

Workshop

**Collections at Risk: Sustainable Strategies
for Managing Near Eastern Archaeological Collections**

Organised and edited by

Andrew Jamieson
University of Melbourne



Michael T. Fisher – Gil J. Stein

***Aks* of War: A Digital Museum Inventory for a War-Torn Afghanistan**

This paper provides an overview of the history of the National Museum of Kabul during wartime, discusses the complex relationship between cultural heritage preservation and military conflict, and presents our development strategies that are specific to the conflict zone of Afghanistan.¹

For the past three-and-a-half decades Afghanistan has oscillated between civil war and civil strife, but the last decade of conflict has introduced a new element to the country: U.S. and internationally funded projects in fields such as education, energy, and cultural heritage preservation. It is within the context of an uncertain security situation that our project, the Oriental Institute-National Museum of Afghanistan Partnership, is rapidly creating a digital inventory of the National Museum's holdings. The steps toward recording, assessing, and securing the minority of the Museum's original collection that has survived the decades of looting and iconoclastic destruction are challenging and numerous. However, the end result is of paramount importance: to make a permanent and detailed digital record of the museum's collection. Over the past two years, the partnership has inventoried and taken photos (*aks* in Dari) of tens of thousands of objects using a secure, relational, «translingual» database that functions in both Dari and English. Our discussion will focus on the challenges

- 1 The authors would like to thank the 9ICAANE, Basel, organising committee along with Andrew Jamieson for organising the Collections at Risk: Sustainable Strategies for Near Eastern Archaeological Collections Management workshop. We would also like to thank the US Embassy, Kabul, and the Oriental Institute of the University of Chicago for generously providing funding for our project. We are indebted to all of our many colleagues who have indispensably assisted with this project, especially Mr Alejandro Gallego Lopez, Mr Steven Camp, and Dr Laura Tedesco. Finally, we want to thank Minister of Information and Culture, Dr Sayed Makhdoom Raheen, Deputy Minister of Culture, Mr Sayed Mosadeq Khalili, the Ministry of Information and Culture of Afghanistan, and all of our colleagues at the National Museum of Afghanistan, especially Dr Omara Khan Massoudi, for their gracious partnership and support.

of working toward both a complete digital inventory and a sustainable inventorying system within the context of an ongoing civil war. Ultimately, we wish to engage in a broader dialogue about wartime cultural heritage preservation in the Near East and the means available to conduct it.

In recent years the state of cultural heritage in regions besieged by military conflict had reached unsettling proportions. Afghanistan in particular has withstood iconoclasm, looting, and physical destruction of objects of cultural heritage, including the Buddhist and Nuristani collections of the National Museum in Kabul and the great standing Buddhas of Bamiyan (Wegener/Otter 2008).

Rohit Jigyasu had identified the issue that «cultural heritage as a specific element in a disaster situation is not really addressed» (Levin 2008), but today efforts are in place to mitigate the damage from these catastrophes. It is important to recognise that each cultural heritage horror story has an equally important backstory, and the collection of those backstories should inform archaeologists, curators, and conservators as to sound methodologies for preservation work, the dangers of passivity, and sustainable strategies for the future. The Oriental Institute of the University of Chicago is tasked with applying some of those methodologies to the conflict zone of Afghanistan, focusing on the heavily damaged and many-times over decimated, but still magnificent, collection of the National Museum in Kabul.

In this paper we will first outline the recent history of the National Museum of Afghanistan within the context of a theater of conflict that has morphed several times over the past thirty years (Friedman 2010). We will then discuss some of the issues of cultural heritage preservation relevant to our work in Afghanistan and to our present topic of collections in conflict zones. We will conclude with a case study presenting the successes and challenges that our partnership project has had in creating a digital inventory and stabilising the collections of the Kabul Museum.

Background of the National Museum during the Afghan Wars

Three-and-a-half decades of conflict and civil strife in Afghanistan began with the Soviet invasion of 1977. In response to the war, six million Afghan refugees fled to Iran and Pakistan where they survived but lost substantial elements of their intangible cultural heritage. A combination of invasion and exile, according to Nancy Hatch Dupree, contributed to a weakening of traditional social-cohesion traits. This weakening and the resulting «mistrust, nepotism, and cronyism» (2002: 984) had substantial ramifications especially in terms of a declining consideration for the national cultural patrimony.



Fig. 1. Exterior of museum, 1994 (source: National Museum of Afghanistan).

Fig. 2. Looting of the museum (source: National Museum of Afghanistan, Jolyon Leslie).

Furthermore, the constricted wartime economy encouraged opportunistic behavior. This, combined with a new disregard for heritage, led to the looting of archaeological sites and museums, sometimes organised by local officials in collaboration with extra-national dealers in the region. For example, at Mir Zaka, in Pakhtiya Province, local looters illegally excavated 200 kilograms of silver and gold (the «largest ancient coin deposit in the history of humanity» up to that point) and smuggled it out of Afghanistan. The looting even included previously hallowed and protected items such as Islamic gravestones. Archaeological research ceased in 1978 after the Soviet war began (*ibid.*).

In the aftermath of the Soviet pullout in 1989, after years of war, the various Mujaheddin groups competed for control over the country, drawing factional lines across Kabul that at times placed the National Museum on the forefront of the battle (Grissman 2009; **fig. 1**). In 1993 fourteen rockets hit the museum in one day (Omara Khan Massoudi, personal communication), and through 1996 the shelling continued, damaging objects on display (Grissman 2001: 7) and 90% of the Museum's archival records (Stein 2012: 123). But even more devastatingly, each time the dividing lines between factions shifted, plunder of the Museum began anew (Grissman 2009). Between 1993 and 1996 looters had removed an estimated 70% of the collection (Feroozi/Tarzi 2004: 1; **fig. 2**).

Although the onset of the Taliban regime in 1996 put an end to the looting, extreme elements within the new government advised Mullah Omar to have the Ministry for the Prevention of Vice and the Promotion of Virtue determine whether the Museum adhered to Sharia law concerning statuary and extra-Islamic deities (Dupree 2002: 985). In February of 2001 the government issued an edict to destroy all of the Museum's non-Islamic objects,

including Gandharan sculptures that represent some of the world's earliest Buddhist iconography (Dupree 2001: 3) and the unique Nuristani ancestor effigies (Klimbourg 2008). On March 8th and 9th the Taliban ordered the destruction by dynamite of the Great Buddhas of Bamiyan. On March 17th, 2001, Qadratullah Jamal, then Minister of Information and Culture, used a sledgehammer to smash many of the Museum's Buddhist, Nuristani, and other pre-Islamic sculptures (Dupree 2002: 985; **figs. 3–4**).

Responses attempting to stop the loss of cultural heritage and its metadata in Afghanistan began in 1988 when Omara Khan Massoudi, later appointed Director of the National Museum, led an expedition to remove key components of the collection to secret and secure locations in Kabul. During the civil war the formation of the Society for the Preservation of Afghanistan's Cultural Heritage (SPACH), in 1994, helped stabilise monuments in central, southern, and western parts of the country and secure the National Museum in Kabul. UNESCO, SPACH, the Musée Guimet, and the staff of the Kabul Museum attempted to make a record of what was left. The inventory recorded approximately 7,000 objects coming from 50 sites (Grissman 2009).

In 2003 the Ministry of Information and Culture reopened the National Museum and then began its reconstruction and reinstitution. With the assistance of the US Embassy in Kabul, National Geographic, UNESCO, the Netherlands Embassy in Kabul, and other organisations, the Museum conducted a partial, paper inventory of its remaining holdings, identifying approximately 12,000 of the objects left inside of the Museum but all 22,300 held in the vaults beneath the Presidential Palace (Lovgren 2004).

Now the Museum has entered what Stein calls a «second phase of reconstruction», and the US government continues to support the preservation of cultural heritage in Afghanistan through a variety of projects meant to further protect and expand the Museum and its rare collections (Stein 2013: 87), even during the ongoing war.

Issues of Cultural Heritage in Conflict Zones

Militarism and archaeology have long had an intertwined relationship. The earliest western archaeology was often carried out by generals, sometimes during military campaigns. In Afghanistan, the Rabatak inscription, now famous as the single greatest historical source for the early political and military history of the Kushan Empire, was discovered by fighters digging a combat trench in Baghlan Province during the civil war in 1993 (Kluyver 2001: 17).

While the tenets of the 1954 Hague Convention for Cultural Heritage Preservation were based on concepts devised and applied in World War II, military conflict has also frequently meant collateral damage to cultural objects, instability within those regimes tasked with protecting those objects, and sometimes more far-reaching impacts such as the gradual



Examples of Taliban destruction:

Fig. 3. Buddhist statuary (source: National Museum of Afghanistan and Gil J. Stein).

Fig. 4. Wooden Nuristani ancestor effigies (source: Max Klimbourg).

breakdown of the cultural norms that every society needs in order to value its heritage and transmit it to the next generation (Dupree 2002). In some cases, heritage itself becomes the target (e.g., see Herscher/Riedlmayer 2000); in Afghanistan, this latter phenomenon is visible most clearly in the Taliban's destruction of the Bamiyan Buddhas in 2001.

Ben Wisner suggests that «the answer [to sustainable preservation of cultural heritage in conflict zones] is interdependent with other issues... such as the possible positive roles of heritage and heritage collections in social, psychological, and economic recovery» (Levin 2008). However, in another kind of twist, one possible impetus for the Taliban's destruction of the Bamiyan Buddhas was the amount of aid and attention directed at cultural heritage in Afghanistan while civilians were starving (Gamboni 2001). David Lowenthal discusses the «disparity between prehistoric abundance and current poverty» (2000: 23), and the essential conflict between «national and tribal iconoclasts» and «global preservation canons» (2000: 21).

Despite periods of positivity in the relationship between archaeology and the military, namely the WWII-era and, arguably, very recent times, the lessons learned during the second world war did not generally hold sway into the late 20th century (Hoffman 2006). It seems as if the loss of cultural heritage had increased since the Soviet withdrawal of troops from Afghanistan in 1989 and the onset of the Iraq war in 1992. Furthermore, the looting that now typically accompanies these periods of conflict further compounds the problem as it can fund local warlords and other militaristic factions (Brodie 2006: 57; Garen 2004: 30). As conflict is unlikely to disappear, we have to build «sustainable», scalable systems of

cultural heritage preservation now so that future generations have a continuous model and steady base on which to build.

Gamboni (2001), referencing Lowenthal (1989), identifies a key problem in cultural heritage preservation: the multiplicity of group versus the singularity of object and location. For this issue, Lowenthal sees the preservation of fragments and processes as paramount to the «product» (ibid.; Gamboni 2001). Yet such a concept runs contrary to the approaches toward material culture typical of museums in developing countries, where fragmentary objects are sometimes disregarded and information about processes of recovery, interpretation, and selection is often suppressed. However, specifically because armed conflict creates uncertainty of outcome, decentralised power, and heightened awareness of identity markers (Goldstein 2003: 5), addressing multiplicity is a crucial issue for wartime cultural heritage preservation.

Nancy Dupree has described seventeen actions necessary to protect cultural heritage in Afghanistan, many of which address the issues of sustainability and multiplicity. Some of the key suggestions include building «training components into every project»; «employing information technology as a tool for research»; «maintaining a database» of cultural heritage properties; creating «a clearinghouse for the reception of recovered looted or illegally excavated objects»; discovering sustainable internal and external funding sources; incorporating communities, especially in provincial areas; and, eventually, «working with the ministries of education and higher education to ensure heritage subjects become part of the school curriculum» (Dupree 2002: 986–987).

There is a growing acceptance of the above kinds of «necessary actions» as crucial in the sphere of wartime cultural heritage protection. What Dupree's points to are strategic, cooperative, community-based projects that incorporate an understanding of the past events and failures but with a realistic view of the outcomes of war.

The Oriental Institute-National Museum of Afghanistan

Partnership

As Wegener and Otter (2008) write,

In the past, one of the most important measures to protect cultural property during armed conflict was the preventive planning done by institutions. During World War II, museums that succeeded in saving their collections began planning years in advance, using the same emergency planning techniques as always, but extending their worst-case scenario to the possibility of war.

In the theater of Afghanistan, various organisations and government institutions had taken many measures over several decades to prepare cultural remains for inevitable chaos; however, each time they secured parts of the cultural heritage, a new element of the war would dominate the landscape (see above). In 2012, Afghanistan once again faced a shifting paradigm of conflict and the possibility of new threats to the cultural patrimony. Because of the incomplete nature of the Museum inventory begun in 2004, the devastating relationship between war and paper records already seen in Afghanistan, and the need for a bureaucratic overhaul of objects management and curation procedures at the Museum, the US Embassy in Kabul initiated a grant to create a complete digital inventory of the collection with a focus on long-term capacity for usage and maintenance that included object stabilisation and rehousing.

The five main goals of the partnership are to:

1. Develop a secure, easy-to-use, and sustainable Dari-English computer database for the holdings of the National Museum of Afghanistan (NMA).
2. Develop the first complete computer-based inventory of the estimated 60'000 objects remaining in the NMA [and extramural vaults] after the looting or destruction of an estimated 70 percent of the Museum's holdings during the Afghan civil war and subsequent Taliban rule;
3. Make preliminary conservation assessments of the objects in the NMA's collections as part of the inventory process;
4. Re-house the objects in the NMA's collections in acid-free, archival-quality containers in preparation for a possible move of the collections to a new museum building (if the decision is made to construct a new museum building); and
5. Train the NMA staff in international standards of database, recording, and artefact management procedures (Stein 2013: 87).

The team of experts from the Oriental Institute has worked in close cooperation with colleagues at the Kabul Museum to identify the issues of recent history that afflict the national collections, such as the destruction of provincial museums, rampant looting, and targeted iconoclasm. But the project has also identified concerns for the future that include rapid turnover of key staff positions due, in part, to the weakened bond between citizen and nation arisen from years of conflict and exile. This phenomenon, along with other factors, has limited the institutional memory of the Museum.

The first efforts by the Oriental Institute team after arriving in Kabul in May, 2012 focused on soliciting the opinions of the museum staff by holding workshops, training seminars, and brain-storming sessions nearly every day for several weeks. After that period, the partnership went to work finishing the design of the database and inventorying system, using

**NMA - OI MUSEUM PARTNERSHIP
DIGITAL ARTIFACT INVENTORY**

Record Number **NMA 0020**

English **داری** تغییر کار بر چاپ کارت چاپ کارتهای ثبت شده امروزی کارتها

60.17.1421	شماره سابقه م.م.ا.	شماره سابقه
عصر برونز	دوره	کلکسیون
فرهنگ	3000 BC - 2000 BC	سنه میلادی
3000 BC - 2000 BC	سنه هجری قمری	3000 BC - 2000 BC
3000 BC - 2000 BC	سنه هجری شمسی	3000 BC - 2000 BC

MG Ch. 22	شماره باستانشناسی	مرجع حفاری های باستان شناسی
17	شماره سایت	DAFA
مندیگک	سایت	هیبت حفاریات
قندهار	ولایت	411
		محل کشف در ساحه

تشریح اثر
قدح با پایه بلند و کعب هموار بدنه مخروطی دهن کوچک که دربنده دارای تزئینات حیوانی و هندسی میباشد.

تغییرات وارد شده برای معلومات بیشتر به کارت قبلی مراجعه شود تغییرات وارد شده نسبت به اندازه های قبلی در تشریح دیتابیس تغییرات وارد شده نسبت به کارت قبلی

شماره موقعیت اثر	تاریخ	شماره روک / صندوق	شماره المار	دییو
1.106.Tr.M2	4/20/2013	M2	Tr	106

موقعیت

موقعیت موقتی اثر

15.00 سانتی متر
4.80 سانتی متر
به گرام

10/2

Fig. 5. Screen shot of the translingual database showing Dari text, object photography, and digital scans of paper records.

a combination of input received, international museological standards such as the Getty Museum Object Identification System, and a recurrent local feedback system.

Once the Oriental Institute staff felt like it understood the concerns of the museum administration and staff and the issues that existed, the second step was to integrate the work that had been done in previous years. This included old paper record sheets of objects (fig. 5) and specialised databases where possible. Understanding how these systems fit together, or failed to, in some cases, was crucial to create a sensible, viable, single system of recording that still reflected the original, pre-war system of the 1950s–1970s. The goal of the partnership is to integrate the pre-existing data records into a new digital system that comprise a complete inventory of current museum holdings, while having the capacity to a) link the artefact registries of the National and provincial museums, and b) record new museum



acquisitions as archaeological research resumes and heritage rescue projects develop in Afghanistan.

Alongside the work to integrate the older data and continuing development of the bilingual classification system, the OI team began training sessions meant to empower the curatorial and conservation staff members (see **fig. 6**). The topics have ranged from basic computer usage and data entry, taught one or two at a time, to workshops covering a full range of practical and academic topics relevant to Afghanistan. Of course, providing basic archival-quality materials for housing and reorganising the storage of the artefacts has been another key component of our project (**fig. 7**).

As Elizabeth Chilton and Neil Silberman point out, there are «wider issues of conflicting interpretations or conflicting domains of intangible heritage that may endure even after violent conflict has ceased» (Chilton/Silberman 2009). For this reason, we think that it is significant that the partnership has never halted any of the above steps.

This is beneficial in many ways, one being that although «the greatest resource for sustaining peace in the long term is always rooted in the local people and their culture» (Lederach 1997: 94), war and exile have disrupted the continuity of the local culture in Afghanistan (Dupree 2002). Furthermore, at the National Museum staff turnover has been high due, presumably, to the vicissitudes of a new and developing government combined with the fickle nature of a young population who grew up in either war at home or exile abroad. Through continuity and systemisation of not just inventory practices but also meta practices, we aim to establish a stronger institutional memory and sustainable set of museum practices and policies that can bear enduring national conflict and social strife.

Further to that point, the training component of the OI-NMA project includes identifying members of the museum staff with the potential for leadership and learning of advanced technical skills. By training in both larger groups and with specific individuals more closely, the project is trying to support a structure where multiple staff members have basic computer and inventorying skills and there is no «monopoly of knowledge». It is also important to support various levels of internal leadership so that when new staff arrive, there is a simple and productive system for the transmission of necessary skill sets and collection management concepts.

Another method of preparing the Museum for the future while still making rapid progress today has been the translanguality of the database. This functionality allows for instant and seamless translation of terms from Dari to English, or vice versa, as staff enter them into the text fields. This has allowed for rapid inventorying of the artefacts by reducing the time required to type in two languages. It has also standardised the terminology used in the Museum for artefact descriptions and classification, and will enable a staff whose language capabilities may change over time to produce work in both the international standard language – English – and the local standard language – Dari.

Considering Gamboni's point that «the ambivalent character of listing» values some objects of cultural heritage over others and leaves many to be lost, damaged, or destroyed (2001), the OI-NMA project endeavors to digitally record every artefact stored in the Museum. Certainly, archaeological selection and other factors already limited the number of objects preserved in the Museum, but the partnership strives to include everything, including fragmentary objects. The database's latest IT innovation features pop-up windows that display fully integrated tools for identification of artifact attributes such as a stone artefact's mineral composition, a standardised term for a particular type of jar shape, or a coin's ruler and denomination data (**fig. 8**). These features represent the next step in our efforts to ensure

Fig. 6.
Oriental Institute
(OI) staff conduct
hands-on workshop
on conservation and
rehousing techniques.



Fig. 7.
Museum staff rehouse a
Naga statue using acid-
free ethyfoam slabs.



Gold double dinar of Vima Kadphises.
c. first quarter of 2nd Century
Weight: 15.54 gm., Diam: 26 mm., Die axis: 1 o'clock
Crowned, diademed torso of king left, holding club and elephant god.
Greek legend around: ΒΑCΙΑΕΥC ΟΟΗ... ΜΟ ΚΑΔΦΙCΗC (King Vima Kadphises) /
Siva standing facing, with head turned to right, bull Nandi right behind.
Kharoshthi legend: maharajasa rajadrajasa sarvaloga ivarasa mahisvarasa Vima Kadphishasa tratarā

Gold dinar of Vima Kadphises
c. first quarter of 2nd Century
Weight: 7.95 gm., Diam: 21 mm., Die axis: 12 o'clock
Crowned, diademed torso of king left, holding club and elephant god.
Greek legend around: ΒΑCΙΑΕΥC ΟΟΗ... ΜΟ ΚΑΔΦΙCΗC (King Vima Kadphises) /
Hypophallic Siva standing facing, with head turned to left, holding mace and deer skin
Kharoshthi legend: maharajasa rajadrajasa sarvaloga ivarasa mahisvarasa Vima Kadphishasa tratarā

Gold quarter dinar of Vima Kadphises
c. first quarter of 2nd Century
Weight: 2.04 gm., Diam: 12 mm., Die axis: 12 o'clock
Crowned, diademed head of king right, framed in a window
Greek legend around: ΒΑCΙΑΕΥC ΟΟΗΜΟ ΚΑΔΦΙCΗC (King Vima Kadphises) /
Siva's trident, with axe head on shaft, tamga left, mudrapada right
Kharoshthi legend: maharajasa rajadrajasa Vima Kadphishasa

AE tetradrachm or aur of Vima Kadphises
c. first quarter of 2nd Century
Weight: 17.01 gm., Diam: 27 mm., Die axis: 12 o'clock
King standing facing, sacrificing at fire altar at left, club, tamga and ashenid-shafted trident in fields.
Greek legend around: ΒΑCΙΑΕΥC ΒΑCΙΑΕΩΝ CΩΤΗΡ ΜΕΓΑC ΔΟΧΜΟ ΚΑΔΦΙCΗC
Siva standing facing, holding trident and deer skin, bull Nandi right behind.
Kharoshthi legend: maharajasa rajadrajasa sarvaloga ivarasa mahisvarasa Vima Kadphishasa tratarā

Fig. 8. Screen shot of a pop-up catalogue for identifying coin types and series.



Fig. 9. Oriental Institute (OI) and National Museum of Afghanistan (NMA) staff inventorying artefacts.

the sustainability of not only a functioning inventory system, but also an informed curatorial staff by providing instantly accessible tools for learning and productivity.

At the time of writing, three years into the project, the partnership has inventoried over 38,000 objects in both Dari and English, more than 90% of the entire collection, each record complete with categorisation, description, photography, and conservation assessment (**fig. 9**). Alongside the inventory, it has also reorganised the storerooms and re-packaged the artefacts, using acid-free, archival-quality materials to stabilise every object for medium- and longer-term storage (**fig. 7**). This has not only made the objects safer and more accessible, but it has also accomplished the collateral achievement of transitioning entire storerooms from being under external control to being under direct curatorial control. The everyday work of the inventory is not only productive in terms of recording and making accessible the contents of the building. It features important aspects of an effective labor environment such as team-building, cooperative group work, and accountability.

The database also holds significant research capabilities highlighting a second important way that the inventory is contributing to the rebuilding of the National Museum as an institution that goes beyond simply storing and displaying objects. Research and public education are also essential functions of any museum. The completion of the inventory will greatly facilitate the National Museum's ability to develop new research projects, exhibits, and public programs as essential tools needed to re-forged the nearly-severed links between the people of Afghanistan and their rich cultural heritage.

Conclusion

Essentially, the partnership between the National Museum of Afghanistan and the Oriental Institute of the University of Chicago has tried to consider the Kabul Museum collections in light of both the problems that have developed over the past thirty years of conflict in Afghanistan and what kind of impact those problems will have on future endeavors in archaeology, curation, and preservation.

While «photographs or drawings cannot replace the actual object... having some visual record of an object certainly helps to preserve the knowledge of it» (Reichel 2008: 61). We cannot know or guarantee the physical future of this unique and priceless collection. But we can give the collection an indestructible digital existence, and this data is the surest safeguard for the survival of Afghanistan's cultural heritage. Against these future risks, we feel we have constructed a solid foundation for this and the next generation of Museum staff to protect and curate their incredibly rich but incredibly endangered collections.

Bibliography

- Brinkman, M., 2006. Reflections on the Causes of Illicit Traffic in Cultural Property and Some Potential Causes. *Hoffman 2006*: 64–67.
- Brodie, N., 2006. An Archaeologist's View of the Trade in Unprovenanced Antiquities. *Hoffman 2006*: 52–63.
- Chilton, E./Silberman, N., 2009. Heritage in Conflict and Consensus: New Approaches to the Social, Political, and Religious Impact of Public Heritage in the 21st Century. <http://www.umass.edu/chs/news/workshop.html#abstracts> (accessed 16 December 2014).
- Dupree, N., 2001. Importance of the Cultural Destruction in Afghanistan. *SPACH Newsletter* 7, 3–4.
- 2002. Cultural Heritage & National Identity in Afghanistan. *Third World Quarterly* 23/5, 977–989.
- Ferozi, A. W./Tarzi, Z., 2004. The Impact of War upon Afghanistan's Cultural Heritage, *Archaeology*. <http://www.archaeological.org/webinfo.php?page=1042> (accessed 16 December 2014).
- Friedman, G., 2010. The 30-Year War in Afghanistan. *Geopolitical Weekly*, 6/28.
- Gamboni, D., 2001. World Heritage: Shield or Target? *CGI Newsletter* 16/2. http://www.getty.edu/conservation/publications_resources/newsletters/16_2/feature.html (accessed 19 December 2014).
- Garen, M., 2004. The War within the War. *Archaeology* 57/4, 28–31.
- Goldstein, A. P., 2003. *The Psychology of Group Aggression*, New York: J. Willey.
- Grissman, C., 2001. The Recent History of Kabul Museum. *SPACH Newsletter* 7, 5–9.
- 2009. Kabul Museum. *Encyclopaedia Iranica* 15/3, 318–323.
- Herscher, A./Riedlmayer, A., 2000. Monument and Crime: The Destruction of Historic Architecture in Kosovo. *Grey Room* 1, 109.
- Hoffman, B., 2006. *Art & Cultural Heritage: Law, Policy, and Practice*, Cambridge.
- Klimbourg, M., 2008. *The Restoration of the Kafir Effigies of the National Museum of Afghanistan*, Austrian Afghan Society. Vienna: Austrian Afghan Society.
- Kluyver, R., 2001. The Retrieval of the Rabatak Inscription. *SPACH Newsletter* 7, 17–18.
- Levin, J., 2008. Putting Heritage on the Map: A Discussion about Disaster Management and Cultural Heritage. *Conservation Perspectives, the CGI Newsletter* 23/1.
- Lederach, J. P., 1997. *Building Peace: Sustainable Reconciliation in Divided Societies*, Washington, D. C.: United States Institute of Peace Press.
- Lovgren, S., 2004. 'Lost' Treasures of Afghanistan Revealed in Photos, *National Geographic News*. http://news.nationalgeographic.com/news/2004/11/1117_041117_afghan_treasure.html (accessed 16 December 2014).
- Lowenthal, D., 1989. Material Preservation and Its Alternatives. *Perspecta* 25, 66–77.

- 2000. Stewarding the Past in a Perplexing Present. E. Avrami/R. Mason (eds.), *Values and Heritage Conservation*, Los Angeles: Getty Conservation Institute, 18–25.
- Reichel, C., 2008. Cataloging the Losses: The Oriental Institute’s Iraq Museum Database Project. G. Emberling/K. Hanson (eds.), *Catastrophe! The Looting and Destruction of Iraq’s Past*. Chicago: Oriental Institute Museum of the University of Chicago, 51–64.
- Sims-Williams, N., 2012. Bactrian Historical Inscriptions of the Kushan Period. *The Silk Road*, 10, 76–80.
- Stein, G.J., 2012. The Oriental Institute-National Museum of Afghanistan Partnership. *Oriental Institute Annual Report 2011–2012*, 123–130.
- 2013. Oriental Institute-National Museum of Afghanistan Partnership and Cultural Heritage Protection Work. *Oriental Institute Annual Report 2012–2013*, 87–95.
- Wegener, C./Otter, M., 2008. Cultural Property at War: Protecting Heritage during Armed Conflict. *Conservation Perspectives*, the CGI Newsletter 23/1.

Michael Fisher, from the University of Chicago, is the Field Director of Oriental Institute-National Museum of Afghanistan Partnership (OI-NMA). Email: mtf@uchicago.edu.

Professor Gil Stein is the Director of the Oriental Institute, at the University of Chicago. Email: gstein@uchicago.edu.

Youssef Kanjou

Protection Strategies and the National Museum of Aleppo in Times of Conflict

This paper discusses the protection strategies for archaeological collections at the National Museum of Aleppo. The large number and diverse nature of the archaeological collections necessitated the implementation of a range of protection methods.¹

The National Museum of Aleppo (commonly known as the Aleppo Museum) was founded in 1931 in response to an urgent need to display the results of the archaeological projects working in northern Syria, particularly the finds emerging from Tell Halaf which formed the initial core of the Aleppo Museum exhibition. Originally the museum building had been an Ottoman palace; in 1968 it was repurposed and redesigned as the modern building that stands today. The Aleppo Museum is divided into five sections: Prehistoric, Ancient Syrian Antiquities, Classical, Islamic, and Modern Art.

From the outset, the Aleppo Museum exhibited the history of northern Syria, for this reason it is sometimes called the North Syrian Museum. Its collection includes the most important finds from the archaeological sites of the Syrian Euphrates River valley and Dead Cities. With the construction of two hydroelectric dams on the Euphrates River, more than 60 archaeological teams executed excavations in this area, and all the discoveries came to the Aleppo Museum (Del Olmo/Fenollos 1999; Freedman 1979). Over time the contents of the Aleppo Museum grew with the increased number of archaeological excavations in northern Syria. Later when regional museums were opened in Raqqa, Deir ez-Zor and Idlib many objects were relocated to these new institutions, but much pressure remained on the Aleppo Museum to find space for its ever expanding archaeological collections. The Aleppo

1 The author would like to thank the organising committee of the 9ICAANE in Basel. The author would also like to thank to Andrew Jamieson for organising the workshop: Collections at Risk: Sustainable Strategies for Near Eastern Archaeological Collections Management. Finally, the author would like to thank to Professor Jean-Marie Le Tensorer for supporting his participation at this congress.

Museum also carries responsibility for curating and disseminating knowledge on its specialised subject area: Ancient Syrian antiquities dating back to the Bronze and Iron Ages. This is in contrast with the National Museum of Damascus which focuses on the Classical and Islamic periods.

Of primary importance for the Aleppo Museum is its curation of original collections from the major kingdoms of ancient Syria: Mari, Ebla and Ugarit. The Museum also exhibits some of the most important world cultures in the Middle East, such as Achulian, Mousterian, Aramaean, Babylonian, Hittite and Assyrian, which are all displayed at the museum in chronological order (Akkermans/Schwartz 2003).

The recent conflicts in Syria have put this highly significant collection at risk. The conflict began on March 15th, 2011 with peaceful protests but soon took the form of armed conflict which continues until now. Meanwhile, many of Syria's archeological sites are at risk. There are over 10,000 documented sites, from prehistoric times up to the present. The main periods are represented: Paleolithic, Neolithic, Halafian, Sumerian, Akkadian, Babylonian, Assyrian, Hittite, Aramaean, Hellenistic, Roman, Byzantine, Islamic and Ottoman. These archaeological sites are concentrated in three main areas: northern Syrian (Euphrates River valley), north-western Syria (Dead Cities) and southern Syria (Orontes and coastal region). All these areas are now scenes of very severe and intense conflict.

The current situation has affected the status of archaeological sites and museums of Syria in a loss of support both in terms of security and funding. In addition, sites and museums often lay within the circle of armed conflict as in the cities of Homs, Raqqa, Aleppo and Deir ez-Zor. Heritage sites have suffered as the rest of Syria, both socially and economically due to illegal excavators active throughout Syria. A number of factors are contributing to the problems, including archeological sites been used as military bases, the construction of modern buildings over ancient sites, and the loss of artefacts either directly or indirectly through theft or vandalism. The overall lack of resources and awareness relating to the importance and the role of heritage in society results in lack of respect among the combatant parties, and the inability of the community to contribute to the protection of monuments.

In particular, Syrian museums have undergone several robberies since the beginning of the conflict. According to official reports, the first was at Hama Museum where an important artefact was stolen (a gold statue of a god dating back to the 2nd millennium BCE). Around 30 pieces were stolen from the Marra Museum. Several boxes containing hundreds of objects were taken from the Raqqa Museum. Similarly, one piece was stolen from the Apamea Museum. Seventeen objects were looted from the Archaeological Museum of Jaabar (Abdulkarim 2013). Objects were also stolen from the storage repositories of many archaeological missions, such as Tell Brak, Tell Bazi, Tell Al-Karkh, Tell Sheikh Hamad, Apamea, Andrin and Tel Saka. Recently the biggest looting was from the Heriqalah storage repository where one military group stole around one hundred archaeological pieces. The

Syrian authorities have confiscated stolen objects intended for smuggling from several areas since the beginning the conflict. So far, the number of antiquities rescued totals 4,000 pieces dating back to different periods (Abdulkarim 2013).

Before the war spread to neighboring countries such as Iraq and Lebanon, their museum staff established protection plans for the museum collections. In the case of Beirut, museum staff sent the small valuable objects, the gold, and other major pieces, to the French Archaeological Institute in Damascus. Other objects were placed in the underground chambers of the Crusader Castle in Byblos, north of Beirut. Some objects stayed in the museum; most of the delicate objects were stored in cardboard boxes in the staff offices on the second floor and the more sturdy objects were placed on shelves in the basement storage rooms. The larger objects, such as the sarcophagi, the floor and wall mosaics and statues, were covered with concrete (Al-Radi 2003).

In Iraq, all of the moveable objects on show in the galleries were taken down and hidden in the storerooms or in bomb shelters around Baghdad. The larger objects and statues were left in place and foam rubber pads were placed around them for protection. Foam rubber was also strategically laid or wrapped around smaller objects and placed on the face of the Assyrian reliefs, as well as on the floors of the storerooms. The manuscripts and ancient scrolls were removed and deposited in a bomb shelter in western Baghdad. Archival material was packed into boxes and distributed in Shiite neighbourhoods where they could be guarded by clerics. The gold jewellery from the Royal Tombs of Ur and those from the Royal Tombs of the Assyrian Queens in Nimrud (totaling some 7,360 pieces) had already been deposited in the vaults of the Central Bank of Iraq before the Gulf War of 1991 (Rothfield 2008; Wegener/Otter 2008; Al-Radi 2003).

Action Plan to Save the National Museum of Aleppo

Due to security developments and based on previous experience observed in Egypt, Iraq, and Libya the Aleppo Museum begun developing an action plan to safe guard and protect the north Syrian archaeological collections. Seeing the conflict unfolding in Syria was much like a repeat situation of what transpired in Iraq. The staff of the Aleppo Museum studied the experiences in Iraq very carefully and took from it lessons and ideas about how best to protect Syria's heritage.

The conflicts in Syria started in March 2011, and over time, it has become more acutely necessary to take action to protect the archaeological collections in the Aleppo Museum. The museum specifically adopted the following four principles:

1. Evaluation of the evolving security situation: the security situation in Aleppo city has changed throughout the conflict. For one year there was no police near the museum, but this changed as the armed conflict came closer to the museum using different types of weapons, including car bombs, posing an increased threat to the staff attending the museum every day.
2. Evaluation of the artefacts: the objects were divided into three groups based on significance, and depending on their importance as well as on storage requirements they were further divided into two categories: first degree and second degree. This was necessary because the size of the Aleppo collection did not allow the same protection for all material.
3. Evaluation of the types of risk: staff started to consider the variety of risks involved. Will the objects be stolen by thieves or armed groups? Will there be big or small shells or bombs?
4. Evaluation of evasive precaution and camouflage: it was necessary to change the layout of the museum so that no one entering inside the museum to loot it could find material, in contrast to the previous plan which was well known by all.

The overarching aim was to protect the museum without guards or any other persons, or in other words, ensuring that if thieves or armed groups entered into the museum, they could not take anything or even access the artefacts due to a number of obstacles impeding access to them. During the planning of the protection strategies the Aleppo Museum went through several stages. In the first stage, the security situation (2011) was still acceptable so artefacts were moved from the galleries and showcases to warehouses. Original objects were replaced with replicas. At that time it was believed that the main danger was thieves attempting to loot the museum.

At the same time, museum staff updated the digital archive system. At the end of 2011 and beginning of 2012, all the artefacts were catalogued and entered into the Syrian museum database. This process began in Aleppo, occurring in two stages. Each stage took 21 days and involved working with the students of the Archaeology Department at the University of Aleppo: comprising two groups, each one containing 15 students. Also at that time as the security situation progressed, staff moved the very important artefacts, over 5% of the collection, to a safe place outside the museum.

All this work was undertaken during 2011 when the security situation was relatively stable. However, in the following year the armed forces entered the city and the surroundings and the clashes came nearer to the museum, especially the terrorist attack on the city centre in the beginning of October 2012, where 4 car bombs exploded and greatly damaged the museum infrastructure. It broke all the windows, the artificial roof, light system and the showcases, as well as injuring some workers and curators. Fortunately no artefacts were



Fig. 1. The Mari display section at Aleppo Museum, after the 4 car bombs exploded in Aleppo city centre, near the Aleppo Museum.



Fig. 2. The damage inside the Classical section of Aleppo Museum (the objects on display are copies).



Fig. 3. The protection procedure of the large stela from Tell Ahmar at the Aleppo Museum.

damaged in the bombings. This soon became almost a daily routine, with the museum being targeted by multiple shells and bullets. Two mortars landed in the garden of the museum, two on the outer wall of the museum and one in one of the halls (recently snipers have begun to observe the main door) (**figs. 1–2**).

These events led to more protection and additional security measures. The museum began supporting all the statues and mosaics with sand bags (bag dimensions 50 x 50 cm), both inside and outside the galleries (**figs. 3–4**). All the halls and storerooms were sealed off with metal (fire proof) doors and reinforced with concrete. For the protection of the objects in the garden sand bags and bricks were used for protection. In order to ensure security of both the museum and the employees and obstruct armed groups entering to the museum, some staff remained inside the museum at all times. At this time the museum housed a number of guards and curators (the families of six guards and three curators were based at the museum). For two years now they are permanently living in the museum. The museum's general safety plan has contributed to the protection of artefacts in the museum. In comparison with other Syrian museums, there is a notable difference in the protection procedures.



Fig. 4. The implementation of the protection plan of the Aleppo Museum entrance.

For example, in the museum at Raqqa and Marra pieces were not protected in any way thus being exposed to theft and vandalism.

Though most important pieces resided in safety for a long time, many other significant pieces have been left to a less secure fate. It is impossible to protect all artefacts to the same degree and any kind of damage to any piece constitutes a real disaster for Syria. As part of protection strategy, museum staff re-evaluate the protection plan every day. Even though the strategy has been set it has not been possible to execute the full security plan allowing for the most thorough protection because of a lack of economic support. The museum still needs considerable support in order to strengthen its protection. The museum remains in grave danger owing to the current situation, with the use of heavy weapons threatening to destroy a section of the museum at any moment.

Future Rehabilitation Plan of the National Museum of Aleppo

At this point the National Museum of Aleppo is thinking about the future in two key areas or stages. The first step involves reinforcing the protection of museum for the preservation of the most artefacts possible. The museum is also considering how it can change some of the

protection strategies that are geared towards short-term security. Early on, it was assumed the war would end quickly. However, now that it has proven more long-term it is necessary to change plans to suit the new circumstances (no more explanation is possible about this stage for security reasons). The second step or question relates to how the museum will change? Will the role of the museum stay as it is? Will it only display artefacts? Similarly, how can we face the big disasters in our heritage sites and museums? Also, why do museums not receive attention from civil and military people, especially in time of conflict?

The museum believes it should play a significant role in the community, and therefore believes that rehabilitation of the link between the museum and the community is critically important. The biggest lesson learnt from these past events is the devastating effects of the absence of such a relationship. The local community needs to take a supporting role safeguarding the museum (Boylan 2002).

For that reason from 2011 to 2012 the staff began a program to connect the Aleppo Museum to the community. Museum staff organised a number of activities with primary and secondary schools from different areas in Aleppo city in cooperation with several NGO associations. The activities included a writing competition with stories inspired by local museums, a rally at the Aleppo citadel and at other heritage sites. Such activities drew a lot of interest from the students and their families. These pilot activities aimed at exploring opportunities for using cultural heritage as a vehicle for socio-culture development, mobilising community initiatives using social organisations and volunteerism in cooperation with the Aleppo Museum. The museum is now considering its role in the reconstruction endeavour: including the construction of national identity and civil peace. This could be rebuilt through the common history of all spectrums of Syrian people and focused through the presentation of different ancient cultures in the Aleppo Museum from Aramaic, Assyrian and Babylonian, as well as Muslim and Christian faiths.

At the same time the museum believes it must take a role in rebuilding a new relationship between society and heritage institutions. This means the community must participate in some way in museum practices; this can be through outreach activities outside the museum in cooperation with social groups. Such activities can take place in cultural centres, NGO centres and markets or organisers can invite the community to present their heritage, both tangible and intangible in the museum. This way contact can be established between museum and society, informing more people about museums. The activities in museums will come to play an important part in the daily lives of the people, this will help to increase the knowledge about heritage and ensure its protection when necessary (Mhando Nyangila 2006; Kila/Zeidler 2013).

The Aleppo Museum is now looking to the local community to take initiative in cultural heritage protection, as cultural heritage represents the identity of a community, stemming from the past but living today and being transmitted to present and future generations. The

protection of cultural heritage has mainly been focusing on the heritage itself and not to the people for whom it has meaning. However, if the aim is to preserve the cultural heritage in the time of conflict, it is important not only to focus on the protection of the objects, but also to promote a community's ownership of that cultural heritage (Jaramillo 2012). In this sense, heritage recognition constitutes a priority and a vehicle towards peace. That means we must not just look to heritage, but to the people, and community. One problem now is that many people cannot understand what the sites and museums are displaying and why they are important. It is essential to establish relations between the community and the local heritage. No doubt that this heritage belongs to the community, the members of which are also the main component of this heritage. Without society there is no sense of heritage. Heritage is a cumulative process of communal cultural products over time. It is also a key element of identity, and it serves as a connection between the community and the land, a connection that can become a motive for peace (Kila 2012; Bevan 2006).

Research into the causes of the destruction of Syrian heritage have found that the main reasons were the weak role of community resulting in a negative effect during the civil war; the rapid change from a small contained struggle to an armed conflict, followed by the absence of any consideration to the protection of museums. However, due to lack of awareness on the importance of heritage and the lack of knowledge in the community, as well as the aftermath of armed conflict, the community's role was limited. As the fighting intensified local communities were pushed to abandon sites and left the area to armed groups, with no attention to or awareness of the importance of archaeological sites. Early on, the communities established some initiatives for the protection of museums. For example, the Marra Museum, was first protected by the local community but the increased violence of the conflict forced them to leave it under the protection by the Free Syrian Army.

At the same time, the museum notes, in the case of Syrian heritage, that the initiatives for the protection of heritage coming from individuals and associations seem more active than those coming from the official authorities. Individual initiatives work on different levels: through social networking or work on the ground or communication with local communities and international organisations. In this case, all societies have certain core values and principles whether social, economic or religious, and work to stimulate the society through the development of those principles to the protection of heritage and identity. These forms are ultimately interlinked and cannot be separated; rather they must be incorporated into the practices of both museum and community.

Conclusion

So far there is no sign the war will stop especially in Aleppo. For this reason it is now necessary to develop a plan for the long-term protection of the museum objects. In order to achieve this staff of the Aleppo Museum are constantly looking for new ideas or suggestions from archaeologists and non-archaeologists who have experience in the working of museums in times of conflict. Staff of the Aleppo Museum are prepared to cooperate internationally in this matter, because it is believed the Aleppo Museum is not just a museum for the Syrian people, it is for all humanity. Many key materials for studying world civilisation exist in the collection of the Aleppo Museum. In particular the museum is hoping for ideas from survey and excavation teams who have extensive working experience of the Aleppo region and have a deep knowledge of the importance of the museum. Their help is indispensable in dealing with the current crisis and they are motivated to so as the joint owners of many of the objects in Aleppo National Museum.

Bibliography

- Akkermans P./Schwartz, G., 2003. *The Archaeology of Syria: From Complex Hunter-Gatherers to Early Urban Societies (ca. 16, 000–300 BC)*. New York: Cambridge University Press.
- Al-Radi, S., 2003. War and Cultural Heritage: Lessons from Lebanon, Kuwait and Iraq, De Kracht van Cultuur. http://www.krachtvancultuur.nl/actueel/2003/oktober/war_and_cultural_heritage.html (accessed 22 October 2014).
- Abdulkarim, M., 2013. *The Archaeological Heritage in Syria During the Crisis 2011–2013*. Damascus: DGAM.
- 2013. *خبير اثار سوري: 20 مليار دولار قيمة الاثار المهربة الى الخارج*، رقماليس دقيقاً. Arabic News. http://arabic.news.cn/culture/2013-03/12/c_132226157.htm (accessed 22 October 2014).
- Bevan, R., 2006. *The Destruction of Memory: Architecture at War*. London: Reaktion.
- Boylan, P., 2002. The Concept of Cultural Property Protection in Times of Armed Conflict: From the Crusades to the New Millennium. N. Brodie/K. W. Tubb (eds.), *Illicit Antiquities: The Theft of Culture and the Extinction of Archaeology*. *One World Archaeology* 42. London. 43–108.
- Del Olmo Lete, G./Montero Fenollos, J.-L. (eds.), 1999. *Archaeology of the Upper Syrian Euphrates. The Tishrin Dam Area*. Proceedings of the International Symposium held at Barcelona, January 28th–30th, 1998, *Aula Orientalis Supplementa* 15. Barcelona.
- Freedman, D. N. (ed.), 1979. *Archaeological Reports from the Tabqa Dam Project, Euphrates Valley*. Cambridge, MA: American Schools of Oriental Research.
- Jaramillo, C. M., 2012. Beyond the protection of material cultural heritage in times of conflict. S. Lambert/C. Rockwell (eds.) *Protecting Cultural Heritage in Times of Conflict*. ICCROM.

- Kila, J. D., 2012. *Heritage under Siege: Military Implementation of Cultural Property Protection Following the 1954 Hague Convention*. Leiden: Brill.
- Kila, J. D./Zeidler, J. A. (eds.), 2013. *Cultural Heritage in the Crosshairs: Protecting Cultural Property during Conflict*. Leiden: Brill.
- Lambert, S./Rockwell, C. (eds.), 2012. *Protecting Cultural Heritage in Times of Conflict*. ICCROM.
- Mhando Nyangila, J., 2006. Museums and community involvement: A case study of community collaborative initiatives, National Museums of Kenya. INTERCOM 2006. Proceedings of the Annual Meeting and Conference of the International Committee on Management (2–4 November 2006). Taipei. <http://www.intercom.museum/Taiwan2006a.html> (accessed 22 October 2014).
- Rothfield, L., 2008. *Antiquities under Siege: Cultural Heritage Protection after the Iraq War*. Lanham MD: Rowman Altamira.
- Wegener, C./Otter, M., 2008. Cultural Property at War: Protecting Heritage during Armed Conflict. Getty Newsletter 23.1. http://www.getty.edu/conservation/publications_resources/newsletters/23_1/feature.html (accessed 22 October 2014).

Youssef Kanjou, National Museum of Aleppo, Syria; currently based at the National Museum of Ethnology, Osaka, Japan. Email: youssefkanjou@gmail.com.

Cheikhmous Ali – Martin Makinson – Philippe Quenet

Syrian Museums under Threat: an Overview

This paper provides an overview on Syrian museums since the beginning of the armed conflict. It reports on the damage and threats. It also discusses the activities and recommendations of APSA (The Association for the Protection of Syrian Archaeology).

Museums appear in the Syrian law on antiquities, which stipulates the inalienable character of moveable antiques and objects. The 38 Syrian museums were organised in broadly different categories, reflecting the role assigned to them and their aims. Those of the territories of Damascus and Aleppo display collections of cultures from all over Syria's territory (**fig. 1**), while regional museums, twelve in number, exhibit collections from their respective areas. The seven museums of popular arts and traditions illustrate society's material heritage, without however dealing with the issue of immaterial heritage, absent from discussions despite its importance. Finally, about ten specialised museums present a narrative focusing on a particular theme, for instance medicine and science in Damascus and Aleppo. To this panel, one must add museums that showcase objects from a particular site, as well as didactical material enabling the interpretation of remains. Three site museums were developed in Syria, in 'Arwad, Doura-Europos and in the Aleppo citadel.

These 38 museums enclose collections consisting of hundreds of thousands of objects and archaeological and traditional treasures from various periods, as well as artworks – paintings, sculptures – created by contemporary Syrian artists.

Prior to 2011, the museums of Syria were monitored in a way no better than archaeological sites, because of deficiencies in – or even the total lack of – security measures, in protection, in the archiving of records, and in object conservation. These museums were not ready to face a situation that destabilised all Syrian cities as from the second half of 2011. Ever since, they have been exposed to four categories of threats and destructions:

1. Shortcomings in security, safekeeping and archiving measures;
2. Transformation of some museums into military barracks;
3. The bombing of some museums, transformed into targets, since they have

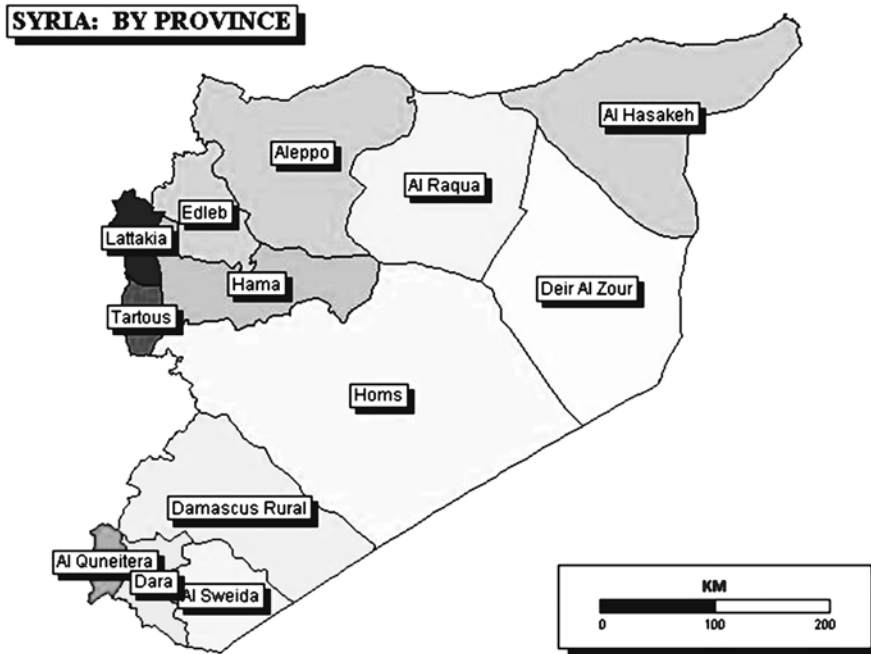


Fig. 1. Map of Syria Governorates (source: <http://www-personal.umich.edu/~copyright/image/solstice/sum02/animapssyria.html>).

become battlefields;

4. Looting and vandalism suffered by several museums.

To begin with, it should be noted that in 2012, the General Directorate of Antiquities and Museums (DGAM) had safeguarded some museums – for instance at the Damascus and Aleppo National Museums – whose showcases in rooms had been emptied beforehand, and objects and small finds deposited in basements protected by steel doors and guards. They also put precious objects from some museums in safe places, while for others protective measures have been wanting, for instance at Apamea which to the present day is unprotected.

Information gathered until now (i.e. June 10th 2014) by the Association for the Protection of Syrian Archaeology (APSA) enables us gain a general impression of different types of damage affecting museums.

Damascus Governorate

National Museum of Damascus

According to news spread by the DGAM, most collections in the National Museum of Damascus have been placed at a safe location.

The Museum of Arabic Calligraphy in the Old City of Damascus

This museum, housed in a building constructed in the Mamluk period (15th century AD), is located to the north of the Great Umayyad Mosque. On January 31st 2013, it was hit by a shell, which, according to the DGAM, damaged part of the southern facade and made windows explode into pieces (DGAM 2014).

N.B.: The Historical Documentation Center, which is part of the Historical Museum of Damascus, houses approximately four million paper documents covering a time span of more than 500 years. Conditions of conservation are notoriously precarious in this building and expose its collections to potential threats.

Rif Dimashq Governorate (Damascus Countryside)

In this governorate only limited information is available so it is difficult to accurately assess the extent of damage and destruction.

The Deir 'Atiyeh Museum

In November 2013, the Deir 'Atiyeh Museum was subjected to looting. Several traditional weapons and silver jewelry pieces were looted. Moreover, some parts of the building's structure (built in 1991) were damaged by fighting (DGAM 2013a).

Homs Governorate

The Homs Archaeological Museum

The Homs Archaeological Museum was affected by damage of different kinds. A video broadcast by the BBC in 2012 shows that several walls were ripped apart to create safe passages for intruders. The doors are open. The objects are therefore under threat of theft and destruction. Even though the museum is to this day under regime army control, no new detailed information on the building or the objects housed in it has been disseminated. The DGAM's recently published report is not in agreement with the one broadcast by the BBC in 2012. Its reliability and credibility are therefore dubious (APSA 2013a, DGAM 2014b).

The Museum of Popular Arts and Traditions of Homs (Zahrawi Palace)

This is Homs' second museum in importance. It is located within the Zahrawi Palace (Qasr al-Zahrawi), a residence built in the 19th century. It was transformed into a military entrenchment by the regime's armed forces. Walls of sandbags were erected, behind which snipers were posted.

On January 26th 2011, the Free Syrian Army took control of the building. Dissidents have spread several testimonies on the state of the building and the damage it suffered. According to photographs and to videos published by the opposition, a large proportion of the objects of this museum were damaged or destroyed. Intruders even broke the Byzantine sarcophagi stored in the basements. The museum was subsequently bombed by the regime's army, on September 17th 2012. Part of the first floor's facade was destroyed (APSA 2012a) (**fig. 2**).

The Archaeological Museum of Palmyra

Information transmitted in 2011 by our APSA correspondent in Palmyra described a snipers' brigade established on the museum's roof. The museum was subjected to slight damage due to an artillery shell. Snipers are nowadays posted elsewhere, according to information at hand (DGAM 2012a, 2013b).

Hama Governorate

The Hama Archaeological Museum

In this museum, the statuette of an Aramaean deity, dating from the 8th century BCE, made in bronze and plated in gold, was stolen in August 2011.

According to our best knowledge, the theft was committed with the assistance of insiders or of a civil servant from the Hama Archaeology Department, since this theft was carried out without forcing any of the doors. Some people were apparently arrested, but neither pro-regime media nor the General Directorate provided any news on the enquiry.

The Taybet al-Imam Museum

This museum houses the largest mosaic discovered to this day in Syria. It covers a surface of approximately 600 sq. m. and is dated to 242 AD. Due to the bombings occurring nearby, the building was damaged. Office furniture and computers were plundered. To this day, one still does not know whether the mosaic has deteriorated or not (DGAM 2013c).



Fig. 2. Homs, Zahrawi Palace: front facade of the building before and after the bombing of Sept. 2012 (source: APSA correspondent in Homs).

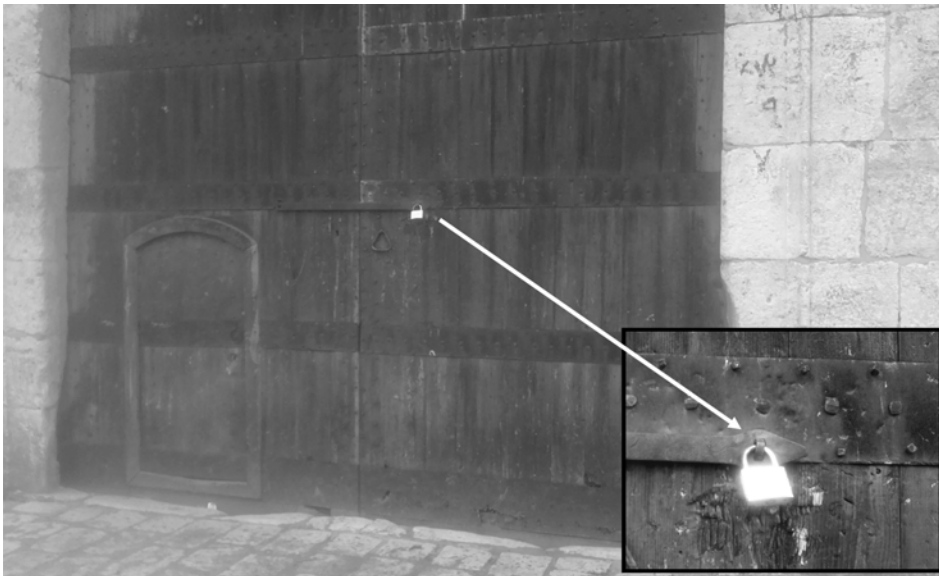


Fig. 3. Hama, Apamea Museum: the main entrance to the museum is locked with a small ordinary padlock (source: Hussayn Kenag, APSA correspondent in Qala'at al-Mudiq).

The Apamea Museum

This museum is located in the Khan al-Mudiq, which was built in the 17th century. Its collections include statues, tombstones and mosaics discovered in the Apamea region. Several Websites have mentioned a stolen statue of the classical period, while the DGAM signaled the theft of a marble object, however without providing more detail.

We emphasise the fact that in this museum, devices for protection are almost non-existent (**fig. 3**). This museum is currently under threat and appropriate protective measures must be taken, particularly the installation of bolted doors and alarm systems to protect the building and archaeological collections in the exhibition rooms and storage areas (APSA 2013b).

Idlib Governorate

The Idlib Archaeological Museum

We have no details on this museum, as violent fighting has engulfed the city of Idlib. A photograph transmitted shows that the entrance to this museum was affected by slight damage and that a military force (soldiers of the regime's army) have set up camp and weapons storage in the museum courtyard.

The Ma'arat al-Nu'man Museum

Contrary to the DGAM's announcements, the Ma'arat al-Nu'man Museum, which houses the most important collection of mosaics in the Middle East and covers a surface of almost 2000 sq. m., was destroyed following daily aerial and massive bombings, also affecting the city. The latter has been under Free Syrian Army control since 2012 (APSA 2012b, 2012c, 2012d).

The old museum was known under the name of Khan al-Qashlah, and is located next to the newly-built museum. It was transformed into a regime army military entrenchment until August 2011. Following this, the Free Army took control of the building and the new museum. The latter is currently protected by the fighters of the Martyr's Brigade of Ma'arat al-Nu'man. According to this brigade, various objects were stolen by regime soldiers. The theft included approximately 30 ancient coins, baked earth figurines and small objects dated to the Islamic period (DGAM 2013d).

At the beginning of October 2012, a bomb from a MIG fighter jet fell within the vicinity of the museum. Until now, this Ottoman period building has suffered from five shells and one of them, while exploding, blasted some of the doors and windows, but also the showcases for exhibits, obliterating a few faience objects in the process. Basalt objects exposed in the museum courtyard were also damaged (**fig. 4**).



Fig. 4. Idlib, Ma'arat al-Nu'man, Museum courtyard: a Roman basalt door before and after the bombing of Oct. 2012 (source: Marwan al-Hamid, APSA correspondent in Idlib).

Worthy of mention is the fact that during the fighting opposing both sides, two mosaic panels were damaged (bullet impacts) (fig. 5).

Aleppo Governorate

Aleppo Archaeological Museum (National Museum of Aleppo)

According to information published by the DGAM, the rooms of the Aleppo Museum have been emptied and valuable objects have been moved to a safe place. A report of the same institution states that the building suffered material damage due to an explosion in Sahat al-Jabri on October 3rd 2011: the suspended ceiling collapsed, windows were blown up and a curator and two public officers were injured. Later on, because of the explosion of a car bomb, the museum suffered renewed damage on January 2nd 2013. In May 2014, shells have damaged a few walls and have slightly injured public officers (DGAM 2012b, 2014c, 2014d).



Fig. 5. Idlib, Ma'arat al-Nu'man Museum: bullet impacts on a mosaic panel (source: Marwan al-Hamid, APSA correspondent in Idlib).

Science and Medicine Museum of Aleppo (Bimaristan Argun)

This building was built in the Mamluk period in AD 1354. It was meant to be a psychiatric hospital. It suffered from destruction following the fighting between regime forces and the Free Syrian Army. A few pictures posted on social networks in 2012 show broken plaster replicas of busts of famous physicians and surgeons. In the hallway, weapons and mattresses are thrown haphazardly on the ground (APSA 2012e).

In 2013, SAPAH (Syrian Association for Preservation of Archaeology and Heritage) members were able to enter the museum in order to put away objects and they locked the doors.

The Museum of Popular Arts and Traditions of Aleppo

According to information disseminated in DGAM reports, the Dar Ajaqbash building in the Jdeideh quarter, which is from the Ottoman period (built in 1757) and houses the Museum of Popular Arts and Traditions of Aleppo, was also partly destroyed following fighting between the regime's army and the FSA. A number of the wooden ceilings were damaged, a few walls were shelled, doors, windows and showcases made of wood have vanished because of theft. Moreover, some traditional objects made of glass, weapons like



Fig. 6. Aleppo, «Poche House»: evidence of degradation and looting (source: SAPAH).

Baghdadi daggers, arrowheads and other important items like textiles and traditional robes were plundered (DGAM 2013e, 2014e).

The House of Adolphe Boucha, Belgian Consul in Aleppo

The Consul's house, also called «Poche House», housed a library, as well as several collections of ancient and traditional objects. Some were looted between 2011 and 2012.

In June 2013, members of SAPAH and DAA (Department of Archaeology of [the Free City of] Aleppo) managed to enter the house and to record previous damage and degradation during this visit (**fig. 6**).

On June 18th 2013, they packed and moved the objects, in cooperation with the Free Syrian Army and the Council of Aleppo Province, and delivered them into the hands of this Council (APSA 2013c).

The Educational Museum

The Educational Museum contains objects dated between the 18th and 20th century. It is located on the frontline and has suffered from damage and theft.



Fig. 7. Heraqla, the Raqqa Museum Deposit: storage conditions before the looting (source: DGAM of Syria).

In October 2013, The Free Council of Aleppo Province published a report concerning this museum, describing its current state. They also moved its collections to a safe location (APSA Aleppo Museum).

Raqqa Governorate

The Raqqa Archaeological Museum

Information received from Syria appears to certify that this museum has undergone no destruction so far. Nevertheless, nine coffers containing ancient objects from several archaeological sites in the governorate were forced and looted.

In August 2013, a committee of the Raqqa Museum was able to check the state of objects preserved in three coffers guarded by the Liwa (Brigade) al-‘Azza Lillah at Tabqa. This check showed that this coffers’ content was intact. The finds are now under the custody of the Liwa (Brigade) al-‘Azza Lillah.

As for the six remaining coffers, we have no information. Moreover, the situation of the Raqqa Museum is very worrying because at any moment, terrorists from the Islamic State of Iraq and the Levant (ISIL), who control the city, could place dynamite in this institution and destroy all objects remaining in showcases (Ar-Raqqah Museum).

The Raqqa Museum of Popular Traditions

It is under similar threat to the city's Archaeological Museum, since it is not protected in any satisfactory manner.

The Qala'at Ja'abar Museum

Several Websites spread news mentioning that this museum suffered from the theft of seventeen figurines dated to the 3rd millennium BC, originating from Emar and Tell Selenkahiyeh.

Moreover, a laconic report written by the DGAM merely informs that «seventeen objects were stolen in an ancient tomb at Qala'at Ja'abar», providing no details or photographs likely to help Interpol in its search for these exhibits.

Heraqla, the Raqqa Museum Deposit

Information from Syria spoke of the plundering by an armed gang of a storage deposit containing objects from several archaeological sites located in Raqqa's vicinity. Hundreds of objects were looted (**fig. 7**).

The storage room had been the focus of recurrent attacks perpetrated by armed gangs determined to loot it. These attacks had previously been repelled by guards and volunteers of the local community, but in August 2013, a brigade of almost one hundred armed fighters was able to remove and transport all the objects kept in the storage deposit. None of these objects could be located after the event. It is feared that they have already been illegally exported and are being sold illicitly on the international antiquities market (DGAM 2013f, 2013g).

Deir ez-Zor Governorate

The Deir ez-Zor Archaeological Museum

According to information sent to us by activists on location, and according to video footage posted on the Internet, regime army forces have settled in the museum and camped in the surrounding garden since the beginning of military intervention ordered by the regime against this city. We were informed that snipers were posted on the museum's rooftops and that checkpoints were set up around the building, a decision motivating several FSA attacks.

According to a DGAM short report, the museum was slightly damaged (DGAM 2013h).



Fig. 8. Doura-Europos, site Museum: evidence of vandalism and looting (source: <http://www.shoofeemafee.com/index.php?type=main>).

The Deir ez-Zor Museum of Popular Arts and Traditions

This museum was severely damaged: the main doorway and windows were broken into, objects were stolen, replicas of people in traditional costume were smashed and several museum items were looted. Video footage shows the building's current state and the damage to paintings made by contemporary artists of the Deir ez-Zor region (APSA 2012f).

The Doura-Europos Museum

The site of Doura-Europos was subjected to massive plundering and illicit excavation, the dig house was burgled and the site museum was damaged. Looters smashed the molded reconstructions of objects, stole the contents of showcases and proceeded to illicit digging. Office material belonging to the excavation was taken away. The most recent information signal that the museum – known as the «Roman House» – was subjected to new destructions: the roof beams for instance were stolen (APSA 2012g) (**fig. 8**).

Summary of Destruction

This report on the 38 museums clearly shows the following facts:

1. Five museums were transformed into military barracks: Idlib, Deir Ez-Zor, Raqqa, Qala'at Ja'aber and Ma'aret an-Nu'man Museums;
2. Thirteen Syrian museums were damaged to various degrees because of fighting, vandalism and bombing. We can classify these destructions into these categories:

- a) The structure of buildings of six museums was subjected to slight damage: the Museum of Arabic Calligraphy in Damascus, the Deir Attiyeh Museum in Rif Dimashq, the Palmyra Museum, the Taybet al-Imam Museum in Hama, the Educational Museum and the House of the Consul Bocha in Aleppo.
- b) The structure of buildings of two museums has suffered from moderate damage: the Aleppo Archaeological Museum and the Museum of Science and Medicine in the same city.
- c) The core structure of three museums was severely destroyed: the Ma'arat al-Nu'man Museum, the Homs Archaeological Museum and the Museum of Popular Arts and Traditions (Qasr al-Zahrawi) in Homs.
- d) Two museums were subjected to vandalism: the Doura-Europos Museum and the Museum of Popular Arts and Traditions in Deir ez-Zor.

3. Fourteen museums were subjected to looting:

The Doura-Europos Museum, Consul Poche's house in Aleppo and the Educational Museum in the same city;

Four museums of popular arts and traditions;

Six archaeological museums (those of Qala'at Ja'aber, Ma'aret an-Nu'man, Apamea, Hama and Homs) and an excavation storage deposit (the Heraqla storage deposit west of Raqqa).

All the information above has been gathered and classified by APSA. They were directly collected on the ground by APSA members or sympathisers in Syria, or provided by other Syrian individuals or local associations concerned with their national historical and archaeological heritage. Other sources are the global media (the Internet, the TV channels and the newspapers) and the DGAM of Syria.

Conclusions

As concerns the protection of museums, many may feel we are generally impotent. In reality, actions – modest but effective – could partly remedy the present situation. With teams on the ground in several Syrian governorates, our NGO, in partnership with other local associations, can quickly undertake the following steps if funds are allocated:

1. Reinforce the protection of certain museums like the Museum of Science and Medicine in Aleppo, the Apamea and Hama Museums. This, provided security conditions are fulfilled (at Apamea for instance, they should not be targeted by snipers positioned on rooftops in the Mudiq citadel);
2. Replace and lock doors, as those of the Ma'rat al-Nu'man Museum, so as to protect it from theft.

Actions of this kind, implemented punctually and independently by NGOs, would be all the more crucial because international organisations do not have the appropriate means and structures to commit their forces at this small scale. Nor is this part of their broad and official assignments. Syria provides a case for a possible «guerilla» of sorts to rescue heritage that should incite us not to rely only on national and supra-national institutions, but on small, mobile and reactive groups as well.¹

1 Authors have cosigned this contribution on behalf of *The Association for the Protection of Syrian Archaeology*.

Bibliography

- APSA, The Association for the Protection of Syrian Archaeology. Strasbourg. <http://www.apsa2011.com/> (accessed 10 December 2014).
- Aleppo Museum. Strasbourg. <http://www.apsa2011.com/index.php/en/provinces/aleppo/museums.html> (accessed 10 December 2014).
- Ar-Raqqah Museum. Strasbourg. <http://www.apsa2011.com/index.php/en/provinces/ar-raqqah/museums.html> (accessed 10 December 2014).
- 2012a Homs Musée palais Al Zehrawi. Protect Syrian Archaeology. <http://youtu.be/SsrGUtPRzp8> (accessed 16 December 2014).
- 2012b ASL protège le Musée de Maara 15 08 2012. Protect Syrian Archaeology. http://youtu.be/_NGF7E5g4BQ (accessed 16 December 2014).
- 2012c ASL protège le Musée de Maara 20 08 2012. Protect Syrian Archaeology. <http://youtu.be/EkLBiwDua-k> (accessed 16 December 2014).
- 2012d AFP Maaret al-Numan historic museum of mosaics is victim of war. Protect Syrian Archaeology. <http://www.youtube.com/watch?v=WOUZ-s7Q6W0> (accessed 16 December 2014).
- 2012e Aleppo Alep Bimaristan Argun. Protect Syrian Archaeology. <http://youtu.be/Krpdgg65XKw> (accessed 16 December 2014).
- 2012f Deir Ezzor – Dommages causés au musée Traditions. Protect Syrian Archaeology. <http://youtu.be/UcVxLiRo9dw> (accessed 16 December 2014).
- 2012g Deir Ezzor Pillage à Doura Europos. Protect Syrian Archaeology. <http://www.youtube.com/watch?v=ZpTvbTS2kM> (accessed 16 December 2014).
- 2013a Homs État de Lieux du Musée Archéologique. Protect Syrian Archaeology. http://youtu.be/K0plM6y_w2Q (accessed 16 December 2014).
- 2013b Apamée état des lieux du musée archéologique. Protect Syrian Archaeology. <http://youtu.be/7IHSsQS0X7I> (accessed 16 December 2014).
- 2013c Aleppo Report on the Work Carried out in the House of the Belgian Consul in the Old City of Aleppo. Aleppo. <http://www.apsa2011.com/index.php/en/provinces/aleppo/monuments/650-aleppo-report-on-the-work-carried-out-in-the-house-of-belgian-consul-in-the-old-city-of-aleppo-05-07-2013.html> (accessed 10 December 2014).
- DGAM, Directorate General of Antiquities and Museums. Damascus. <http://www.dgam.gov.sy/> (accessed 10 May 2014)
- 2012a Damage affecting the western wall of the National Museum of Hama. Damascus. <http://www.dgam.gov.sy/index.php?d=239&id=614> (accessed 15 December 2014).

- 2012b Material damage infect National Museum of Aleppo because of the bombings in Saadallah al-Jabri Square. Damascus. <http://www.dgam.gov.sy/index.php?d=239&id=598> (accessed 15 December 2014).
- 2013a Thefts Affect the Deir Atiyah Museum. Damascus. <http://www.dgam.gov.sy/index.php?d=239&id=1090> (accessed 15 December 2014).
- 2013b Material damage affecting the National Museum of Palmyra. Damascus. <http://www.dgam.gov.sy/index.php?d=239&id=912> (accessed 15 December 2014).
- 2013c Report on the damage in Taibat al-Imam Museum in Hama. Damascus. <http://www.dgam.gov.sy/index.php?d=239&id=724> (accessed 15 December 2014).
- 2013d Maart Museum: the theft of 30 antique pieces of pottery, clay dolls and mascots. Damascus. <http://www.dgam.gov.sy/index.php?d=239&id=938> (accessed 15 December 2014).
- 2013e Directorate effects of Aleppo report about thieves stealing some pieces of traditional folk traditions Museum Details. Damascus. <http://www.dgam.gov.sy/index.php?d=239&id=794> (accessed 15 December 2014).
- 2013f Gunmen attack organizer warehouses in tenderness and robbing hundreds of artifacts. Damascus. <http://www.dgam.gov.sy/index.php?d=239&id=1051> (accessed 15 December 2014).
- 2013g The latest information about the organizer warehouse building in Raqqa. Damascus. <http://www.dgam.gov.sy/index.php?d=239&id=840> (accessed 15 December 2014).
- 2013h Six mortar shells fall on Deir ez-Zor Museum. Damascus. <http://www.dgam.gov.sy/index.php?d=239&id=933> (accessed 15 December 2014).
- 2014a A Mortar Shell Fell on the Calligraphy Museum in Damascus. Damascus. <http://www.dgam.gov.sy/index.php?d=239&id=1142> (accessed 15 December 2014).
- 2014b Pictures: Damage in the Homs Museum Building and the Department of Antiquities. Damascus. <http://www.dgam.gov.sy/index.php?d=239&id=1231> (accessed 15 December 2014).
- 2014c Pictures: A mortar shell fell on the National Museum of Aleppo. Damascus. <http://www.dgam.gov.sy/index.php?d=239&id=1237> (accessed 15 December 2014).
- 2014d Pictures: material damage in the Directorate of the effects of Aleppo and the National museum. Damascus. <http://www.dgam.gov.sy/index.php?d=239&id=1224> (accessed 15 December 2014).
- 2014e Preview damage in folk traditions Museum in Aleppo. Damascus. <http://www.dgam.gov.sy/index.php?d=239&id=1223> (accessed 15 December 2014).

Cheikhmous Ali, CNRS-UMR 7044 ARCHIMÈDE, Strasbourg. Email ayazali12@yahoo.fr.

Martin Makinson, universit  Dufour de Gen ve, Sciences de l'Antiquit . Email: harranaya@yahoo.fr.

Philippe Quenet, universit  de Strasbourg et CNRS-UMR 7044 ARCHIMÈDE, Strasbourg. Email pquenet@unistra.fr.

Dianne Fitzpatrick

Quantifying the Problems and Counting the Costs of Near Eastern Archaeological Collections: Five Case-Studies

This paper presents findings obtained from five archaeological sites in Syria and Turkey. These case-studies document Near Eastern collections management practices. The results are being used to develop an Archaeological Collections Management Plan to assist archaeologists in managing archaeological collections.

The aim of this paper is to discuss key findings from the field-study component of the author's doctoral dissertation, entitled *Collections at Risk: an examination of archaeological collections management practices in the Near East* (Fitzpatrick in preparation).¹ Research reveals that many countries in the Near East have increasing numbers of archaeological collections stored in national, regional and local museums, as well as in on-site storage depots (Jamieson/Fitzpatrick 2014; Fitzpatrick 2011). However, current collections management practices are inadequate to sustainably manage collections (Fitzpatrick i. p.).² Archaeologists are ethically and legally bound to make provision for the preservation of their research (including finds and data) into the future (American Schools of Oriental Research 2012; Australian Research Council 2007), but out-dated heritage legislation, insufficient resourcing and lack of planning make it difficult to uphold these obligations, contributing to the current collections management predicament. Firstly, the archaeological collections at the five case-studies will be discussed and quantified. Then the size, space and costs of managing these collections will be examined.

- 1 The full analysis of the five case-studies will be discussed at length in the candidate's doctoral thesis.
- 2 It is estimated that less than four percent of an archaeological project's inventoried objects/artefacts are accessioned annually by museums in many Near Eastern countries.

Quantifying Archaeological Collections

To better understand collections management practices five archaeological projects (case-studies) were analysed. The sites, two in Syria and three in Turkey, were visited and documented between 2010 and 2013. The sites represent different periods, sizes and types reflecting an equally diverse range of archaeological values. **Table 1** shows the site details for each of the case-studies, including: case-study number; site name; country; site type; historic period; chronology; project status and relative scale of project size. The three case-studies in Turkey are currently in progress; however, the case-studies in Syria are currently suspended.

Of the five case-studies, three have a <discard> policy for archaeological collections whereas two of the projects do not.³ Overall, it was noted that the archaeological collections (artefacts, materials, types) are very similar at each site. Artefact categories typically encompass bone, ceramic, stone, glass, metal, organic samples and building materials. Plastic crates are the most common method for storing artefacts on site in the Near East and were therefore used as a standard unit of measurement. The dimensions of the archaeological collections were determined based on the number of crates. The total number of crates for each case-study was derived from project records, actual counts and estimates. It was found that the average number of crates of stored archaeological material at the case-study sites was 770 crates. It should be noted that the number of crates for Case-study No. 2 only included pottery. Case-study No. 3 which has a <no discard> policy had the highest number of crates (2260) whereas Case-study No. 5 had the lowest number of crates (225). Case-study No. 1 was the longest-running project, commencing twenty-five years ago, whereas the duration of Case-study No. 4 and No. 5 was only eight years. It is worth noting that although Case-study No. 4 was a relatively new project by comparison to Case-study Nos. 1, 2 and 3, it had already accumulated 546 crates of artefact material, due to the implementation of a <no discard> policy. The average project duration of the case-study sites was sixteen years. It was possible to calculate the number of crates the case-study sites produced each season by dividing the total number of crates by the project duration in number of years. The projects that implemented a <no discard> policy yielded the highest annual crate accumulations: 118 crates for Case-study No. 3 and 68 crates for Case-study No. 4. The longest-running project,

- 3 Artefact retention or discard policies are determined by a range of considerations and interests including the research objectives of the project. Protocols will often vary according to the specific needs and requirements of a particular project. Normally, policies specify how and why individual artefacts and types of artefacts will be retained, discarded or sampled during an investigation. They ensure that a considered and consistent approach to artefact management is maintained throughout a project, an essential component of the documentation for any archaeological collection that results from the investigation.

Case-Study No.	Site	Country	Site-Type	Historic Period	Chronology	Project Status	Scale*
# 1.	Jebel Khalid	Syria	Fortified settlement NE Syria	Hellenistic	ca. 323 – 27 BCE	1986 – suspended 2011	Large
# 2.	Tell Ahmar	Syria	Tell site NE Syria	Neo- Assyrian; multi- period	ca. 860 BCE	1988 – suspended 2011	Small
# 3.	Çatalhöyük	Turkey	Tell site central Turkey	Neolithic	ca. 10000 BCE	1993 – current	Large
# 4.	Tell Tayinat	Turkey	Tell site southern Turkey	Early Bronze Age; Iron Age; multi- period	ca. 3000– 2000 BCE; ca. 1200– 550 BCE	2004 – current	Small
# 5.	Antiochia Ad Cragum	Turkey	Coastal city SE Turkey	Roman	ca. 25 BCE –72 CE	2005 – current	Medium

*Number of persons working on-site per season (0–49 = small; 50–99 = medium; >100 = large). Combination of core staff, archaeological specialists, excavators, students, volunteers and local representatives and workers

Table 1. Case-study sites.

Case-study No. 1, annually accumulated the least number of crates. An average 49 crates per site per annum was calculated. It was also possible to calculate the approximate weight of collections (kilogram per annum) by multiplying the number of crates per annum by the figure of fifteen which represents an average crate weight (15 kg). Based on these calculations it was revealed that Case-study No. 3 accumulated approximately 1770 kilograms (kg) or 1.8 ton of material each year. Case-study No. 4 accumulated 1020 kg or just over one ton of archaeological material each year. This implies that the average annual kilogram accumulation for <Discard> case-study sites is 305 kg. In contrast, the average annual kilogram accumulation for <No discard> case-study sites is 1395 kg. The overall average for all five case-study sites is 741 kg per annum; the median is 420 kg per annum. **Table 2** sets out the collecting details and collection dimensions, including: case-study number; collecting policy; artefact material types; total crates stored on-site; project duration, crates per annum; and an approximate kilogram (kg) accumulation per annum.

Case-Study No.	Collecting Policy	Artefact Material Types	Total Crates	Project Duration (Years)	Crates (p.a.)	Approx. kg per annum
# 1.	Discard	Bone/tooth/antler; ceramic; charcoal; coin; glass; metal; plaster; seed; shell; slag; stone; organics	ca. 433	25	17	255
# 2.	Discard	Bone/tooth/antler; ceramic; coin; glass; metal; plaster; shell; stone; organics	380 (pottery only)	23	16	240
# 3.	No discard	Bone/tooth/antler; ceramic; charcoal; glass; metal; plaster; seed; shell; slag; stone; organics	2260	19	118	1770
# 4.	No discard	Bone/tooth/antler; ceramic; charcoal; coin; glass; metal; plaster; seed; shell; slag; stone; organics	546	8	68	1020
# 5.	Discard	Architectural blocks; bone/tooth/antler; ceramic; coin; glass; metal; plaster; seed; shell; slag; stone	225	8	28	420
		Mean	770	16	49	741
		Median	433	19	28	420

Table 2. Quantifying Case-study sites archaeological collections.

Case-Study No.	Storage space (sqm)	Stored Weight of Collections (000 kg)	Cost sqm (\$USD)	Storage Facility Status
# 1.	32	6.4	Not available	Rented off-site; temporary
# 2.	85	5.7	Not available	Built on-site; long-term lease
# 3.	245	33	\$514–643 (construction only)	Purpose-built on-site; long-term
# 4.	75	8.1	ca. \$500 per calendar month	Rented on-site; temporary to long-term
# 5.	108	3.3	Not available	Leased on-site temporary to long-term
AV.	109	11.3	Rent or build	80% on-site

Table 3. Space currently utilised by Case-study sites to store archaeological collections.

Case-study Nos. 1, 2 and 4 all utilise storage space that is less than 100 square meters (sqm) of space. Notably, Case-study No. 3 uses 245 sqm of space. The current storage facilities at Case-study No. 3 comprise three free standing, purpose-built storage depots. In addition, this site has some additional storage capacity in two of its laboratories: 160 half crates of human bone are stored permanently in the secure and alarmed Human Remains Laboratory and 50 wooden crates, or 4 cubic meters, are stored in the Finds Laboratory. In 2010, storage units 1 and 2 were near full capacity. It was estimated the area they occupied was approximately 175.4 sqm. A third storage depot was constructed in 2012. **Table 3** shows storage space details, including: the case-study number; storage space per square meters (sqm); stored weight of collections in kilogram; cost per square metre in U.S. dollars and the storage facility status (rented or purpose-built).

The average storage space for all case-study sites was 109 sqm. The stored weight of collections for Case-study Nos. 1, 2, 4 and 5 is 10,000 kilograms or 10 ton. This figure was derived by multiplying crate numbers by fifteen kg, the average crate weight. The average stored weight of collections for each site was 11,300 kilograms or 11.3 ton. Again, Case-study No. 3 is the exception with the highest amount of 33,000 kilograms or 33 ton. Observations made on-site (at case-study No. 3) revealed that crates are currently stored at a density of 13.8 crates per sqm. The crate capacity (density) for units 1, 2 and 3 was calculated based on an optimised storage layout of sixteen crates per square meter with an allowance for adequate passage-ways and entrance clearways. It was noted that the height of the crates did not exceed seven tiers. An optimal figure of sixteen crates per sqm was achieved as a result of evaluating the practicalities and difficulties in accessing heavy crates at higher levels. By dividing the annual accumulation of crates (119) by the optimal crate density (16 crates per sqm), it was calculated that 7.4 sqm of space is required annually to accommodate the collections or 8.6 sqm if stored at current densities. A count of 2414 crates was made of artefact material that is currently stored in the storage depots. The combined capacity of the storage depots is 3900 crates, leaving a future capacity for 1486 crates. Calculations show that the remaining storage capacity (1486 crates) will be full in 12.5 years if the space is optimised at sixteen crates per sqm or 8.1 years if crates continue to be stored at the present density of 13.8 crates per sqm.

Quantifying the Problem and Counting the Costs

The storage cost per sqm for Case-study Nos. 1, 2 and 5 were not available. The sqm cost for Case-study No. 3 ranges from USD \$514–643. The capital cost of construction for each storage depot was approximately USD \$45,000.⁴ Over a twenty-five year period (the intended duration of the Project Director's tenure), an amortised annual amount of USD \$5,400 would be required to cover these capital infrastructure costs. This does not include an allowance for price indexation or inflation. This figure is based on 7.4 sqm of floor space being required for collection storage for each year of operation.

Case-study No. 4 had the second highest amount of stored artefact material on site. The current storage facilities at this site comprised two storage areas, each of 38 sqm. A total of 76 sqm was leased from the landowner at the site. Local enquiries revealed that properties in central and southern Turkey can be rented for prices beginning at USD \$500 per calendar month. In 2012 the physical collections included approximately 546 crates of artefacts. Predominantly, two types of storage systems are used, full-sized crates and wooden storage shelves. As of July, 2012, Case-study No. 4 had been operating for eight years. By dividing the number of crates (546) by the number of years of operation (8 years), it was calculated that this project accumulates 68.3 crates per annum. This included artefact material collected as part of a surface survey. The annual weight accumulation was estimated to be 1024 kg based on an average of 15 kg per crate. The total weight of the artefact material was estimated to be approximately 8.1 ton. Based on these calculations the existing remaining storage capacity for crates would be full in 4.3 years and the shelving system would be exhausted in 2.5 years at Case-study No. 4.

Case-study No. 3 is the only project which utilises purpose-built on-site storage facilities. Projections indicate that all three storage areas would be full to capacity in 8.1 years if the crate density is not optimised. Case-study No. 1 utilised rented, off-site facilities; whereas Case-study Nos. 4 and 5 used temporary to long-term rental or lease agreements with the landowners for use of existing buildings re-purposed for storage of artefact material. Case-study No. 2 utilised a combination of purpose-built and on-site buildings. All case-study sites with the exception of Case-study No. 1 stored artefacts in on-site purpose-built, rented or leased buildings. It is now compulsory for foreign archaeological projects to build on-site artefact storage facilities in Turkey.

4 Interview conducted with Professor Ian Hodder on 15/07/2012.

<i>Çatalhöyük Crate Categories (* artefact categories > 50 crates)</i>	2010	2012
Douglas Baird survey	365	365
*Archaeobot	72	72
Archaeomagnetic	1	1
Architectural samples	5	5
*Archive samples	216	249
Brick	5	5
Bead	3	3
*Building material	130	129
CBM (Ceramic Building Material)	20	20
Charcoal	15	16
Chemical Analysis Samples	1	1
*Clay ball	64	69
Clay object	12	16
Core	1	1
Daub	27	27
Eggshell	2	2
Etütlük	16	18
*Faunal Bone	457	528
Figurines	5	7
Glass and Metal	3	4
*Ground Stone	400	226
*Heavy residue	259	119
*Human Bone	122	161
Kiln library	3	3
Mellaart	21	23
Micromorphology Samples	11	11
Natural Stone	–	1
*Obsidian	26	63
Organic	9	10
*Pottery	319	365
Pigment	1	1
Phytolith	22	25
Plaster	23	29
REC/Temper	4	5
Shell	14	17
Surface	–	15
Tile	10	13
Other	18	–
Total crate numbers	2682	2625

Table 5. Çatalhöyük «Top 10» artefact categories.

Table 4 shows the 2010 and 2012 allocation of artefact categories and crate numbers for Case-study No. 3.⁵ In 2010, 2682 crates of artefacts were stored on-site. In 2012, 2625 crates of artefacts were stored on-site. Categories marked with an asterisk (*) indicate more than 50 crates of which there are ten main categories. There are thirty-seven main categories of artefact classes in the project's collections management system; many have multiple sub-categories. Records and documents are maintained by the collections management team and IT personnel. Both in 2010 and 2012, the <top ten> categories represented 76% and 75%, respectively of the collections. **Table 5** provides an overview of artefact categories and crate numbers in descending order. **Table 6** details a list of research categories grouped into broad themes with corresponding numbers of research specialists from 2003–2012. This analysis of a nine year period was derived from data taken from the project website (Çatalhöyük Research Project 2013). It can be seen that the artefact categories which attracted most research attention for the Neolithic period were archaeometric testing of organic samples and materials, analyses of human and faunal remains, stone technology analyses and Information Technology.

By comparing data gathered from the five cases-studies with details obtained from a survey of archaeologists excavating in the Near East⁶ (Fitzpatrick i. p.; Jamieson/Fitzpatrick 2014; Fitzpatrick 2011) and a database of <Current Archaeology in Turkey> (University of New England 2013) it is possible to obtain an indication of the scale and extent of the collections management issues in Turkey. **Tables 7** and **8** present the results of the two surveys: **Table 7** contains data derived from a survey of thirty-two archaeological project directors (2010–2013) who worked or are currently working in eleven territories, states and countries in the Near Eastern region (Fitzpatrick i. p.); and **table 8** contains data derived from an on-line database hosted by the University of New England of 421 archaeological sites/projects operating in Turkey. The results from both surveys indicate that <Classical> and <Bronze Age> period sites represent the largest group of site types: 59% and 70% respectively. A further indication of the volume of archaeological collections stored on-site may be gained by multiplying Turkey's 421 sites by the average annual accumulation of crates (forty-nine as shown in **table 2**). This equates to more than twenty thousand crates across these historic periods in Turkey. The findings from the surveys of archaeologists revealed that an average of 1.5 ton of archaeological material is excavated and stored at each site annually across the Near Eastern region. By extrapolating this figure (1.5 ton) across Turkey's surveyed sites (421), an annual figure of 631,000 kg or 631.5 ton is achieved.

5 The author is very grateful to Julie Cassidy and Lisa Guerre for their help and for access to collections management records and documents during visits to Çatalhöyük in 2010 and 2012.

6 Some of the key findings from the survey of archaeologists were presented at 8ICAANE, see Jamieson/Fitzpatrick 2014, Fitzpatrick 2013 and Fitzpatrick 2011.

<i>Çatalhöyük Research Categories</i>	<i>Çatalhöyük Research Specialists 2003–2012</i>
Palaeoethnobotany, Phytoliths & Starch Residue	98
Human Remains	80
Fauna	79
Chipped Stone & Lithics	44
Ceramics & Pottery	38
Clay	26
Visualization	25
Ground Stone & Bead Technology	22
Total visiting specialists	412

Table 6. Çatalhöyük research categories and visiting specialists 2003–2012.

<i>North Africa, Southwest Asia and Eastern Mediterranean</i>		
Site type	No. of sites	Percentage (%)
Classical	10	31
Bronze Age	9	28
Iron Age	6	19
Neolithic	3	10
Chalcolithic	2	6
Palaeolithic	1	3
Islamic	1	3
Total sites	32	100

Table 7. Survey of archaeological sites in North Africa, Southwest Asia and Eastern Mediterranean sites.

<i>Turkey</i>		
Site type	No. of Sites	Percentage (%)
Classical	214	51
Bronze Age	81	19
Iron Age	46	11
Chalcolithic	35	8
Neolithic	29	7
Palaeolithic	11	3
Ottoman	5	1
Total sites	421	100

Table 8. Survey of archaeological sites in Turkey.

Budget Items	Supported (Direct Costs)	Not Supported (Indirect Costs)
Access to collections and databases	X	
Accommodation and travel	X	
Capital works and general infrastructure		X
Computer and software	X	
Equipment, maintenance and consumables	X	
Field research and data collection	X	
General maintenance		X
Logistics and transport	X	
Materials and supplies	X	
Personnel	X	
Publication, dissemination and outreach activity	X	
Specialists and experts	X	
Tools and technicians	X	
Web hosting	X	
Workshops and conferences	X	

Table 9. Australian Research Council Funding Rules indicating <supported> and <un-supported> budget items.

The survey of archaeologists also revealed that 88% of Near Eastern research projects are government funded.⁷ **Table 9** provides an example of the type of budget items that are supported and those activities that are not supported typically under government funding. The <Budget Items> list has fifteen organisational and operational categories. Both budget items <Supported> and <Not Supported> are also shown. Items which directly support research programs may be funded. Categories not supported are capital works, general infrastructure and maintenance. This includes construction of dig-houses, storage depots, laboratories, living quarters or buildings repairs. As of 2012, the construction of on-site storage buildings for storing archaeological collections is a permit requirement in Turkey along with the additional requirement of a ten year Site Management Plan (Republic of Turkey 1983).

7 Fitzpatrick i. p. In Australia for instance, the Australian Research Council (ARC), the main research body of the Australian Government, has a long history of funding archaeological research in the Near East.

Conclusions

This paper presented selected findings on archaeological collections management practices from five case-study sites located in Syria and Turkey. The case-studies included a range of archaeological site-types. Each case-study was characterised by different organisational structures reflecting the specific research objectives of the different excavation projects. The main purpose of the case-studies was to observe, quantify and document collections management practices. The findings of the five case-studies suggest it may be possible to broadly predict dimensions of archaeological collections (artefact material) generated by projects and storage space needs over time. Should all parts of archaeological collections be kept in their entirety in perpetuity then policies, processes and procedures must be developed and implemented by the archaeological projects that generate them to ensure the sustainable management of these resources into the future. It was further revealed that funding bodies typically do not cover or support infrastructure costs such as those associated with the construction and maintenance of on-site storage facilities for archaeological collections. Given the current collections management predicament it is important that heritage agencies and antiquities organisations review and update controls to ensure they reflect international archaeological collections management standards. Although the five case-studies represent only a small sample of archaeological sites operating in the Near East, they nevertheless provide an indication of some of the main issues involving archaeological collections management practices, particularly relating to artefact material stored on-site.⁸

8 The author would like to thank the organising and scientific committees of 9ICAANE for providing the opportunity to present this paper in Basel. In addition, the author would like to acknowledge and thank the following individuals and groups for supporting this research in Syria and Turkey: Professor Graeme Clarke, Australian National University; Dr. Heather Jackson, University of Melbourne; Professor Guy Bunnens, University of Liege; Professor Ian Hodder, Stanford University; Professor Timothy Harrison, University of Toronto; Professor Michael Hoff, University of Nebraska-Lincoln, USA; and Syrian Directorate General of Antiquities and Museums and Turkish Directorate General of Culture and Tourism.

Bibliography

- American Schools of Oriental Research, 2012. ASOR Code of Conduct. <http://www.asor.org/about/history.html> (accessed 1 October 2013).
- Australian Government, 2007. Australian Research Council. Australian Code for the Responsible Conduct of Research. Canberra.
- Çatalhöyük Research Project, 2013. Team. <http://www.catalhoyuk.com/team/>(accessed 18 June 2013).
- Fitzpatrick, D., 2011. A collections management plan for Near Eastern artefacts: Preservation and significance. *Interesting Times: New Roles for Collections*. Conference Papers of the Museums Australia National Conference 2010, The University of Melbourne, Canberra, 54–61. http://www.ma2010.com.au/docs/MA2010_Conference_Papers.pdf (accessed 15 October 2012).
- 2013. *Collections at Risk: An investigation of Near Eastern Archaeological Collections Management Practices*. IRIS 26, 65–69.
 - in preparation. *Collections at Risk: An investigation of Near Eastern archaeological collections management*. Ph.D. dissertation., The University of Melbourne.
- Jamieson, A./Fitzpatrick, D., 2014. Sustainable Management Strategies for Near Eastern Archaeological Collections. P. Bieliński et al. (eds.), 8 ICAANE. *Proceedings of the 8th International Congress on the Archaeology of the Ancient Near East* (30 April – 4 May 2012, University of Warsaw 3. Wiesbaden, 251–268.
- Republic of Turkey, 1983. The Law of Conservation of Cultural and Natural Properties dated 21.07.1983. No. 2863. Amended by law No 3386 and 5226.
- University of New England, 2013. Turkish archaeological sites by period. <http://www.une.edu.au/about-une/academic-schools/school-of-humanities/study-areas/archaeology/current-archaeology-in-turkey/sites-by-period> (accessed 06 August 2013).

Dianne Fitzpatrick is a PhD candidate in Classics and Archaeology, School of Historical and Philosophical Studies, at the University of Melbourne. Email: d.fitzpatrick@student.unimelb.edu.au. Her doctoral research forms part of a larger project known as the Syrian-Australian Archaeological and Historical Research Collaboration Project directed by Dr Youssef Kanjou and Dr Andrew Jamieson.

Hamed Salem

Palestinian Archaeological Collections and Lessons of Conflicted Situations

This paper analyses the ways in which material from Palestinian collections has been preserved, especially in light of the conflicts raging within its borders. These military encounters continuously threaten the collections and archives of previous expeditions. The paper is divided into 5 categories reflecting different conditions of the various archaeological collections.¹

Archaeological research in Palestine has persisted under the shadow of ongoing conflict for more than one hundred and fifty years. Hundreds of thousands of objects have been collected since the conflict began, the majority acquired through illicit excavations. The fates of the looted artefacts are not known, though we know that most were bought by private collectors in Europe, America, Palestine and Israel. Other collections have been acquired by monasteries, where museums are established or by existing European museums.

Most of the materials were gathered in the chaos resulting from the many local and global conflicts in Palestine. Three major trajectories of the material collection can be traced from Palestine throughout the conflict: displacement by foreign archaeological missions and long term occupations, illicit excavations and looting, and improper storage and archiving. Consequently, these activities place Palestinian hidden and recovered collections in severe danger.

The main questions, however, are what threats are facing the collections under Palestinian control? What preventive measures have been taken to protect the materials, especially in times of chaos and conflict? And, for those collections which can be located, what measures have been developed toward their protection?

1 The author would like to thank the 9ICAANE organising committee and Andrew Jamieson for organising this workshop in support of sustainability in collection management strategies for Near Eastern Archaeology.

Diaspora and Displaced Collections from Authorised Excavations

The digging fever to get quick results and collect artefacts in early Palestinian excavation was an obvious result of conflict and administrative disorder (ex. Marchand 2010: 27). In 1865, the Palestinian Exploration Fund was established with the main task of exploring the Land of the Bible. Since then, they have funded several surveys and excavations. The Survey of Western Palestine marks its finest achievement. Excavations also took place at major sites of Tell es Sultan, Tell Ta'annak and Tell Balatah, and Jerusalem. Most of these excavations aimed at collecting artefacts to be sent the Palestine Exploration Fund (PEF) headquarters and the British Museum. The PEF collection had 6000 objects; the material coming almost exclusively from PEF excavations carried out between the 1860s to the 1930s, and mainly from Jerusalem, Tell el Hesi and Samaria.

During this period, the Ottoman government attempted multiple times to create legislations made to restrict the flow of antiquities to the European countries (St. Laurent and Taskömür 2013: 10). In 1884, the antiquity act put archaeological collections under control of the state. The Ottomans were interested in building a local museum in Palestine to host finds from foreign excavations. However, the antiquity law was evaded and several items were shipped to the PEF (*ibid*). Aware of the needs to protect the materials, the Ottomans catalogued the collection and stored it in different places in Jerusalem (Gibson 1999: 132). The original museum building was destroyed by the Haggana, with little information of whether the bombing affected the entire collection. The Ottoman catalogue was not used for verification. In the aftermath of the First World War, the archaeological collections were caught in the middle of conflict between the Ottoman Empire and the British Mandate.

Excavations in Palestine increased after the establishment of the Palestine Department of Antiquities under the British Mandate. Several excavations took place within the West Bank and Gaza; more than 38 research expeditions and hundreds of salvage projects. Among these are the excavations of Tell Ajjul by Petri, Tell Duthan, Jerusalem, Sabastiyah (Samaria), Tell en Nasbeh, Tell Beit Mirsim, Tell Balata (Qasr Hisham) and other prehistoric sites like Shuqba, Wadi Khartun, and Kh. el Mafjer. Materials were granted to museums worldwide. Contra to the Ottomans, the British Mandate revised the law to allow antiquity trafficking (Kersel 2010). The new antiquity law allowed the division of the materials between the excavators, the donors and the state, dispersing the excavated collections around the globe.

Excavations ceased in Palestine after the 1936 rebellion. They remained on hold during World War II, the founding of the Israeli state, and the establishment of Jordanian rule over the Palestinian areas. Internationally-funded excavations resumed in the early 1950s. Garstang's policy of splitting the excavated material between the excavators, the state and the donors continued under Jordanian rule. About 21 projects were conducted during Jordanian rule, half of those were continuations of previous excavations. Among those are the



Fig. 1. The Palestine Archaeological Museum.

following sites: Tell el Fara'ah excavated by the Ecole Biblique, Tell Ta'annak by the American Schools of Oriental Research (ASOR), and Tell es Sultan and Jerusalem (Ophel) by the British School. New expeditions started at sites among them: Tell Balatah, Tell Duthan, Beitin, Tell et Tell, and Kh. Qumran. No known archaeological project was conducted in the Gaza Strip. The Palestine Archaeological Museum still had its collections (**fig. 1**), but other archaeological collections were displaced across the world including many foreign museums, universities and institutions especially the British Museum, and Jabal el Qala'h Museum in Amman. After 1967, many of the international expeditions refrained from conducting fieldwork; following the Hague Conviction of 1952, which restricts archaeological excavations in occupied territories to salvage projects.

The Israeli occupation of the West Bank used archaeology as a pawn in Israeli politics (Abu El Haj 2001; Hallote/Joffe 2002). The West Bank was ruled by military officers. The archaeology office was annexed to the Israel Antiquities Authority under the Staff Officer of Archaeology of Judea and Samaria (henceforth SOAJ), who became the sole authority. Immediately after the 1967 war, more than 1000 sites were excavated following a survey of the newly occupied territories (Greenberg/Keinan 2009). Most of the archaeological work was connected to Israeli settlement activities and examining strata relevant to biblical



Fig. 2. Part of the Dayan Collection on display in the Israel Museum (Source: Israel Museum).

stories at sites such as Jerusalem (Silwan), Kh. Seilun (Shilo), Kh. el-Burnat (Mount Ebal), Faradis (Herodium) and Tlul Abu Al'ayiq (Herod's Winter Palaces) or Kh. Qumran. In some excavations the materials belonging to the upper strata were not carefully removed and thus destroyed. We know little about the whereabouts of the materials that were recovered from the excavations in this period. Some material ended up in Israeli museums (**fig. 2**) and local storage places, the majority in that of the Staff Officer of Judea and Samaria in Shiekh Jarah Jerusalem.

The Palestinian Department of Antiquity (PDA), known as the Palestinian Department of Antiquities and Cultural Heritage (DACH), was established in 1994 following the Oslo Agreement between the Palestine Liberation Organization and Israel. The Gaza Strip was under Palestinian rule, excluding Israeli settlements and camps until Israel's 2005 disengagement. The West Bank was divided into areas A, B, C creating not only a geographic division, but a dual-authority over archaeological sites. While the PDA controls areas A and B, SOAJ remained responsible for managing archaeology in area C, which forms more than 70% of the land. Most of the archaeological sites are in this area. SOAJ continues directing salvage and research excavations especially those related to the separation wall. Research projects continue at the site of Kh. Qumran, Kh. Eras (Mt. Girizim), and Jabel Fradis (Herodium). Four sites were also declared as a National Park by the Israel Nature

Park Authority. According to the Oslo Agreement, Israel must provide a list of all the antiquities and turn over all the antiquities. Though Israeli antiquity officials claim this material was archived and ready to be turned over to the Palestinians, the material itself is still not available for researchers. Until this list is made public the nature and number of the collections will remain unknown putting it under threat of loss, neglect or looting. The Palestinian Department of Antiquity made an effort to create a database of these artefacts based on the published materials. Their database included an estimate of 16'000 pieces; this number only includes those pieces deemed worthy of publication.

The relocation of materials outside the areas of conflict has not guaranteed their safety in times of war. Sellin's excavation archive and so the fate of Balatah materials was lost after his house was completely bombed during World War II (Campbell 2014: 97). On a similar note, Kh. el Mafjer records of the 1960s were lost after the flood hit the Jordanian Department of Antiquity Offices in Amman during the early 1970s. However, it is expected that collections are more secure among diaspora, due to the extensive precautions taken in response to previous wars. Though international law clearly states regulations against the displacement of materials from occupied territories (Greenberg/Keinan 2009; Kersel 2010; Keane/Azarov 2013) materials are still appropriated, looted and sold illegally. Efforts are being made to make archives of Palestinian materials available, but it is a costly endeavor requiring international cross-institutional co-operation.

Diaspora and Displaced Collections from Illicit Excavations

Treasure hunting and illicit excavation is a practice that is rooted deep in history. Raiding tombs, especially royal ones, has occurred since the 2nd millennium B.C. Antiquity collection for private leisure or museums is reported as early as the early as the 17th century. Similarly, traveler's accounts have pointed to a number of valuable objects being sold in the antiquity markets for this purpose (ex. Cairo, Wild 1840: 374). Collecting was also a major objective within early excavations in the Near East. One of the negative impacts of these archaeological excavations was that they turned the local workers attention into antiquity as a source of income, initiating extensive looting of archaeological sites. Some of the looters in Palestine learned how to dig from working with the foreign expeditions (Yahya 2008: 41–42; Rjoob 2010: 82–83). Some of the excavators themselves were antiquity dealers (Moscrop 2000: 104). Slowly, as demand grew among collectors, looting became a family business among Palestinians. The occupation of the West Bank opened the border and allowed looting to escalate. The ease of movement «allowed for some dealers to <legally> replenish their dwindling stock» (Kersel 2008: 28). Furthermore, Kersel's (2007) analysis of the current Israeli antiquity legislation proposed that it promotes looting and allows



Fig. 3. The middle bronze age fortifications exposed by illicit excavations.

legalisation of the looted materials through granting trading licenses to antiquity dealers, making it a profession recognised by the state. Alas, most of the licensed dealers from east Jerusalem, had evaded the laws by forging documents to sell antiquities from looted sites. Israel and the United States are the two states who did not ratify the international antiquity trafficking law. As a result of the second Iraqi war, and the closure imposed on the Palestinian Occupied Territories, a wave of plundering arose in this area, many seeing it as a source of income. The looters organised networks taking advantage of the lower employment and poverty among Palestinians to hire local workers to excavate on their behalf. The majority of the workers did not see the artefacts as belonging to anyone, giving them the right to trade in them. Looting continues as a major threat to undiscovered collections, encouraged by the current Israeli legislation and lack of enforcement by the Palestinian Authority areas. The history of looting at Tell Qileh may better explain the complicated situation of the looting.

Tell Qileh is a site located south-west of Hebron. It is situated near the 1948 border. The site is listed in the survey of Western Palestine and later recorded as a major multi-period settlement. It was well protected under the Israeli occupation. Any looting attempt was stopped by the Israeli army. A wave of looting took place in Hebron area and at Tell Qileh following the first Gulf war, where many Palestinians turned to antiquities as an income generating job. Following the Oslo accord, the site came under Palestinian Authority in Area B. Following the Palestinian-Israeli conflict of 2001–2003, chaos erupted and the



Fig. 4. Looted materials seized by the Palestinian police in Hebron.

Palestinian police could not reach many areas outside the cities. At that time, hundreds of looters invaded the site, living in tents and taking advantage of the chaos resulting from the ongoing war. The Palestinian authorities did not have the resources to stop the looters. The Israeli army with a military checkpoint about 1.5 km away did not interfere. The site was systemically invaded again after the discovery of a hoard of bulla. Since 2008, antiquity dealers and mediators have asked the local workers to dig for more bulla. Equipped with the new knowledge, they began resifting the old dirt accumulated from the 2001 digging as well as digging new holes. Currently, Ashtar figurines are attracting new looters, and new digs are taking place beside the fortifications system. During the decades of looting, the site was severely damaged. Aerial photos indicated several holes and our survey had recorded more than 110 of them (fig. 3). We revealed a depth of 6 meters for some holes during the 2014 excavation season. The two upper strata have almost disappeared from the site. Most artefacts were sold on the antiquities market, a number being restored by Palestinian authorities (Tell Qileh, fig. 4). It is clear that at least 1000 bulla ended up in the hands of private Israeli collectors (Deutsch 2012: 59).



Fig. 5. The collection of Waleed Al-Aqqad in Gaza (Source: al-Ghol 2014).

In conclusion, a complex smuggling network, which includes Jordan, Lebanon, Palestine, and Syria, has developed and continued from the Mandate period until today. Artefacts cross numerous borders as they are transformed from illegally excavated objects to legally acquired cultural items. The looted objects eventually enter private collections in Europe, North America and the Arab world, beside Israeli and Palestinian private collections and museums (for example, the Hebron University Museum, and the Keiryat Arba Museum). There is no exact figure of looted artifacts. Over 6000 objects have been confiscated by the Palestinian Department of Antiquity since 1994. This represents a fraction from an estimated 100,000 objects leaving the area annually.

Collections in Private Cases

Israeli officials, and military commanders, such as Teddy Kollek and Moshe Dayan, used their official powers to encourage looting of objects for their private collection (Al Ghoul 2013). Dayan's collection (Kletter 2003) ended as one of the largest private collections acquired by illicit excavations, acquired through the army, local workers, and several antiquity dealers. The collection was purchased by the Israel Museum for 1 million U.S. dollars, causing a notable controversy among Israeli and other archaeologists. Following that the Israeli museum dispersed the collection to around 35 sites (ibid.). After 1967, his activities increased in the newly occupied Palestinian areas, where the Israeli laws did not apply to his deeds. Beside his hobby, Dayan turned to antiquity trading as a source of increasing



Fig. 6. The collection of Jawdat N. Khoudary (Source: <http://www.almathaf.ps>).

wealth. We have little knowledge about the number of objects collected by Dayan during his life time. At least 800 objects were displayed and tens of thousands of pieces traded and sold worldwide. These objects could then be sold through auction houses and the internet.

At the same time, a generation of Palestinian antiquity collectors emerged encouraged by the large scale looting and to ensure collections were not lost to figures like Dayan. Though the Palestinian Authority had ceased more than 6000 illicit transactions, the fate of other tens of thousands are not known, probably sold on the black market. As an example, resources estimate about 8000 objects in Gaza ended in private collections (Othman 2014), such as Jawdat Khoudary, Waleed Aqqad, Jamal Abu Alian and others (figs. 5–6). The museums are at risk of being plundered and damaged in the light of the Gaza wars. During the most recent war in 2014, the archaeological sites and some private collections were subjected to damage by bombing. Of the most vulnerable are those located at the border. Abu Alian's collection in Khan Younis was severely damaged and looted. According to him, 70% of his collection was severely damaged, another 10% of the most valuable objects were looted by the Israeli army, and 20% were partially damaged (Othman 2014). Khoudary's

collection (**fig. 6**) was damaged after the 22 days of land and air shelling in 2008–2009. According to Khdoury (Gelfond Feldinger 2009), «The glass doors and windows have been shattered and the roof and walls have been damaged. Roman and Byzantine pottery, Islamic bronze objects and many amphorae have been destroyed, initially during shooting 20 m to 200 m away, and later because of nearby shelling, with one direct hit to the museum’s conference hall». Aqqad was aware of the need to protect his valuable collection, and made an attempt to hide it in holes from recent bombings.

Some Gaza collectors turned their collections over to public museums. Khoudary with the help from the French built what became known as the Gaza Museum of Archaeology. He made an inventory and published a catalogue of some materials (Chambon 2012). In this manner, the collection was protected and little damage occurred in the latest war. However, the huge collections from Gaza still needs full documentation and a plan of protective measures.

Collections in Official Museum Cases

In a similar incident, the museums in Hebron and Nablus were severely damaged and looted during the 2002 Israeli incursion. The Hebron Museum collection is mainly made up of objects acquired through illicit excavations. It was first located in the Municipality building, and then later moved to a new location in an old Turkish bath in the Old City. According to Mohamed Khiathah, the director of Hebron Department of Antiquity, the new location, close to Israeli Army and settlers, was too vulnerable to attacks and looting (Al Sharif 2006). The Hebron Museum was severely looted during the Israeli incursions to Hebron in April, 2002. Oral reports collected from Antiquity Department workers, claimed that the museum was first looted by Israeli settlers accompanied by the army, and then by organised mobs. The museum was totally emptied. The Department of Antiquity was able to return many looted items, but an estimate of about 200 objects remained missing. However, there was no inventory list or a record of the museum to estimate the damage as many items had no clear provenance.

Collections in Storage

The two major collections in storage are located at Department of Antiquity headquarters and at Birzeit University. The Department of Antiquity hosts archaeological materials in the headquarters of each governorate, the biggest being with the head ministry. By law, one is not allowed to move the materials from one place to another. For this reason, PDA established several local museums. There is an estimate of 11,000 objects across the various



Fig. 7. Old storage place moved to a new storage place at Birzeit University.

locations; half of these collections come from illicit excavations. PDA had digitised the material and placed it in a central database.

Birzeit University hosts a collection of 3000 artefacts in its museum besides its ethnographic collection. The Birzeit collection was stored in an old building, facing deterioration (fig. 7). The material was removed in 2012 to the new building, with limited space, but in an improved condition. The management of the collection is still in its first stages, and complete digital archiving is currently taking place.

One of the major problems facing the archaeological materials is a lack of risk management plan including personnel trained to deal with artefacts in time of conflict. If chaos erupts, there is a clear understanding of the danger facing the materials, but there is no clear plan of what needs to be done. Another problem is the lack of storage space as well as a lack of resources to carry on making intensive inventories. Palestinians are now more aware of collections protection and maintenance, but fearful of their non-stable political conditions.

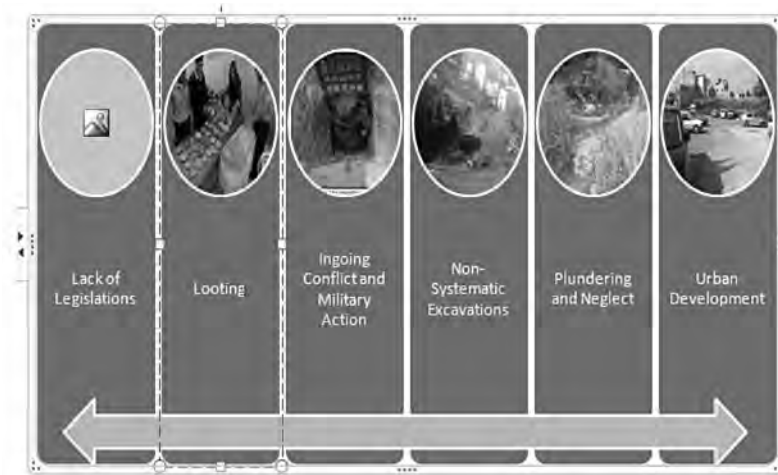


Fig. 8. Diagram of threats facing hidden and recovered collections.

Conclusions

According to the standards put forward by Manning and Kremp (2000), the history of the collections in Palestine and the lessons learned from collections in Iraq, Afghanistan, Libya, Egypt and Syria, (Stone/Farchakh Bajjaly 2008; Kila/Zeidle 2013), there are 6 risks that should be considered in managing the Palestinian collections (**fig. 8**): looting, urban development, ongoing conflicts, military actions, un-systemic excavations and lack of proper legislation. Although there is an awareness of the danger of losing archaeological materials in times of post-war chaos, little was done towards providing protective measures and building a risk management plan for all of Palestine.

In addition, the last war in Gaza proved that the Israeli soldiers and the Palestinian police and military did not consider heritage places a high priority. In one case, the Israeli army invaded a museum in Nablus, an area excavated by the Israeli Staff Officer himself, claiming that it was constructed by Palestinians to «smuggle» weapons. The occupation forces never took the necessary measures to protect the local heritage. On the contrary, cases are known where the army was directly involved in the destruction and looting of sites and antiquities, smuggling or ignoring the smuggling of artefacts. The Israeli officers at the checkpoints had no orders to seize antiquities clearly smuggled by Israeli and Palestinians driving cars with Israeli plates.

The ongoing excavation alongside settlement activities breaks international laws and takes advantage of the ongoing conflict to continue the transfer of materials from the occupied territories. To avoid any criticism, the settlers supported by the Israeli Antiquity Authority excavate with great haste in places like Jerusalem, Tell Rumeideh, Kh. Seliun (Shilo), Jabal Fradis (Herodium) and the Hebron area (Rjoob 2010).

Furthermore, there is no place in Palestine without archaeological remains. The lack of supervision after granting building licenses leads to the destruction of many archaeological sites through chance findings by construction workers. In some cases, materials from sites are removed by the building contractors and sold to dealers. In several cases entire sites were bulldozed to build new projects, some sanctified by the local councils.

In conclusion, one of the devastating effects of the ongoing war is the damage to archaeological sites, causing tremendous loss of archaeological artefacts. The fate of thousands of looted artefacts is not known. Many ended in private collections unpublished. In the absence of good training, the state of the current collections is under severe danger of being lost and damaged forever.

Bibliography

- Abu El Haj, N., 2001. *Facts on the Ground: Archaeological Practice and Territorial Self-Fashioning in Israeli Society*. Chicago: University of Chicago Press.
- Al Ghoul, A., 2013. Pillaging of Gaza Antiquities – An Archaeological Tragedy. *Almonitor*. <http://www.al-monitor.com/pulse/originals/2013/02/archaeological-pillaging-gaza.html> (accessed 26.12.2014).
- Al Sharif, H., 2006. Instead of Protecting Antiquities, the Laws Protect Looters. *Al Hewan al Motmaden*, 1660. <http://www.ahewan.org/debat/show.art.asp?aid=74254> (accessed 26.12.2014).
- Campbell, E., 2014. Archaeological Campaigns at Schechem. B. Wagemaker (ed.), *Archaeology in the 'Land of Tells and Ruins': A History of Excavations in the Holy Land Inspired by the Photographs and Accounts of Loe Boer*, 91–99.
- Chambon, A., 2012. *Gaza From Sand and Sea: Art and History in the Jawdat al-Khoudary Collection*. Vol 1. Gaza: Mansour Bookshop & Press.
- Deutsch, R., 2012. Six Hebrew Fiscal Bullae from the Time of Hezekiah. M. Lubetski/E. Lubetski (eds.), *New Inscriptions and Seals Relating to the Biblical World*. Atlanta: Society of the Biblical Literature, 59–67.
- Gelfond Feldinger, L., 2009. First evidence of Damage to Gaza's Cultural Sites Emerges; Antiquities Museum Hit; Fears Grow for Excavated Archaeology. <http://www.museum-security.org/2009/01/first-evidence-of-damage-to-gaza%E2%80%99s-cultural-sites-emerges-antiquities-museum-hit-fears-grow-for-excavated-archaeology/> (accessed 26.12.2014).
- Gibson, S., 1999. British Archaeological Institutions in Mandatory Palestine 1917–1948. *Palestine Exploration Quarterly* 131/1, 115–143.
- Greenberg, R./Keinan, A., 2009. *Israeli Archaeological Activity in the West Bank 1967–2007: A Sourcebook*. Jerusalem: Ostrakon.
- Hallote, R./Joffe, A., 2002. The Politics of Israeli Archaeology: Between 'Nationalism' and 'Science' in the Age of the Second Republic. *Israel Studies* 7/3, 84–116.
- Keane, D./Azarov, V., 2013. UNESCO, Palestine and Archaeology in Conflict. *Denver Journal of International Law and Policy* 41/3, 309–343.
- Kersel, M., 2007. Transcending Borders: Objects on the Move. *Archaeologies. Journal of the World Archaeological Congress* 3/2, 81–98.
- 2008. The Trade in Palestinian Antiquities. *Jerusalem Quarterly* 33, 21–38.
 - 2010. The Changing Legal Landscape for Middle Eastern Archaeology in the Colonial Era, 1800–1930. G. Emberling (ed.), *Pioneers to the Past: American Archaeologists in the Middle East 1919–1920*. Chicago: The Oriental Institute Museum Publications, 85–90.

- Kila, J./Zeidle, J. (eds.), 2013. *Cultural Heritage in the Crosshairs: Protecting Cultural Property during Conflict*. Leiden: Koninklijke Brill NV.
- Kletter, R., 2003. A Very General Archaeologist – Moshe Dayan and Israeli Archaeology. *Journal of Hebrew Scriptures* 4. <http://ejournals.library.ualberta.ca/index.php/jhs/article/view/5856/4909> (accessed 26.12.2014).
- Manning, R. W./Kremp, V., 2000. *A Reader in Preservation and Conservation*. The Hague: International Federation of Library Association and Institutions.
- Marchand, S., 2010. Orientalist and Popular Orientalism in Fin de Siècle Germany. A. Lermer/A. Shalem (eds.), *After One Hundred Years: The 1910 Exhibition ‘Meisterwerke muhammedanischer Kunst’ Reconsidered*. Leiden, 17–36.
- Moscrop, J. J., 2000. *Measuring Jerusalem: The Palestine Exploration Fund and British Interests in the Holy Land*. London: Leicester University Press.
- Nigro, L., 2006. Preserving the History and Archaeology of Palestine at Tell es-Sultan: The Contribution of Rome “La Sapienza” University. L. Nigro/H. Taha (eds.), *Tell es-Sultan in the Context of the Jordan Valley: Site Management, Conservation and Sustainable Development, ROSAPAT 2*, Rome: University of Rome “La Sapienza”, 95–100.
- Othman, M., 2014. Israeli war destroyed Gaza antiquities. *Al-Monitor*. <http://www.al-monitor.com/pulse/originals/2014/10/gaza-museums-antiquities-destroyed-israel.html#>. (accessed 26.12.2014).
- Rjoob, A., 2010. Contested Management of Archaeological Sites in the Hebron District. *Present Pasts* 2/1, 75–88.
- St. Laurent, B./Taskömür, T., 2013. The Imperial Museum of Antiquities in Jerusalem, 1890–1930: An Alternate Narrative. *Jerusalem Quarterly* 55, 6–45.
- Stone, P./Farchakh Bajjaly, J. (eds), 2008. *The Destruction of Cultural Heritage in Iraq*. Woodbridge, Suffolk: Boydell Press.
- Wagemaker, B., 2014. *Archaeology in the ‘Land of Tells and Ruins’: A History of Excavations in the Holy Land Inspired by the Photographs and Accounts of Loe Boer*. Oxford: Oxbow Books.
- Wild, W., 1840. *Narrative of a Voyage to Madeira, Teneriffe and Along the Shores of the Mediterranean*. Dublin: William Curry, Jun. and Company.
- Yahya, A., 2008. The archaeology of Palestine between looting and protection. *Journal of Palestine Studies* 19/76, 128–148.

**Hamed Salem is a faculty member in the Department of History and Archaeology at Birzeit University.
Email: hsalem@birzeit.edu.**

Silvia Perini

Syrian Cultural Heritage in Danger: A Database for the National Museum of Aleppo

This paper aims to suggest a strategy for the preservation of museum collections in times of conflict, with a particular reference to the National Museum of Aleppo. It focuses on the importance that updated museum inventories and databases assume towards the protection of movable artefacts.

Inventories of collections provide essential documentation of the provenance, state and context of the object displayed and stored within museums. Beyond having a clear administrative purpose, these catalogues and databases are also essential to the preservation of artefacts and the knowledge that they hold in times of crisis. Along with a number of other pre-, peri- and post-crisis measures, registration enhances the safety of an object making illicit trafficking less likely and restitution easier to manage. The topic of this paper is discussed in three parts: first, a theoretical background and measures that should be undertaken for the protection of a museum collection during an emergency are suggested according to the most important international heritage organisations, such as UNESCO and ICOM. Second, this paper examines the current situation at the National Museum of Aleppo. Third, it suggests a possible response towards the protection of the museum's collection.

Theoretical Background: Preserving Movable Cultural Heritage in Times of Crisis

Firstly, it is necessary to clarify the meaning of the terms «cultural heritage» and «crisis» (or «emergency»). «Cultural heritage» consists of both tangible and intangible cultural heritage (UNESCO website). The tangible heritage includes movable (paintings, sculptures, coins, manuscripts), immovable (monuments and archaeological sites), and underwater cultural heritage (shipwrecks, underwater ruins and cities), while intangible cultural heritage refers



Fig. 1. Disaster Risk Management cycle (adapted from UNESCO 2010: 13, fig. 1).

to oral traditions, performing arts, and rituals (UNESCO website). «Crisis» means a time of intense difficulty or risk. There are three types of elements that may lead to a crisis: natural elements (meteorological, geological, biological, etc.); human-induced (armed conflict, fire, pollution, infrastructure failure or collapse, civil unrest and terrorism); and indirect or secondary factors (UNESCO 2010: 9).

This paper refers to a specific type of tangible cultural heritage, namely movable artefacts, during a particular circumstance of crisis, armed conflict.

During a disaster situation, emergency response procedures for saving people, as well as heritage, need to be developed and practiced beforehand (UNESCO 2010: 14). Heritage organisations and institutions such as ICOM (International Council of Museum, for references see bibliography), ICOMOS (International Council on Monuments and Sites, see references), ICCROM (International Centre for the Study of the Preservation and Restoration of Cultural Property, for references see bibliography), ICORP (International Scientific Committee on Risk Preparedness, for references see bibliography) and UNESCO (United Nations Educational, Scientific and Cultural Organization, for references see bibliography), have defined measures that should be undertaken during a crisis.

A *Disaster Risk Management Cycle* (DRMC) suggests measures to be undertaken during the three periods of a crisis: before the outbreak of the disaster (pre-crisis), during the disaster (peri-crisis) and after the disaster (post-crisis) (**fig. 1**) (UNESCO 2010: 13; Tejjeler 2006: 133–135).

In the pre-crisis period, three measures should be undertaken: *Prevention*, which includes all the actions taken to decrease the possibility that an emergency will occur; *Mitigation*, actions taken to eliminate/reduce loss of life and property related to an act that cannot be prevented; and *Emergency preparedness*, actions taken to develop policies and planning for potential crises/emergency. During the peri-crisis, the main measure is the *Response*, which includes the actions taken to contain and resolve the crisis/emergency in order to avoid that it would develop into a disaster. Lastly, during the post-crisis, three further measures should be undertaken: *Damage assessment*, this is the preliminary evaluation of damage and/or loss caused by the crisis; *Treatment/recovery*, repair and recover the damage/loss; and *Rehabilitation*, restore the damage/loss of the site/monument/building/collection to its former position (pre-crisis).

The measures illustrated in the DRMC represent the best-case scenario of the actions that should be undertaken pre, during and after an emergency. In reality, the situation is often different.

A Case Study: The National Museum of Aleppo (Syria)

Which preventive measures and which response have been undertaken for the protection of the National Museum of Aleppo collection since the beginning of the crisis? Based upon the information offered by the Syrian Directorate-General of Antiquities & Museums (DGAM) and other organisations and groups, such as the Association for the Protection of Syrian Archaeology (APSA), this analysis proceeds to examine pre- and peri-crisis measures undertaken for the management and conservation of the museum's collection.

The National Museum of Aleppo

The National Museum of Aleppo, founded in 1931, is the largest museum in Aleppo. It is located on the edge of the historical centre, in the northern part of the city. The museum collection includes five sections: Prehistory, Bronze and Iron Ages, Classical, Islamic period, and Modern Art. Although the majority of the museum objects comes from sites located in the northern part of the country (Aleppo, Euphrates and Al-Jazeera regions), there are also artefact from inner Syria, such as Palmyra.

The courtyard of the Museum of Aleppo and the building itself and have been badly affected during the conflict because of the museum's location on the frontline of the battle. The DGAM reported that the museum has suffered from some windows and doors smashing, and the ceiling was damaged due to explosions and mortar shells in areas adjacent to the museum (Abdulkarim 2013a, 2013b, 2014; DGAM 2014a, 2014b, 2014c). However, despite these physical damages, no artefact has been reported stolen from this museum (as of December 2014).

Before Disaster (Pre-Conflict Period)

A museum collection has to be viewed as composed not only by the objects themselves, but also by their documentation, in both paper and digital formats (inventory, catalogue, picture, etc.). When an archaeological object is moved from its place of origin and its context (i.e. archaeological site), its significance is reduced and becomes more dependent on the documentation linked to it. A museum is obligated to maintain up-to-date information of all objects within the collection, detailing the provenance, including those objects that have yet to be accessioned and loaned items. Establishing and keeping inventories up-to-date is essential to organising information and protecting cultural objects from being illegally traded. In 1970, UNESCO edited *The Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property*. A number of provisions in the Convention clearly state that cultural property that has been documented as appertaining to the inventory of a museum is better protected against trafficking. If a stolen cultural item is identified, restitution provisions between State Parties (States that have ratified the Convention) may be applied, facilitating the return of the item. On the other hand, material illicitly dug from an archaeological site is much more difficult to trace than object stolen from a museum and far easier to steal (UNESCO, website). Since no documentation exists for this material, their cultural and historical value is lost forever and can very difficultly be recovered. Nevertheless, many museums around the world do not have a complete and up-to-date inventory, so when suddenly faced with the unforeseeable, the historical objects are put into severe risk and vulnerability. For these museums, the tools needed to identify whether the object has been stolen or merely lost within the collection are absent.

During the pre-conflict period, the Museum of Aleppo collection was inventoried in both electronic and hardcopy forms by the museum staff. Only the latest acquisitions had been digitally entered in the database, and due to the volume of finds placed in the museum from rescue excavations, not all of them had been adequately recorded. Along with the museum inventory, information about the museum collection is also available from the Lists of Objects, which is the record of the objects found during archaeological excavations that is submitted to the local museum by the site's directors at the end of each working season. Both the Aleppo Museum and the directors of archaeological foreign teams own a copy of





INVENTORY NUMBER	EXCAVATION NUMBER	DESCRIPTION	MATERIAL	DIMENSION (cm)	DATE	PHOTOGRAPH
371	TAH 05 M02.84 O.046	Earring	Bronze	D. 1.5 Th. 04	LBA	
376	TAH 05 M07.56 O.28	Female figurine (torso)	Baked clay	H. 5 W. 6.2 Th. 1.8	LBA	
383	TAH 05 A29.78 PL 304	Small carinated cup	Baked clay	Base D. 2.1 Rim D. 7 H. 3.4	LBA	
396	TAH 05 M02.84 O.046	Cylinder seal	Stone	L.1.4 D.0.6	LBA	

Fig. 2. Tell Ahmar List of Objects.

the site's List of Objects, which are available in hardcopy and/or electronic forms (electronic forms, however, may be available only for the most recent years). Lists of Objects have been edited by the site directors, mainly in agreement with some specific DGAM requirements, but the format of the lists follows the individual site recording methodology. Thus, when comparing Lists of Objects from different sites, one may find some differences. Figure 2 shows an example of a List of Objects from the site of Tell Ahmar (season 2005) (fig. 2). The *Inventory Number* is the number that each team gives to the objects in the list that they sent to the museum. Each object should then be assigned another number with an «M» prefix by the museum staff. This is the accession number of the object in the museum. The inventory number is thus of little value as its only function is to help identify the objects when they are delivered to the museum (Bunnens, personal communication). The *Excavation Number* is the number that archaeologists gave to the artefact and it gives information about the context of the object's recovery (i.e. excavation season, area, feature, object, or pottery lot number).

During Disaster (Peri-Conflict Period)

Since the beginning of the conflict in Syria, three measures have been undertaken to protect the museum collection, namely: 1) the museum closure, 2) the collection transfer, and 3) the protection of the immovable objects *in situ*. The closure of the museum (fig. 3) took place in 2012. Subsequently, exhibition vitrines were emptied and the collection moved to a safer place (fig. 4). Large and immovable objects (i.e. statues and mosaics) located in the museum courtyard were protected with sand bags (fig. 5).



Fig. 3. Museum of Aleppo, main entrance (source: APSA, April 2014).

Proposal: How Can We Contribute to the Protection of the Museum of Aleppo Collection?

In recent conflicts (i.e. Bosnia and Herzegovina, Iraq, Afghanistan), measures to recuperate damaged heritage have been undertaken only after the conflict was over. However, heritage experts acknowledge that various emergency response procedures for saving heritage need to be developed and put to work during the conflict. The more time that elapses after an incident the more irreparable the losses are. With this in mind, which measures can be undertaken for the protection of the Museum of Aleppo collection during the peri-conflict period? This work suggests creating a common reference platform (which does not presently exist) aiming to collect Lists of Objects and providing a homogenisation of the recording system from local incompatible methodologies to a standardised system.

This work can be undertaken in several steps. Firstly, it is necessary to collect Lists of Objects from site's directors. This operation requires international collaboration and the open participation of directors of archaeological excavations in Syria. In order to protect object's copyright, archaeologists should agree on permission standards for using unpublished material.



Fig. 4. Museum of Aleppo, first floor exhibition room (source: APSA, April 2014).



Fig. 5. Museum of Aleppo, courtyard (source: APSA, April 2014).



OBJECT ID CHECKLIST

TAKE PHOTOGRAPHS

Photographs are of vital importance in identifying and recovering stolen objects. In addition to overall views, take close-ups of inscriptions, markings, and any damage or repairs. If possible, include a scale or object of known size in the image.

ANSWER THESE QUESTIONS:

Type of Object

What kind of object is it (e.g., painting, sculpture, clock, mask)?

Materials & Techniques

What material is the object made of (e.g., brass, wood, oil on canvas)?
How was it made (e.g., carved, cast, etched)?

Measurements

of measurement is being used (e.g., cm., in.) and to which dimension the measurement refers (e.g., height, width, depth).

Inscriptions & Markings

Are there any identifying markings, numbers, or inscriptions on the object (e.g., a signature, dedication, title, maker's marks, purity marks, property marks)?

Distinguishing Features

Does the object have any physical characteristics that could help to identify it (e.g., damage, repairs, or manufacturing defects)?

Title

Does the object have a title by which it is known and might be identified (e.g., The Stream)?

Subject

What is pictured or represented (e.g., landscape, battle, woman holding child)?

Date or Period

When was the object made (e.g., 1893, early 17th century, Late Bronze Age)?

Maker

Do you know who made the object? This may be the name of
or a cultural group (e.g., Hopi).

WRITE A SHORT DESCRIPTION

This can also include any additional information which helps to identify the object (e.g., color and shape of the object, where it was made).

KEEP IT SECURE

Having documented the object, keep this information in a secure place.

Fig. 6. ICOM Object ID (source: <http://icom.museum/>).

Once Lists of Objects have been created and collected, the second step consists of providing a standardisation of the lists from local methodologies to an overarching system. An example of this process is illustrated by the ICOM Object ID description (**fig. 6**). The ICOM ID includes some necessary key items of identification, such as a Photograph, and information about: Type of Object; Materials & Techniques; Measurements; Inscriptions & Markings; Distinguishing Features; Title; Subject; Date or Period; Maker; and a Short Description (ICOM Object ID). These elements have been agreed by international museum, police, customs, insurance and database experts.

With standardised Lists of Objects in place, the last step is to upload them to a public storage space. The cloud storage will allow data publishers to upload files that can then be accessed over the internet by other users. This process will permit publishers to share and collaborate on data. However, it is important to stress that, given the sensitive data entered into the database, the uploaded information can only be accessed through user authentication, i.e. user name and password. Thus, the information will be protected in such a manner that only authorised parties can read it.

Conclusions

Assuming that the collection of the National Museum of Aleppo is currently safe, without a comprehensive and organic inventory it is still at risk. The project suggested in this paper, namely sharing and standardising Lists of Objects, is proposed as an emergency response procedure toward the preservation of the National Museum of Aleppo collection. This solution is not only urgently required, but also feasible, given that it can be undertaken during the peri-conflict period. The outcomes of this procedure will be crucial during the post-conflict period, because they will be used to integrate and update the museum inventory. An updated inventory will be essential to help controlling illicit trade of cultural objects; evaluate the damage and loss of the collection tracing the objects that may have been missed or lost during this period of inactivity; and support the future rehabilitation of the museum during the post-conflict period.

Acknowledgment

The author would like to thank the organising committee of the 9th ICAANE in Basel and, in particular, Andrew Jamieson for organising the workshop *Collections at Risk: Sustainable Strategies for Near Eastern Archaeological Collections Management* within which this paper was presented. Furthermore, I would like to thank the director of the Tell Ahmar excavation, Dr Guy Bunnens, who kindly provided an example of Lists of Objects from the site (see **fig. 2**).

Bibliography

- Abdulkarim, M., 2013a. The Archaeological Heritage in Syria during the Crisis. Damascus: Ministry of Culture. http://dgam.gov.sy/archive/docs/File/downloads/cult_heritage_crisis_en.pdf (accessed 11 May 2014).
- 2013b. Updating the report on the status of Syrian Antiquities and their protection measures (since the beginning of the crisis until June, 15, 2013). Damascus: Ministry of Culture. <http://www.dgam.gov.sy/?d=177&id=884> (accessed 11 May 2014).
 - 2014. Annual Report 2013. Damascus: Ministry of Culture. http://dgam.gov.sy/archive/docs/File/downloads/dgam_report_2013_en.pdf (accessed 11 May 2014).
- APSA, The Association for the Protection of Syrian Archaeology. Strasbourg. <http://www.apsa2011.com/> (accessed 10 December 2014).
- DGAM, Directorate General of Antiquities and Museums. Damascus. <http://www.dgam.gov.sy/> (accessed 10 May 2014)
- 2014a. Initial Damages Assessment for Syrian Cultural Heritage during the Crises (from the beginning of the crisis to March 2014). Damascus. http://dgam.gov.sy/archive/docs/File/downloads/damage_assessment_table%20mar2july_2014%20en.pdf (accessed 11 May 2014).
 - 2014b. Initial Damages Assessment for Syrian Cultural Heritage during the Crises (July – August 2014). Damascus. http://dgam.gov.sy/archive/docs/File/damages_table_en.pdf (accessed 11 May 2014).
 - 2014c. Initial Damages Assessment for Syrian Cultural Heritage during the Crises (July – September 2014). Damascus. http://dgam.gov.sy/archive/docs/File/downloads/damage_assessment_table%20july_september%20en.pdf (accessed 11 May 2014).
- ICOM, International Council of Museums. Paris. <http://icom.museum/> (accessed 10 May 2014).
- ICOM Red List. Paris. http://icom.museum/fileadmin/user_upload/images/Redlists/Syria/ERL_SYRIE_EN.pdf (accessed 10 May 2014).
- ICOM Object ID. Paris. <http://archives.icom.museum/object-id/checklist/english.pdf> (accessed 10 May 2014).
- ICOMOS, International Council on Monuments and Sites. Charlenton-le-Pont. <http://www.icomos.org/en/> (accessed 11 May 2014).
- International Committee on Risk Preparedness. Charlenton-le-Pont. <http://icorp.icomos.org/> (accessed 11 May 2014).
- ICCROM, International Centre for the Study of the Preservation and Restoration of Cultural Property. Paris. <http://www.iccrom.org/> (accessed 10 May 2014).

- Teiggeler, R., 2006. Preserving Cultural Heritage in Times of Conflict. G. E. Gorman/S. J. Shep (eds.), Preservation management for libraries, archives and museums. London, 133–165.
- UNESCO, 2010. Managing Disaster Risks for World Heritage. Paris. <http://whc.unesco.org/en/managing-disaster-risks/>(accessed 10 May 2014).
- 2007 Cultural Heritage Protection Handbook N°3. “Documentation of Artefacts’ Collections”, 2007, Paris. (accessed 10 May 2014).
- UNESCO Cultural Heritage definition. <http://www.unesco.org/new/en/culture/themes/illicit-trafficking-of-cultural-property/unesco-database-of-national-cultural-heritage-laws/frequently-asked-questions/definition-of-the-cultural-heritage/> (accessed 10 May 2014).

Silvia Perini completed her PhD in archaeology at the University of Edinburgh. She is an independent researcher. Email: perini.sil@gmail.com.

Andrew Jamieson

New Uses for Old Collections: Community and Curriculum Engagement Using Near Eastern Archaeological Collections

This paper discusses Near Eastern archaeological collections in the engagement of community, and in the enhancement of education curricula. Part one discusses collections use in the Classics and Archaeology program at the University of Melbourne. Part two outlines a proposal for a repository at Qala’at Najem in north Syria.¹

Recent instability in the Near East and the looting of archaeological sites, museums and on-site storage magazines highlights the vulnerability of archaeological collections (Ali 2013: 353–366; Kila 2012). In order to deal with this situation as well as the continuing influx of artefacts into repositories there is a critical need to develop procedures and processes for sustainably managing and preserving these collections for the future. This in addition to the ongoing need to assess the significance of archaeological collections in order to prioritise available resources on those identified as important (Smith 2011: 105–109). In a survey of archaeologists working in the Near East the following findings were revealed relating to archaeological collections management practices (Jamieson/Fitzpatrick 2014: 251–268; Fitzpatrick 2011):

- 53% of archaeologists do not budget for long-term care of archaeological collections
- On average projects run for *18.63 years*
- On average *1.2 tons* of artefacts are excavated each season by projects working in the Near East

1 The author would like to thank the organising committee of 9ICAANE in Basel for supporting the Collections at Risk: Sustainable Strategies for Near Eastern Archaeological Collections Management workshop. The author would also like to thank all the workshop participants.

- On average 2700 *artefacts* are inventoried each season
- On average only 6% of *inventoried artefacts* are accessioned by museums
- Only 19% of *surveyed archaeologists* had definite long-term plans for collections

Problems accessing collections hinders or limits their use. Digitising collections addresses some of these access and use issues but at the same time has contributed to a reduction in the direct engagement with collections. Underuse of collections makes them vulnerable. The decrease of engagement inevitably raises questions about the need to dedicate space to large and bulky archaeological collections. To validate the resources required to manage archaeological collections it is necessary to improve the physical access and increase the direct use of artefact assemblages. This also raises awareness about the importance and value of archaeological collections. Teaching and research, exhibitions and interpretation, curriculum and community engagement can contribute to the long-term sustainability of archaeological collections.

Curriculum Engagement

Museum educators and curators pioneered the study and exhibition of objects beginning in the 19th century, emphasising the importance of ‹hands-on› learning and object study (Paris 2002). They also emphasised the value of educative experiences based on ‹genuine› objects (Simpson/Hammond 2012). Today, students use collections in new and different ways across a wide range of disciplines in seminar rooms, laboratories, museum galleries and on-line accessing virtual collections and museums via the internet (Chatterjee 2008). Institutions such as University College London (UCL) and the University of Reading in the UK are pioneers and leaders in object-based learning in higher education and in introducing pedagogical perspectives on enhancing student learning through archaeological collections.

At the University of Melbourne object-based learning is experiencing a revival. The University of Melbourne, a campus-based university, is the second oldest university in Australia (founded in 1853). The Faculty of Arts, the University's oldest faculty, is currently redeveloping and reimagining the Bachelor of Arts degree which will encourage more interactive and hands-on approaches to engagement with primary material. This is underpinned by a focus on object-based learning (Duhs 2010). While object-based learning is unlikely to be utilised by all disciplines, Archaeology is leading the way with ideas behind this redevelopment and is helping shape a broad ‹object-inspired› approach to learning and engagement (Sparks 2010). This will see a redesign which embraces object-based learning approaches and the display of objects within the newly configured Faculty. The key benefits of object-based learning may be summarised as follows (Chatterjee 2010):

- Objects provide a direct link with ‹the past› and can enhance young people's interest

in and understanding of a subject

- Objects encourage learners to use all their senses – especially touch
- Objects help to develop the important skill of drawing conclusions based on an examination of evidence
- Objects are ideal for generating group and class discussion
- Object-handling has a long-lasting effect and relationship with memory, more so than text-based learning
- Objects promote the value of museums and encourage young people to visit museums and galleries to further their learning

In light of the Faculty of Arts plans, the Classics and Archaeology Collection, one of the University of Melbourne's oldest Cultural Collections, will figure prominently in the reintroduction of OBL (Yule 2003: 17–18). The objects were originally acquired as a teaching and research collection. The Classics and Archaeology Collection was an integral part of the student experience in 19th and 20th centuries; but like many universities the antiquities collection faced a downturn in favour and use in the later 20th century (with the rise of online virtual and digital technologies). The Classics and Archaeology Collection was formed by the two former departments of Classics and Middle Eastern Studies. From the initial donation of five pieces of Egyptian papyri in 1901, by the Egypt Exploration Society, the collection expanded through field work, acquisitions and donations to become one of the most significant antiquities collections in Australia. The Collection includes approximately 25,000 objects: 20,000 in the teaching collection and 5000 in the museum collection. Together the material covers primarily the regions and cultures of ancient Greece, Rome, Cyprus, Egypt and the Near East.

Because of the support given to a number of excavation projects, the antiquities collection of the University of Melbourne contains important sets of artefacts (mostly pottery) from Sir Flinders Petrie's excavations in Egypt, Sir Max Mallowan's excavations at Nimrud, Professor James Stewarts excavations in Cyprus, and Dame Kathleen Kenyon's work at Jericho and Jerusalem, to mention just a few of the better known projects. Of similar significance are the large quantities of pottery represented in the Near Eastern collection. Keen to establish a teaching collection, the former Middle Eastern Studies department at the University of Melbourne provided financial assistance and support to a number of Near Eastern archaeological excavation projects from the 1940s to the 1970s, and in return received an allocation of the finds. Important sets of pottery come from Tell Arad, Beersheba, Bab edh Dhra and Lachish (McClellan 1983: 153–171).

In the 1980s and 1990s archaeologists based at the University of Melbourne undertook salvage excavations in the Syrian middle and upper Euphrates River valley (Jamieson/Kanjou 2009: 1–30). At the time, the Syrian Directorate General of Antiquities and Museums

(DGAM) generously permitted the archaeologists from Melbourne to take sherd collections from these field projects back to Australia. Currently we have collections of Bronze Age, Iron Age, and Hellenistic ceramics from Thomas McClellan and William Culican's excavations at El Qitar, Guy and Arlette Bunnan's excavations at Tell Ahmar and Graeme Clarke, Peter Connor and Heather Jackson's excavations at Jebel Khalid. Melbourne also has a significant collection of Iron Age pottery from Peter Parr's excavations at Tell Nebi Mend; and a number of important Anatolian collections from Antonio Sagona's excavations in Turkey (Büyüktepe Höyük and Sos Höyük).

The Near Eastern collections are accessed and used regularly for a variety of teaching and learning or curriculum engagement purposes. At the tertiary level we use and access the Near Eastern collections in a number of Classics and Archaeology courses. In the First Year subjects students are introduced to the Near East and explore the ancient world using an object-based approach to learning. The classes using collections resonates strongly with the students and many comment that these classes are their most memorable and enjoyable – because they get to engage directly with objects, and because it challenges the way they look at and see things. In Second and Third Year subjects more complex ideas are discussed and debated, using an object-based approach in a consideration of ethical, theoretical and methodological questions and problems. In other subjects objects are used to train students in practical archaeology which combine traditional classroom teaching and learning with <hands-on> and experience-based workshops to develop a working knowledge of practical archaeology. Verified student comments in the Quality of Teaching and Student Experience Survey questionnaires demonstrate the efficacy of an object-based learning approach in enhancing curriculum engagement on many different levels.

The Near Eastern collections are also used with younger secondary school students. Through work with schools the collections are used to raise awareness and broaden the aspirations of young children and in many cases act as a bridge into the University of Melbourne's undergraduate subjects and postgraduate programs. The Near Eastern collections are also used in a variety of public programs and master classes involving mature age and continuing education students.

The key outcomes and benefits resulting from curriculum engagement using Near Eastern collections at the University of Melbourne may be summarised as follows:

- Increased museum visitation
- Increased enrolments in Ancient World Studies subjects and courses
- Increased satisfaction levels in teaching and learning outcomes
- Increased donor funding and benefaction

Over a ten year period (from 2005 to 2014) there has been a steady increase in museum visitation. The total number of visitors for the year 2013 numbered 24,859. Of this total 5,444 people visited the museum through academic programs. This represents 22% of the overall

museum visitation. Similarly, there has also been a steady increase in student enrolments in Ancient World Studies subjects and courses. Further verification of the benefits of curriculum engagement using object-based learning is documented in the Quality of Teaching surveys. At the end of every semester students complete a questionnaire. In subjects involving OBL the overall median score is around 4.7 or above (out of 5.0) which is much higher than the University of Melbourne average. However, it is in the last area, that of external funding and donor support, that the most important benefits may be noted. With greater funding pressures on museums and repositories it is essential to look to alternative funding streams and sources for sustainable collections management. In the past ten years the Classics and Archaeology Program has attracted and secured a number of large donations, and bequests. Combined, these endowments are estimated to be valued in excess of four million (Australian) dollars. These funds now support a range of teaching and learning activities, including exhibitions and collections management of the Near Eastern collections.

Community Engagement

In the second part of this paper the use and access of archaeological collections for community engagement purposes in the Near East will be discussed. This work forms part of a joint research collaboration project that was initiated with Youssef Kanjou and National Museum of Aleppo known as the Syrian-Australian Historical Research Collaboration Project that commenced in 2008; however, owing to the situation in Syria the project is currently on hold (Jamieson and Kanjou 2009: 1–30). Therefore, it is necessary to preface the following comments by noting that the objectives of the project are yet to be fully implemented or realised.

The construction of the dam at Tabqa on the Syrian ‘big bend’ of the middle Euphrates River triggered intensive excavations in the region 50 km up river from the town of Raqqa. When construction work at Tabqa began in 1968, numerous sites were threatened with destruction. The Syrian Directorate General of Antiquities and Museums (DGAM), with the support of UNESCO, appealed for international assistance, and many foreign archaeological missions responded to this call by offering excavation assistance. The dam at Tabqa was completed in 1973, creating a reservoir now known as Lake Assad (Freedman 1979; Margueron 1980).

In the late 1980s, the DGAM initiated a second intensive program of rescue archaeology, inviting international collaboration to investigate sites to be inundated by the construction of the new Tishreen dam, north of Tabqa, in the Syrian upper Euphrates River basin. Once again, many important sites were threatened with destruction. The sites ranged in date from the Neolithic to Classical periods through Late Antiquity to the Early Modern period. The Tishreen dam was completed in 1999 (Del Olmo Lete and Montero Fenollos 1999).

Collectively, these sites tell the story of the history and development of the Euphrates River valley from prehistoric times up until the present day. The combined salvage excavations conducted by Syrian and other international missions generated large quantities of archaeological artefacts. Many of the most significant finds from the excavations from the Tabqa and Tishreen dams went on display in the National Museum of Aleppo, where a special permanent exhibition was devoted to the finds from this region. However, it was simply not possible for the museum in Aleppo to accommodate all the material produced by these salvage operations.

So that the archaeological material from the Euphrates valley is available and accessible in the future an alternative location was needed for its storage. One potential repository was identified, by the late Hamedo Hammade, at Qala'at Najem (also referred to as Qalat Najm or *Qal'at Naḍj m*), located on the right bank of the Euphrates River, overlooking the Tishreen reservoir, approximately 20 km from the modern town of Menbij (Kennedy 2006). The large Arab fortress at Qala'at Najem marks an important crossing point on the Euphrates River (Tabbaa 2006; Yovitchitch 2006). The existing extant remains of Qala'at Najem largely date from the 13th century CE rebuilding of the fortress. The Syrian Directorate General of Antiquities and Museums (DGAM) has carried out major restoration works at Qala'at Najem over many years. Qala'at Najem is a site of considerable cultural and historical importance, its Arab military architecture is especially significant (Sourdel 2010), but its full potential, for tourism and other adaptive reuses, has not been fully investigated or explored. The large galleries and chambers at Qala'at Najem offer an obvious storage solution for the Euphrates valley, providing a much needed artefact repository for the archaeological collections that cannot be housed by the museums of Aleppo and Damascus due to a lack of space.

Before the Syrian conflict began in 2010 the Syrian-Australian Historical Research Collaboration Project developed a broad framework around the following four stages:

- The establishment of an archaeological collections repository
- The creation of a research centre for reference collections
- The promotion of education, interpretation, public programs and tourism-related activities
- The identification of community engagement opportunities

In 2010 work began on the first stage of the Syrian-Australian Historical Research Collaboration Project with creation of the repository. As a pilot study, the stratified Neo-Assyrian pottery, approximately 20,000 sherds, from the excavations at Tell Ahmar in Area C was relocated to Qala'at Najem (Jamieson 2012). It is planned to use this curated collection of 7th century BC (Iron Age III) diagnostic material as a model that may be applied to other significant stratified archaeological collections to be deposited at Qala'at Najem. The archaeological context, date-ability, diversity, rarity and condition of the Area C corpus and

its constituent parts distinguish it as notably significant and highly representative of the Iron Age III (IA) period. Its Assyrianising features, which are unique, emphasise the collections importance.

In 2010 preliminary work also began scoping a research framework based on historical periods. In managing the archaeological collections from the Euphrates valley (their significance must be assessed not only with reference to the research design of the archaeological project that recovered and created them, but also from an understanding of wider regional and national research frameworks to which they may be able to contribute new information), as outlined by Schacht (Schacht 2011a: 61–76; see also 2011b: 49–66). The development of a research framework may be used to identify research priorities, thereby situating site-specific projects in a broader context and providing access to cumulative knowledge about particular site-types and artefact assemblages. Importantly, research frameworks can inform judgements about the relative significance of archaeological sites and collections. This information assists heritage agencies and antiquities organisations managing repositories and justifying the allocation of resources. Artefact collections that can provide data for rarely addressed areas of research should be considered to have greater research potential than those that provide data for more commonly published, and possibly exhausted, research topics.

Unfortunately, owing to the crisis in Syria it has not been possible to return to Qala'at Najem to continue with the implementation and development of the other stages of the Syrian-Australian Historical Research Collaboration Project. However, when it is safe to do so, it is envisaged that Qala'at Najem may serve as an education and interpretation facility in which a variety of learning activities could inform local and international visitors about the history and archaeology of the Euphrates valley. It would include displays on selected sites and archaeological collections from the Euphrates valley and information on Qala'at Najem reinforcing and enhancing the site's importance within the historical context of the region. It is also planned to include material and information on the cultural heritage of the modern era inhabitants who have added an important dimension to the life along the Euphrates valley.

With the modern inhabitants of the Euphrates valley in mind the project at Qala'at Najem also aspires to offer opportunities for local communities and acknowledge the importance of integrating local historical knowledge, by bringing this knowledge to the foreground and acknowledging these groups. It is hoped that the project at Qala'at Najem will provide local communities with an opportunity to manage and promote the cultural heritage in their area. Touristic interest roused by the project would help develop the local economy and raise awareness about managing and preserving the archaeological heritage of the Euphrates valley region (Schmindt 2014: 37–55). The project would provide training opportunities to both Australian and Syrian students in museum and conservation studies and promote the

importance of Qala'at Najem across Syria. The outcomes would be to encourage sustainable tourism, and develop ways to generate income for the local community using the archaeology of the region through interpretation and presentation at the historic site.

It is hoped that when it is safe to return to Syria it will be possible to continue with the implementation of the other stages of the Qala'at Najem project which have the potential to deliver significant outcomes, especially in the area of community engagement by:

- providing opportunities for local communities to engage with and feel responsible for the archaeological collections
- using the collections to tell stories that make research more accessible and understandable to the non-specialist or through object-based learning directed towards students and local communities, addressing the widening participation agenda
- making information more accessible to the general public encouraging a more collaborative, inclusive and accessible relationships between local communities and the wider audiences
- reaching specific communities that might otherwise feel shut out of museums, due to unseen cultural boundaries present in elite art institutions

Conclusion

In spite of the multiple resolutions and codes of ethics, recommending that local communities be brought into the process of archaeological planning, executing, and writing, there is still a long way to go in achieving these participatory approaches in the Near Eastern context (Colwell-Chanthaphonh/Ferguson 2008). The benefits of using Near Eastern archaeological collections for curriculum engagement may be measured by the increase in student enrolments, the high satisfaction rates of students in teaching and learning, and a deep public interest in the study of the ancient Near East flowing into financial support and benefaction. The project at Qala'at Najem also offers a number of important opportunities and benefits through the access and use of archaeological collections from the Euphrates valley. The key objectives of the Qala'at Najem project are considered to be highly complementary to the sites' historical importance providing beneficial outcomes not just for the castle but also for the history and culture of the Euphrates River valley as well as local communities of the region.

Bibliography

- Ali, C., 2013. Syrian Heritage Under Threat. *Journal of Eastern Mediterranean Archaeology and Heritage Studies* 1/4, 353–366.
- Colwell-Chanthaphonh, C./Ferguson, T. J. (eds.), 2008. *Collaboration in Archaeological Practice: Engaging Descendant Communities*, Lanham MD: Rowman Altamira.
- Chatterjee, H. J., 2008. Staying Essential: Articulating the Value of Object Based Learning. *University Museums and Collections Journal* 1, 37–42. <http://edoc.hu-berlin.de/umacj/1/chatterjee-helen-1/PDF/chatterjee.pdf> (accessed 28 May 2014).
- Chatterjee, H. J., 2010. Object-based Learning in Higher Education: the Pedagogical Power of Museums. *University Museums and Collections Journal* 3, 179–181. <http://edoc.hu-berlin.de/docviews/abstract.php?lang=ger&id=37659> (accessed 28 May 2014).
- Del Olmo Lete, G./Montero Fenollos, J.-L. (eds.), 1999. *Archaeology of the Upper Syrian Euphrates. The Tishrin Dam Area. Proceedings of the International Symposium held at Barcelona, January 28th–30th, 1998, Aula Orientalis (Supplementa 15)*. Barcelona.
- Duhs, R., 2010. Learning from University Museums and Collections in Higher Education: University College London (UCL). *University Museums and Collections Journal* 3, 183–186. <http://edoc.hu-berlin.de/umacj/2010/duhs-183/PDF/duhs.pdf> (accessed 28 May 2014).
- Fitzpatrick, D., 2011. A Collections Management Plan for Near Eastern Artefacts: Preservation and Significance, Interesting Times New Roles for Collections. *Conference Papers of the Museums Australia National Conference 2010, The University of Melbourne*. Canberra, 54–61. http://www.ma2010.com.au/docs/MA2010_Conference_Papers.pdf (accessed 28 May 2014).
- Freedman, D. N. (ed.), 1979. *Archaeological Reports from the Tabqa Dam Project, Euphrates Valley*. Cambridge, MA: American Schools of Oriental Research.
- Jamieson, A., 2012. Tell Ahmar III. Neo-Assyrian Pottery from Area C. *Ancient Near Eastern Studies Supplement Series* 35. Leuven: Isd.
- Jamieson, A./Fitzpatrick, D., 2014. Sustainable Management Strategies for Near Eastern Archaeological Collections. P. Bieliński et al. (eds.), 8 ICAANE. *Proceedings of the 8th International Congress on the Archaeology of the Ancient Near East (30 April – 4 May 2012, University of Warsaw)*, 3. Wiesbaden, 251–268.
- Jamieson, A./Kanjou, Y., 2009. Archaeological Research by the University of Melbourne in the Middle and Upper Euphrates Valley, North Syria. *The Artefact* 32/1, 1–30.
- Kennedy, H. (ed.), 2006. *Muslim Military Architecture in Greater Syria: From the Coming of Islam to the Ottoman Period*, Leiden: Brill.

- Kila, J. D., 2012. *Heritage Under Siege. Military implementation of Cultural Property. Protection following the 1954 Hague Convention.* Leiden: Brill.
- Margueron, J.-Cl., 1980. *Le Moyen Euphrate. zone de contacts as d'échanges. Actes du Colloque de Strasbourg, 10–12 Mars 1977.* Leiden: Brill.
- McClellan, T., 1983. *Palestinian Pottery.* C.A. Hope/J. K. Zimmer (eds.), *Ancient Middle Eastern Ceramics and Australian Archaeology in the Middle East.* Melbourne, 153–171.
- Paris, S. G. J., 2002. *Perspectives on Object-based Learning in Museums.* Mahwah, N. J.
- Schacht, I., 2011a. *Towards a Thematic Research Framework for Australian Historical Archaeology.* *Australasian Historical Archaeology* 28, 61–76.
- 2011b. *Not leaving it to Chance: Using Significance to Prioritise the Selection of Archaeological Collections for Long-term Preservation.* *Smith/Murray 2011:* 49–66.
- Schmidt, P. R., 2014. *Rediscovering Community Archaeology in Africa and Reframing its Practice.* *Journal of Community Archaeology and Heritage* 1/1, 37–55.
- Smith, C./Murray, T. (eds.), 2011. *Caring for our Collections. Developing Sustainable, Strategic Collection Management Approaches for Archaeological Assemblages.* Melbourne: Museum Victoria Publishing
- Sparks, R. T., 2010. *Object-handling in the Archaeology Classroom.* *University Museums and Collections Journal* 3, 191–196. <http://edoc.hu-berlin.de/umacj/2010/sparks-191/PDF/sparks.pdf> (accessed 28 May 2014).
- Simpson, A./Hammond, G., 2012. *University Collections and Object-based Pedagogies.* *University Museums and Collections Journal* 5, 75–82. <http://edoc.hu-berlin.de/umacj/2012/simpson-75/PDF/simpson.pdf> (accessed 28 May 2014).
- Smith, C., 2011. *Workshopping Ideas for a Sustainable Approach to Managing Archaeological Assemblages.* *Smith/Murray 2011,* 105–109.
- Sourdel, D., 2010. *Ḳal'at Nadjm.* P. Bearman et al., *Encyclopaedia of Islam*, 2nd edition, Leiden: Brill Online. http://referenceworks.brillonline.com.ezp.lib.unimelb.edu.au/entries/encyclopaedia-of-islam-2/kalat-nadjm-SIM_3816?s.num=0&s.f.s2_parent=s.f.book.encyclopaedia-of-islam-2&s.q=%C4%B6alat+Nadjm (accessed 28 May 2014)
- Tabbaa, Y., 2006. *Defending Ayyubid Aleppo: the fortifications of al-Zahir Ghazi (1186-1216).* *Kennedy 2006:* 176–183.
- Yovitchitch, C., 2006. *The Tower of Aybak in 'Ajlun Castle: an example of the spread of an architectural concept in early 13th century Ayyubid fortification.* *Kennedy 2006:* 224–242.
- Yule, P., 2003. *Classics, Cypriot and Middle Eastern Collections.* C. McAuliffe/P. Yule (eds.), *Treasures: Highlights of the Cultural Collections of the University of Melbourne.* Carlton, 17–18.

Andrew Jamieson is Senior Lecturer in Classics and Archaeology (School of Historical and Philosophical Studies) at the University of Melbourne. Email asj@unimelb.edu.au.

Elisabeth Völling

Textiles as Cultural Heritage in Fieldwork and Repositories

This paper focuses on material cultural heritage in the form of textiles. Textile research is an area of increasing importance often involving scientific methods of investigation. This paper discusses the importance of textile finds and features as part of cultural heritage in the Near East. It focuses on the documentation of fragile remains and pseudomorphs as the first step to save perishable materials for future generations.¹

The significance of textile finds and features in the Near East as a part of culture heritage is threatened by inevitable decay due to climatic conditions. In particular textiles react extremely sensitive to environmental influences and may leave only tiny and inconspicuous traces within the archaeological record. All states of textile preservation contain information about the settings of burial clothing, grave goods and treatment in funeral procedures. This information has to be saved from beginning of recovery to their storage in repositories.

This paper is divided into four parts that together will discuss importance of textile research focusing on the material of the finds and the methods used to process and document them. The first part discusses the manner in which traces of textiles are preserved whether through the material itself, or depictions thereof. The second part discusses methods of analysis of ancient textiles and their production. Part three discussed the natural preservation of textile and plant fibres as pseudomorphs. The final part engages with the problems of preserving and storing such pseudomorphs after they have been uncovered.

1 A modified version of this paper, prepared by Dr Nicole Reifarth and Dr Elisabeth Völling, was read in absentia at the 9ICAANE workshop on Collections at Risk: Sustainable Strategies for Near Eastern Archaeological Collections Management. The current paper was prepared for the congress proceedings by Elisabeth Völling.

State of Preservation

Arid environments or in contrast standing water or permafrost, environments preserving organic material are not available in the Near East. Most textile finds survive in undisturbed tombs like those at Ur, Gordion or Nimrod, or in the Palestinian caves. They are also preserved in fragments as single finds in graves and rarely in settlements. Textiles in natural state prove the skills of ancient textile production. They usually grant a limited view to the fabrication of ancient cloth or tissue. In contact with metal corrosion or gypsum or lime and under the heat of fire, textile structures transform into a homogenous solid-state. Processes of carbonization and mineralization substitute textile structures and preserve the organic material indirectly as pseudomorphs. Both, originals and pseudomorphs are the basis for investigations well adapted for variable requirements on the material.

Imprints on pottery and seal impressions also give a small insight of the cloth or fabrics used by craftsmen. The imprints are suitable to document weaving techniques, which are nevertheless of high significance especially coming from prehistoric periods. Spinning quality could also be noticed, but raw materials cannot be defined (**Table 1**).

Textile Finds in the Near East

Written sources offer detailed information about textile production, types of garment, determination and value of cloth within palatial, sacral and legal usage or as trade goods (Waetzoldt 1972; See also Gillis/Nosch 2007; Michel/Nosch 2010; Nosch et al. 2013).² Before writing and in periods and regions without writing our knowledge of textile craft is restricted to archaeological finds. Data gained from millimeter-sized scraps can vary dependent on the state of preservation, raw materials, spinning quality, weaving techniques and dyestuffs. Textile remains have been published by scientists specialised in archaeological textile research for the last one-hundred years. These publications have provided a sufficient base giving an overview of textile technology in the Near East (Völling 2008: 202–246). Together with textual documents, the material remains have allowed us to reconstruct an important industrial sector in ancient Near Eastern society.

Culture Heritage is threatened in the Near East in general due to war activities, plundering and the devastation of ancient sites and repositories. Near Eastern organic material is, contrary to the well preserved Egyptian clothing popular as loot, though not a precious material

2 An overview is given in *Ancient Textile Series* edited by the Danish National Research Foundation Centre for Textile Research (CTR). The members and authors of the CTR focus the research on Near Eastern textile studies on written sources, textile tools, ethnology and experimental studies.

Conservation of textile remains in the Near East

Natural influences	Physic-chemical influences	Indirect influences (imprints)
In original condition Any state of preservation	No original condition Textile structures - pseudomorph	Other material Weaving techniques
Predominantly possible: - in undisturbed, sealed off burials, tombs and tumuli - in caves - in water (only one example in Ohallo II, Tiberias/Israel)	Mineralisation: - in connection with metal corrosion (substitute of iron or copper ions) - silicified plant material (phytoliths) - calcium compound (gypsum)	Imprints in: - predominantly clay - metal - bitumen - gypsum - other material (e.g. soil)
	Carbonization and coal diagenesis	

Table 1. Preservation conditions where textile remains survived in the Ancient Near East.

traditionally targeted by plunderers. The intentional destruction of the few remains and their natural decay however are greater contributors to our current deficit. For this reason textile research is an area of increasing importance needing the application of enhanced methods for investigation. Some examples of work that has been done:

Fibre analyses are summarized by M. Gleba³ – currently wool is a subject in comprehensive research studies (Ryder 1969: 495, 521; Gleba 2012: 3643–3661; Rast-Eicher 2013: 1224–124; Firth/Nosch 2013: 67–84; Breniquet/Michel 2014).⁴

- Dyestuffs were analysed not only in connection with plant and animal fibres. Still extracted from soil sediments or deposits of strong decayed organic material and actually in animal excrements dyestuffs verify or suppose indirectly textile evidence (Reifarth/Völling 2013: 33–39; Reifarth 2011a: 449–463).
- Strontium isotope ratios have recently been shown to be an indicator for wool fibre provenience. Together with oxygen isotope ratios this is also a method to determine the provenience of plant fibres, all of them in natural state (Gleba 2011: 11).⁵
- DNA is currently being investigated in the aim to explore ancient flax genetics and to analyse the proteome and changing properties of ancient wools (Ørsted Brandt et al. 2011: 209–221).⁶
- Textiles are particularly suitable for C14 dating using Accelerator Mass Spectrometry (AMS) since they have a short life and may even give more precise dates than other material (Gleba 2011: 11; Akin 2010:13–22).

3 Investigations on textiles of mostly European finds provide a summary of textile examinations methods in general: Andersson Strand et al. 2010. See also: Banck-Burgess et. al. 2013: 21–30. Another similar version of the publication of Andersson et al. 2010 is emphasized on Mediterranean and Near Eastern finds and sources: Gleba 2011: 9.

4 The publication is broached to the issue of wool economy with many contributions and literature.

5 Here is to be mentioned, that wool has hardly survived in the Near East.

6 Unfortunately we have not enough material in the Bronze and Iron Ages for analyses.

Isotopic tracing, molecular and radiocarbon analysis are currently being explored on ancient textile remains. Every available material is necessary to provide the results in databases. Methods in Archaeometry are an addendum to conventional examinations of fibre and dye-stuff proof, spinning and weaving techniques.

Textiles and Plant Fibres as Pseudomorphs

Textile evidence is also given by mineral and charcoal replaced structures. This inorganic material does not allow a clear definition of raw materials, but still exhibits the presence of textiles, mats and basketries. Weaving implements or even dyestuff remaining, if available, are further gains of information signifying techniques. An advantage of pseudomorphs in contrast to textiles in their original state is firstly the preservation of greater pieces or surfaces showing more details of weaving techniques and secondly the chance of discovering information about the taphonomy of textiles or basketries produced in prehistory epochs. Some features that may be the foci of future studies:

- Greater fragments of charred textiles could demonstrate hemlines, seams and stitching documented e. g. in Neolithic Çatal Höyük (Helbaek 1963; Burnham 1965; Ryder 1965; Vogelsang-Eastwood 1988). The possibility to retain textile techniques is of great significance verifying skills of textile craft in the Neolithic.
- Textiles in connection with bronze and iron metal corrosion preserved as a substitute of iron and copper ions. Bronze but especially iron tools were scarcely found in Mesopotamia. Syria, Anatolia and Iran provide more metal grave goods but only in very few cases with textile residues (Völling 2008: 43–45). Such pseudomorphs are well explored by restorers (Nowack-Böck 2010: 174–180; Mitschke 2001). Simple plain weaved fabrics were used for wrapping metal objects laid down in the graves.
- Silicified plants of grasses and reed should also be noticed here. Phytoliths characterize basketry and mats used for everyday life or those needed in hut and house buildings. These are all predominantly made out of grass and reed. Phytoliths arranged in an extremely fine weaving structure were found in an early Holocene house in Körtek Tepe (Schreiber et al. 2014: 15–16; Ryan 2011: 292–305). Processing of flax is not known so far in that early time and the transition from finest grass products to processing flax is a conceivable step to the beginnings of textile production. This assumption has to be supported by further investigations focused on finds from earliest sites in South East Anatolia and Syria.
- Textiles as gypsum compounds were encountered in the Royal Tomb of Qatna (Reifarth 2011b: 499–523; Reifarth 2011c: 469–482). Most of the textile remains had been discovered on the northern stone bench in Chamber 4 in connection with the only

undisturbed body in the tomb construction. The deposits on the bench are only five cm thick. A very complex microstratigraphy comprises mainly textile layers, but also human and plant remains as well as residues supposing from of a wooden coffin. Below the body a sediment-like material had been found and identified as several remains of textiles. This recent research documents the advanced possibilities of investigation methods gained from difficult to determine deposits. Explanatory models of taphonomic and mineralization processes are currently being explored: they enlighten the context of funeral ingredients and burial procedures.

Textile Remains and Pseudomorphism in Storage Magazines and Repositories

Advanced examination methods raise the question of textile storage methods in magazines and repositories that would allow for supplementary investigations. This is still a desideratum however, but necessary to get more detailed information on older material or to answer specific questions like the specific patterns of weaving in Kaman – Kalehöyük (Fairbairn 2004: Abb. 118, fig. 3).

First of all, textile finds in any state of preservation demand expert ability to identify millimeter-sized scraps or strong decayed organic material. Inside the sarcophagi of the Queen Tombs in Nimrod for example tassels, fragments of fabrics and embroidery threads of royal garment were embedded in an organics-preserving environment (Damerji 1988: 48–49; Crowfoot 1995: 113–118). The dry and sealed off storage location contained colored, supposable strong decayed organic substances and well-preserved original textile fragments (Fibers & Textiles Laboratories, TORAY Industries, Inc. 1996: 199–200 Pl. 1–6). The colored stuffing wasn't foremost in the excavator's mind, more concerned with a fear of grave robbery the precious grave. This led to an incomplete study of these goods. This excavation happened in 1988 and since then all prospects have changed: examination methods have been enhanced for studying such organic substances.

Block-liftings with organic residues are usually analyzed in a restoration workshop or a suitable repository allocated to excavation sites or in district museums (Nowack-Böck 2002, unpublished). Specialised scientists are today regularly members of staff in excavation teams. Within the team they are responsible for investigation and publication such findings. Besides block-lifting, the transport of textile relics in magazines and repositories takes place in plastic bags, smaller fragments in rigid boxes and greater one in acid free tissue paper. Kept in standardised packing material, their short and long term storage depends individually on the management of storage locations (Gillis/Nosch 2007).

<i>Natural influences</i>	<i>Physic-chemical influences</i>	<i>Indirect influences (imprints)</i>
<i>In original condition</i> Any state of preservation	<i>No original condition</i> Textile structures - pseudomorph	<i>Other material</i>
block lifting with the surrounded earth or soil consolidating of earth or other environment (matrix)	mineralised and carbonised textiles are extremely brittle and have to be handled carefully	predominant clay: - cuneiform tablets - pottery - on sealings as a documents
better preserved material has to be stabilized and consolidated	consolidation with volatile components such as cyclododecan is advis-ably	imprints in metal corrosion
wet textiles should be block-lifted and kept wet	block-lifting	

Table 2. Rescue of textile remains in the Near East.

The documentation of the fragile remains and pseudomorphs after discovery is the first step to save that perishable commodity for future generations. Microscopic picture documentation concerning all significant parameters of fibre identification, spinning and weaving techniques and dyestuff applications serve first information on the finds. Furthermore natural-scientific investigations are to be adapted on the requirements posed by a multifaceted material. Depending on technical and personal equipment working on excavation sites and in repositories, all performable examinations fill references in databases. They provide a field of research of a rather young science on one of the oldest craft skills in ancient societies.

Conclusion

The study of textiles is paramount to our understanding of ancient society. They formed an important part of daily life for the people in the Near East providing clothing, shelter, storage and much more. Though we have come a long way from archaeology's initial disinterest with every day and especially organic items, and a number of studies have been done with regards to textile materials, they often ignore the wide range of taphonomic preservation methods for textiles. By developing better methodologies for the study and preservation of textiles in various states, especially those found as pseudomorphs we will be able to expand our limited textile resources and our knowledge gained from them about Near Eastern culture. However this endeavor will take time, especially regarding the current situation of people in Iraq and Syria. In these war-torn countries the knowledge embedded in these ancient organic remains has become secondary to the issues of the present day (**Table 2**).

Bibliography

- Akin, D. E., 2010. Chemistry of Plant Fibres. J. Müssig (ed.), *Industrial Applications of Natural Fibres. Structure, Properties and Technical Applications*, 13–22. Chippenham, Wiltshire.
- Andersson Strand, E., et al., 2010. Old Textiles – New Possibilities. *European Journal of Archaeology* 13/2, 149–172.
- Banck-Burgess, J., et al., 2013. Methoden der Textilarchäologie. M. Tellenbach et al. (Hgg.), *Die Macht der Toga. Dresscode im römischen Weltreich. Ausstellungskatalog Roemer- und Pelizaeus-Museum Hildesheim. Regensburg*, 21–30.
- Breniquet, C./Michel, C. (ed.), 2014. Wool Economy in the Ancient Near East and the Aegean. *Ancient Textile Series* 17. Havertown.
- Burnham, H. B., 1965. Çatal Hüyük – the textiles and twine fabrics. *Anatolian Studies* 15, 169–174.
- Crowfoot, E., 1995. Textiles from Recent Excavations in Nimrud. *Iraq* 57, 113–118.
- Damerji, M. S. B., 1999. Gräber assyrischer Königinnen aus Nimrud. Verlag des Römisch-Germanischen Zentralmuseums: Mainz.
- Fairbairn, A., 2004. Archaeobotany at Kaman-Kalehöyük 2003. *Kaman-Kalehöyük* 13. *Anatolian Archaeological Studies* 13, 107–120.
- Fibers & Textile Industries, TORAY, Inc., 1996. Report on the Analyses of Textiles Uncovered at the Nimrud Tomb-Chamber. *Al-Rafidan* 1996, 199–200, Pl. 1–6.
- Firth, R./Nosch, M.-L., 2012. Spinning and Weaving Wool in Ur III Administrative Texts. *Journal of Cuneiform Studies* 64, 67–84.
- Gillis, C./Nosch, M.-L., 2007. First Aid for the Excavation of Archaeological Textiles. *Ancient Textile Series* 2. Oxford.
- Gillis, C./Nosch, M.-L. (eds.), 2007. *Proceed Ancient Textiles. Proceedings of the First International Conference on Ancient Textiles (March 19–23 2003)*. Exeter.
- Gleba, M., 2011. *Textile Studies, Sources and Methods*, KUBABA 2. <http://www.fcsh.unl.pt/kubaba> (accessed 20 December 2014).
- From textiles to sheep: investigating wool fibre development in pre-Roman Italy using scanning electron microscopy (SEM). *Journal of Archaeological Science* 39, 3643–3661.
- Helbaek, H., 1963. Textiles from Çatal Hüyük. *Archaeology* 16/1, 39–46.
- Michel, C./Nosch, M.-L. (ed.), 2010. *Textile Terminologies*, *Ancient Textile Series* 8. Oxford.
- Mitschke, S., 2001. Zur Erfassung und Auswertung archäologischer Textilien an korrodierten Metall. (Vorgeschiehtliches Seminar der Phillips-Universität Marburg, Kleine Schriften 51). Marburg.
- Nosch, M.-L./Koefoed, H./Andersson Strand E. (ed.), 2013. *Textile Production and Consumption in the Near East*. *Ancient Textile Series* 12. Oxford.

- Nowack-Böck, B., 2002. Zur Bearbeitung von Blockbergungen mit organischen Resten aus archäologischen Ausgrabungen, Staatliche Akademie der Bildenden Künste Stuttgart (Unveröffentlichte Diplomarbeit). Stuttgart.
- 2010. Bewahren und Erfassen, Umgang mit mineralisierten Strukturen auf Metallen in der Denkmalpflege. Vorgeschichtliches Seminar der North European Symposium for Archaeological Textiles X, 174–180.
- Ørsted Brandt et. al., 2011. Characterising the potential of sheep wool for ancient DNA analyses. *Archaeological and Anthropological Science* 3, 209–221.
- Pfälzner, P. (ed.), 2011. Interdisziplinäre Studien zur Königsgruft von Qatna. *Qatna Studien* 1. Wiesbaden.
- Rast-Eicher, A., et al., 2013. Sheep wool in Bronze Age and Iron Age Europe. *Journal of Archaeological Science* 40, 1224–1241.
- Reifarth, N., 2011. Die Textilien vom Bestattungstisch in Kammer 4. Vorbericht zu den mikrostratigraphischen und textiltechnologischen Untersuchungen. *Pfälzner* 2011: 499–523, Taf. V–VII.
- Reifarth, N./Drewello, R., 2011. Textile Spuren in der Königsgruft. Vorbericht zu ersten Ergebnissen und dem Potenzial zukünftiger Forschungen. *Pfälzner* 2011: 469–482.
- Reifarth, N. J. M./Evershed, R., 2011. Identification of dyestuffs from mineralised textile remains from the royal tomb in Qatna/Tell Mishrife. *Pfälzner* 2011: 449–463, Taf. I–IV.
- Ryan, P., 2011. Plants as material culture in the Near Eastern Neolithic: Perspectives from the silica skeleton artifactual remains at Çatalhöyük. *Journal of Anthropological Archaeology* 30, 292–305.
- Ryder, M. L., 1965. Report of Textiles from Çatal Hüyük. *Anatolian Studies* 15, 175–176.
- 1969. Changes in the fleece of sheep following domestication. P. J. Ucko/G. W. Dimbleby (eds.), *The Domestication and Exploitation of Plants and Animals*. London, 495–521.
- Schreiber, F./Coşkun, A./Benz, M./Alt, K. W./Özkaya, V. (with contributions from N. Reifarth and E. Völling), 2014. Multilayer Floors in the Early Holocene Houses at Körtik Tepe – an Example from House Y98. *Neolithics* 2/14, 13–22.
- Vogelsang-Eastwood, G. M., 1988. A re-examination of the fibres from the Çatal Hüyük Textiles. *Oriental Carpet and Textile Studies* 3/1, 15–19.
- Völling, E., 2008. *Textiltechnik im Alten Orient: Rohstoffe und Herstellung*. Würzburg.
- Völling, E./Reifarth, N., 2013. Spuren aus dem Reich der Farben. Einblicke in die Kunst antiker Textilfärberei. *Antike Welt* 1, 33–39.
- Waetzoldt, H., 1972. *Untersuchungen zur neusumerischen Textilindustrie. Studi economici e tecnologici* 1. Roma.

Elisabeth Völling, MicroArchaeology: Textiles and Organic Materials, Saarburg/Würzburg, Germany:
<http://microarchaeology.com/index.php/en/Email:lisa.voelling@gmx.de>.

