. The three plots show a large superposition of the probability intervals for the three dates, indicating that, within the experimental uncertainty, the three bones can be considered contemporary. However, as there are archaeological indications that G 11 can be slightly more recent than G 12, we used the calibrated dates of the G 11 and G 12 graves to create a Bayesian model which uses archaeological in-

<sup>18</sup> Terrasi *et al.* 2007. The analysis became possible thanks to a grant of CISA Center (Centro Interdipartimentale di Servizi per l'Archeologia, Università degli Studi di Napoli "L'Orientale"), co-funded by CIRCE Center.

<sup>19</sup> Longin 1971; Brown *et al.* 1988.

<sup>20</sup> Passariello *et al.* 2012.

<sup>21</sup> Passariello *et al.* 2007; Marzaioli *et al.* 2008.

<sup>22</sup> Terrasi *et al.* 2008.

<sup>23</sup> Bronk Ramsey 2013.

<sup>24</sup> Reimer *et al.* 2013.

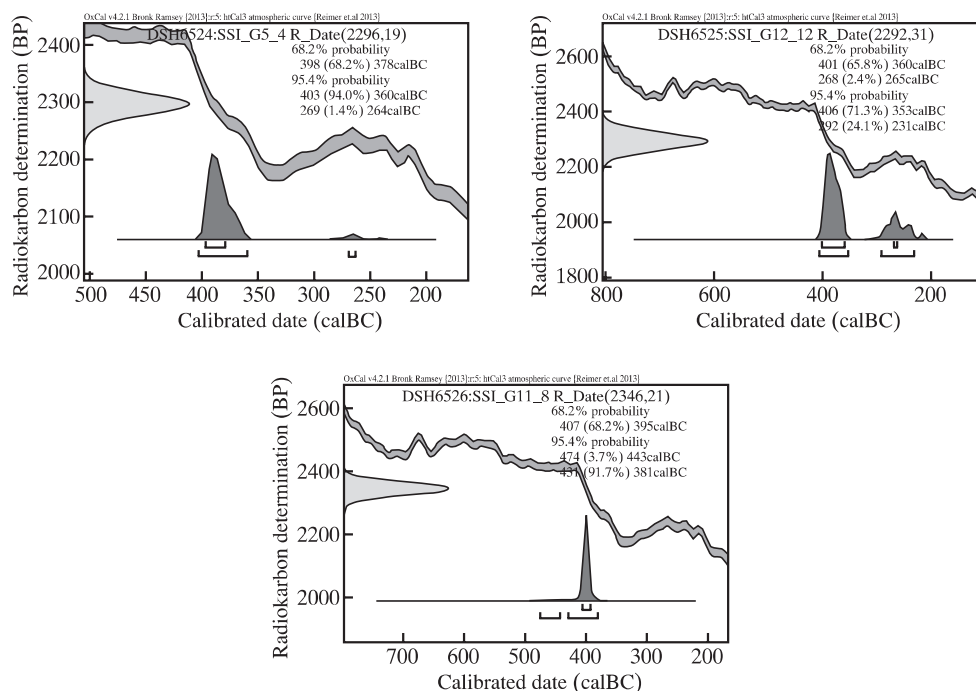


Fig. 3. Calibrated ages of the three bone samples from graves G 5, G 12 and G 11, obtained by the OxCal v4.2.4 (Bronk Ramsey, Lee 2013) and INTCAL13 (Reimer *et al.* 2013)

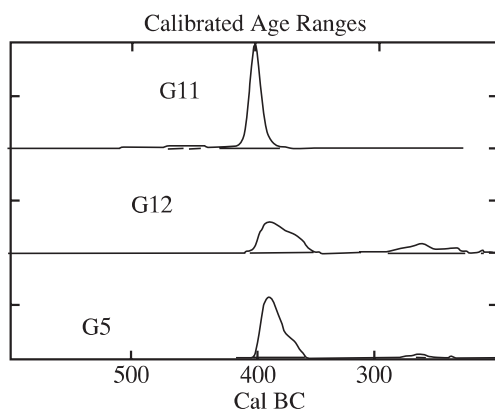


Fig. 4. A comparison among the calibrated-date probability distributions for samples G 5, G 12 and G 11

formation such as phasing and stratigraphy and accounts for statistical scatter in the  $^{14}\text{C}$  analyses and calibration methods<sup>25</sup>. The result of this analysis, as it can be seen in Fig. 4, is that with a high degree of confidence the experimental data are compatible with the hypothesis that G 11 is later than G 12 by several years, taking also into account the variability of the apparent age at burial due to collagen turnover time.

*F.T., F.M., I.P. and M.C.*

#### *New stratigraphic evidence*

The results of the analyses are particularly interesting and led to further field evidence being sought. A short working campaign was thus implemented in April–May 2015.

<sup>25</sup> Bayliss 2009.





Fig. 5. The Buddhist sanctuary of Saidu Sharif I during the ACT fieldwork (view from E). Arrows indicate the location of the artificial cut (= Section) (photo: ACT Field School Project)

Participating in the work were L.M. Olivieri, Aatif Iqbal (Head in-charge of Institute of Cultural Heritage of Swat University), Akhtar Manir (Field Officer and Chief Restorer of the Mission), Abdul Azim and Naik Mohammad (Mission Field Officers)<sup>26</sup>.

In the late 1990s some construction work was undertaken by the owners of the land bordering the sanctuary on the West side. This work was halted by the authorities as illegal due to its proximity to the archaeological site, which was unfortunately damaged by the cutting of a long artificial trench (Fig. 1 and 5). This work took place on a part of the outer slope and involved complete mechanical excavation of the slope/terrace West of the stupa area and the consequent levelling of the land down to -2,80 m in order to allow for the construction of houses. The cut was made at about 15–16 m from the West row of minor monuments<sup>27</sup>, and thus straddled the external/internal area of the original lower terrace (Fig. 5), which in ancient times was bounded to the West by a wall running N-S ('substruction wall'<sup>28</sup>) situated in fact 16 m from the West line of stupas<sup>29</sup>. The course of this wall is known from two sondages, which however had not revealed the depth of the foundations. Only a few traces of this wall remain today as it was obliterated by the above-mentioned work.

<sup>26</sup> The 2015 excavation campaign at Saidu Sharif I was funded thanks to a grant from the Italian Ministry of Foreign Affairs and International Cooperation, Direzione Generale per la Promozione del Sistema Paese, Ufficio VI, Missioni archeologiche italiane all'estero.

<sup>27</sup> Stupas 52, 53, 55, 37, 34, 33, 9, 8, 7, 6, 5 and 4 (Faccenna 1995, General Plan).

<sup>28</sup> Faccenna 1995.

<sup>29</sup> The terrace was bounded to the South by a second wall running E–W (Faccenna 1995, 141). As far as the age of the western wall is concerned, to judge from the few remains preserved in cross-section (see below), it was certainly constructed post-Period II of the sanctuary. The wall does not seem to have been built with a foundation pit but directly at ground level. The few underlying stone blocks seem to have sunk under gravity rather than due to intentional laying.



Fig. 6. The Section seen from NNW (see Fig. 5). The interface between the later archaeological deposit and the alluvium layer (SU 4), where all the graves were dug, is clearly distinguishable  
(photo: ACT Field School Project)



Fig. 7. Detail of a stretch of the Section after cleaning of T1, T2, and T3 area (see Fig. 8)  
(photo: ACT Field School Project)

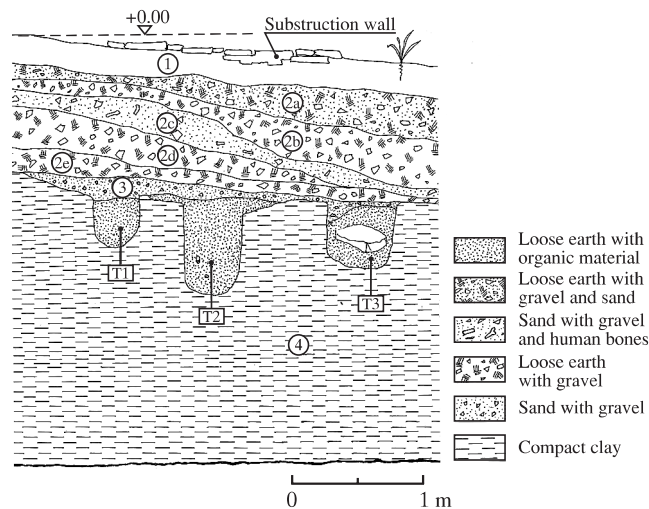


Fig. 8. T1, T2 and T3 archaeological section (see Fig. 7) (drawings by F. Martore)

The exposed cut revealed several graves having the same characteristics as those discovered underneath the monastery and already observed in Autumn 2013. On the strength of the results of the  $^{14}\text{C}$  tests on the bone samples from graves G 11, G 12 and G 5, it was decided to clean up and study the exposed section in order to determine the stratigraphic situation in an area outside the complex and not affected by the work involved in its construction (Fig. 6). The section (which is quasi-rectilinear) runs N-S for over 52 metres. The lower plane of the cut remains more or less at the same height, while its upper plane slopes from 0.00 (= sanctuary plane = Period II floor level) to -2.80 m.

Along the entire section 26 graves with an E-W alignment were found, cut by the construction work and with their side section exposed. In the central sector of the section, a 5 meter long portion was selected (=Section Ia) corresponding on top to the area situated in front of the staircase of the Main Stupa. Three graves were documented in it (with a preliminary definition from the North as: T1, T2 and T3). The stratigraphic survey took in the whole section although the present article will focus above all on the analysis of Section Ia (Fig. 7). The results were compared with the data emerging from broader analysis and were found to be consistent and perfectly corresponding.

Graves T1, T2 and T3 were dug out of a compact, light-coloured yellowish layer of alluvial clay ('leather-like' consistency), sterile, with practically no inclusions (SU 4). They are situated at a distance of ca 0.40–0.60 m from each other. They vary in width (0.40; 0.50; 0.70) and depth (0.40; 0.80; 0.60), but all open at the same level (upper interface of SU 4). Their filling is uniform, reddish coloured and loose (SU 5); the visible bone fragments lie at the bottom of the grave. In tomb T3 one of wide flat stones is visible; these stones have been interpreted as external *sēmata* that had collapsed into the grave<sup>30</sup>.

<sup>30</sup> The collapsed stones certainly seem to indicate that the pit filling was not compact. The uniform reddish coloured appearance of layer SU 5 suggests the presence of organic material: it cannot be ruled out that the internal structure of the pit was composed of a wooden or at least a degradable cist sealed by a sand and pebble mound (=SU 3), in some cases surmounted by a *sēma*. The deterioration of the inner cist supposedly caused the *sēma* and the mound to collapse, as can be seen in tomb T3, into the interior. It should be noted that the tombs having no *sēmata* were not found to have collapsed and their mound, although eroded and sloping southwards,



Other similar stones have been documented inside other tombs along the section. The upper interface of SU 4 is sub-horizontal and slopes slightly downwards towards the S. It is covered by a thin layer of gravel and sand containing small schist chips visible over the entire length of the artificial cut (SU 3). Also this layer is sub-horizontal, sloping slightly downwards towards the South. The layer SU 3, with its general profile of gravel and sand lens, increases where the tombs open. This is quite clearly visible in tomb T2. The layer SU 3 is covered by *at least* five layers (top down: SU 2a-e; see below), sloping towards the S, which clearly follow the contour of the original slope. These layers are composed of soil deposits containing numerous scattered inclusions (pebbles) and stand out because of their colour. SU 2c can also be distinguished by the presence of occasional scattered human bone fragments. The layer SU 1 corresponds to the heap lying above level 0.00 (subsequent to the sanctuary's Period II floor, during which the first layers of the 'substruction wall'<sup>31</sup> were laid) (Fig. 8).

#### *Interpretation of data*

A preliminary analysis of the data emerging from a study of Section Ia and their comparison with the stratigraphic evidence of the previous excavations lead to the following conclusions:

1. The previous excavations did not document layers SU 2a-e of Section Ia.
2. Layers (4)-(4a)-(4b) documented in previous excavations have characteristics that differ from SU 2a-e in composition and nature (horizontal layers containing also potsherds mostly deriving from building works, *contra* sloping layers containing scattered non artificial inclusions; layers consisting of intentional deposits *contra* layers of erosive-alluvial deposits, but see points 4 and 5 for the latter).
3. Previous excavations did not document the layers of rubble, gravel and sand, denoted as SU 3.
4. It may be hypothesized that the upper interface of SU 2a corresponds to the original westward and southward slope on which the Buddhist complex would have been built.
5. It may be hypothesized that layers SU 2a-e correspond to the erosion deposit, that is, to the detritus from the northern ridge that appeared between the abandonment of the graveyard and the construction of the shrine. In particular layers SU 2b (and 2c?) could be considered as deposits resulting from erosion processes involving the graves further uphill (due to the presence of scattered bone fragments).

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seemed to be intact. The filling of the graves having no *sēmata* is similar in nature and suggests the co-presence of decomposed vegetal material (A.I.).

<sup>31</sup> For this reason, we have inferred that the 'substruction wall' is later than Period II (see above).

The detail stratigraphic analysis shows that the layer SU 2 is not the result of a single activity. Instead it can be divided into five sub-layers each overlaying the other, i.e. SU 2a, 2b, 2c, 2d, and 2e (numbered from the top). The layers SU 2a and 2c are composed of grayish soil containing small pebbles. The approximate thickness of these layers is from 35 to 15 centimeters. SU 3 sloping towards southern side is preserved in one area. SU 2b and 2d are respectively composed of a compact yellowish soil (probably mixed with ash) containing pebbles, and yellow clay with pebbles. SU 2b and 2c show scattered fragments of bones. Micro-analysis of SU 3 shows that SU 3 is composed of more sub- or micro-layers, i.e. SU 3a, 3b, 3c, 3d and 3e. SU 3a is composed of sandy clay and gravel brought by runoff water and loosely compacted. SU 3b has a slightly harder composition and is formed by sandy clay. SU 3c is a loose layer composed of gravel. SU 3d is composed of brownish sandy clay and is rather hard. SU 3e is a loose layer composed of sandy clay and gravel (A.I.).



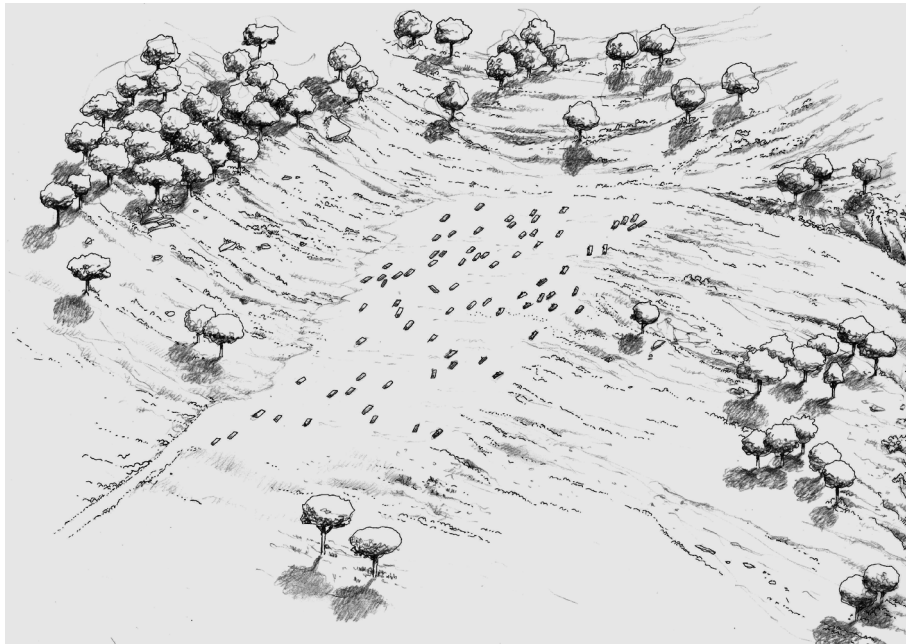


Fig. 9. The graveyard area before the construction of the Buddhist sanctuary (seen from ESE)  
(drawings by F. Martore)

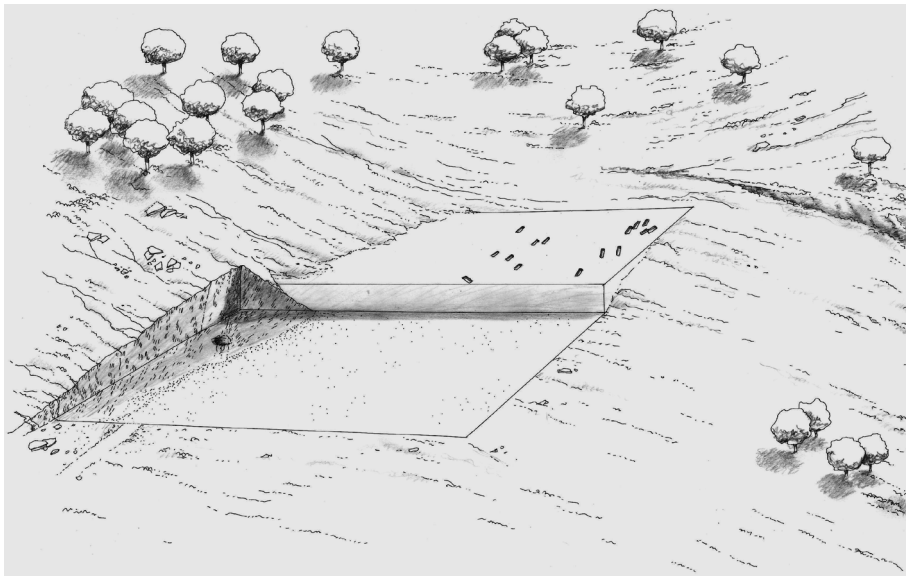


Fig. 10. The graveyard area during the construction of the Buddhist sanctuary (seen from ESE)  
(drawings by F. Martore)

6. It may be postulated that SU 3 (or rather the layers contemporary/associated with it) covered part of the original plane outside the graveyard and that its existing form/composition (as can be seen in cross section) is due to the erosion, leaching and scattering of the materials used to cover the tombs or to the gravel and rubble mounds.

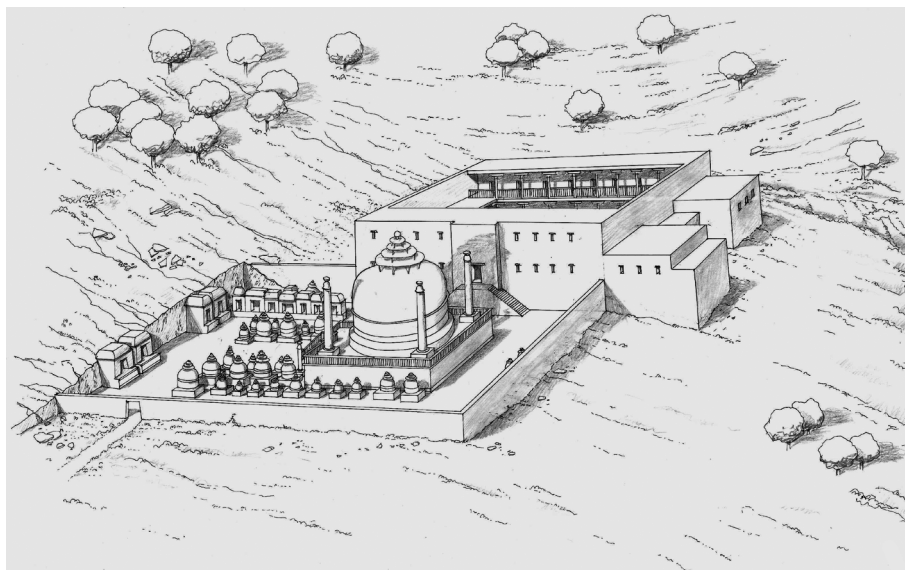


Fig. 11. The Buddhist sanctuary in its final stage CE (drawings by F. Martore)

7. Layers (5)-(5a)-(5b) of the monastery excavations<sup>32</sup> certainly correspond to SU 4 of Section Ia.

8. It is highly likely that the layers SU 2a-e and SU 3 were removed artificially during the levelling of the two terraces to make room for the complex (Fig. 9–10). This levelling work also involved cutting into the rock along the entire northern boundary of the complex, and must also have been completed by Period I. If this was the case, during the phase of preparation for the construction of the complex, the area concerned must have been subjected to an extremely invasive treatment, which radically modified its features (Fig. 11). Examples documented by the excavation of other coeval Buddhist complexes in Swat lend weight to this hypothesis<sup>33</sup>. The fate of the removed soil material is not clear: part of it may have been used to make the bedding mortar (for instance for the nucleus of the Main Stupa, etc.), and another part must have been dumped along the southern slope on the right bank of the torrent skirting the area. Some of the material may have been discharged on the western side (for the stone material, see the following note).

9. The entire area occupied by the complex within its natural bounds (rocky slope to the North, area cut by the torrent to the South, hilly slope to the East) and artificial ones (cut in the rock to the North and, at a later stage, the enclosure wall to the West) was previously occupied by a graveyard. The western boundary of the graveyard may well have actually extended as far as the base of the western slope, where the southern torrent turns northward, about 100 m West of the ancient sanctuary boundary (ca 50 m from the boundary a sondage performed in the 1980s uncovered a child's grave<sup>34</sup>). Available surface area of about one hectare may be hypothesized. Available archaeological evidence indicates, however, an area of about 5,500 sq. m. that was effectively used. Further

<sup>32</sup> Callieri 1989.

<sup>33</sup> See the 2011 excavations at Gumbat/Balo Kale, and the 2012 digging at Amluk-dara (Olivieri *et al.* 2014).

<sup>34</sup> Communication by Mr. Akhtar Manir.

evidence may be extracted from this data. Along the section (ca 52 metres) 26 graves were documented; along the central part of the section, ca 35 linear metres, 11 graves were found (0.50 m wide on average, a similar average distance apart). It may thus be postulated that on average there was (or at least there was enough room for) about 500 graves, one every 10 sq. m. Even prudentially reducing this number by 30%<sup>35</sup>, an average of 700 graves per hectare is still a considerable number. In some cases (both in the section and in the excavation, see G 12 and G 13) some graves are superimposed. This implies that, as no overlapping due to overcrowding has been recorded, a later phase must have been superimposed on an earlier phase of the graveyard. The superimposition of graves would seem to indicate that when the new graves were dug the old ones were not visible. Nevertheless it should be borne in mind that the chronological gap between the two phases (as indicated by the evidence from graves G 13 and G 12) is so slight as not to show up in the <sup>14</sup>C analysis and in any case does not exceed 5–10 years.

The variation in the E–W alignment, which in some cases (G 13 and G 1) is SE–NW, can be explained in terms of the solar analemma, that is, the time of year in which the graves were dug: the E–W orientation corresponds to sunrise in the equinoxes and the SE–NW orientation to that of the winter months (in Summer the orientation is NE–SW). It may be inferred from this that the majority of graves follows a predetermined orientation (namely that of the other visible graves), while the variations may well have occurred intentionally (as a result of direct observation of the sunrise), or else because the orientation of the neighbouring graves was not clearly visible (for instance, if they were covered by grass or bushes). This phenomenon is clearly visible in the Islamic cemeteries in the area.

10. It is consequently necessary to reassess the conclusions drawn at the end of the excavation of the complex (1980s) and to suggest the following supplements/corrections:

10.1. The graveyard was average in size (comparable to, if not greater than, the earliest graveyards of Katelai and Loebanr<sup>36</sup>) and served a medium-small size community although for not more than two generations.

10.2. Graves consisted of simple pits covered by a mound of rubble and in some cases marked by a stone *sêma* in the centre.

10.3. During the phase of abandonment erosion exposed and carried downhill occasional scattered bone material from the graves further uphill.

10.4. The graveyard had been abandoned for at least three centuries by the time the sanctuary was constructed and would probably not have been visible at the time of the monastery's construction. There is a gap in the chronological continuity between the two phenomena; their physical superimposition is indirect.

10.5. The graveyard was partially cut by terracing work and exposed.

10.6 Many of the graves must have been obliterated completely; it was consequently initially believed that considerable space existed between one grave and another, which was then contradicted by the new data. The bone fragments found in some foundation pits of the Monastery confirm this.

10.7. The characteristics of the graveyard, as acknowledged in the past<sup>37</sup>, are very similar to those of the graveyard (in two phases) of Sarai Khola (Taxila)<sup>38</sup>: burial in sim-

<sup>35</sup> It may actually be postulated that the heaviest concentration of graves was situated downhill (where the section has been documented) and decreased further uphill (where the graves discovered during the Monastery's excavations were found).

<sup>36</sup> Silvi-Antonini, Stacul 1972.

<sup>37</sup> Noci *et al.* 1997.

<sup>38</sup> Halim 1968; Bernhardt 1969; Halim, 1970–1971; 1972; Bernhardt 1981; Lukacs 1983.





Fig. 12. Sectors Q, S and T along the N limit of the Buddhist sanctuary

(photo: ACT Field School Project)

ple graves, bodies laid supine, absence of grave goods, anthropological-physical data<sup>39</sup>. Fresh evidence shows that beyond these similarities the two graveyards were relatively close in date (Sarai Khola: 260  $\pm$  50 BCE<sup>40</sup>; Saidu Sharif I: 406–361 BCE)<sup>41</sup>.

*Note on the original size of the stupa terrace*

Reassessment of the stratigraphy of zones Q, S and T (from the West, the sectors corresponding to the northern boundary of stupa terrace) (Fig. 12) confirms that no monument has its foundations exclusively supported by the horizontal cut made in the bed-rock. The way the rock outcrop to the North (pelitic schist) is laid out is a peculiar feature of the ground surface of the terrace, which is quite visible and exposed in front of the zones Q, S and T, and is made to correspond to the earlier floor level, namely F3<sup>42</sup>.

<sup>39</sup> Bernhardt 1981; Lukacs 1983; Noci *et al.* 1997 (Macchiarelli).

<sup>40</sup> Bernhardt 1981.

<sup>41</sup> The descriptive panel placed on the site by the Department of Archaeology and Museums, Government of Pakistan in the 1990s, certainly unwittingly, already indicated the 4<sup>th</sup> century BCE at the date of the graveyard. As it transpired it was not far from the truth.

<sup>42</sup> With reference to the zones mentioned (in particular, see shrines 64 and 63, which abut the vertical cut in the rock: shrine 64 is partially supported by layer (i), which covers the horizontal bed-rock (Faccenna 1995, 379, fig. 165; 175, fig. 31a); shrine 63 is likewise supported by layer (g), associated with the floor F3R (*ibid.*, 373, fig. 160). Shrines 54 and 45, situated in the same row but detached from the rock face, are supported by layers covering the horizontal cut: in the first case, on layers (d) and (e) (*ibid.*, 363, fig. 154; 357, fig. 149; 175, fig. 31b); in the second, on layer (i) (*ibid.*, 357, fig. 149). South of shrine 63 lies vihara 50, associated with F3 supported by the two layers (e) and (f) covering the bed-rock. Moreover, moving on to zone L-H-E, that is,





Fig. 13. Sector T: layer corresponding to floor F3

(photo: ACT Field School Project)

In this rocky surface several cisterns of various shapes, sizes and functions have been dug (nos. 68, 66a-c, 67a-b, and 62<sup>43</sup>). Moreover, the excavation of sector T, which was originally left unexcavated<sup>44</sup>, was begun in Autumn 2013 and resumed and completed in May 2015, revealed that the horizontal cut in the bed-rock (in Faccenna 1995 associated with F3) is consistent with the vertical cut. The recent sondage uncovered a ground level (compact red soil) covering the horizontal cut and corresponding to F3R above which is linked to the ground plans of shrines 45 and 48 (Fig. 13) (see n. 42). Discovered below this is a step-like quarry area running partly parallel to the vertical cut. The soil at the level of this area is loose and blackish coloured containing sand and occasional tiny bony fragments; the soil is damp owing to the water infiltration visible in the lithostasis of the rock face. Behind this area runs a small well-paved path that continues alongside the vertical cut; several slabs are neatly laid along the E side of shrine 45. Below this lies a compact layer of red soil containing scattered vertically placed minuscule potsherds (a typical indicator of a trampling surface), bones and stucco consisting of tiny scattered fragments; this was certainly a ground level corresponding to layer (m) of shrine 48<sup>45</sup> (=F3?). At this point part of the original horizontal rock plane already emerges. Below this lies a blackish coloured layer containing rubble and gravel, certainly produced by

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to the row of external monuments E, shrine 35 is wholly supported by layer (h) which covers the horizontal cut in the bed-rock (ibid., 344, fig. 138), for instance, the adjacent shrine 48, supported by layers (m) and (n) (ibid., 352, fig. 145).

Excavation of zones S and Q, and part of T was directed by the author in Autumn 2013.

<sup>43</sup> Faccenna 1995, 294, fig. 107 and 108.

<sup>44</sup> Faccenna 1995, 61.

<sup>45</sup> Faccenna 1995, 351.



Fig. 14. Sector T: the quarry evidence below F3 (photo ACT Field School Project)

stone-working activities; this layer corresponds to layer (l) of shrine 45 and to layer (n) of shrine 48<sup>46</sup>. The final level of the sondage completely exposed the bed-rock. The latter was extensively altered by the cutting of steps to allow blocks and slabs to be quarried (Fig. 14). The quarrying activity seems to have been a consequence of and consistent with the cutting of the vertical surface. Chronology-wise, the activity can be placed in the earliest stage of the complex, and must have preceded the construction of the earliest monuments and buildings.

The cut must have been performed as follows:

- (a) cutting of steps top down (out of convenience the quarry face must be descended in parallel with the excavation of the earthen part of the slope, namely the part where the graves were situated);
- (b) partial continuation of the quarrying activity on the horizontal outcrop (which was artificially exposed as the original rock sloped southwards);
- (c) preparation of the rock face in its currently visible form;
- (d) filling of cavities left by the quarry step with rubble;
- (e) level of the area to form floor F3 (= layer (m)?).

In phase (c) all signs of terrace preparation have been obliterated and the finishing touches put on by the workmen carrying out the decoration. This conclusion is suggested precisely by the traces left on the finished vertical rocky wall. These traces were left by chisels (chisels 0.01-0.02 m, and adzes<sup>47</sup>), and are very different from the typical quarry marks left by picks, wedges and levers<sup>48</sup>.

<sup>46</sup> Faccenna 1995, 351, 356.

<sup>47</sup> Faccenna 1995, 62.

<sup>48</sup> Faccenna 1995, 63, n. 1; Di Florio *et al.* 1993. For the tools used and their comparison with those used for the Saidu Sharif I sculptures, see Faccenna 1995; Vidale *et al.* 2015.

Partially modifying the reconstruction suggested by Faccenna 1995, the (vertical/horizontal) preparation and finishing work on the rocky outcrop would thus precede Period Ic and was performed to achieve the original lay-out of the terrace. Although lithological analysis of the masonry indicates that pelitic schist was used only in later monuments<sup>49</sup>, the filling of all the earliest stupas, including the Main Stupa consisted mostly of pelitic schist. The total amount of material extracted from the rocky wall, according to Faccenna, was *ca* 1,012 cubic metres<sup>50</sup> (a very conservative estimate, as the quarry face must have been deeper). This quantity corresponds solely to the volume of the dome of the Main Stupa. It is there, therefore, that the material quarried from the northern rock wall could arguably have been used conveniently.

## References

- Bayliss, A. 2009: Rolling out Revolution: using radiocarbon dating in archaeology. *Radiocarbon* 51, 123–147.
- Bernhardt, W. 1969: Preliminary report on the human skeletal remains from the prehistoric cemetery of Sarai Khola. *Pakistan Archaeology* 6, 100–116.
- Bernhardt, W. 1981: Ethnic and morphological affinities of the people of the Iron Age cemetery of Sarai Khola near Taxila (Pakistan). *Journal of Mediterranean Anthropology and Archaeology* 1, 180–210.
- Bronk Ramsey, C., Lee, S. 2013: Recent and Planned Developments of the Program OxCal. *Radiocarbon* 55/2–3, 720–730.
- Brown, T.A., Nelson, D.E., Vogel, J.S., Southon J.R. 1988: Improved collagen extraction method by modified Longin method. *Radiocarbon* 30/2, 171–177.
- Callieri, P. 1989: *Saidu Sharif I (Swāt, Pakistan)*, 1. *The Buddhist Sacred Area, The Monastery* (IsMEO Reports and Memoirs, XXIII. 1). Rome.
- Callieri, P. 1993: Раннеисторический Сват: пример аккумуляции? [Early Historical Swat: a Case of Acculturation?] *Vestnik drevney istorii [Journal of Ancient History]* 2, 131–136.
- Калльери П.-Ф. Раннеисторический Сват: пример аккумуляции? *ВДИ* 2, 131–136.
- Di Florio, M.R., Lorenzoni, S., Zanettin Lorenzoni E., Olivieri L.M. 1993: Evidence of Ancient Stone Quarrying in Lower Swat, NWFP, Pakistan. A Geo-archaeological Study. *Science and Technology for Cultural Heritage* 2, 63–74.
- Faccenna, D. 1995: *Saidu Sharif I (Swāt, Pakistan)*, 2. *The Buddhist Sacred Area. The Stūpa Terrace* (IsMEO Reports and Memoirs, XXIII. 2). Rome.
- Faccenna, D. 2001: *Il fregio figurato dello Stūpa Principale nell'area sacra buddhista di Saidu Sharif I (Swāt, Pakistan)* (IsIAO Reports and Memoirs, XXVIII). Roma.
- Faccenna, D., Callieri P., Filigenzi, A. 2003: At the Origin of Gandharan Art. The Contribution of the IsIAO Italian Archaeological Mission in the Swat Valley, Pakistan. *Ancient Civilizations from Scythia to Siberia* 9/3–4, 277–280.
- Halim, M. 1968: Preliminary report on the excavations at Sarai Khola. *Pakistan Archaeology* 5, 100–116.
- Halim, M. 1970–1971: Excavations at Sarai Khola. Part I. *Pakistan Archaeology* 7, 28–40.
- Halim, M. 1972: Excavations at Sarai Khola. Part II. *Pakistan Archaeology* 8, 3–112.
- Longin, R. 1971: New method of collagen extraction for radiocarbon dating. *Nature* 230 (5291), 241–242.
- Lukacs, J.R. 1983: Dental anthropology and the origins of two Iron Age populations from Northern Pakistan. *Homo* 34, 1–15.
- Marzaioli, F., Borriello, G., Passariello, I., Lubritto, C., De Cesare, N., D'Onofrio, A., Terrasi, F. 2008: Zinc reduction as an alternative method for AMS radiocarbon dating: process optimization at CIRCE. *Radiocarbon* 50/1, 139–149.
- Noci, F., Macchiarelli, R., Faccenna, D. 1997: *Saidu Sharif I (Swāt, Pakistan)*, 3. *The Graveyard* (IsIAO Reports and Memoirs, XXIII. 3). Rome.
- Olivieri, L.M. 2014: Restauro conservativo e mobilitazione sociale in siti archeologici della valle dello Swat (Pakistan). *Restauro Archeologico* 1, 57–77.

<sup>49</sup> See Di Florio *et al.* in Faccenna 1995.

<sup>50</sup> Faccenna 1995, 63.

- Olivieri, L.M. *et al.* 2014: *The Buddhist sites of Gumbat and Amluk-dara (Barikot)*. (ACT-Field School Project Reports and Memoirs, II). Lahore.
- Passariello I., Marzaioli, F., Lubritto, C., Rubino, M., D'Onofrio, A., De Cesare, N., Borriello, G., Casa, G., Palmieri, A., Rogalla, D., Sabbarese C., Terrasi, F. 2007: Radiocarbon sample preparation at the CIRCE AMS Laboratory in Caserta, Italy. *Radiocarbon* 49/2, 225–232.
- Passariello, I., Simone, P., Tandoh, J., Marzaioli, F., Capano, M., De Cesare N., Terrasi F. 2012: Characterization of different chemical procedures for  $^{14}\text{C}$  dating of buried, cremated, and modern bone samples at CIRCE. *Radiocarbon* 54/ 3–4, 867–877.
- Reimer, P.J., Bard, E., Bayliss, A., Beck, J.W., Blackwell, P.G., Bronk Ramsey, C., Grootes, P.M., Guilderson, T.P., Hafflidason, H., Hajdas, I., Hattz, C., Heaton, T.J., Hoffmann, D.L., Hogg, A.G., Hughen, K.A., Kaiser, K.F., Kromer, B., Manning, S.W., Niu, M., Reimer, R.W., Richards, D.A., Scott, E.M., Southon, J.R., Staff, R.A., Turney, C.S.M., van der Plicht, J. 2013: IntCal13 and Marine13 Radiocarbon Age Calibration Curves 0–50,000 Years cal BP. *Radiocarbon* 55/ 4, 1869–1887.
- Silvi-Antonini, C., Stacul, G. 1972: *The Protohistoric Graveyards of Swat (Pakistan)* (IsMEO Reports and Memoirs, VII. 1–2). Rome.
- Terrasi, F., Rogalla, D., De Cesare, N., D'Onofrio, A., Lubritto, C., Marzaioli, F., Passariello, I., Rubino, M., Sabbarese, C., Casa, G., Palmieri, A., Gialanella, L., Imbriani, G., Roca, V., Romano, M., Sundquist, M., Loger, R. 2007: A new AMS facility in Caserta/Italy. *Nuclear Instruments and Methods in Physics Research* B259, 14–17.
- Terrasi, F., De Cesare, N., D'Onofrio, A., Lubritto, C., Marzaioli, F., Passariello, I., Rogalla, D., Sabbarese, C., Borriello, G., Casa, C., Palmieri, A. 2008: High precision  $^{14}\text{C}$  AMS at CIRCE. *Nuclear Instruments and Methods in Physics Research* B266/10, 2221–2224.
- Vidale, M., Olivieri, L.M., Ferrari, S., Loliva, E. 2015: Tracce di strumenti e organizzazione del lavoro su elementi scolpiti gandharici di Saidu Sharif e Panr (Swat, Pakistan) conservati nel MNAO. In: S. Pannuzi (ed.), *Gandhara. Tecnologia, produzione e conservazione. Indagini preliminari su sculture in pietra e stucco del Museo Nazionale di Arte Orientale 'Giuseppe Tucci'*. Roma, 35–45.
- Vidale, M., Micheli, R., Olivieri, L.M. (eds) 2016: *Excavation at the Protohistoric Graveyards of Gogdara and Udegram* (ACT-Field School Project Reports and Memoirs, III). Lahore.