Historical Battlefield Archaeology in the Martyr's Memorial Museum of RU: Practice, Problems and Prospects

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Abstract

The history of Bangladesh's independence is being preserved through historical battlefield archaeology. Many battlefield archaeological resources inside and outside the Martyrs Memorial Museum are not being preserved properly. This research follows survey, direct interview, and direct observation methodology, as well as Kothari's survey formula. It is descriptive qualitative research, and some parts have been analyzed using descriptive statistics and quantitative methods. The total number of outcomes in the sequence of N artifacts is approximately 185 and KII N 291. For weapon destruction, the CHAID and UZRGM systems are applicable. Skulled age and sex are determined through the DNA and 14C systems, the teeth's enamel, the dentine and cementum for soft tissue, single and double implications, decontamination, and the 'Y' chromosome marker, whose outcome is recommended to authorities for testing. Here the solutions to the problems are identified and surveyed. Almost everyone in the survey agreed to take necessary measures for development. Preparation for marketing to tourists by preserving historical and archaeological resources. In particular, a forensic report on the skull should be made, and heavy weapons should be re-examined for destruction.

Keywords: battlefield archaeology, archaeological resource, heavy weapons re-examined, skull and bones forensic, status and prospects.
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Introduction

The study of the past of humanity via the recovery, examination, and interpretation of material remains is known as archaeology. It entails looking into tangible objects, architecture, and other traces left by earlier civilizations or human activity (Trigger 1989; Pearson and Shanks 2001; Edwards 2004; Renfrew and Bahn 2007; Yoffee and Fowles 2011; Fagan and Durrani 2016; Orser 2016). Historical battlefield archaeology is a subfield of archaeology that focuses on analyzing and examining the physical artifacts left behind by relatively contemporary human societies, typically those who existed before the invention of writing and battle (Smith 2014). In order to understand the past, it blends historical study and analysis with archaeological

methodologies. Items with aesthetic, cultural, historical, or scientific significance are gathered, maintained, studied, and presented at museums for the benefit of the general public (Burcaw 1997; Hein 2000; Bedate et al. 2004; Buffington 2005; Davison 2005; Hooper 2020). In addition to providing visitors with possibilities for cultural and educational experiences, museums serve as repositories for both material and intangible legacies. A memorial museum is a place dedicated to preserving, displaying, and educating the public about a particular event, person, or theme through the use of artifacts, records, and other historical resources. These museums offer a place for reflection, recollection, and learning in addition to acting as tangible reminders of important events like wars, genocides, or tragedies (Hasian 2004; Stone 2006; Ryan 2007; Buntman 2008; Moore 2009; Tyner et al. 2012; Guatemala 2014; Irwin 2017; Sodaro 2017). Rajshahi University is home to two museums. The preservation and observation of these museums are governed by the law and administrative structure of the entire university. One of the two major museums is the Veranda Research Museum, established by Lord Carmichael in 1913 during British rule in the Laxmipur area of Rajshahi city. Many civilizations used artifacts and antiquities resources of ancient Bangladesh were collected with high respect (Ali). The other is the Rajshahi University Martyrs Memorial Museum, located in front of *Shere-e Bangla Fazlul Haque Hall* inside the Rajshahi University campus. According to the Bengali year, the foundation stone of the exhibition room of Rajshahi University Martyrs Memorial Museum was laid on 7 Chaitra 1395 by the then Vice Chancellor, Professor Amanullah Ahmed . Later, according to the Bengali year, the exhibition room of the Martyrs Memorial Museum was inaugurated on 9 *Fagun* 1396 (21 February 1990) by the wives of the three heroic martyred teachers who were martyred in the great liberation war of 1971 in Bangladesh. Rajshahi University is one of the most important public universities in Bangladesh. It is located on the banks of the Padma River, the main river of Bangladesh, in the northern part of the country under the jurisdiction of Mothiar Thana in Rajshahi district. It was established in 1953 in East Pakistan, one of the major states or provinces of Pakistan during the then-Pakistani rule. Rajshahi University has a glorious history and tradition. Thus, judging from all aspects, Rajshahi University can be said to be a vast and prosperous university. This university is playing a leading role in education research in Bangladesh and is leading from the front. Since this university was established about seven decades ago (Islam 2023). It has made a great contribution to the collection of archaeology in Bangladesh and the northern region. In 1947, after nearly 200 years under British rule (1857–1947), the freedom-seeking people of the Indian subcontinent expelled the British by fighting for independence. As a result, two new countries named India and Pakistan were born. It was the religious division of the country that resulted in the current Bangladesh, as well as the then-East and West Pakistan. East Pakistan was subjected to various discriminations, which led to the war for independence in 1971.Then the West Pakistani army brutally massacred the

intellectuals of East Pakistan. In particular, the universities were on a rampage of genocide (Islam and Khatun 2023). As a result, Rajshahi University was transformed into a slaughterhouse for killing people. The West Pakistan Army selected the eastern area of the campus adjacent to the present Dr. Shamsuzzoha Hall for the Rajshahi University massacre. At the same place, they killed the students, teachers, officials, and employees of Rajshahi University and the freedom-loving people and intellectuals in the surrounding area for nine long months. The site is now known as the Rajshahi University Mass Grave or the Slaughterhouse (*Bouddhya Bhumi*). Massacres were carried out here, and corpses were dumped in what became a nine-month-long mass grave. At the end of the war, this horrible incident came to everyone's attention. Later, Rajshahi University honored the heroic sons who sacrificed their lives for the country. A slaughterhouse (*Boudhya Bhumi*) has been built there in their honor. Along with that, many skeletal bodies were buried. There were many war discoveries later on.The Martyr (*Shaheed*) Memorial Museum was originally established at Rajshahi University to preserve them. Martyrs Memorial Museum has three galleries known as Gallery 1, 2, and 3. Items used by freedom fighters in Bangladesh's great liberation war are displayed in galleries 1 and 2.Especially in gallery number one, the PhD thesis paper of Bangladesh's first martyred intellectual, Dr. Shamsuzzoha Sir, and his belongings have been placed. Gallery Number 3 houses various types of heavy weapons, skulls, and other items used in the war by the Pakistani army.
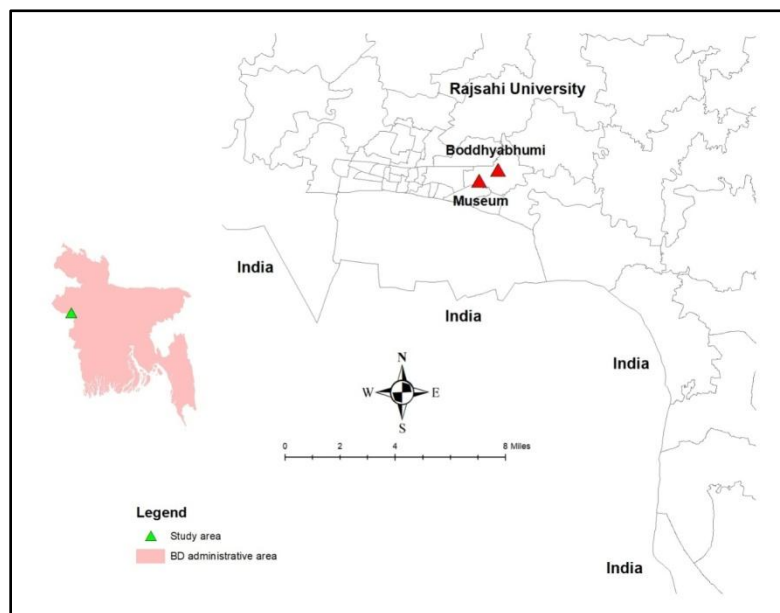

Figure 1. Study area map showing the locations of the primary and finally archaeological sample collections. It's created by me through ArcGIS.

Figure 2. The main location of genocide and archaeological material was collected from this place.

The Martyrs' Memorial Museum is geographically located in the most important place in Rajshahi University. The Martyrs' Memorial Museum houses the internal part of the Martyrs' Memorial archaeological wealth, and the outer part is used as an open stage where the university's cultural activities are held. On the left side of the front of the Martyrs' Memorial Museum, there are three destroyed vehicles of the Pakistani army. A large amount of nearly perishable archaeological property has been kept in the Martyrs' Memorial Museum. The importance of this resource is infinite. Because probably the last remnants of the liberation war that took place five decades ago have been preserved, which I consider to be historical archaeological resources. The Martyrs Memorial Museum houses historical and archaeological relics.If it had not been established, it would have been difficult to sustain and preserve these archeological monuments. Many important archaeological sites were likely to perish with the passage of time. The variety of archeological resources preserved in the martyrs' memorial museum has given a new dimension to the archeological resources of Bangladesh. If they were not preserved, various types of weaponry in particular would have rusted and perished due to being inside the soil. If they fall into the hands of various terrorist groups, there is a possibility that they will use them for evil purposes and cause damage inside the country. The main importance of the archeological artifacts preserved in the Martyrs' Memorial Museum is that it is the largest and most visible platform for imparting knowledge about the horrors and history of Bangladesh's independence war in 1971 to the present generation.

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BACKGROUND AND LITERATURE

Yet no research has been done on the Martyrs Memorial Museum of Rajshahi University so far. But this is the first martyrs' memorial museum in Bangladesh and in the entire University of Bangladesh. But several available studies have been done on Historical Archaeology (Table1).

Table 1.

Available Studies on Historical and Battlefield Archaeology, Forensic skulls

Aspect	Area	References
Public memory and power in American historical archaeology	USA	Shackel (2001)
Archaeological insights into segregation in Northern Ireland	Ireland	McAtackney (2015)
The politics of museums and memorial culture in post-Martial Law Taiwan	Taiwan	Denton (2021)
Historical memory and the politics of museums in post socialist China	China	Denton (2013)
Reform and purification in the historical archaeology of the South Pacific during the period 1840–1900	Australia	Flexner (2017)
The management of historical capital in Shandong, focusing on museums, monuments, and memory in provincial China	China	Flath (2002)
the historical archaeology of Vanuatu mission landscapes and emphasizes the mapping of local perspectives	Vanuatu	Flexner (2014)
The focus is on "leveling the playing field" in the context of historical archaeology and its outreach efforts	South Africa	Jeppson (1997)
The targeting of the symbolic dimension of Baathist Iraq, focusing on cultural destruction, historical memory, and national identity	Iraq	Isakhan (2011)
The use of forensic and archaeological approaches to locate the remains of Holocaust victims. The focus is on the curation and exhibition of human remains in the aftermath of genocide and mass violence	-	Colls (2016)
The concept of "slippage" in the construction of memorial meaning, particularly focusing on bones, intentions, and the dynamics of violence.	-	Conley (2021)
Military landscapes and discusses agendas and approaches for future research in this area of study.	UK	Woodward (2014)
War damage and the challenges of reconstruction in France during the period 1940–1945	France	Kyte (1946)

As it bears the memory of the War of Independence, it is also the bearer of modern historical archaeology. No researcher within Bangladesh has studied the archaeology of Rajshahi University. Again, no foreign researcher has done any research on the archaeology of our Rajshahi University outside the country. But in the outer world, researchers have developed accurate research and methods for age and gender determination through disarmament, rust preservation, resource conservation, and forensics. Shells, rocket launchers, anti-tank mines, and grenades were among the heavily recovered weapons kept at the martyr's memorial museum. Museum officials could not say for sure whether all these weapons have been destroyed. Forensic analyses of the various skulls and limb bones recovered from here have not determined the age or sex, and no research has been done on how they died. Derelict vehicles of the Pakistani army are kept in an empty lot in front of the martyr's memorial museum. Due to climatic reasons, rains may spoil it; they have not preserved it well. The curators here have very little experience in archaeology or museum studies. Although there are three galleries, no chart has been made of the artifacts in each gallery. Inside the gallery, the body tags of the artifacts are in disarray. After all, the martyr's memorial museum has no good website and no competent guide, and there are many other problems. The main focus of this research is on the problem, practice, and prospects of a martyr's memorial museum. How to solve the problems of transforming the museum into a world-class repository of archaeological treasures and increasing the museum's global visibility in order to attract tourists. Although no researcher has studied this collection, an English newspaper in Bangladesh, "*The Daily Sun*," and BlogSpot, "*Digitalalist*," have produced a small report. Bangladeshi archaeological resources and sites cannot be developed properly because of its economic, political, and technological problems (Chowdhury & Ahmed 2015). Apart from this, many other problems include geographic, ethnic, and religious prejudices, a failure to spread propaganda, and a failure to properly understand its importance. Though Bangladeshi archaeological sites are highly important for Muslim vernacular architecture (Chowdhury & Ahmed 2015; Khatun and Islam 2023). In that sense, archaeological resources are a national treasure, and the public should raise awareness about their preservation and popularization (Rayhan 2011; Khatun et al. 2022). The main topic of this research is to increase the possibility of a martyr's memorial museum. Though the main obstacle is the heavy weapons stored in the museum. There are deadly grenades and other weapons, including rocket launchers, which, when exploded, can destroy all the artifacts collected in the martyrs' memorial museum as well as cause many lives and environmental damage. To get rid of it, the weapon must be destroyed again. Because in 2019, the rocket launcher recovered during soil excavation in the *Buddabhumi* area of Rajshahi University was fresh and dangerous. It's clear that when heavy weapons like grenades and others are misused, intentionally or not, there can be serious injuries, disability, and death (Heisler et al. 2020; Islam and Khatun 2023). No research has

been done in Bangladesh on the destruction of its weapons. However, some research on heavy weapons outside of Bangladesh has been done recently. Chemical weapons have already been destroyed in the United States, where they destroyed 4/5% of their heavily stocked chemical weapons through incineration and 9% through neutralization, while keeping the remaining parts (Pearson & Magee 2002). Again, there have been many methods for destroying weapons, such as high temperature destruction methods and low-temperature methods, among which are mentionable incineration, plasma pyrolysis, molten metal technology, hydrogen lysis, electrochemical oxidation, and solvated electron technology (Trapp 2006). Destroying weapons in the martyrs' memorial museum to provide security and assurance to tourists. The outside is neglected, and all the artifacts inside, especially the skulls, should be properly preserved.

RESEARCH METHODS

Fieldwork

Undertake archaeological excavations and surveys within the premises of the Martyr's Memorial Museum, aiming to diligently explore the site and unearth significant artifacts and structures that enrich our historical comprehension of the museum. The excavation techniques employed will encompass the implementation of test trenches, meticulous stratigraphic analysis, and the careful retrieval of artifacts.

Artifact Analysis

Collecting and analyzing the retrieved artifacts forms an integral part of the research, aimed at unraveling their historical context, establishing their dating, and evaluating their significance. To achieve this, laboratory methods, including typological analysis, scientific dating techniques, and material analysis, will be employed. These rigorous approaches will facilitate the interpretation of the artifacts and provide insights into their cultural implications.

Archival Research

Engage in an extensive exploration of historical documents, photographs, maps, and various archival sources associated with the Martyr's Memorial Museum. By utilizing this research methodology, we aim to gain a profound understanding of the site's historical background, including its construction and subsequent developments over time. This meticulous examination of primary sources will contribute significantly to our comprehensive comprehension of the museum's evolution and contextual significance.

Interviews and Oral Histories

Conduct in-depth interviews with museum staff, local residents, and individuals possessing extensive knowledge about the history and development of the Martyr's

Memorial Museum. Through these interviews, we seek to gather valuable insights into the challenges encountered during the establishment of the museum and its subsequent evolution. By engaging with key stakeholders, we aim to uncover personal accounts, anecdotes, and expert perspectives that shed light on the museum's journey, enriching our understanding of its significance and cultural impact.

Comparative Analysis

Compare the findings from the Martyr's Memorial Museum with those from similar historical sites or museums to identify common challenges, best practices, and prospects for improvement. This can be achieved through a systematic review of the literature and case studies.

Data Analysis

Thoroughly analyze the gathered data, utilizing appropriate qualitative and quantitative methods, in alignment with the research objectives and addressing the identified problems and prospects. The analysis will encompass various techniques such as content analysis of archival documents, statistical analysis of artifact data, and thematic analysis of interview transcripts. These methods will enable a comprehensive examination of the data, facilitating the identification of patterns, trends, and significant insights. By employing a rigorous analytical approach, we aim to derive meaningful conclusions and recommendations that contribute to the advancement of knowledge and offer practical solutions for addressing the challenges and prospects identified within the scope of the research.

Catalogue, Survey and Statistics Analysis

We have been able to gather enough information and statistics from the three galleries. It seems that the archaeological resources are more important in Gallery 1 than in Gallery 2. Direct observation revealed that gallery number three was the most important. The author followed Kothari's research methodology of survey counting. The formula is being calculated below.

$$n = \frac{z^2.p.q.N}{e^2(n-1) + z^2.p.q}$$

$$= \frac{(1.96)^2 \times 0.5 \times 0.5 \times 1210}{(0.05)^2 \times (1210-1) + (1.96)^2 \times 0.5 \times 0.5}$$

$$= \frac{1162.084}{3.9829}$$

$$= 291.76$$

Here,

n= size of the sample
N= Total number of the faculties member
Z= confidence level (at least 95% probability=1.96)
e= acceptable error
p= estimated population proportion (0.5 this maximizes the sample size)
q= 1-p
e= error limit of 5% (0.5)
Source: (Kothari 2004), research methodology (179 no page).

The author used the law of Kothari research methodology to conduct a survey and direct interviews and survey with a total of 291 faculty members. There are 58 departments in total, and in survived has a single formula for each department. An example below:

$$1 = \frac{n_i}{N} \times n$$

Here,
Ni= total member in a department
N= total population
n= total survey people.
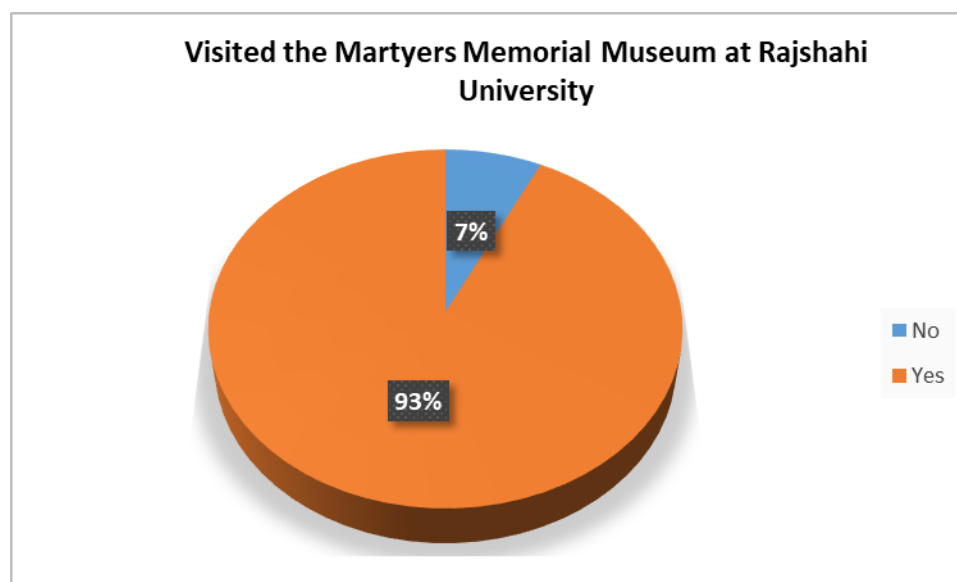Everything else is analyzed below, including survey data.
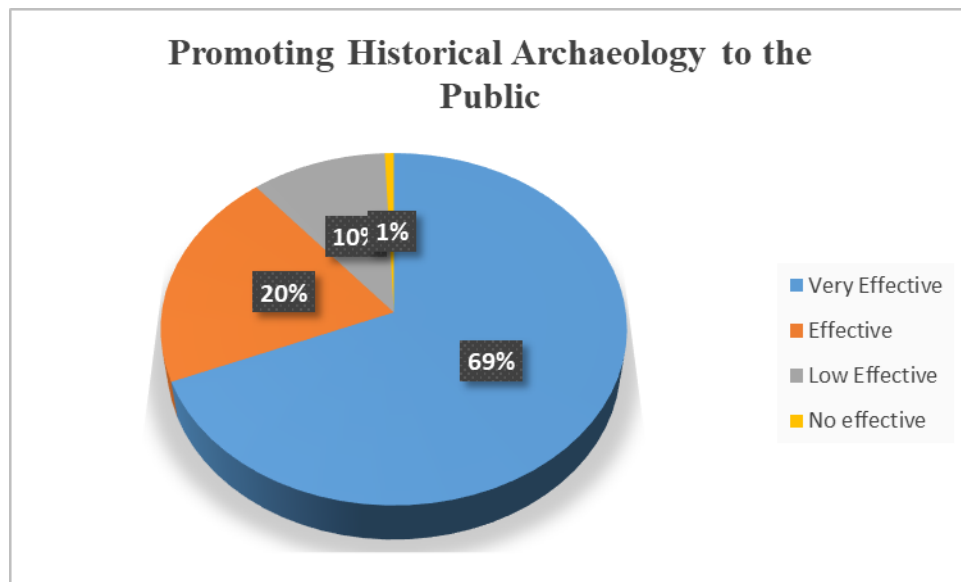

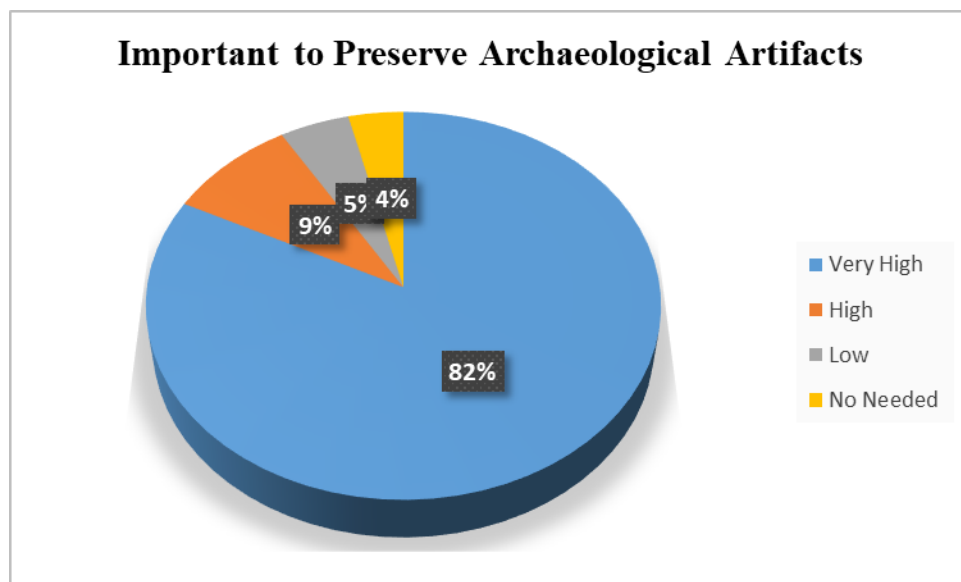Figure 3. First survey.

Figure 4. Second survey.

Figure 5. Third survey.

Table 2

Descriptive statistics analysis of survey data

Questionnaire	n	MEAN	SE	MED	SD	VAR	MIN	MAX	CL(95.0%)
First	291	145.5	124.5	145.5	176.0	31000.5	21	270	1581.92
Second	291	72.75	44.04	44.5	88.08	7758.25	2	200	140.15
Third	291	72.75	55.82	20	111.65	12466.92	11	240	177.66

According to the statistics (Table 2), (Table 3), (Table 4), (Table 5), (Table 6), (Table 7) and (Table 8), the five data tables are presented in stages

SERIAL NO	MATERIALS	N	NAME/ USED BY
1	Research book	1	Chemistry,An experimental science
2	Used things	3 and more	Tie, pant, coat and other things
3	Statue	2	Piteous cry and a fighter
4	Dress	1	A freedom fighter
5	Brick	1	Symbol

Table 4

Gallery 2

SERIAL NO	MATERIALS	N	NAME/ USED BY
1	Dress and others	19	Dress of different people
2	Bag	5	Bag of different people
3	*Jainamaz*	1	Professor Hashimmia
4	Medal	2	Major Gias
5	Shoe	7	Different people
6	Others things	22	Different people
7	Binoculars	1	Major Gias
8	Plate	3	Brass plate
9	protractor	1	Bir Shrestha Captain Mohiuddin Jahangir
10	wireless	1	Nowajdoula khan
11	Mortar shell	1	Pakistani army
12	Rocket launcher	1	Pakistani army
13	Currency	Many	Pakistani currency

Table 5

Gallery 3

SERIAL NO	MATERIALS	N	NAME/USED BY
1	Anti-tank mine	1	Pakistani army
2	Bomb (shell)	1	Pakistani army
3	Rocket launcher	2	Pakistani army
4	Bullet	6	Pakistani army
5	Greened	3	Pakistani army
6	Bones, skeletons, skulls	10	Bangladeshi people
7	Gun box	2	Pakistani army
8	Cover land mine	1	Pakistani army
9	Helmet	5	Pakistani army
10	Record reel	1	Used for freedom fight

Table 6

Note and coins of Pakistani currency:

SERIAL NUMBER	CURRENCY	NUMBER
1	100 taka	3
2	10 taka	1
3	5 taka	1
4	10 taka	1 bundle
5	Coins of various	Minimum about to 22

Table 7

In front of martyr's memorial museum

SERIAL	MATERIALS	NUMBER
1.	Jeep car	2

Table 8

Descriptive statistics analysis of total galleries artifacts in number

Gallery	n	MEAN	SE	MED	SD	VAR	MIN	MAX	CL(95.0%)
First	10	2	0.77	1	1.73	3	1	5	2.150
Second	94	7.230	2.72	2	9.82	96.52	1	30	5.937
Third	32	3.2	0.940	2	2.97	8.84	1	10	2.127
Coins	47	9.4	4.760	3	10.64	113.3	1	22	13.21
Jeep	2	2	0	2	0	0	2	2	-

A large amount of information has been collected through direct observation, surveying, and direct interviewing. However, according to the survey results, almost everyone answered as it did. But there were some who gave a slightly negative answer in terms of religious orthodoxy. However, 97% were aware of the importance of protecting archaeological resources. All are agreed that the martyr's memorial museum bears the great dignity of the great liberation war and the contribution of Rajshahi University. Because all the teachers, students, officials, and employees of Rajshahi University have fought for the independence of the country and led the various units of the war by applying war tactics. They did not hesitate to give their lives for the needs of the country. So they think improvement is a matter of imagination. Everyone said that if the concerned officials think that the solution should be done, then it should be done. This research paper is the first about this museum. So there was no opportunity to differentiate this research from the research of other researchers.

Archaeological Discoveries: Traces of the 1971 Pakistani Era in Bangladeshi History

The authors are the first to recognize the importance of researching the martyrs' memorial museum. Since it is a commemorative museum, it must take the necessary steps to preserve it for at least 1000 years. Everything is explained in detail according

to the figure (Fig 6). The importance of the first gallery of the martyr's memorial museum cannot be underestimated. The people of the world now have an independent Bangladesh because the first intellectual gave his life for this country.

Figure 6. Bloody shirt and piteous cry statue figure of a brave freedom fighter.

He is the professor at Rajshahi University, Dr. Shamsuzzoha. A large history has been written about this in the history of Bangladesh. The rulers of Pakistan used to kill the people of Bangladesh with their army. They embarked on a mission to destroy the education system and kill teachers and students to make Bangladesh talentless. Dr. Shamsuzzoha said that before a student is shot in the chest, the bullet should hit him in the chest. He was the proctor of Rajshahi University at that time. On February 18, 1969, he died at the age of 34. Dr. Shamsuzzoha's bloody clothes and his used items are stored in gallery number 1. The gallery at number 1 has preserved his Ph.D. thesis book from the London University, Chemistry and An experimental science. There is a famous statue of "Piteous Cry," which was created by famous Bangladeshi artist Pranab Das during the post-war period. The horror of that time is clearly understood when looking at this pitiful crying face. The body of the piteous cry is bandaged in two places. It has painted a terrible picture of the martyred people of Bangladesh. The most important archaeological asset in this gallery is this black dress. This dress is owned by a martyred freedom fighter. There is a hole in the center of this garment, which shows that this heroic son was killed by a sword through his abdomen. This dress was about 2 feet in length and full of craftsmanship. Badiuzzaman Tuna gave this dress to the number one gallery. Often, the Renaissance is the best time to find archaeological resources. Because archaeology is the handmaiden of history, there are no distinctions between prehistoric and historic archaeology, which serves as a bridge for historical anthropology (Willey and Phillips 2001; Mallios 2005; Perry 2007; Mayne 2008; Ferris 2009; Hein 2016; Johnson 2019). Shirts and dresses are always part of a country's cultural tradition and valuable to its national culture. Internally, a shirt could have remained infected with bacteria and fungus, causing harm to anyone who came into contact with it, but it must have been sterilized via chitosan treatment for preservation in a private collection or museum (Chao 1998; Marcu et al. 2020; Righettiet et al.

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2020). A statue of a freedom fighter is seen here. This statue is named fighter is seen here. This statue is named a "freedom fighter" and is medium in size (Fig 7).

Figure 7. A statue of a freedom fighter with a gun and brick symbol.

It has a big rifle in its hand, which is tied with a string. This statue was built by Abdur Razzaque. The material used to make this statue is a mixture of cement, concrete, and iron. This statue is of a male figure. The figure on the left shows many bricks together. A human shape can be seen on a brick. A closer look reveals two eyes and a nose that are in a crooked state. This is a brick-based freedom connection. This figure shows the nation of Bengali heroes, and their unity is strong. These symbols (Fig 8), made nearly five decades ago, are now considered archaeological resources because they are kept in museums. One of the four types of archaeology is historical archaeology, in which all resources are maintained by physical and natural science and any resources discovered must be handled carefully or their valuable materials will be inadvertently destroyed (Elia 1997; Watkins 2000; Loubser 2001; Childs and Sullivan 2003; Ellis 2003).

Figure 8. The binocular bag and shoe used by Major Gias in 1971.

Figure 4 starts from gallery number two and presents two valuable archaeological resources. These were used in the liberation war in 1971. Here are the

figures of a binocular bag and a shoe. Long after the end of the war, Major Gias gave his binoculars to the Martyrs Memorial Museum on December 10, 2000. Binoculars have two steel frames. Both shoes and binoculars are produced from cowhide. Binoculars were used to carry map-reading equipment or other essential items in battle.

Figure 9. Before 1971, this plate was used by martyred teacher Sukharanjan Samaddar and wireless machines.

Among the archaeological resources preserved from gallery 2 that could not be shown in figures are bags, prayer rugs, clothing, ribbons, and glasses. Saving glasses, bowls, hats, books, wallets, umbrellas, sticks, and protectors, a large plate, made of brass, can be seen here (Fig 9). Martyred teacher SukharanjanSamaddar of Rajshahi University's language department used to eat on this brass plate. He was killed by the Pakistani army during the war. Another machine appears to be basically a wireless machine. It was used during the war. Nowrojuddyala Khan gave it to the martyr's memorial museum.

Methods of Destruction: Weaponry and Land Mines

Gallery number two has more informational items, including an eye chart, an apron, an operation dress, and a diary. Here is a dangerous mortar shell used by the Pakistani army during the war. The most dangerous weapon is the grenade bomb. There are three grenade bombs here, all rusted.

Figure 10. Mortar shells and grenades.

If these are not checked, they will explode at any time and cause massive damage. The Pakistani army dropped them from planes using this mortar shell (Fig 11). They were found in a pond near the Mother Box Hall of Rajshahi University. Grenades, primarily fragmentation grenades (Fig 10), which are primarily innovated by steel shell, were tested using 30 hand grenade remnants, of which approximately 87 percent were remnants and 54 percent were metal (iron, zinc, nickel, chromium, lead, and cadmium), and the last contained the glasses and residual explosives, but 15 percent were lost due to air emissions (Larson et al. 2007; Larson et al. 2009; Martin et al. 2012; Fulmer et al. 2017). The CHAID method and, if necessary, the artillery fuse are activated methods for grenade fuses, but both of these are sector essential UZRGM methods (Trafficking 2020;Ampula 2021; Rutherford et al.). The British army used heavy weapons in battle in the past, but they were capable of developing new weapons, such as grenades, which they threw after unlocking the nose cap and removing the safety pin (Leeson 2010).

Figure 11. Rocket launcher used by the Pakistani army in 1971.

There are three rocket launchers; the first one is found on the river near Rajshahi Court. On August 3, 1993, it was delivered to Md. Mamun Rashid. Later, two rocket launchers were collected from the western residential area of Rajshahi University. During Bangladesh's liberation war in 1971, the Pakistani army attacked with rocket launchers (Fig 10). At the time, a British newspaper reported on the Simon Dribin report, and the Pakistani army used rocket launchers near Dhaka University Hall (Ahmed 2018).

Figure 12. Anti-tank mine and cover land mine.

This is an anti-tank mine. It is also a component of complete mines. It was used by the Pakistani army. It was collected by Golam Rabbani from Afir Uddin's house in Maheshpur village of Dinajpur. A second cover land mine was collected from a pond in Naogan. Anti-tank mines are classified into two types based on their primary target: anti-tank mines and anti-personnel mines, but any anti-tank mine contains more explosive materials capable of destroying and damaging vehicles and other objects (Cauderay 1993; Gooneratne et al. 2004; Canning 2006; Habib 2006; Showichen& Hameed 2008; Ramasamy et al. 2009; Barnawi et al. 2022;). The Germans used anti-tank mines for the first time in World War I, and since then, various types of mines have been developed, including those that are self-destructing (they explode automatically after a preset time), self-neutralizing mechanisms, low metal content, remote delivery systems, wide area mines, and have sophisticated sensors (Owsley 1995; Efaw 1999; Herthel 2001; Martynenko 2001; Bloodgood 2002; Showichen & Hameed 2008; Rutherford 2011;). Land mines are primarily anti-personnel, and they have evolved as a result of Germany and Italy activating anti-tank mines (Fig 11) in the defense line with grenades and fuses (McGrath 2000; Maslen 2001; Price 2002; Keeley 2003; Robledo et al. 2009; Tepe 2012; Nunez et al. 2014).

Age and Sex Determination: Bones and Skull Analysis

In 2003, many skulls were recovered from the Rajshahi University boddhabhumi. It is estimated from the number of bones that more than 150 people were killed there. A number of skulls were found here, none identified as male or female. But one skull appears to be an adult male. Moreover, one skull painted blue is the skull of the Pakistani army (Fig 13). When forensic anthropological researchers are taken tasting, forensic science applications are fixed and predicted for general ages throughout the head and face, particularly biological and environmental factors of skeletal and soft tissue age-related characteristics (Albert et al. 2007; Williams 2008; Martin and Osterholtz 2015; Almonaitiene et al. 2022; Walkup 2022). The 14 c system can be used to determine an individual's date of birth, but there is also highly important bone collagen that is created at different times when the teeth's enamel is being created, as well as other methods to identify the dentine and cementum, which can be identified by teeth, hair, and cortical and trabecular bone (Tykot 2004; Ubelaker et al. 2006; Alkass et al. 2013; Calcagnile et al. 2013; Cook and Mackenzie 2014; Solis et al. 2017; Villagran et al. 2017; Teglind 2021).

Figure 13. In 2003, bones, skeletons, and skulls were collected near Rajshahi University in Boddhabhumi.

To know the causes of death, there must have been an application of the maceration method, which creates a separation of tissue from bones, and after the maceration experimented on clean bones, the remaining cellular components and DNA were kept (Schultz 2001; Mairs et al. 2004; Love and Sanchez 2009; Hankel et al. 2013; Castania et al. 2015; Couse & Connor 2015; Kierman 2015; Silverman 2018). In India, the real age of a skeletal specimen was determined by its soft tissue, which was based on the fusion of ossification, and the real gender was determined by a dependent method of sexually morphological traits to test in the skull, hip bone, and femur (Sander 1989; Scheuer and Black 2004; Lewis 2007; Kanchan et al. 2009; Roberts et al. 2013; Mesejo et al. 2020). It's difficult to find out DNA in any skeleton, but sex determination is one of the most important parts of forensic anthropology when there are three methods applied, particularly single PCR amplification, double PCR amplification, and decontamination of the bone (Kemp and Smith 2005; Cruz et al. 2008; Ghraeeb 2010; Kim et al. 2011; Quincey et al. 2013). Because of their mutual dependence, a skeleton's age is probably linked to its sex, but if it is decided to identify the skeletons through DNA markers, it will take extra effort to examine the skeletons' sex by the amelogenin and the "Y" chromosome marker, and it is possible to calculate a skeleton's age by biological process (Keyser et al. 2003; Rosing et al. 2007; Bogdanowicz et al. 2009; Daskalaki et al. 2011; Pajnic et al. 2016; Afonso et al. 2019). Now it's clear how to identify the real age and sex of skeletons, skulls, and bones by using the methods of forensic anthropology.

Classical Era: Historical Message and Artifacts for the Modern Generation

Gallery number three contains two bullet boxes. Those who collected from Dr. Zoha Hall, Rajshahi University, during the post-war period.

Figure 14. Box and bullet.

Ammunition was carried in such boxes. It is a wooden box (Fig 14). Moreover, many dangerous bullets (Fig 14) have been collected.

Figure 15. In 1971, Pakistani helmets and caps were used by the Pakistani army.

Here is a box containing a skull and a Pakistani army helmet (Fig 15). Another has four used items, but I believe they are caps and gloves. Everything present here was used by the Pakistani army in the war in 1971. All items used by the Pakistani army are blue in color.

Figure 16. This record reel was used by Bangladeshi freedom fighters in 1971.

Any speech recorded by reel (Fig 16) at the time was saved and turned into cassettes. It is rusted. These rusts must be cleaned if you want to keep them for a long time. These were used by the freedom fighters of Bangladesh in the great liberation war.

Figure 17. Pakistani currency dates back to the country's rule prior to 1971.

It's all Pakistani currency (Fig 17). The currencies were in circulation during Pakistani rule. Currency preserved in the martyr's memorial museum will be good if not preserved, as it will spoil.

Figure 18. Jeep vehicles used by the Pakistani army during the 1971 Liberation War.

Here too, three vehicle (Fig 18) destroyers used by the Pakistani army in 1971 are preserved. It seems that it is the most neglected of all the archaeological resources collected in the martyr's memorial museum. Because it has been stored in the open air in front of the martyr's memorial museum, which is prone to rust. Always, a car depends on its maintenance and repair, but if there has been marginal erosion and loss of function due to its accumulation of molecular damage by rusting, then it becomes very costly to maintain and repair (Blagosklonny 2009). Rust undoubtedly creates relationships between iron, oxygen, and wetness, as well as the erosion of ferruginous and color, and the infrastructure queue of progress is dependent on decay rhythms (McCallum 2016). Visitors go to museums not only to gaze but also to learn and be entertained, but top-tier museums are looking for ways to improve their interior design, including all elements and other things, so that more visitors can enjoy them (Caulton 2006). It is their duty to preserve the past artifacts, and archaeologists should keep loyalty to the elemental evidence, but the passage of time has created conflicts among some communities, and it's difficult to maintain equilibrium among them so that artifacts can be preserved well (Chirikure & Pwiti 2008). All archaeological resources are non-renewable and one-of-a-kind remains, but they serve as reminders of past significant places, cultural, natural, and civilizational past histories, and provide evidence that sparks intellectual curiosity in any generation (McManamon 2000). Archaeological resources are mainly past history, origin, destruction, and cultural sources. Cultural tourism is always an authentic experience gained through direct experience, objectivism, naturalness, past civilizations, and any type of artifact (Prentice 2001). Archaeological sites are frequently looted, but this is not always a problem for poor countries and may even promote free trade through auction houses and museums (Proulx 2013). Most archaeologists want to preserve antiquities, wealth, and artifacts in any way they can. However, it may appear that the value or demand for archaeology resources is high, but because the resources are owned by a poor country,

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the rich country attempts to loot these resources through a covert means. As a result, the author believes that each country should preserve its archaeological resources and appoint an archaeological board to oversee them.

CONCLUSION

There were skulls and skeletons of martyrs discovered in 2003, and heavy weapons were discovered at various times, such as grenades, mortar shells, and rocket launchers. If they explode, all the collected archaeological resources will be destroyed. Moreover, various archaeological artifacts are not well preserved. By preserving archaeological resources well, the quality of museum services should increase, making them more attractive to tourists. Also, the museum should protect the historical and archaeological resources from any problems or damage. The martyr's memorial museum is like a mirror of a brave Bangladeshi soldier and his history. The author thinks and recommends that these research solutions and methods will bring prosperity and welfare to the nation. At the Martyr's Memorial Museum of RU, historical archaeology represents a crucial nexus of cultural heritage preservation and historical comprehension. A moving way to remember martyrs' sacrifices and introduce modern generations to their history is through the practice of locating and preserving items and situations associated with them. The effort will nevertheless come without difficulties. Ethics pertaining to treating the departed, their relatives, and the martyrs' memory with respect must continue to take precedence. To achieve a comprehensive and considerate approach, cooperation between archaeologists, historians, curators, and environmentalists is necessary. The potential of historical archaeology in this setting is bright, despite these difficulties. A deeper understanding of the past is predicted thanks to ongoing research and cutting-edge methods, which will improve the museum's exhibits and educational outreach. As this discipline develops, it has the ability to involve the general public in a significant historical investigation and build a deep relationship with the sacrifices made by martyrs. Historical archaeology at the Martyr's Memorial Museum is an important project with a promising future that makes a substantial contribution to our knowledge of history and memorialization.

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