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Archaeological approaches in investigations of Holocaust-related mass graves: A Ukrainian Perspective

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Introduction

Traditionally, Holocaust studies has focused on the investigation of different types of camps and subcamps (extermination, concentration, Prisoners of War (PoW), forced labour, transit) established by the Nazis and their collaborators. Current research has documented over 40,000 ghettos, camps, and subcamps, mostly in Central Europe and Western Europe, but this number increases every year.¹ However, an examination of the fates of Eastern European and Soviet Jews shows that the Holocaust took place not only at these camps outside the present territory of Ukraine but also in thousands of small villages, towns, and cities, often in plain sight of the local population.² As a result, Ukraine is dotted with mass graves.³ Because of the criminal negligence of the rulers of the former USSR and lack of involvement from the Ukrainian

¹ Geoffrey P. Megargee (ed.) *The United States Holocaust Memorial Museum Encyclopedia of Camps and Ghettos, 1933–1945*, volume. 3, Camps and Ghettos under European Regimes Aligned with Nazi Germany (USHMM, 2018): XIX.

² Марина Дубик, Георгій Папакін (ред.) *Довідник про табори, тюрми та гетто на окупованій території України (1941-1944)*, (Київ: Державний комітет архівів України; Український національний фонд "Взаєморозуміння і примирення". 2000); Александр Круглов, Андрей Уманский, Игорь Щупак. *Холокост в Украине. Рейхскомиссариат «Украина». Губернаторство «Транснистрия»* (Днепро: Укр. ин-т изучения Холокоста "Ткума": Лира ЛТД, 2016); Илья Альтман (ред.), *Холокост на территории СССР. Энциклопедия*. Российская политическая энциклопедия, Научно-просветительский центр «Холокост», 2009).

³ Geoffrey P. Megargee (ed.) *The United States Holocaust Memorial Museum encyclopedia of camps and ghettos, 1933-1945*. Volume 2, Part A. (USHMM, 2012): XXXI – XXXV; Patrick Desbois, "The Witnesses of Ukraine or Evidence from the Ground: The Research of Yahad—In Unum". In: *The Holocaust in Ukraine: New Sources and Perspectives*. (The Center for Advanced Holocaust Studies, United States Holocaust Memorial Museum, 2013): 94-95.

Government, most of these graves are still not officially commemorated.⁴ Despite an increase in recent research projects and open access to archives, many mass graves remain unlocated and at risk. Notably, modern urbanisation frequently means that today even mass graves which were located outside of town or village boundaries during Holocaust are often located in the middle of urban areas where they are used as garbage dumps or for agricultural purposes.

The examination of sites of genocide and mass violence, including those related to the Holocaust, is not a terra incognita in the 21st century. Forensic and archaeological investigations of mass graves and other sites connected to these events have developed significantly, particularly over the last 40 years; inspired by the emergence of forensic archaeology as a sub-discipline in the Americas in the late 1970s and its evolution in the United Kingdom, Europe, and Australia thereafter.⁵ Whilst forensic archaeology is widely defined as "the application of archaeological theory and methods to the resolution of medico-legal and humanitarian issues, archaeology in Ukrainian perception primarily focuses on studying antiquity based on material remains (artefacts, facilities, human remains).⁶ This opinion has undoubtedly contributed to the ongoing neglect of the physical evidence connected to the Holocaust in Ukraine.

With the aim of demonstrating how archaeologically derived data can fill gaps in knowledge regarding lesser-known sites – and how the use of inappropriate methods can result in a loss of evidence - this paper will examine some of the investigations that have sought to locate Holocaust-related mass graves in Ukraine. Utilising multiple spatially and temporally diverse case studies, this paper determines the effectiveness of the different archaeological and non-archaeological approaches employed. The text is divided into three sections based on the qualifications and field of expertise of researchers who have initiated in-field investigations - non-archaeologists, archaeologists and forensic archaeologists – in which we highlight the different approaches taken and common missteps of applying archaeological and forensic archaeological methods in this context. It is not our intention to provide a review of every search

⁴ Arkadi Zeltser *Unwelcome Memory: Holocaust Monuments in the Soviet Union* (Jerusalem: Yad Vashem, 2018): 87 – 104; Александр Эткинд, *Кривое горе: Память о непогребенных*, (Москва: Новое литературное обозрение, 2018).

⁵ John Hunter, Barrie Simpson and Caroline Sturdy Colls, *Forensic Approaches to Buried Remains*. (Chichester: John Wiley & Sons., 2013).

⁶ Scientific Working Group for Forensic Anthropology (SWGANTH) (2013), *Age Estimation*. Докладніше дивись: https://www.nist.gov/sites/default/files/documents/2018/03/13/swganth_age_estimation.pdf.

Переглянуто 11.11.2021. NB: Forensic archaeology relates to different fields of knowledge depending upon the country: for instance, in the USA forensic archaeology and physical anthropology are considered a subfield of anthropology, but in the UK and some other countries, they are separate disciplines: Caroline Sturdy Colls, *Holocaust Archaeologies*. (Cham: Springer International Publishing, 2015): 149.

or recovery project that has been undertaken, but rather to provide a range of examples to illustrate strengths, weaknesses and the evolution of investigatory practices. Within these sections we present a detailed analysis of the largest and most widely publicised archaeological excavation of Holocaust mass graves in Ukraine (at the time of writing) which was undertaken in Busk in 2006 as well as presenting some of our own work at numerous sites across the country as a second detailed case study. We conclude with our recommendations for practitioners who may wish to undertake or initiate an archaeological investigation in the future based on our own experience in the field.

Surveys by non-archaeologists

After the Holocaust and following extensive Jewish emigration since the 1980s, the Jewish community almost disappeared from Ukrainian towns and villages. Alongside antisemitic practice during the Soviet era, these factors contributed to the abandonment and loss of Jewish culture. As a direct response, several surveys of Jewish immobile cultural heritage (cemeteries, synagogues, and other religious buildings) took place after the Independence of Ukraine in 1991. These included those by the U.S. Commission for the Preservation of American's Heritage Abroad, European Jewish Cemeteries Initiative, and Heritage Foundation for Preservation of Jewish Cemeteries.⁷ These projects reflect a wider trend in Europe and the USA in terms of people wanting to know more about their Jewish heritage and the greater access to sites afforded to researchers since the Dissolution of the Soviet Union.

Pre-war everyday life in Soviet Jewish communities in big cities and shtetls became essential objects of study from the late 1990s.⁸ The general purpose of these studies was to record and preserve Jewish heritage in Ukraine by employing different techniques and methods

⁷Commission for the Preservation of America's Heritage Abroad. *Jewish Cemeteries, Synagogues, and Mass Grave sites in Ukraine*, (2005) Washington, D.C, Докладніше дивись: <https://surface.syr.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1022&context=rel>. Переглянуто 11.11.2021; *International Jewish Cemetery Project* (web page) Докладніше дивись: <http://iajgscemetery.org/eastern—europe/ukraine/>. Переглянуто 11.11.2021. *European Jewish cemeteries initiative surveys* (web page) Докладніше дивись: <https://www.esjf—surveys.org/>. Переглянуто 11.11.2021. *Heritage Foundation for Preservation of Jewish Cemeteries* (web page) Докладніше дивись: <https://hfpjc.com/cemeteries>. Переглянуто 11.11.2021.

⁸Elissa Bemporad, *Becoming Soviet Jews: The Bolshevik Experiment in Minsk*, (Indiana University Press, 2013) Jeffrey Veidlinger, *In the Shadow of the Shtetl: Small—Town Jewish Life in Soviet Ukraine*. (Indiana University Press, 2013). NB: The term "shtetl" means a locality that combines indications of the town and the village in Eastern Europe. Mostly shtetls inhabitants were Jewish. In shtetls, on unlike villages, the population was not only engaged in agricultural, but there were a well-developed trade and craft as a permanent activity of a particular part of the population. Often in such shtetls, Jewish communities live in isolation from representatives of other ethnic groups, preserving their culture, traditions, religion and language.

such as topographical surveys, remote sensing and excavation. Although only a few have focused specifically on Holocaust sites in Ukraine, these projects have sometimes generated data of interest to Holocaust researchers. For example, projects occasionally catalogued Jewish mass graves and cemeteries in Ukraine, thus providing approximate numbers of victims but also details about site locations and conditions.⁹

Another group investigating such topics is Yahad-In Unum.¹⁰ Traditionally, this organisation uses a two-phase methodological approach: (1) archival research in the German Federal Justice Archives and a comparison with the data of the Extraordinary State Commission¹¹; (2) fieldwork investigations in one specific region (chosen after the first phase). The latter usually first involves the collection of eyewitness testimonies, mostly derived from different categories of bystanders such as people who lived near killing sites, curious witnesses, and people who were forced into work at the time of the execution for example. Then, after interviewing, the investigative team and witnesses attempt to reconstruct the crime scene at the alleged place of the killing site or mass grave.¹² During the last fifteen years, researchers have collected a unique video archive of eyewitness testimonies and created one of the most complete maps of Holocaust mass grave locations in Ukraine (see Fig.1.).

⁹ *Jewish Cemeteries, Synagogues and Mass graves in Ukraine* (2005); *International Jewish cemetery project* (web sites).

¹⁰ NB: Yahad-In Unum is the French-based voluntary organisation which focuses on location the mass grave and collecting eyewitness testimonies about fate of Jewish community mostly in Eastern European countries.

¹¹ The Extraordinary State Commission for the Establishment and Investigation of the Atrocities of the German Fascist Invaders and Their Accomplices and the Damage They Caused to Citizens, Collective Farms, Public Organizations, State Enterprises and Institutions of the USSR (ChGK, referred to as "the Extraordinary Commission" later in the text).

¹² Desbois, Patrick, Yahad – In Unum's Research of Mass Grave Sites of Holocaust Victims. In International Holocaust Remembrance Alliance. *Killing Sites*. (Berlin: Metropol Verlag, 2015): 89-90.

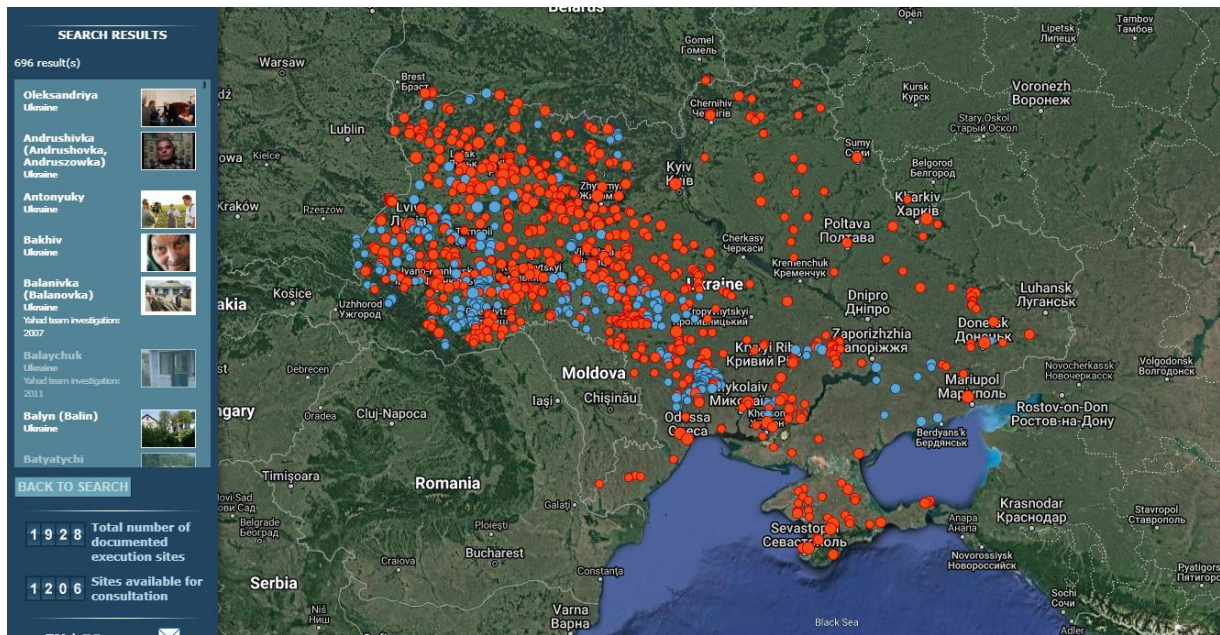


Fig. 1: A map of Jewish killing sites and mass graves in Ukraine, after Yahad-In Unum (2022).

The most common field technique employed by the Yahad-In Unum team during site visits is metal detecting, based on the notion that the Holocaust by bullets (shootings that occurred in most cases at mass grave sites) will have resulted in an accumulation of bullets and/or shells that could potentially have been left behind after an execution; thus, grave locations can be pinpointed by finding them. According to Father Patrick Desbois (the founder of the Yahad-In Unum), a metal detector survey was engaged for the first time during the Yahad-In Unum investigation in Khvativ (Lviv region) in 2006.¹³

Even though the value of data collected by the Yahad-In Unum team cannot be disputed, the approach used to get this data needs critical analysis. Eyewitness accounts alone, especially taken 70-80 years after the event, are not sufficient to definitively confirm mass grave locations. Furthermore, although they may be a valuable indicator, the existence of bullets cannot conclusively confirm the presence of a killing site or mass grave. When considering this approach, it should be noted that the whole territory of Ukraine was an arena for battles and partisan guerrillas which might explain the extent of bullet deposition. Another important concern is an absence of accurate recording of artefacts found during Yahad-In Unum's field campaigns. For example, the United States Holocaust Memorial Museum (further USHMM)

¹³Отець Патрік Дебуа, *Хранитель спогадів. Кривавими слідами Голокосту* (Київ: Дух і Літера, 2011):77-79.

holds a collection of discovered objects from Ukraine. One of these items is a shield-shaped shovel head (object 2010.443.43); it is unclear from the archival description whether this was unearthed in Berdychiv (Zhytomyr region) or Khvativ (Lviv region), two sites which are 300km apart from each other.¹⁴ It is also unclear whether these objects were discovered during a walkover survey or by metal detector search. The lack of this critical information stands in direct contrast to the rigorous methods used by forensic archaeologists, reducing the value of this object for conducting research, and breaking the general principle of *Yahad-In Unum's* methodology that states:

every piece of evidence or source of information can lead to a complete picture of the facts only when complemented by a diversity of other resources.¹⁵

Archaeological field projects and investigations of Holocaust sites

As forensic archaeology in Ukraine remains in its infancy (see below), archaeological investigations of Holocaust mass graves have most commonly been undertaken by experts in the ancient rather than the contemporary past. Some Ukrainian archaeologists have employed non-invasive techniques to search for graves e.g., during investigations in Railivka in Lviv region in 2010 led by Ksenia Bondar', and Bryukhovychi, Lviv, Biligorshcha in the Lviv region.¹⁶ However, although survey data was compared with aerial photos and pre-war/wartime maps, archival sources and witness testimonies do not appear to have been used.

Other projects that have involved archaeologists in searches for include excavations on the Teptiuzh mountain in Lviv region in 2013 (led by Bokhdan Lazarak and Yaroslav Onischuk), and at Pushkarivskii Yar in Poltava in 2019.¹⁷ However, whilst they were led by people with archaeological backgrounds, most of the work was undertaken by Poshukovtsi, volunteer organisations which focus on searching for missing soldiers in former Soviet countries such as Russia, Ukraine, and Belarus. The primary purpose of their searches is the exhumation and reburial of the soldiers' remains and if possible, identification. For most cases,

¹⁴The USHMM collection (2020). a shield shaped shovel head (object 2010.443.43). Докладніше дивись: <https://collections.ushmm.org/search/catalog/irn43139>. Переглянуто 11.11.2021.

¹⁵ Desbois, P. (2013): 94.

¹⁶ Borys Chetverikov, Ksenia Bondar and other, "Determination of location of the historical objects using photogrammetric methods and methods of non—destructive ground research", *Geodesy, cartography and aerial photography*. Volume 85. (2015): 94—103.

¹⁷Богдан Лазарак, Ярослав Онищук, «НКВС чи ГЕСТАПО?: Масове вбивство цивільного населення на горі Тептюж біля Млинок Шкільникових у липні 1941 р. та суперечливі джерельні свідчення» *Дрогобицький краєзнавчий збірник*. Спеціальний випуск II. (2015): 187—198; *Сьогодні у Пушкарівському яру фахівці з поховань та історики проводять пошукові роботи* (2019). Докладніше дивись: <https://pl.suspilne.media/news/30889>. Переглянуто 11.11.2021.

this is possible only if legible identification tags are found as forensic anthropological expertise or DNA testing is not employed. To achieve the project goals, excavations are carried out but, with a lack of reporting, it is difficult to assess the methodological approaches of these works. This practice is still commonly used in Ukraine, and many graves of unknown soldiers have been identified. However, the main limitations of this approach are: (1) they do not follow a rigorous search and recovery methodology that complies with forensic archaeological standards and, thus, valuable information about the nature of graves and the remains within them is undoubtedly lost; (2) they ignore ethical concerns when working at the burial sites of genocide victims e.g. the stipulations in Jewish law which forbid the disturbance of human remains, and the need to treat all missing persons equally and with respect; (3) they fail to create accurate records which describe why, when and where the study has been carried out. Indeed, the number of investigations led by poshukovtzi is undoubtedly much higher, but they are difficult to identify and analyse in the absence of reporting.

Busk case study

The largest excavation of Holocaust sites in Ukraine to date took place in Busk in 2006, directed by Yahad-In Unum. Even though this group predominantly focuses on gathering eyewitness testimonies, they commissioned archaeologists from Ukraine to carry out the in-field investigations. Given its scale and significance, these works are critically analysed here in detail.

Background

Busk is located in what is presently defined as the Lviv region. In 1939, during the Soviet annexation of parts of the territory of Poland, Busk was incorporated into the Ukrainian SSR. On the 1st of July 1941, the town was occupied by the Nazis. About 1,900 Jews were living there at the time.¹⁸

On Yom Kippur – the holiest day for Jews (21st of September 1942), a considerable mass execution was conducted in Busk. Germans, assisted by Ukrainian auxiliary police, selected 600-700 Jews unfit for labour and executed them next to Kamianka Strumyl'ova (now

¹⁸ *The USHMM encyclopedia* (2012). Vol. 2, Part A: 768.

Kamianka Buz'ka).¹⁹ After that, Jews from nearby villages were moved to Busk and, in December 1942, placed into a ghetto of more than 2,000 people. The ghetto was created on two small streets and housed to 4,000 people.²⁰ Jews that died in the ghetto of starvation and ill-treatment were buried at the Jewish cemetery in mass graves.²¹ Those who were capable of working were used as forced labour and transferred to labour camps.

In January 1943, all patients of the Jewish hospital in the ghetto were executed. Additionally, on 21st May 1943, 1,200 ghetto prisoners were also executed at the Jewish cemetery. The remaining 300 inmates were transferred to Lviv to a camp on Janowska Street.²²

Archaeological investigation ²³

Between the 14th and the 23rd of August 2006, excavations were conducted at the site of the Jewish cemetery in Busk by a Communal association called the Memorial Society for Search of Victims of War in collaboration with Yahad-In Unum (Fig. 2). This was the site of the possible executions of the Jewish population of Busk during World War II. The proposed aims of the fieldwork were:

1. To conduct exhumation of burials.
2. To study bone fragments without disturbing their integrity, with the aim of establishing the nationality of victims, cause of death, an approximate timeline of events and the number of victims in the grave.
3. To photographically document the process of investigation.²⁴

¹⁹ *The USHMM encyclopedia* (2012). Vol. 2, Part A: 768; Shayari, A. (1965): 57.

²⁰Dieter Pohl, *Die Holocaust-Forschung und Goldhagens Thesen* (München: Oldenbourg, 1997): 257. Shayari, A. (1965): 57.

²¹ *The USHMM encyclopedia* (2012). Vol. 2, Part A: 768;

²² *The USHMM encyclopedia* (2012). Vol. 2, Part A: 769;

²³ NB: This part was made possible thanks to Yahad - In Unum's Fellowship Holocaust Young Scholars Workshop 2019.

²⁴ Ярослав Онишук, *Звіт про проведення пошуково дослідницьких робіт на місці розстрілів єврейського населення в часи Другої світової війни у м. Буськ Львівської області*. (2006): 2.

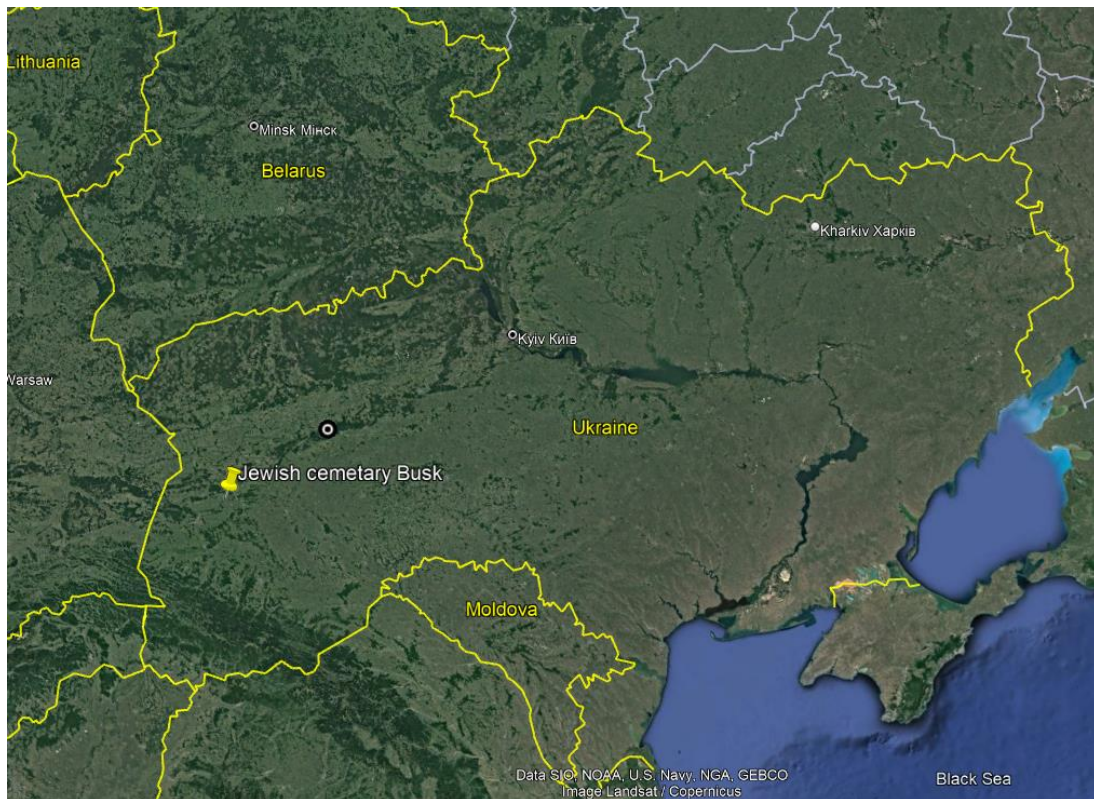


Fig. 2. Location of the Jewish cemetery in Busk. (Copyright Google Earth).

Despite the religious considerations²⁵, excavation at Busk went ahead. According to Father Desbois, permission was given by the Jewish authorities because the mass graves could

²⁵ The victims of the Holocaust were dehumanised, and efforts were made to destroy them both physically and spiritually. Therefore, as described by Sturdy Colls, respect for their belief systems and their remains affords them a dignity that the perpetrators who murdered them did not. However, although modern research standards require practitioners to uphold high ethical principles, accounting for religious views with regards burial rites is not a legal requirement in international nor national law. In recent work, Sturdy Colls and Colls outlined that the legal system in many countries requires crime scene investigation regardless of the religious denomination of the victim. In some cases, this requirement provokes an ethical conflict. In Ukraine, Jewish victims account for most of the burials from the Holocaust, therefore, respecting Jewish religious laws becomes an essential aspect of giving respect to the deceased. An important consideration for researchers is Halakha (Jewish law), which states it is prohibited to disturb the burials of Jews regardless of whether they represent a lawful or unlawful interment. According to Halakha, to disturb a dead body, or its final resting place is to carry out an act of desecration. In addition, Holocaust victims are considered Tzadik / Tzaddiq (Hebrew: צדיק "righteous man"). Within this constraint the use of non-invasive technologies, such as those used by forensic archaeologists, becomes indispensable. See more in: Sturdy Colls, C. (2015): 64-77; Caroline Sturdy Colls, 'Earth conceal not my blood': forensic and archaeological approaches to locating the remains of Holocaust victims", In: Dreyfus, J—M. and Anstett, E. (eds.) *Human remains in society: Curation and exhibition in the aftermath of genocide and mass—violence*. (Manchester: Manchester University Press, 2016): 163–196; Caroline Sturdy Colls, (2021). "'For Dust Thou Art, and Unto Dust Shalt Thou Return": Jewish Law, Forensic Investigation, and Archaeology in the Aftermath of the Holocaust in Brown, S. and Smith, S.D. *The Routledge Handbook of Religion, Mass Atrocity, and Genocide*. (London: Routledge 2021): ch.27; *Єврейские кладбища*. (web page) Докладніше дивись: <https://toldot.ru/evrejskieKladbishcha.html>. Переглянуто 11.11.2021. ; NB: The concept of tzaddiks could be compared with Christian saints, but it is not identical. Tzadiks are partially responsible for

be in danger from looting activities.²⁶ To follow Halakhic requirements for the duration of fieldwork, representatives of ZAKA (an Israeli non-profit organisation that assists Israeli government agencies in identifying and preparing victims of terror attacks or other similar incidents for burial) were present at the excavation site. This imposed significant restrictions on the archaeologists in terms of conducting excavation; they were instructed to remove only the top layers of soil, not to disturb bones in any way, not to extract any objects or remains, and to analyse only the top layer of skeletons in multilayer burials.²⁷ However, that the invasive work that was undertaken far exceeded that which was permitted in similar projects elsewhere in Ukraine and in Poland by Orthodox Rabbis in light of their much stricter reading of Halakha.²⁸

The investigation in Busk was designed as an archaeological excavation with the addition of metal detector surveys. Based on the archaeological report, it appears that the following steps were taken:

- Desk-based research, primarily based on sources of information from German and Soviet archives;
- Witness interviews (these steps were conducted by the Yahad-In Unum team);
- Visual inspection of the site which revealed 15 rectangular depressions where shootings allegedly took place (depth of 0,3²⁹-0,5 m^{30 31}) and which were assumed most likely to be mass graves;³²
- Excavation of burials "across the entire site"³³ All depressions (possible graves) were excavated using a traditional method of successive removal of layers of soil, followed by clearing of bone fragments with brushes, knives and trowels for recording and taking photos of the findings. Also, metallic rods were used to determine the depth of burial, perhaps, due to the inability to remove further layers above or within the remains due to Halakhic restrictions.
- Photography;

the sins of their generation: *Tzaddiq* at *Encyclopædia Britannica*. Докладніше дивись: <https://www.britannica.com/topic/tzaddiq>. Переглянуто 11.11.2021.

²⁶ Дебуа, П. (2011): : 181-182.

²⁷ Onyschuk Ya. (2006): 1-2.

²⁸ For examples, see Sturdy Colls, C. (2021): ch.27.

²⁹ Pit 1.

³⁰ Pit 2.

³¹ For other pits the depth is unknown;

³² Onyschuk Ya. (2006): 3.

³³ Ibid: 3.

- Description of individual burials;
- Anthropological analysis;
- Stratigraphic description.

The results of the archaeological fieldwork (discovered graves), visual inspection of human remains (determining approximate sex, age, cause and manner of death) and an analysis of accompanying artefacts (shells and bullets, specific elements of clothing, jewellery, etc.) indicated who the victims were and were then used to verify witness testimonies.

Although this approach initially appears to represent a traditional archaeological methodology, based on a review of the archaeologists' report, several issues present themselves. A critical analysis of these works allows common challenges in implementing invasive archaeological methods for Holocaust studies in Ukraine to be demonstrated.

Analysis of fieldwork results

As Table 1 illustrates, archaeologists in Busk faced a range of complex problems beyond those relating to Halakha, which also limited opportunities to complete comprehensive surveys of mass graves. According to the archaeologists, the conditions for excavation were unfavourable due to the frequent flooding of burials³⁴, poor preservation of bone fragments³⁵, and multilevel layering of several burials. The team of archaeologists excavated 17 pits on the territory referred to in the historical documents and eyewitness testimonies as killing sites and mass grave locations (the area of the Old Jewish cemetery and partially area of the former Christian cemetery of the 16th and 17th centuries). The existence of other burials in the same place raised another challenge for researchers: separating the Holocaust-related graves from ordinary burials. These circumstances had a significant impact not only on the process of excavation but also on the results.

Pit	Size of excavated area	Grave dimensions	Depth at which remains appeared	Number of skeletons
1	2.1m x 4.1 m	2 m x 2 m x 1.2 m	0.8 m	12
2	3.5 m x 4 m	2 m x 4 m x 1.8 (?) m	1 m	30 (skeletons laid in two layers, it seems, no soil layer was between)
3	4.1 m x 2.6 m; depth unknown	Unknown	0.8 m	32 (skeletons laid in three layers with layers of soil between them)
4	2.5 m x 2 m; depth unknown	Unknown	1 m	2

³⁴ Onyschuk Ya. (2006): 3.

³⁵ Ibid: 8 pit 8 and pit 9;

5	5 m x 3.2 m	3 m x 2 m x 1.4 m (?)	1.4 m	18
6	2.5 m x 2.5 m x 1.6 m	Unknown	0.7 m	14 (skeletons were laid in two layers, it seems, no soil layer was between). The area was flooded, and bone remains were badly preserved.
7	2 m x 7 m; depth unknown	Unknown	1.3 m	42 (possible some skeletons laid on top of others, possible two layers of human remains)
8	1.5 m x 3.5 m x 1.3 – 1.5 m	Unknown	1.1 m	22 (possible multilayer burial)
9	Length and width are unknown, depth 1 m	Unknown	Unknown	The area was flooded, and it was impossible to excavate this grave properly.
10	2 m x 8 m; depth unknown	Unknown	1.2 m	35 (2 of them were children)
11	Length and width are unknown, depth	Unknown	Unknown	Both these pits were excavated on the territory of the former Christian cemetery (now private property). Christian burials of the 16 th -17 th centuries were discovered.
12	1 – 1,2 m	Unknown	Unknown	
13	2 m x 2.5 m x 1.6 m (?)	Unknown	1.2 m	11 (skeletons were laid in two layers with layers of soil between them)
14	2 m x 9 m x 1.5 m	Unknown	1.2 m	45 (possible multilayer burial); The area was flooded, and it was impossible to excavate this grave properly
15	1.5 m x 2 m; depth unknown	Unknown	1.1 m	3
16	2 m by 9 m	Unknown	at 1.2 m and 1.6 m	Two conglomerates of human remains were discovered in this pit: 16 a – 33 (adults) + 4 (children 4-10 years old) 16 b - no less than 16. This area also had a high level of soil moisture and it made the excavation process extremely difficult.
17	4 m x 11 m; depth unknown	Unknown	1 m	From 135 to 150 (18 of them were children).

Table 1. Measurements and a possible number of individuals in each pit³⁶, excavated during the fieldwork in Busk in 2006.³⁷

However, gaps in this research appeared not only due to factors beyond control of archaeologists. In the report, information about the sizes of pits was not recorded thoroughly. Only in some cases are the sizes of the excavation grids and graves provided (pits 1, 2, 5; Table 1). Although there was mention of stratigraphic analysis (of successive layers of soil), no drawings are available, except for a "plan of the location of pits with human remains" (Fig. 3). Therefore, it is not possible to retrospectively derive any conclusions about the layers of grave

³⁶ NB: all figures approximate, the counting was probably done using skulls since archaeologists were limited in their capacity to move the remains around

³⁷ Onyschuk Ya. (2006): 17.

fill in each pit. There were no drawings of actual burials either, making it impossible to determine exact sizes and other important details for event reconstruction. For example, pit 16 has two concentrations of bone fragments, but it is difficult to establish whether these were two separate pits or whether burials were created in the same pit but at different times.

It seems that the archaeologists focused on the bodies they discovered rather than providing a detailed analysis of the stratigraphic and discrete features present – a requirement of modern forensic archaeological recording at crime scenes and mass grave sites. Further analysis of aerial photos and the plan of excavations also showed that some of the pits were located along the same line (see Figs. 3 and 4). It is possible that they could have been part of a larger trench, yet no evidence is presented in the report confirming whether this is possible or if these were individual pits. Similarly, aerial photographs (Fig. 4.) suggest that pits 2, 3, 4, 8, 10, 13 and 16 contain small layers of darker soil in a clay-sand layer, but this is not captured in the report. Since these appear across a large area and have a similar pattern across all pits, it is likely that these layers represent natural floodplain alluvial deposits. However, a detailed stratigraphic description of them and their exact width and depth would have provided more detailed information on the cuts of the graves and their subsequent backfilling, as well as post-deposition landscape change. In addition, the report did not mention any vegetation change at the sites, even though this can be considered an important indicator when looking for probable burials.³⁸

³⁸ For further information: John Hunter and Margaret Cox, *Forensic archaeology: a textbook*, (Milton Park, Abingdon, Oxon: Routledge. 2005): 29-32; Michael J. Hochrein “An Autopsy of the Grave: Recognizing, Collecting, and Preserving Forensic Geotaphonomic Evidence”, In Haglund, W.D., & Sorg, M.H. (Eds.). *Advances in Forensic Taphonomy: Method, Theory, and Archaeological Perspectives* (CRC Press, 2002): 85-86; Franklin Damann,, David Carter,, “Human Decomposition Ecology and Postmortem Microbiology “ In Pokines, J., & Symes, S.A. (eds.) *Manual of Forensic Taphonomy* (CRC Press, 2013): 37–49.

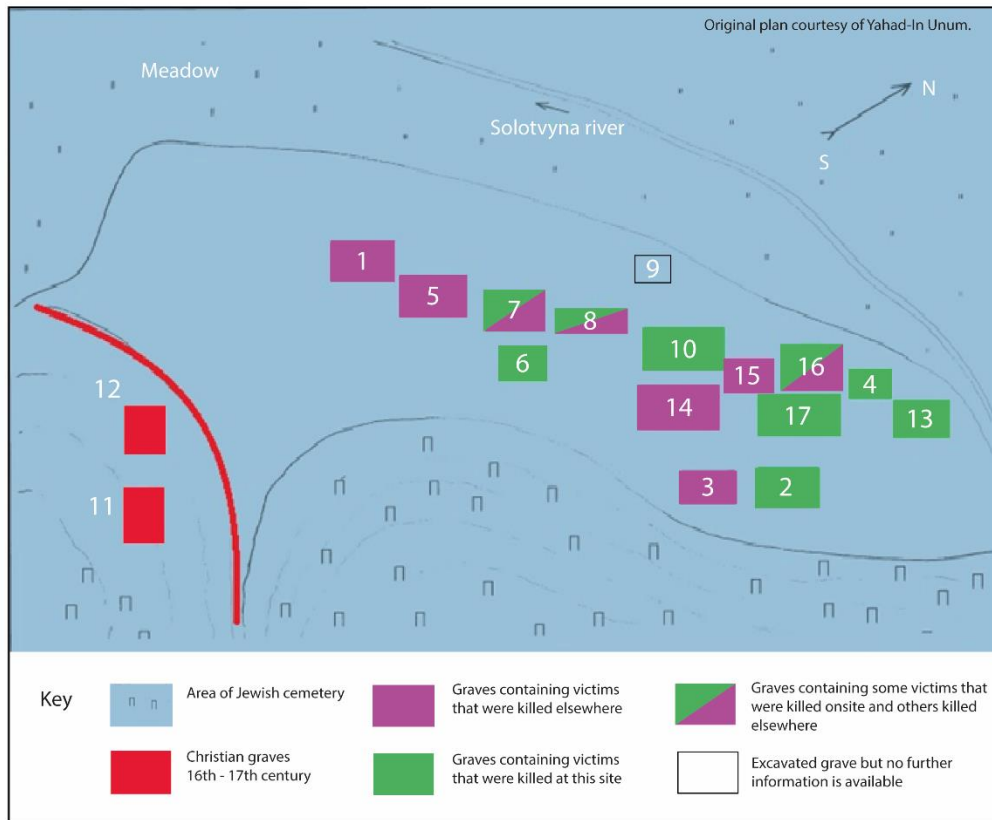


Fig. 3. Plan of excavation area with labelled pits (base image Yahad-In-Unum) annotated with additional burial data (copyright Centre of Archaeology, Staffordshire University).



Fig 4. Fieldwork in Busk, August 2006. Photograph courtesy of Yahad-In Unum.

According to the report, the total number of buried remains in the excavated mass graves in Busk was 450-465, including 26 child skeletons.³⁹ Unfortunately, it is impossible to recognise how the figure given was derived since no details of any anthropological works

³⁹ Onyschuk Ya. (2006): 17. NB: The distinctions in the numbers occurred due to no accurate numbers of victims in pit 17.

appear in the Investigation Report.⁴⁰ This figure is far less than the anticipated number of victims based on the historical documents (see Background section above). Presumably, as the team of archaeologists did not excavate everything (following Halakhic stipulations), it is highly possible that further remains existed in the layers beneath. The authors of the report did admit that the total number of buried individuals could be up to a thousand corpses but gave no rationale as to why. It is also not clear whether separate bones found in the upper soil layers were included in the totals given. Since there are no drawings or photos of the bones or any skeletal inventories, it is difficult to reconstruct accurate topographies of human remains within the grave, making it challenging to estimate how many individuals these belong to.

The authors of the report were correct to point out that the presence of female and child remains in the burials undoubtedly signifies that the victims were civilians.⁴¹ However, the remains could not be analysed fully to determine their age and sex since they were only partially uncovered and the degree to which the archaeologists involved possessed specialist anthropological knowledge is not clear in this case.⁴²

Finally, the archaeologists at Busk did indicate which pits contained people that were executed directly at the cemetery and which pits were for victims killed in other sites but who were brought there for burial. The researchers made their conclusions on the position of the remains, for example:

- the chaotic filling of the burials,
- the different poses of the deceased
- the number (or complete absence) of bullet casings.

According to the report, pits 3,4, 7, 6, 8, 10, 13, 14, 16 (partially) and 17 contained remains of victims that were shot at the cemetery (Fig. 3). Witnesses also mention that the victims were placed at different sides of pits and shot⁴³, which was partially validated by the more significant density of corpses on the sides of pits 3,10, 14 and 17.

⁴⁰ Onyschuk Ya. (2006):

⁴¹ Ibid: 17.

⁴² NB: Forensic archaeology relates to different fields of knowledge depending upon the country: for instance, in the USA, forensic archaeology and physical anthropology are considered a subfield of anthropology, but in the UK and some other countries, they are separate disciplines of forensic science: Sturdy Colls, C. (2015). p. 149. Whilst many archaeologists are trained to carry out basic anthropological analysis, this varies by country and training. In Ukraine, only 25-30 students who train in archaeology each year undertaken a basic anthropology course.

⁴³ YIUA, 301 U; YIUA, 302 U; YIUA, 33 U.

After conducting the archaeological fieldwork, the pits were backfilled with topsoil and concrete. This gives the site some protection from looting activities, but also makes any further archaeological investigation extremely difficult.⁴⁴

Artefacts from Busk

The artefacts that were discovered during the archaeological investigation at Busk warrant further discussion. The researchers conducted a reasonably detailed analysis of bullets and shells found at the site. There are no doubts about their conclusion that the presence of shells and bullets of different types of rifles (specifically Mauser, Mosin, Mannlicher and P-38 (Walter) pistols⁴⁵) indicate that the executions were not done by units of the regular German army.⁴⁶ Interestingly, this conflicts with witness testimonies which indicate that the shootings were conducted by automatic rifles (full rounds), no signs of which were seemingly found during the excavations.⁴⁷ It is entirely possible that eyewitnesses incorrectly remembered these details, especially since they were interviewed 70 years after the event and were not experts in weapons, thus demonstrating the value of archaeological investigations. Unfortunately, no information was provided on either presence or absence of bullets or shells in spots where the shooters were allegedly standing, even though the use of a metal detector is noted in the description of the methodology.⁴⁸

All pits contained virtually no clothing or household objects. Traces of clothing and shoes were recorded only on some remains in pits 2, 3, 10,15, 16 b and 17. In all cases, these were singular traces of shoes, clothes, and buttons. Yet, there are some disparities in the descriptions of these items. It should be noted that buttons are explicitly mentioned only in the descriptions of individual burials 10 and 16b. However, in the descriptions of found objects, it states that buttons were found in most pits. They were usually attributed to underwear, made from white plastic and relatively small size. There were only a few examples found of buttons from outerwear.⁴⁹ The lack of an inventory list of found objects - a mandatory part of archaeological reports - makes the analysis of personal items found in the graves extremely difficult. For example, the brief descriptions provided do not outline the quantity of buttons

⁴⁴ Дебья, П. (2011): 254.

⁴⁵ Onyschuk Ya. (2006): 15.

⁴⁶ Ibid: 18.

⁴⁷ YIUA, 136 U.

⁴⁸ Onyschuk Ya. (2006):3.

⁴⁹ Ibid: 14.

and where they were found. The interpretation that they belong to underwear exclusively also appears flawed. The fact that small pieces of fabric survived despite high levels of moisture in the soil indicates that they were likely thicker fabrics, and thus are more consistent with outerwear.

The discovery of some clothing, however small, does potentially contradict witness testimonies that state that Jews were undressed before being killed.⁵⁰ Due to the lack of detailed descriptions in the report however, it is difficult to confirm if victims were clothed or whether these were items that were not noticed by the perpetrators. Excepting a few fragments, shoes were however absent from the assemblage. Since shoe soles generally preserve quite well (unlike fabric), it seems likely that victims were made to remove their shoes in most cases. This is supported by the fact that, during archaeological excavations elsewhere in Busk, remains of male, female and children's leather shoes were found in good condition, dating back to the 16th-17th centuries.⁵¹ The absence of personal items next to victims also validate the statements of witnesses that all valuables were taken away.⁵²

As already mentioned above, the Yahad-In Unum team had experience in employing metal detector techniques for their investigations. It is reasonable to assume therefore that a metal detector survey was done in Busk, although this is not mentioned in the archaeological report. Further credence is given to this theory on the basis that Father Debois gifted a collection of five rings found near killing sites and mass graves at the Jewish cemetery in Busk in 2006 to the United States Holocaust Memorial Museum (Accession Number: 2008.76.5; 2008.76.4; 2008.76.1; 2008.76.2; 2008.76.3). These rings were not mentioned in the archaeological investigation report, so it is impossible to establish the circumstances of discovery and whether they were in a mass grave or another location. According to Father Desbois' statement on the museum's website, these items were found approximately 10 metres away from the mass graves.⁵³ The absence of further information makes it impossible to state that these rings belonged to Jews executed during the Holocaust, mainly since they appear to have been found at a Jewish cemetery that was used for burials since the 16th century. The report also states that excavations were conducted at two burial sites that were part of the Christian cemetery (pit 11 and 12; Fig. 3) so it is possible they came from there.

⁵⁰ YIUA, 33 U; YIUA, 136 U; YIUA, 298 U.

⁵¹ Анна Джунківська *Найцікавіші знахідки літописного Буська*. Докладніше дивись: <http://www.buskeradio.in.ua/naysikavishi-znahidki-litopisnogo-buska/>. Переглянуто: 29.7.2022.

⁵² YIUA, 33 U.

⁵³ Robert Ehrenreich, Jane Klinger „War in Context: Let the Artifacts Speak” In Muchitsch, Wolfgang, (ed.). *Does War Belong in Museums?: The Representation of Violence in Exhibitions*: 136.

Most importantly, these artefacts appear to have been exported from Ukraine illegally.⁵⁴ Based on Ukrainian law, an archaeological object is defined as an artefact found underneath the ground or water surfaces, or during walkover survey (archeologichna rozvidka), during which the ground surface is either not disturbed at all or disturbed slightly (topsoil only).⁵⁵ Ukrainian law clearly states that all archaeological objects found in Ukraine are the exclusive property of the state of Ukraine.⁵⁶ The Civil Code of Ukraine has a specific article on obtaining rights to buried treasure. It is explicitly stated that it is prohibited for a private individual to obtain rights to buried treasure during excavations.⁵⁷ Similar provisions exist in international legislation, which Ukraine also ratifies.⁵⁸ Therefore, in practice, regardless of the motivation behind such actions, the removal of rings and gifting them to a collection of a foreign museum constitutes a crime and can be defined as a form of looting.

As stated above, the Busk investigation is one of the best-known examples of the deployment of an archaeological approach at a Holocaust site in Ukraine. However, despite yielding many important results, the overall methodology that was selected was lacking in key areas, resulting in a loss of vital information about the crimes perpetrated.

Forensic archaeological field projects and investigations of Holocaust sites

Even though *forensic* archaeological approaches for Holocaust studies in Ukraine have not been widely adopted, some methods associated with this discipline have been used in certain legal investigations. In the 1940s, the Extraordinary Commission was making attempts to use what would now be defined as forensic archaeological techniques for Holocaust studies in the territory of modern Ukraine.⁵⁹ The Extraordinary Commission was chartered by The Council

⁵⁴ NB: For the time of writing of this article no known agreements being in placed to authors knowledge regarding the transfer of the items.

⁵⁵ Закон України про охорону археологічної спадщини (2004). Докладніше дивись: <https://zakon.rada.gov.ua/laws/show/1626—15#Text>. Переглянуто 11.11.2021: Art. 1.

⁵⁶ Закон України про охорону культурної спадщини (2000). Докладніше дивись: <https://zakon.rada.gov.ua/laws/show/1805—14>. Переглянуто 11.11.2021: Art. 17.

⁵⁷ Цивільний Кодекс України. (2003). Докладніше дивись: <https://zakon.rada.gov.ua/laws/show/435-15#Text> Переглянуто 29.07.2022: Art. 343. 5.

⁵⁸ *Recommendation in International Principles Applicable to Archaeological Excavations 5 December 1956* Докладніше дивись: https://brill.com/view/book/edcoll/9789047422174/Bej.9789004164543.1-760_037.xml Переглянуто 29.07.2022.

⁵⁹ Francine Hirsch, “The Soviets at Nuremberg: International Law, Propaganda, and the Making of the Postwar Order”, *The American Historical Review*, Volume 113, Issue 3, (June 2008): 701–730; Juliette Cadiot and Tanja Pentz, “Law and Justice in Wartime and Postwar Stalinism”. *Jahrbücher Für Geschichte. Osteuropas*, 61(2), (2013):161–171; Nathalia Moine and John Angell, “Defining “War Crimes against Humanity” in The Soviet Union.: Nazi arson of Soviet villages and the Soviet narrative on Jewish and non—Jewish Soviet war victims, 1941—1947”. *Cahiers Du Monde Russe*, 52(2/3), (2011): 441–473.

of People's Commissars, so in official documents, it is frequently referred to as the "Government Commission". Its purpose was to collect evidence of crimes committed by the Nazi regime and its Allies during the occupation of Soviet territories, and it became the main investigatory body for Nazi crimes in the USSR after the Nazi occupation. Thus, it amassed a wealth of evidence regarding killing sites and mass grave locations, the nature of interpersonal violence and the identities of victims of persecution; all of which have the potential to be of substantial value to forensic archaeologists in the present.⁶⁰

The first case of application of forensic archaeology (as we understand it in modern terms) for Holocaust-related sites was conducted by Richard Wright's team in Serniki (Rivne region) in 1990.⁶¹ Forensic archaeologists were employed to provide expertise in the Polyukhovich v The Commonwealth trial (also known as the War Crimes Act Case) in 1991. Ivan Polyukhovich was arrested and alleged to have committed the mass murder of Jewish people in Serniki village from 1942-1943. The forensic archaeological excavation confirmed the existence of a mass grave, and Wright's team estimated the dimensions and the number of victims within it, although the bodies themselves were not removed from the grave.⁶² That data was compared with eyewitness testimonies, highlighting some similarities as well as some discrepancies, and thus demonstrating that forensic archaeological may be able to answer questions that historical sources cannot:

His [the witnesses'] recollection led the archaeological team to the grave, which turned out to contain some 550 bodies and not the 800 he had estimated. The grave was also some 10 m shorter than he said.⁶³

The forensic archaeological works in Serniki were part of criminal proceedings which affected the selection of the investigatory methods used e.g., the key focus of the excavation was to gather information required for the trial and so human remains became evidence that a crime had taken place rather than subjects of humanitarian identification efforts. The recording of the grave itself and the circumstances of the crime were thus prioritised, and the methods used are still seen as seminal in the development of forensic archaeology in the 20th century.⁶⁴ However, the Serniki investigation also exposed important limitations concerning the use of

⁶⁰Daria Cherkaska, *The application of forensic archaeological methods for Holocaust studies in Ukraine*, Doctoral Thesis, (Upcoming).

⁶¹Hunter, J., Cox, M (2005): 144-158.

⁶²Hunter, J. Simpson, B. and Sturdy Colls, C. (2013): 223.

⁶³Richard Wright, "Where are the Bodies? In the Ground" *The Public Historian*, 32(1) (2010): 99.

⁶⁴ Hunter, J. R., Cox M. (2005), p.22.

archaeological methods in Holocaust studies. Despite the high standards of evidence collection, forensic archaeology cannot conclusively prove or deny the involvement of an individual in a crime; in other words, archaeology does not provide an answer to the question of who pulled the proverbial or actual trigger.⁶⁵ The *Polyukhovich v The Commonwealth* trial also became a highly public case which also brought its own pressures for the experts and saw invasive works at Holocaust graves being placed under intense scrutiny.

Another insightful investigation led by Wright took place in Ustynivka.⁶⁶ Historical documents stated that 150 adults were killed and buried in a mass grave in 1942. However, oral witness testimonies also mentioned the mass murder of 20 children of mixed marriages (Jewish and Gentile) in the same place. Forensic archaeological excavations confirmed these accounts and provided additional details about the victims: the remains of the children, aged between six months and twelve years old at the time of their deaths, were found in the mass grave lying above the bodies of the adults who were killed first.⁶⁷ Despite the fact that at Serniki the bodies were left in the grave, the methodology at this site included the removal of skulls for analysis and the use of large excavators and bulldozers. Unlike the Busk excavation, it is unclear if Halakha was considered during these two projects, although the extensive nature of the excavations suggests that the legal demands overrode these concerns.

Case Study: Holocaust Archaeology in Ukraine

In recent years, the application of non-invasive forensic techniques has become a more common approach to fieldwork at Holocaust sites and this has been the case during several examples in Ukraine. These projects were carried out by international teams. The Centre of Archaeology of Staffordshire University, led by the co-authors, has carried out several such investigations as part of three major initiatives: the Rohatyn Heritage Project (Ivano-Frankivsk region), the Protecting Memory Project (Vinnytsia and Zhytomyr regions) and archaeological survey in Slavuta (Khmelnitskii region) (the latter as part of the lead author's PhD research).⁶⁸

⁶⁵ Peggy O'Donnel, "A Gateway to Hell": A Nazi Mass Grave, Australian Forensic Scientists, and a 50 Year—Old Murder". *Holocaust and Genocide Studies*, 32(3). (2018): 380—382.

⁶⁶Wright, R. (2010): 99-100.

⁶⁷ Ibid: 100.

⁶⁸*Rohatyn Jewish Heritage Mass Grave Memorials Project*.(web page). Докладніше дивись: <https://rohatynjewishheritage.org/en/projects/mass-grave-memorials/>. Переглянуто 11.11.2021; Protecting memory project (web page). Докладніше дивись: <http://www.protecting-memory.org>. Переглянуто 11.11.2021; Kevin Colls, Caroline Sturdy Colls and William Mitchell, "Holocaust Archaeology in practice: Killing sites in Ukraine". *Human Remains and Violence: An Interdisciplinary Journal*. (Manchester University Press, in prep). Cherkaska, D. (Upcoming). Chapter 6 and 7.

By discussing these projects in some detail, it is our intention to illustrate the future potential of forensic archaeological approaches that do not necessarily focus on excavation.

The methodology applied during these investigations drew inspiration from the Centre's previous investigations, including the Holocaust Landscapes Project – a European-wide programme of research which has involved work in several European countries including: Poland ("Finding Treblinka" project)⁶⁹, Serbia ("Staro Sajmište: the Living Death Camps Project"⁷⁰, Germany (Bergen-Belsen archaeological survey project⁷¹) and the United Kingdom ("Alderney Archaeology and Heritage" project).⁷² A key component of all these investigations was respect for religious law (specifically Jewish law or Halakha which, as already discussed, forbids the disturbance of Jewish graves in most circumstances), whilst determining site boundaries, mapping camps and documenting the locations of mass graves.

At the sites examined, the most appropriate non-invasive methods were selected based on the topography of the site, the known and predicted remains being sought, and information regarding the actions of the perpetrators. Techniques ranged from forensic walkover surveys through to remote sensing and geophysical technologies to locate and document surface and buried evidence. These methods were accompanied by extensive archival research and the analysis of aerial and satellite imagery.⁷³ The combination of non-invasive methods not only ensured the accurate identification of grave locations in both the Rohatyn Jewish Heritage and Protecting Memory Projects, but it also facilitated access to the 18 mass graves surveyed on account of the respect this methodology afforded to the religious and ethical issues associated with the sites i.e. none of these locations had previously been examined archaeologically but rabbinical authorities were willing to grant permission for the works because Jewish law had been accounted for.⁷⁴

⁶⁹ Dante Abate and Caroline Sturdy Colls, "A Multi-Level and Multi-Sensor Documentation Approach of the Treblinka Extermination and Labour Camps", *Journal of Cultural Heritage*, 34. (2018): 129-135; Caroline Sturdy Colls, *Finding Treblinka: An Exhibition of Forensic Archaeological Research*. (Exhibition Catalogue), (Stoke-on-Trent: Staffordshire University, 2015).

⁷⁰ *Living Death Camp: the archaeology of Staro Sajmište* (web site) Докладніше дивись: <https://forensic-architecture.org/investigation/living-death-camp-staro-sajmiste>. Переглянуто 11.11.2021.

⁷¹ Caroline Sturdy Colls and William Mitchell, "An Example of Nazi Kultur": Paradigmatic and Contested Materiality at Bergen-Belsen Concentration Camp". In: Saunders, N. and Cornish, P. *Contested Landscapes*. (London: Routledge, 2021).

⁷² Caroline Sturdy Colls, Rachel Bolton-King, Kevin Colls, Tim Harris and Czelsie Weston, "Proof of Life: Mark-Making Practices on the Island of Alderney", *European Journal of Archaeology*, 22(2) (2018): 232–254.

⁷³ The Centre of Archaeology at Staffordshire University and EMC Radar Consulting, *A programme of non-invasive forensic investigation of possible mass graves sites in the Vinnitsia and Zhytomir region, Ukraine*, (2017):4.

⁷⁴ Further details about Sturdy Colls C. (2015):

The work as part of the Protecting Memory Project was undertaken to contribute to the memorialisation of 14 Holocaust sites. Determining the boundaries of mass graves was a requirement of the legal procedures required to obtain protected status and a proviso of any construction works that would follow at these sites. Archaeological data was therefore essential in securing permission to commemorate the graves (Figure 5) and 7 memorials were later built on these sites by the Protecting Memory Project leads (Figure 6). Here, it should be mentioned that the Protecting Memory Project conception was based, wherever possible, on involvement of Ukrainian-based companies. However, there are no local companies in Ukraine today that conduct forensic archaeological research to the required professional level.



Fig. 5 Distribution plot (top) illustrating the locations of all of the surface finds during the fieldwork and a topographical plan of the site showing the area and density of finds (blue shading). The majority are human bone fragments, but fragments of shoes were also present. Copyright The Centre of Archaeology



Fig. 6. The part of memorial on the location of the mass grave near Khazhyn commemorated within Protecting Memory Project based on conclusion of the Centre of Archaeology team. (September 2019). Copyright The Centre of Archaeology.

Similar approaches were employed for the Rohatyn Jewish Heritage investigation. The aim of this project was the promotion and preservation of Jewish heritage in the small Ukrainian town of Rohatyn in Western Ukraine.⁷⁵ The results of non-invasive archaeological

⁷⁵Rohatyn Mass Grave Survey 2017 (2017). Докладніше дивись: <https://rohatynjewishheritage.org/en/projects/mass—grave—memorials/>. Переглянуто 11.11.2021; Kevin Colls and William Mitchell, *Non—invasive archaeological research to define the boundaries of WWII sites in Rohatyn, Ukraine*. (Staffordshire University: 2020).

surveys in 2017 and 2019 on two known Holocaust mass graves sites (known as the north and south mass graves) provided more accurate information about burial locations and perimeters. In addition, archaeological survey confirmed the probable absence of Holocaust-era mass graves in one of the town's Jewish cemeteries. At these sites, the information obtained is helping inform future commemoration efforts; specifically, where and what kind of construction works are possible to preserve and to memorialise the burials. The team also recovered and reburied human remains present at the south mass grave site, which existed above-ground due to looting, and the documentation of these remains has provided evidence about the desecration of the site for police investigations initiated by Rohatyn Jewish Heritage.

Finally, the non-invasive archaeological survey in 2019 in Slavuta (Khmelnitski region) also took inspiration from previous projects mentioned above.⁷⁶ Besides a sizeable Jewish community, this city also hosted a military regiment which served as border patrol before WWII. Subsequently, the terrain was converted into a PoW camp for sick, captured soldiers in 1941. The crimes in Slavuta against Jews (which included the mass extermination of local Jewish people from Slavuta and surrounding areas) and PoWs were well documented by Soviet bodies of power. The uniqueness of the site provided the possibility to analyse evidence from two different site types within the same terrain, making Slavuta a remarkable place in terms of Holocaust studies in the Ukrainian context. Cutting-edge techniques - such as geophysical and topographical survey - were employed in combination with the examination of results of previous investigations, mainly those of the Extraordinary Commission and eyewitness testimonies from Yahad-In Unum collection. This approach confirmed the accurate location of known graves and demonstrating the likely presence of unknown burials.⁷⁷

Taking all these projects into consideration, it is evident that the application of non-invasive methods at Holocaust sites in Ukraine has increased over the last decade and offers new opportunities for future investigation. It should be noted, however, that non-invasive techniques do have some limitations. For example, the ability to deploy remote sensing and geophysical survey will depend upon the topography and geology of an area. Distinguishing burial pits from other buried features might also be difficult in the absence of excavation since no non-invasive method provides an x-ray-like view of what exists beneath the ground. Therefore, these methods may indicate a high probability that mass graves are present but only when combined with each other and with archival sources.⁷⁸ Individual identification of victims

⁷⁶ Cherkaska, D. (Upcoming): Chapter 5 and 6.

⁷⁷ Ibid

⁷⁸ Sturdy Colls, C. (2015): 349-351.

is of course not possible using these methods, meaning that analyses must focus on the location, size and construction methods of graves. Additionally, confirmatory excavations may still be deemed necessary if results are inconclusive or access using non-invasive methods is difficult. Such works should only be undertaken with rabbinical consent and, in the authors experience, will involve only the removal of surface layers for the purpose of verifying the presence of remains before the area is swiftly backfilled.

As a final point of previous forensic archaeological approaches in Ukraine, a common trend observed by the authors during the projects described above has been the presence of human remains on the surface because of looting and animal activity. The authors have worked alongside rabbinical authorities on several occasions to recover and rebury human remains found on the surface prior to the commencement of forensic archaeological surveys. Hence, what started as a non-invasive search, became a recovery exercise to protect the remains of Holocaust victims.

The future of forensic archaeology in Ukraine: Considerations for the search for Holocaust victims

Since the 1940s, investigations of Holocaust-era mass graves in Ukraine have been initiated by several agencies each possessing varying degrees of knowledge regarding how to locate, record and characterise human remains, and physical evidence connected to genocide and mass violence. Whilst some search teams have sought to confirm the existence of individual sites, others have focused on mapping the scale of the atrocities perpetrated by the Nazis and their collaborators. Several projects centred on the excavation of graves, despite the stipulations of Jewish law with regards the non-disturbance of burials, and the involvement of forensic archaeologists has been limited. The lack of accurate recording of fieldwork results, absence of inter-practitioner exchange and a lack of published results in Ukraine represent persistent issues. Consequently, knowledge of individual projects and archaeological data have often been often lost and the potential for distribution to local communities has not been realised. Similarly, archaeological investigations have not played an important role in Holocaust studies in Ukraine in the past seven decades due to the fact that there is, as yet, no formal training programme for forensic archaeologists in Ukraine.

Only in recent years have some projects in Ukraine deployed the wide range of methods now available to forensic archaeologists and recognised the value of revisiting previous investigations with the benefit of this knowledge. This is despite the fact that, since the 1980s,

archaeological methods have been more widely applied to genocide investigations, including the Holocaust and Nazi crimes. In fact, forensic archaeology is now seen as an essential part of both judicial and humanitarian initiatives after episodes of mass violence, following successful operations in former Yugoslavia; Rwanda; South Africa; Armenia; South America; Spain; and many other locations around the world.⁷⁹ These investigations have led to the development of new, more rigorous methodologies that can assist in the search for and recovery and identification of missing persons. These efforts sit alongside a broad range of projects related to Holocaust studies across the Europe that have also highlighted the essential role that landscape analysis and physical evidence can play in our understanding of Nazi crimes: at extermination camps⁸⁰, various concentration, forced labour and transit camps⁸¹, euthanasia centres⁸² and killing sites⁸³. At the time of writing, the most significant project focused on

⁷⁹John Hunter. and Caroline Sturdy-Colls, “Forensic Archaeology” in Siegel, J. Knuffler, G. and Saukko, P. *Encyclopaedia of Forensic Sciences*. 3rd edition. (London: John Wiley & Sons Ltd): 18—23.

⁸⁰ For examples, see Isaac Gilead, Yoram Haimi, and Wojciech Mazurek, “Excavating Nazi Extermination Centres”. *Present Pasts*, 1. (2009): 16-19; Andrzej Kola, *Bełżec: the Nazi Camp for Jews in Light of Archaeological Sources: Excavations 1997—1999*, (Warsaw—Washington, The Council for the Protection of Memory of Combat and Martyrdom and the United States Holocaust Memorial Museum, 2000); Marek Bem and Wojciech Mazurek, *Sobibór. Badania archeologiczne na terenie po byłym niemieckim ośrodku zagłady w Sobiborze w latach 2000–2011*, (Warszawa—Włodawa: 2012); Caroline Sturdy Colls “O tym, co minelo, lecz nie zostalo zapomniane. Badania archeologiczne na terenie bylego obozu zagłady w Treblince”. *Zagłada Żydów. Studia i Materiały*, 8 (2012): 77—112. Докладніше дивись: <http://www.zagladazydow.org/?l=a&lang=pl/>. Переглянуто 11.11.2021; Caroline Sturdy Colls and Kevin Colls, “The Heart of Terror: A Forensic and Archaeological Assessment of the Old Gas Chambers at Treblinka”. In: Vareka, P. and Symonds, J. *Archaeologies of Totalitarianism, Authoritarianism, and Repression: Dark Modernities*. (Basingstoke: Palgrave Macmillan, 2020).

⁸¹ For examples, see Ronald Linck and Kevin Dagnault, “Radarprospektion auf dem Areal des Außenlagers VII des KZ Dachau bei Friedheim“. *Das archäologische Jahr in Bayern*. (2013): 174—177; Caroline Sturdy Colls and Kevin Colls, *Adolf Island: The Nazi Occupation of Alderney*. (Manchester: Manchester University Press, 2022); Barbara Hausmair, “Identity Destruction or Survival in Small Things? Rethinking Prisoner Tags from the Mauthausen Concentration Camp”. *International Journal of Historical Archaeology*, 22, (2018): 472—491; Paul Mitchell, “Concentration Camp Buildings as Artifacts: The Archaeology of Buildings in the Mauthausen—Gusen Complex”. *International Journal of Historical Archaeology*, 22, (2018): 553—573; Marek E. Jasinski, “Predicting the Past — Materiality of Nazi and Post—Nazi Camps: A Norwegian Perspective”, *International Journal of Historical Archaeology*, 22, (2018): 639—661; Ivar Schute, “Collecting Artifacts on Holocaust Sites: A Critical review of Archaeological Research in Ybenheer, Westerbork, and Sobibor”, *International Journal of Historical Archaeology*, 22, (2018): 593—613; Gilly Carr, *The Legacy of Occupation: Archaeology, Heritage and Memory in the Channel Islands*. (Springer, 2014).

⁸² Simone Loistl, Florian Schwanninger, “Vestiges and Witnesses: Archaeological Finds from the Nazi Euthanasia Institution of Hartheim as Objects of Research and Education”, *International Journal of Historical Archaeology*, 22, pp. 614—638.

⁸³ Recording Cultural Genocide and Jewish Cemeteries Project, www.recordingculturalgenocide.com; Jan Tomasz Gross, *Neighbors: The Destruction of the Jewish Community in Jedwabne, Poland*, (Princeton, NJ: Princeton University Press, 2001). ; Sturdy Colls, C. (2015):33; Andrzej Ossowski, Marta Diepenbroek, Marcin Zwolski, Adam Falis, Maria Wróbel, Milena Bykowska—Witowska, Grażyna Zielińska and Maria Szargut, “A Case Study of an Unknown Mass Grave — Hostages Killed 70 Years Ago by a Nazi Firing Squad Identified Thanks to Genetics”. *Forensic Science International*, 278, (2017): 173—176; Esther Flieger, “Ossowski: Sprawcy nie powinni leżeć obok ofiar [wywiad]”, *Dziennik Gazeta Prawna*, <https://kultura.gazetaprawna.pl/artykuly/1447136.treblinka—wojna—badania—groby—ofiary.html>. (2020). Переглянуто 11.11.2021.

genealogies, representations and interpretations of campsites in different parts of Europe is "Accessing Campsites: Inclusive Strategies for Using European Conflicted Heritage" (iC-ACCESS). Between 2016 and 2019, this project aimed "to locate, record and digitally preserve the [European] landscape of mass violence".⁸⁴ Archaeologists, forensic investigators and experts in cultural memory, oral testimonies and digital humanities undertook fieldwork and developed exhibitions (in situ and virtual) and educational offerings at seven Holocaust and Communist campsites across Europe. In fact, a new sub-field known as Holocaust archaeology now exists which considers the practical, ethical and theoretical issues connected to the investigation of Nazi crimes, and which has aptly demonstrated the added value of examining landscapes, mass graves and objects, particularly using non-invasive approaches.⁸⁵ As Sturdy Colls has argued:

‘The Holocaust remains a complex and emotive issue, which affected a wide range of people from a variety of different backgrounds. Therefore, whilst the investigation of the physical evidence pertaining to it may be grounded in traditional archaeological thought, methodologies must draw on a variety of disciplines to ensure that approaches to it are uniquely matched with local circumstances. Drawing on the variety of techniques now available to archaeologists, it is now possible to record the evidence of this period in a scientifically robust and respectful fashion.’⁸⁶

Thus, there is now a body of archaeological and forensic archaeological projects pertaining to genocide studies worldwide that can be adapted and from which best practice can be borrowed to ensure that the dignity of the dead is always maintained and to develop Holocaust archaeology in Ukraine. Based on personal experience, and the lessons learnt from reviewing the investigations described in this paper, the authors proposed some *General recommendations* for the future:

⁸⁴Accessing campsites (Web site). Докладніше дивись: <https://www.campsites.org/>. Переглянуто 11.11.2021.

⁸⁵ Sturdy Colls, C. (2015) and Sturdy Colls, C. (2021).

⁸⁶ Sturdy Colls, C. (2015): .350. More details about the ‘forensic turn’ in Holocaust studies can also be found in Zuzanna Dziuban, “Introduction: Forensics in the Expanded Field”, In Z. Dziuban (ed.), *Mapping the ‘Forensic Turn’: The Engagements with Materialities of Mass Death in Holocaust Studies and Beyond*, (Vienna: New Academic Press, 2017): 7-38; Sturdy Colls, C. (2015):.29-31.

- 1) An understanding of the victim demographics and affected communities must be obtained prior to developing archaeological methodologies to account for any ethical and religious considerations connected to a planned survey/excavation/exhumation site;
- 2) Advice should be sought from rabbinical and other relevant religious leaders to account for faith-specific guidance on death and burial and the impact of archaeological methodologies at all stages of the works;
- 3) Archaeologists should work closely with regional and state authorities to establish the mechanisms for obtaining permission to undertake fieldwork and to assess any local issues that might impact upon research;
- 4) Desk-based assessment before the fieldwork must include a rigorous review of any previous investigations, oral histories and a wide range of archival sources;
- 5) Archaeologists should consider the use of non-invasive approaches in advance of or even instead of excavation in order to ensure a wide range of evidence types are located, recorded and characterised;
- 6) Sites associated with acts of genocide should be regarded as crime scenes even if the work is not undertaken as part of criminal proceedings. The adoption of internationally recognised forensic excavation and recording methods is essential – for example, the Minnesota Protocol on the Investigation of Potentially Unlawful Deaths (2016) and/or the Bournemouth Protocol on Mass Grave Protection and Investigation (2020);
- 7) Artefacts found during fieldwork should be handled according to current Ukrainian legislation and may also hold additional religious restrictions based on their location and context. Additionally, it is important to have the funding in place to secure conservation if necessary;
- 8) A clear plan must be in place to ensure the results of the project are disseminated as widely and as ethically sensitively as possible whilst maintaining site safety and integrity.

In bringing this article to a close, it should also be remembered that the landscape of Ukraine is not only filled with mass graves of the Holocaust but also with those from the Holodomor, Stalin's repressions and pogroms, many of which would similarly benefit from the aforementioned approaches. Additionally, in light of recent Russian crimes in Ukraine, there has never been a timelier moment to reflect on previous investigations of mass graves and to develop more rigorous methodologies for the search for evidence of mass violence and crimes against humanity. By recognising the challenges, issues and benefits of previous investigations, it is hoped that forensic archaeologists will be better prepared to document the wide range of crimes committed on Ukrainian soil in the 20th and 21st centuries.

АНОТАЦІЯ

Археологічні підходи до вивчення масових поховань, пов'язаних з Голокостом: український погляд

Археологія Голокосту (Holocaust archaeology) є важливим та ефективним підходом для вивчення історії Голокосту в світі. Підтвердження цього можна знайти за результатами чисельних наукових проєктів у різних куточках Європи, зокрема і в Україні. Хоча на сьогоднішній день кількість подібних проєктів в Україні залишається незначною. У цій статті розглянуто основні підходи у застосуванні археологічних та судово-археологічних методів для вивчення історії Голокосту в Україні. А також запропановані загальні рекомендації для більш широкого запровадження такого підходу з дотриманням як академічних, так і етичних стандартів. Крім того у статті детально проаналізовано приклад дослідження масових поховань жертв Голокосту в Україні (Буськ, Львівська область) з метою проілюструвати перспективи і ліміти застосування цих методів.

Ключові слова: судова археологія, розкопки, масові поховання, місця страт, Голокост від куль, Буськ, Хажин, археологія Голокосту.

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