



An Archaeology of the Pomeranian Crime of 1939: The Case of Mass Crimes in the Szpęgawski Forest (Poland)

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Abstract

This article presents the general historical context of the mass shootings in the fall of 1939 in the pre-war Gdańsk Pomerania, Poland, and introduces the very term “Pomeranian Crime of 1939.” The executions in the Szpęgawski Forest, where between 2,413 and 7,000 people lost their lives, illustrate of the process itself. The results of archaeological research carried out at the site of the mass killings in the Szpęgawski Forest in 2023 is used as a case study. Archaeological research is shedding new light on the crime and its cover-up through analyses of the material evidence.

Keywords Second World War · Pomeranian Crime of 1939 · Mass Grave · Mass Killing Site · Sonderaktion 1005

Introduction

“An Archaeology of the Pomeranian Crime of 1939” is a multidisciplinary and international project dealing with German crimes committed in the first months of the Second World War in Gdańsk Pomerania, Poland. This is one of the first archaeological attempts in Poland to draw attention to the issue of the material heritage of crimes and its significance in the present day (see also Ławrynowicz 2015). The methods and tools of archaeological research and integrating results with the work of historians, ethnologists, physical anthropologists, forensic physicians, and prosecutors from the Polish Institute of National Remembrance, among others, is intended to put the crimes committed in 1939 and their cover-up in 1944 in a new light (see also Groen et al. 2015; Moran and Gold 2019).

The purpose of this text is to draw attention to the nature and extent of the crimes, which have not been discussed in detail in world archaeology. Therefore, we first

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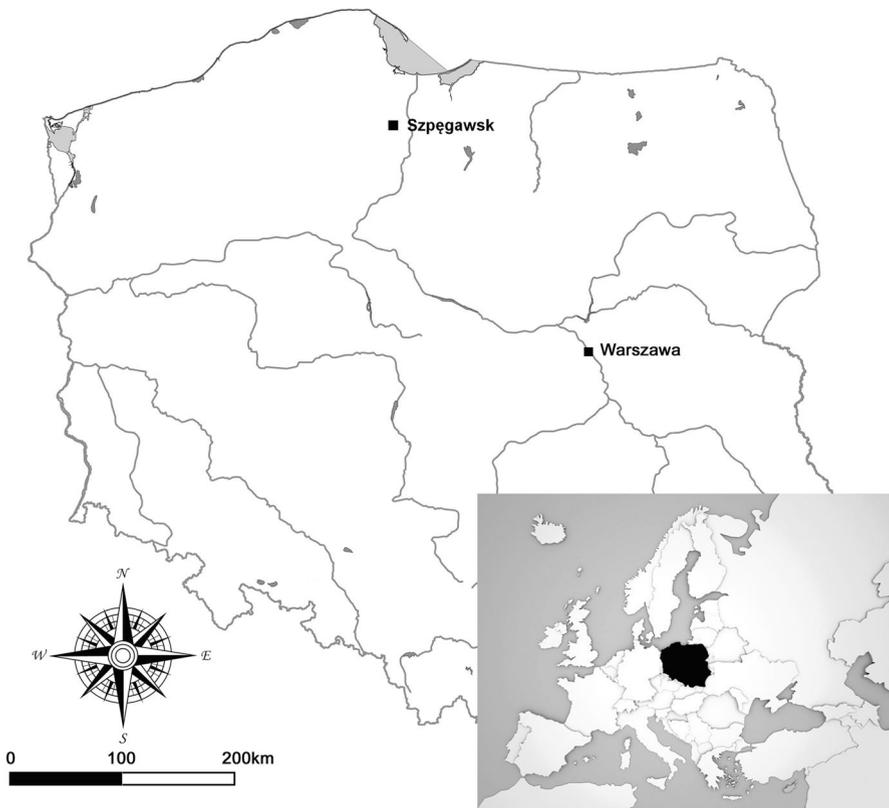


Fig. 1 The location of Szpęgawsk, where in the nearby forests in the fall of 1939 and January 1940 the Germans committed mass crimes. In the second half of 1944, the graves were exhumed and the corpses of the victims were burned in order to cover up the traces of the crime (prepared by M. Michalski)

outline the broader historical context of the problem under study and present arguments for the need to use the concept of the “Pomeranian Crime of 1939,” which is unknown in the English discourse. We then present the crimes in the Szpęgawski Forest as a paradigmatic example of the Pomeranian Crime of 1939 (Kubicki 2019; Milewski 1977, 1989). The Szpęgawski Forest is among the largest execution sites from 1939 in Gdańsk Pomerania. It is estimated that up to 7,000 people were killed there by the officers and supporters of the Third Reich. The last section of the article discusses some preliminary results of the archaeological research carried out in 2023 in the Szpęgawski Forest (Fig. 1). They show a frequently emphasized point in the discourse – not everything has been preserved in written, visual, and post-war reports, and they do not tell the whole story (e.g., González-Ruibal 2019; Sturdy Colls 2015). Archaeology provides insight into the organization, the course of the crimes, and the ways of covering them up, and presents the material heritage of the

crimes. The work carried out is the first of its kind in the case of researching the broadly understood heritage of German crimes from the first period of the Second World War in Pomerania (see also Kobiałka et al. 2021; Kobiałka 2022).

It should also be emphasized that the work carried out is part of the investigations conducted by the Polish Institute of National Remembrance on the mass crimes committed against the Polish people during the Second World War. There is no statute of limitations for genocide. Although the perpetrators are long dead, this is no argument against conducting scientific research and prosecutorial investigations on them.

The Pomeranian Crime of 1939

In the catalog of the permanent exhibition of the Museum of the Second World War in Gdańsk, Poland, one can read the following words:

From the very beginning, the Germans used Pomerania as a crime laboratory. The autumn of 1939 was the beginning of a terrible terror, the victims of which numbered in the tens of thousands among the Polish intelligentsia and other groups condemned to death by the Third Reich. It is here that the first forced deportations of Poles from Gdynia took place here, in October 1939. Pomerania was the centre of the darkness of Nazis' policy in the countries they conquered (Machcewicz 2016:10).

In the "Terror" section of the exhibition, there are seven plaques with the names of places where Polish civilians were executed. These include: Bydgoszcz-Fordon, Piaśnica Forests, Szpęgawski Forest, Mniszek near Świecie on the Vistula River, Paterek near Nakło, Palmiry near Warszawa, and Leszno. It is no coincidence that the first five extermination sites were located in the pre-war Pomeranian Voivodeship.

The outbreak of the Second World War completely changed the lives of the citizens of the Second Republic of Poland. The Third Reich policies in the individual occupied regions of Poland differed according to the racial and economic potential of the inhabitants. In the first phase of the war, the area most severely affected by the occupational terror was Gdańsk Pomerania. The actions of the Germans, which involved significant forces of both the German minority living here as well as the soldiers and officers of the Security Police and Security Services (*Einsatzgruppen* and *Einsatzkommandos*) sent from the Reich, resulted in the death of thousands of citizens of the Second Republic of Poland: men and women, representatives of all professions, people of various ages. Today, the crimes committed by the Germans in this region between September and December 1939, and in some areas until January 1940, are referred to as the Pomeranian Crime of 1939 (Ceran et al. 2018:31).

Instead of using the German terms *Intelligenzaktion* (a term used to describe the killing of the intelligentsia) (Wardzyńska 2009) and *T-4* (a cryptonym used to describe the killing of the mentally ill and disabled) (Evans 2004), the "Pomeranian Crime of 1939" draws attention to over 400 sites where people were shot. Initially, due to the scale of the crimes committed, in Gdańsk Pomerania stood out from other

regions of occupied Poland in the early stages of the war. By the end of 1939, more than 40,000 people had been murdered, about 30,000 of them died in Pomerania (Böhler 2011:170). To put it bluntly, the Pomeranian Crime of 1939 was the first German genocide during the Second World War (Fig. 2).

In the fall of 1939, Poles were murdered as representatives of a particular national group, and Jews were murdered as representatives of a particular religious



Fig. 2 The most important places of mass crimes in fall 1939 and January 1940 in Gdańsk Pomerania (source: Institute of National Remembrance, Poland)

group. It is true that in Article 2 of the UN Convention on the Prevention and Punishment of the Crime of Genocide of December 9, 1948, does not specify social groups (mentally ill) or political groups (opposition of the Soviet Union) or cultural groups (opposition of the USA), but in the original draft of the creator of the concept of “genocide,” a Polish lawyer of Jewish origin Rafał Lemkina (UN Resolution of December 11, 1946, “The Crime of Genocide”), these groups were specified (Mazurkiewicz 2021:160–170). The killing of the mentally ill (partial or total annihilation) was a denial of the group’s right to exist, as was the case with Jews or Poles. The Pomeranian Crime of 1939 was not only a crime of genocide in legal terms, but genocide as a historical phenomenon. In 1944, observing what was happening in the countries occupied by the Germans, especially in Poland, Lemkin concluded that new historical processes required new concepts. He used the term genocide to mean the destruction of a nation or social group. This new term was derived from the Greek word *genos* (race, tribe) and the Latin word *cide* (killing) (Lemkin 1944:75–85).

According to Lemkin, genocide is not a single act, but a coordinated plan of various activities. Existing concepts, such as denationalization or Germanization, were inadequate because they assumed not only that the cultural patterns of the occupying nation would be imposed on the representatives of the occupied nation, but also that they would remain alive. At that time, Lemkin had no knowledge of the extraordinary scale of German crimes in Pomerania at the beginning of the occupation, but he did know that Germany had resorted to extermination as one of the tools of its occupation policy. He distinguished eight genocidal techniques: cultural, social, political, economic, biological, physical, religious, and moral. He did not create a hierarchy of genocidal techniques and did not determine whether any of them is necessary to talk about this phenomenon. However, it is hard not to assume that physical genocide was crucial in his thinking and that it was the main reason for the need to find a new concept. The Pomeranian Crime of 1939 was, in the strict sense, a physical genocide (i.e., the deprivation of life). At the same time, physical genocide was one of the elements of genocide in the broader sense – that is, German policy in occupied Poland, the goal of which was the annihilation of the Polish nation, which may or may not have meant the murder of all its representatives, the extermination of Jews and Roma, as well as other social groups (e.g., the mentally ill), to whom the German Nazis denied the right to exist simply because they belonged to the group they intended to annihilate.

The geographical boundaries of the Pomeranian Crime marked the borders of the pre-war Pomeranian Voivodship, after the administrative reform of 1938. The voivodship consisted of 23 counties. The executions took place at a time when the administrative unit of the Gdańsk – West Prussia District (in German: *Reichsgau Danzig – Westpreussen*) did not yet exist. The district was established on October 26, 1939. The main perpetrators of the crimes in Pomerania were members of the *Selbstschutz Westpreussen* paramilitary formation. Although the *Selbstschutz* operated throughout occupied Poland, it played a decisive role in Gdańsk Pomerania. The organization was formed by representatives of the local German minority shortly after the *Wehrmacht* entered the pre-war territories of the Second Republic of Poland. During the inter-war period, many of the later members of the

Selbstschutz declared their allegiance to the political parties *Deutsche Vereinigung* and *Jungdeutsche Partei*. With the outbreak of war, the Germans began to create paramilitary formations to prevent the Polish army from destroying a strategically important infrastructure and to protect German property. The actual task of the *Selbstschutz* was to assist the operational groups of the security police in organizing and carrying out mass killings of selected Poles.

The task of the *Einsatzgruppen* was to exterminate the leading strata of Polish society, local members of the Jewish communities as well as mentally ill and disabled people – patients of some hospitals in Pomerania. Crucially, in Pomerania, the *Selbstschutz* did not function as support; its members were the main perpetrators of the crimes (Mazanowska and Ceran 2021: 27–29). The potential of the local Germans was used by the commanders of the Third Reich, who decided to create it at a meeting held in Berlin on September 10, 1939 (Ceran 2021:151). The local Germans knew the realities of life in Poland very well, and above all, they could easily indicate the whereabouts of people selected for arrest and execution (Ceran 2019). The commanders were SS officers. Ludolf von Alvensleben, the commander of the northern *Selbstschutz* district, played a key role, because of his Nazi ideology and his awareness of the mission to transform a Polish Pomerania into a German West Prussia (Fig. 3). The physical extermination of selected Poles was the key to achieving this goal. Historians such as Christopher Browning (2000:209), who studied the question of the evil born in “ordinary” people, emphasized that the personality of the commander and his attitude to the task entrusted to him influenced their implementation by his subordinates. On the eve of liquidation, the *Selbstschutz* had



Fig. 3 Management staff of *Selbstschutz Westpreussen* (source: Institute of National Remembrance, Poland)

38,279 members – it was approximately 30 % of the German population in Gdańsk Pomerania (men aged 18 to 45).

The timeframe of the Pomeranian Crime is determined by the dates of operation of the *Selbstschutz* in Pomerania, from September 1939 until the formal dissolution of the organization on November 26, 1939. There are, however, some exceptions. It is known from witnesses that the *Selbstschutz* was still active in the first days of December 1939 (Mazanowska 2019:36). The last executions took place at the beginning of 1940 – this fact was connected only with the shooting of patients of psychiatric hospitals (executions in Mniszek, Piaśnica, Szpęgawsk). The *Selbstschutz* carried out its tasks on the bases of a method which can be called the “*Selbstschutz* method.” The *opus operandi* was basically the same in most cases – Poles were imprisoned in assembly prisons, detention centers, camps, factories, and the like. There they were interrogated and it was decided which of the prisoners would be shot, which would be sent to concentration camps, and which ones would be released. The next step was to find a place for the execution and to deliver or escort the prisoners (Ceran 2014:47–48; Mazanowska 2017).

In 1939, the authorities of the Third Reich assumed that they would transform Polish Pomerania into a racially pure German West Prussia. They chose genocide as the method of social engineering, having learned from the failed experience of the Germanization of these territories in the nineteenth century. The Germans never accepted the annexation of Pomerania to Poland under the terms of the Treaty of Versailles after the First World War. The Second Polish Republic was perceived as a “seasonal state” and the Pomeranian Voivodeship was called the “Pomeranian Corridor” artificially separating West Prussia from East Prussia. The road to the goal led through successive stages. The first one, the Pomeranian Crime, involved the elimination of all those who could prevent the implementation of the plan.

However, a pretext was needed to justify the retaliation against the Poles. The events of September 3–4, 1939, in Bydgoszcz (in German: *Blomberg*) played a key role in the following weeks of fall 1939. As a result of a German diversionary tactic, retreating Polish soldiers were shot at in various parts of the city. This led to lynchings, the victims of which were many innocent Germans (Chinciński and Machcewicz 2008:38). The number of victims was put at 365, including 254 Evangelicals, the majority of whom were Germans. Murders of the German population also took place outside of Bydgoszcz. The events of 3 and 4 September in Bydgoszcz were then systematically used as an excuse to arrest and punish Poles who had absolutely nothing to do with the events in the city. The attitude of the Germans in Pomerania was mainly influenced by the propaganda message about them. The commonly known name *Bromberger Blutsonntag* (in Polish: *bydgoska krwawa niedziela*, in English: *bloody Sunday in Bydgoszcz*) was a propaganda product intended to draw public attention to the “massacres of the German population” carried out by the Poles. The number of German victims was also multiplied to 58,000 and then to 62,000, when in fact it was between 4,000 up and 4,500 (Ceran 2021:149). However, sometimes a local event was used as a pretext for arresting innocent local Poles, such as a fire in a barn in Piastoszyn, belonging to a member of the *Selbstschutz*, as a result of which the local German died (Jastrzębski 1974:138). Later, during the executions in Rudzki Most near Tuchola, 227 Poles were shot in revenge.

The eradication of the traces of the crime began as early as 1939, when the archives of the *Selbstschutz* were destroyed. In 1944, as part of *Sonderaktion 1005* (in English: Special Action 1005) Germans dug out and burned the bodies of those murdered in 1939 in almost 30 execution sites in Pomerania and Kuyavia, (including the three largest: Piaśnica, Szpegawsk, Mniszek) (Kubicki 2019:223–224) (Fig. 4). The victims' bodies were treated as garbage that needed to be disposed of. The



Fig. 4 Sites of mass crimes in 1939–40 in Gdańsk Pomerania, where the corpses of murdered Poles were exhumed in 1944 in order to burn and cover up the traces of the crime (source: Institute of National Remembrance, Poland)

organizers of Action 1005 already knew that “bones may speak quietly, but they never lie and never forget” (Staniewska and Domańska 2023:21; our translation). No body may mean no crime. “The truth of the bones” is crucial for reconstructing knowledge about the crimes. By burning the bodies, the Germans committed, using contemporary terminology of forensic anthropology, necroviolence. The perpetrators not only took the lives of innocent victims, but also destroyed their dignity and right to a grave. Violence against corpses also affected the victims’ relatives, who, unable to bury their family members, remained in “eternal mourning” (Staniewska and Domańska 2023:40). The right to bury loved ones and know about their fate is today considered one of the basic human rights. All in all, the mass murders in the Szpęgawski Forest can be conceived as a paradigmatic example of the crime and its cover-up.

The Pomeranian Crime of 1939: The Case of Mass Killings in the Szpęgawski Forest

The so-called Szpęgawski Forest, 8 km from Starogard Gdański and 15 km from Tczew, is the largest site of civilian execution in the Starogard district and along with Piaśnica near Wejherowo – the largest place of mass killings in the context of the Pomeranian Crime of 1939. Residents of Polish villages and towns in the Starogard district were forcibly dragged from their homes at night and taken to various prisons and detention centers. When Poles asked what right they had to do this, the members of *Selbstschutz* would claim that they were acting on behalf of the Nazi party (Kubicki 2019:1). Victims were brought to the shooting sites in trucks, mainly from the Starogard and Baszta Gdańska prisons (where 12 Polish women were also raped there), from the Tczew and Pelplin prisons, and from other smaller towns. In Gniew, the Germans set up a detention center in the ruins of the Teutonic castle.

In the Starogard prison, the clergy were particularly ill-treated, especially priests with German-sounding surnames. The surviving priest Ignacy Stryzyk testified after the war:

My attention was drawn to Father Bolesław Gordon, the parish priest of Grabów, who was supporting his stomach with his hands and who could hardly walk. During the arrest, one of the arresting thugs kicked him in the stomach tearing his diaphragm and pulling a bloody shoe out of his wound [...] (Gajdus 1962:141; our translation).

Father [Józef] Kuchenbecker comes out, but how changed. A swastika had been carved into his forehead with a knife. Blood flowed profusely from his eyes and lips, staining his clothes. Unable to raise his hands to wipe the blood from his eyes because of the massacres, he gropes towards our ranks and blows to remove the blood flooding his eyes and face (Gajdus 1962:143; our translation).

Prisoners were beaten into unconsciousness. They were sometimes forced to drink alcohol and then eat and swallow their own excrement. They also had to squat with their arms outstretched and repeat the words: “Wir sind als Polen geboren und

wollen als Polen sterben” (in English: “We were born as Poles and we want to die as Poles”; our translation) (Milewski 1977:76).

After being taken to the forest in trucks or buses, the victims were placed over the graves or ordered to lie down in a pit, some of them were stunned with a blow from a rubber truncheon and then shot by a firing squad. The wounded were finished off with handguns. Only one day alone, December 8, 1939, known as the “black day of Szpęgawsk,” more than 400 psychiatric patients were murdered (Milewski 1989:21,81). The perpetrators of the murders were the assault and sentry unit of the SS–*Wachsturmbann* “Eimann” – an independent operational unit of *Einsatzkommando 16* and members of the local *Selbstschutz Westpreussen* cooperating with the German local administration.

After a series of executions, the Germans put up plaques with the inscription “Hier ruhen durch die Polen ermordete Volksdeutsche” (in English: “Ethnic Germans murdered by the Poles rest here”; our translation) at the mass killing site (Archive 1 n.d.). Pine trees were planted on the mass graves from the spring of 1940. In 1944, a special commando 1005 exhumed the bodies and burned them. After the war, the Polish authorities searched for evidence of the crime and mass graves of the victims. Exhumations were also carried out. Based on the reports and other historical as well as oral records, it was generally accepted that the bodies were stacked alternately with a layer of wood and set on fire. After burning, the ashes were sifted through special sieves to select any material remains such as wedding rings, jewelry or gold teeth. The remaining material evidence was broken into small pieces with special pestles and again poured back into the graves, sprinkled with lime and covered with earth. The forest was replanted in the area of mass killing. According to the historical records, in the Szpęgawski Forest 31 graves out of 32 mass graves contained bodies that were burned (however, this was refuted during the field research). During the operation to cover up the traces of the crime, access to the forest was forbidden. The area was patrolled by SS members with dogs. After the war, several metal barrels containing a flammable substance were found on the site. When the site was examined in 1947, human corpses mixed with charred pieces of wood and intact bone fragments, skulls and tibias, were found at a depth of about 2 m. The remains were covered with a layer of earth and lime. In several graves, it was found that human remains had been deliberately mixed with lime, which was intended to accelerate the decomposition process (Kubicki 2019:221–230).

Due to the destruction of documents and burning of corpses, the total number of victims murdered in the Szpęgawski Forest remains unknown. The victims were: Polish civilians, mainly from Starogard and Tczew counties, patients of the psychiatric hospital in Kocborów, the hospital in Świecie near Wisła, and other hospitals from all over pre-war Poland, including children. The Szpęgawski Forest is the largest mass killing site in the county – but not the only one (see more in Kubicki 2019). Recent research based on various historical records, has confirmed the identification of at least 2,413 victims who were (almost certainly) murdered in the Szpęgawski Forest; 1,689 were mentally ill and disabled people because the copy of the list from the Kocborowo hospital was left behind by the Germans when they were destroying the evidence of the crime in the Szpęgawski Forest. Almost half of the mentally ill and disabled people murdered near Starogard Gdański were women. Among

the identified Polish civilian victims were 102 teachers, 70 farmers, and 66 priests (Ceran 2020) (Fig. 5).

After the war in Poland, several perpetrators of crimes committed in the Starogard district were brought before the Special Criminal Court in Gdańsk, which was sitting out of town. For example, Walter Becker, Edward Kickel, and Emil Steinborn were sentenced to death. Johann Aberg, on the other hand, was accused of killing 150 children with injections in the Kocborowo hospital. He confessed to killing four children. However, he managed to escape from Starogard prison. Most of the perpetrators of the crimes in Szpęgawsk escaped to West Germany and avoided criminal responsibility there. For the murder of 1,200 mentally ill people, Kurt Eimann was sentenced to only four years in prison, of which he served half of the sentence (Ceran 2020:39–40). At the end of the 1960s, the trial



Fig. 5 Some of the victims murdered in the Szpęgawski Forest: **A** Jan Kowalski; **B** Marian Trocha; **C** Father Jan Waldoch; **D** Franciszek Fabian – commander of the fire brigade in Tczew; **E** Mieczysław Robert Hein, student of the maritime school; **F** Małgorzata Michalska (source: Maria Sadurska, Piotr Pliszka; Parish of Beheading of St. John the Baptist in Chojnice; Public Library in Starogard Gdański; Institute of National Remembrance, Poland)

of Johann von Plehn, the former head of the *Selbstschutz* in Starogard, began in Germany. In January 1968 a trial was opened against Johan Wilhelm Fast, the commandant of the prison in Starogard. The perpetrator, however, died in 1977.

In 2019, on the 80th anniversary of the outbreak of the Second World War, a new memorial dedicated to the victims of the Szpegawsk crime was unveiled. The monument features 150 concrete tree-like pillars and sawn trunks bearing the names of 2,413 identified victims (Figs. 6 and 7).

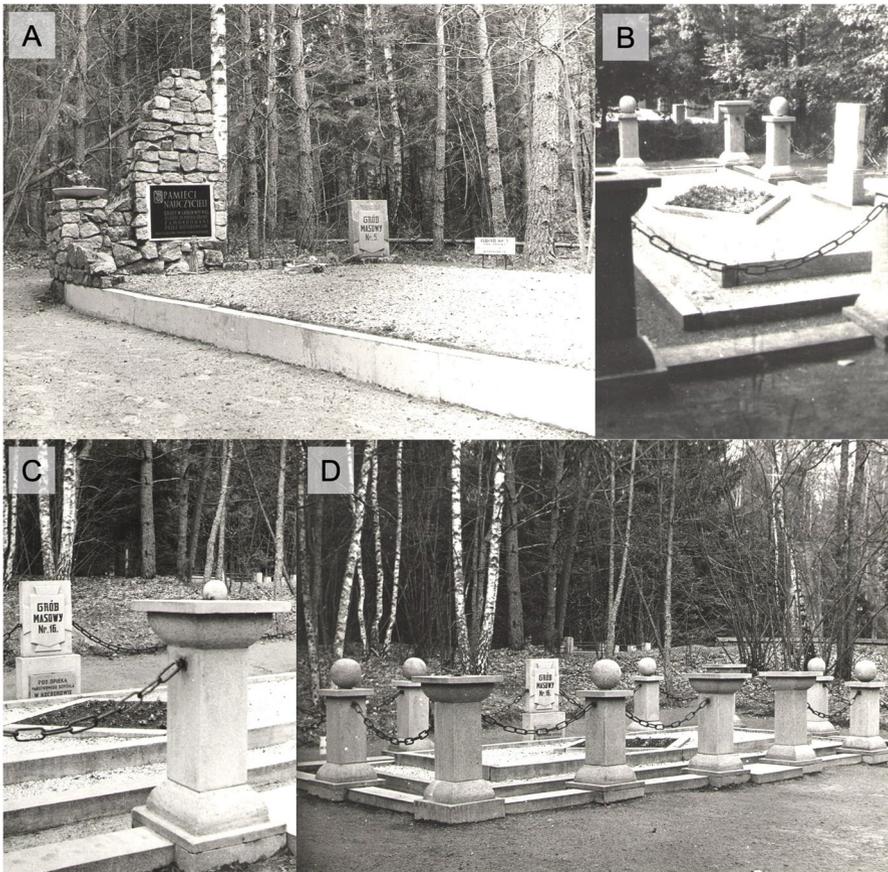


Fig. 6 Post-war commemoration in the Szpegawski Forest: **A** view of mass grave no. 5; **B** view of mass grave no. 16; **C** view of mass grave no. 16; **D** view of mass grave no. 16 (source: Public Library in Starogard Gdański)



Fig. 7 Contemporary commemoration in the Szpegawski Forest: **A** view of the main information board; **B** view of the main monument (author D. Frymark)

An Archaeology of the Pomeranian Crime of 1939: Material Evidence of the Crimes in the Szpęgawski Forest

The first place where fieldwork was carried out in 2023 as part of “An Archaeology of the Pomeranian Crime of 1939” was the Szpęgawski Forest. The research methodology was based on a commonly accepted and used model: (1) desk research, (2) non-invasive research, and (3) excavations (Karski and Kobińska, 2021; Kobińska 2022). The basis for the field research was the hypothesis that there might still be evidence of the crime in the Szpęgawski Forest— both in the form of mass graves that were not destroyed by the Germans in 1944, and those that were not investigated by Polish judicial commissions after the war. It was also assumed that the contemporary memorial consisting of 32 tombstones supposedly marking the precise locations of mass graves may also have a symbolic character – that not all sites marked with tombstones were actually mass graves. On the basis of the research carried out and the samples taken, the preliminary results of selected materials – evidence of mass crimes committed in the Szpęgawski Forest – are discussed below.

Remote Sensing Data

After gathering available historical evidence in the form of archival materials and historical literature on the subject of mass crimes in the Szpęgawski Forest, the research teams’ attention was focused on the analysis of available remote sensing data. These included historical aerial photographs and airborne laser scanning (ALS) derivatives from the resources of the Head Office of Geodesy and Cartography, Poland. Both types of data were collected for cartographic purposes, and the possibility of interpreting the archaeological remains based on them can be classified as a stroke of luck (Fowler 2004). Among the available photographic material, one (the oldest) photograph from 1964 was identified, which provided additional information about the studied landscape.

Airborne laser scanning derivatives were acquired in the form of point clouds (LAS format). These were then reclassified (5–10 measurement points per m²), and a DTM (Digital Terrain Model) with a spatial resolution of 0.5 m² was created using Triangulated Irregular Network (TIN) interpolation of points classified as surface reflections. This product was then processed using visualization algorithms (hill-shade model, local dominance model, visualization for archaeological topography; see more in Verbovšek et al. 2019) aimed at highlighting slight terrain anomalies that could have resulted from human activities during the Second World War in the studied landscape.

The historical aerial photography taken in 1964 does not provide any new information about previously unknown burial sites of victims of German crimes in 1939–40 and attempts to cover them up in the fall of 1944. This is not possible both due to the time of photograph (20 years after the events discussed) and the landscape conditions (forest cover), which effectively hide the sought-after potential traces. However, it is worth noting that the exhumations carried out in this area left behind

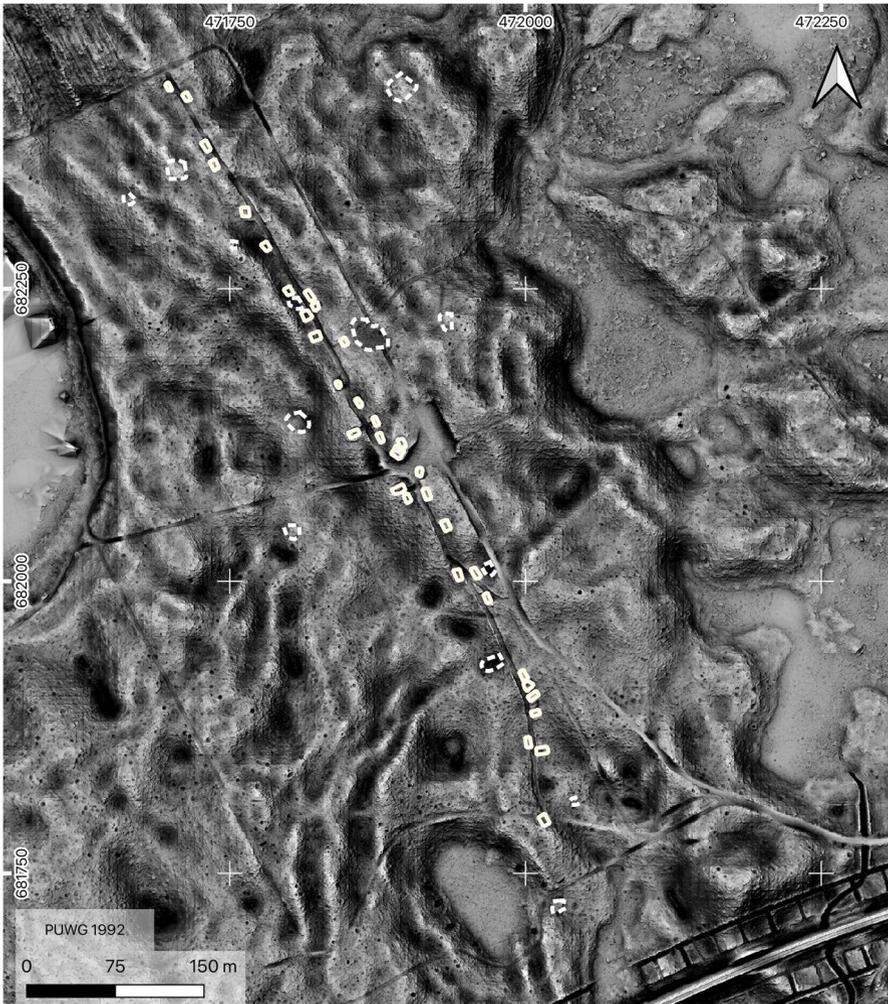


Fig. 8 Visualization of LiDAR data for the Szpęgawski Forest. The solid line indicates the mass graves marked today in the form of tombstones. The dotted line marks the alleged places that may be related to the crimes carried out in the Szpęgawski Forest (prepared by M. Kostyrko; source: Head Office of Geodesy and Cartography, Poland)

22 distinct traces, in which can be seen in the photograph discussed in the form of bright phototones visible in the source material (Fig. 8).

The analysis of the ALS derivatives focused on identification of previously unrecognized mass graves of victims of the Pomeranian Crime of 1939 murdered in the Szpęgawski Forest (Fig. 9). In the vicinity of the known (and previously exhumed) burial sites, attention was drawn to small depressions, similar in size to the known burial sites and of a regular shape, which could indicate man-made features (in view of post-depositional processes, it should be considered that the regular shapes such



Fig. 9 Aerial photography from 1964 showing structures related to the commemoration of the victims of the Pomeranian Crime of 1939 in the Szpęgawski Forest (prepared by M. Kostyrko; source: Head Office of Geodesy and Cartography, Poland)

as rectangles, circles, and polygons from earlier times have only survived in a form similar to their original shape in the contemporary context, and it is from this perspective that these structures were recorded). The assumption was made that these places had been left without any distinctive field markings to allow their later discovery or commemoration. In other words, the terrain was levelled and left to time and the forest to erase any remaining traces. On this basis, 17 locations were documented, which fit into the existing and recognized infrastructure of memorial sites, as well as newly identified traces of former roads and paths (as possible identifiers of roads used during the crimes).

Burial Pit as Evidence of the Crime

During the fieldwork in the Szpęgawski Forest, 17 test trenches were opened. The excavations of two marked burial places – graves numbered 31 and 18 – are of particular importance. Grave no. 31 turned out to be symbolic. After the removal of the tombstone slabs and the subsequent study of its outline, no traces of human activity were found. Hence the statement that grave no. 31 was a symbolic place – it did not indicate the exact location of one of the graves in the Szpęgawski Forest.

The situation was different in the case of the second structure – grave no. 18. It should also be noted that for conservation reasons and the ongoing investigation, the marked grave no. 18 was examined halfway – quarters marked B and D were excavated, which allowed for registering and documenting the length, width, and depth of the burial pit, as well as the relevant stratigraphic relationships. After removing the foundation and the gravel surrounding the grave, the study area was cleared. After cleaning, a clear outline of the burial pit was revealed, similar to a rectangle measuring approximately 10.5 m x 4.5 m (long side on the north–south line) with two branches in the southern part of the pit, precisely in the southeastern part (dimensions: length approx. 6 m, width approx. 0.7 m) and the southwestern (dimensions: length approx. 2.2 m, width approx. 1.2 m) corner of the pit. (Figs. 10 and 11).

The outline of the pit was clearly visible, but the filling itself was mixed. It was a dark beige-yellow in color with black spots. This mixing is most likely the result of building the tombstone, as gravel in the fill was recorded at this level (particularly in the central part of the pit). It was not until the next level that the diversity of the

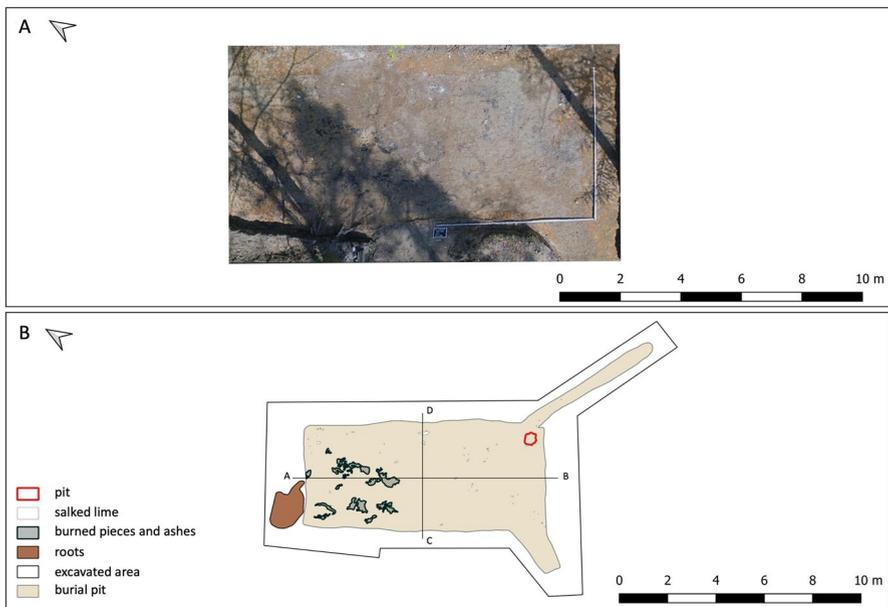


Fig. 10 Grave no. 18: **A** an outline of the burial pit; **B** interpretation of the photography (author M. Czarnik)

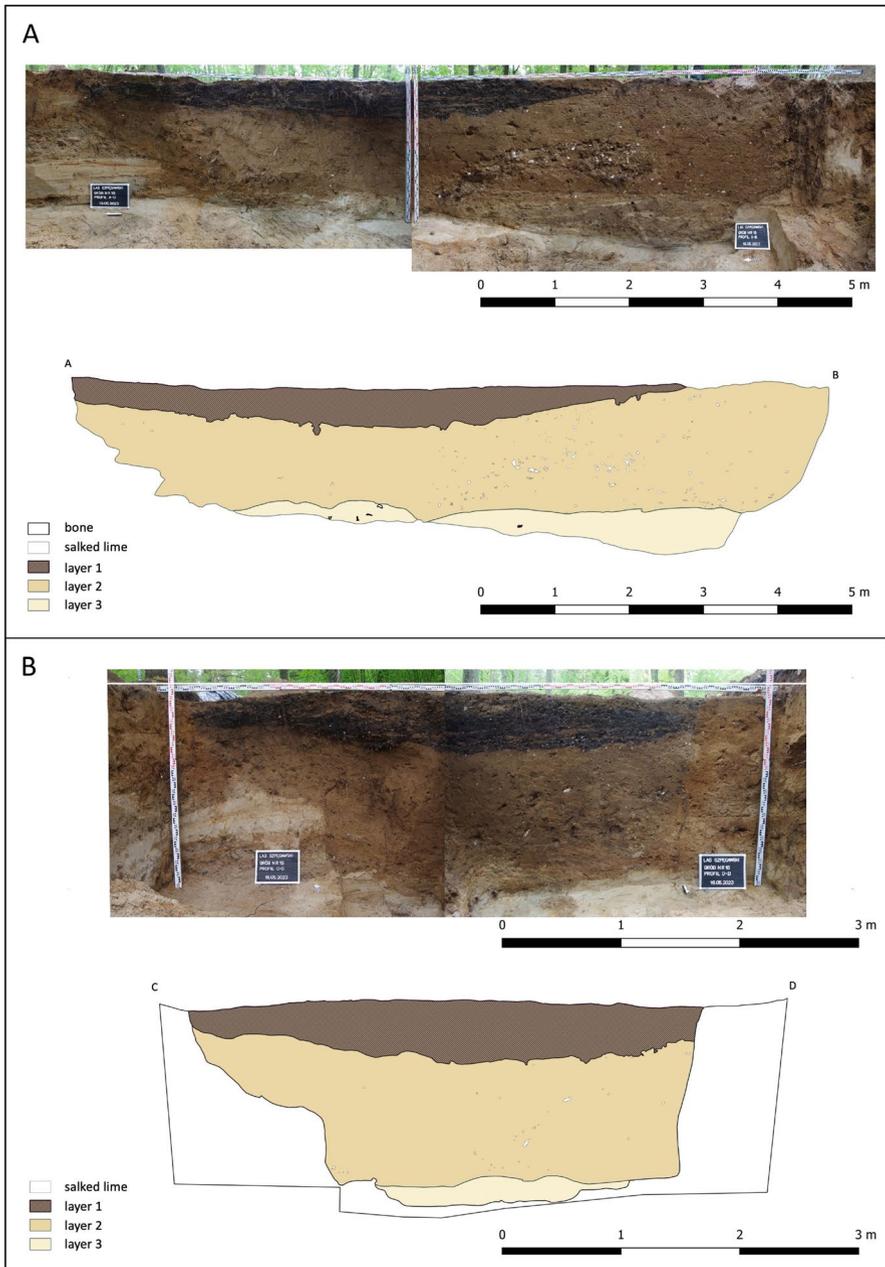


Fig. 11 Burial pit's profiles: **A** profile A-B determining the length and depth of the burial pit; **B** profile C-D determining the width and depth of the burial pit (author M. Czarnik)

fill was revealed. Two layers were noted. The first one had a layered structure. It was mostly black, burned earth, but thin layers of sand were visible too. It was mainly distributed in the southern part of the pit and showed signs of burning. The second layer, dark beige and light brown in color, surrounded the first one. The next layer appeared just at the bottom of the feature at a depth of about 1.5 m. This layer was characterized by a dark beige color with yellow sand inclusions.

The interpretation of the burial pit is based on two observations. Firstly, the contours and differences in color and thickness of the separate layers, and secondly, the analysis of the evidence obtained during the exploration, which can be divided into three groups: human remains, objects and their fragments, and others. The first layer had a color, structure, and material that clearly indicated cremation. In the case of human remains, burned fragments were found, at both high and low temperatures. The bone fragments were highly fragmented. Items found during the exploration also showed signs of burning. On the other hand, lumps of slaked lime and charcoal were assigned to the remaining group. It should be noted here that the lime traces did not bear traces of high temperature. The next layer, apart from the difference in color, differed mainly in the material. The collection of human bones was characterized by the fact that even in the case of a fragmentary state of preservation, they did not show any signs of burning. Whole bone fragments were also recorded much more often (in the previous one there were none). The objects also did not bear traces of burning, and the remaining group contained only lumps of slaked lime. The last layer, at the very bottom of the grave, contained human bones in the anatomical order, or close to it. There were also significantly fewer items recovered (including two gold wedding rings), and no lime or coal was recorded. Based on the above observations, it can be concluded that they indicate different periods of infill formation.

Chronologically, the lowest layer was the oldest, so it should be associated with the period between September 1939 and January 1940, when mass murders of the Polish population took place in the Szpegawski Forest. Compared to the other layers, it constituted a small part of the excavated pit and was mainly visible on the profiles. Its chronology was first confirmed by bone material. It was deposited in clusters, mostly in an anatomical order. This proved the inviolability of the layer. The best example of this was the human remains found, catalogued as K1. This cluster consisted of phalanges, metacarpals, carpals, and forearm bones, arranged in the anatomical order. A gold ring was found on one of the proximal phalanges (one of the two – the other was in quarter B, also on the phalanx bone and within the same layer, which may indicate that the structure was disturbed by subsequent actions. This chronology is also supported by the absence of both slaked lime and charcoal.

The next chronological layer (no. 2) is related to 1944, when the Germans began activities aimed at covering up the traces of previous crimes (excavating bodies from mass graves in order to burn them later). This is proven not only by the color of the fill (no signs of burning on the site and no burned layers), but above all by the condition of the bones and objects recorded during the fieldwork, which showed no signs of burning. Another important argument is the fact that only slaked lime was found and no coals. In the description of the layer in question states that the corners are an

integral part of it. Based on their depth and on the current analysis, it can be assumed that these branches could have served as ramps, along which human remains were pulled out for later transport to the burning site. Some parts of the body may have become detached due to the state of decomposition. Presumably, people working under the supervision of the SS threw slaked lime into the grave when filling it in, in order to destroy any evidence in the form of bones that could still be found in the fill. This conclusion is also supported by the nature of the material recorded during the work. Compared to layer no. 3, no valuable objects were found. Therefore, it can be assumed that the bodies were searched for loot.

The last layer of the grave should also be associated with 1944, but with the final phase of erasing the traces of the crime (Fig. 12). This is supported by the nature of the material culture recovered during the works, as well as the structure of the layer. The sand also contained traces of soot in the form of dark grains and small particles of charcoal. On the other hand, the bone material had various traces of burnout indicating different combustion temperatures. The bone material was mixed in this respect – there were no clusters of bones with the same degree of burnout. This may prove that this material was transported from another location (to be hidden in a previously prepared pit). Ash with bone material, objects, and charcoal were deposited in the upper part of the previously exhumed grave with the addition of slaked lime. Thin layers of sand were visible, separated by layers of burned human bones, wood, and artifacts. All in all, based



Fig. 12 Works in the grave: **A** profile of the burial pit. The dark layer is the human remains that were excavated and burned in 1944; **B** the upper layer of burned human remains, among which there were burned artifacts and personal belongings of the victims; **C** close-up of the upper burned layer; **D** exploration of the bottom of the burial pit, in which there were fragments of unburned human remains. One of the gold rings found on the victim's phalange was found here (author D. Frymark)

on the observations, it can be said that this grave was not exhumed by the Polish commission after the war.

Artifacts as Evidence of the Crime

During the excavation of the grave no. 18, 408 artifacts, mostly metal ones, were identified (Figs. 13 and 14). The number of artifacts does not correspond to the number of inventory numbers, because in many cases it turned out that individual artifacts were joined together as a result of the effect of high temperatures on them (fused together) or as a result of the joining of metal objects in contact with each other during the corrosion process. The preliminary analysis of the artifacts was limited to their initial identification after removal of loose soil fractions and other contaminants – artifacts are currently being conserved. The majority were in a very poor condition. Highly advanced physicochemical processes had resulted in the disposition of thick corrosion products and, in a few cases, fire patina on their surface.

Gold objects are very well preserved. These included five gold dental crowns and two dental bridges. Additionally, two wedding rings were found at the bottom of the grave (the artifacts were not found during the course of the *Sonderaktion 1005*). The context of their deposition suggests that they had not been exposed to factors other than those occurring in the natural soil environment since 1939–40. The only exception was the copy of the ring with a

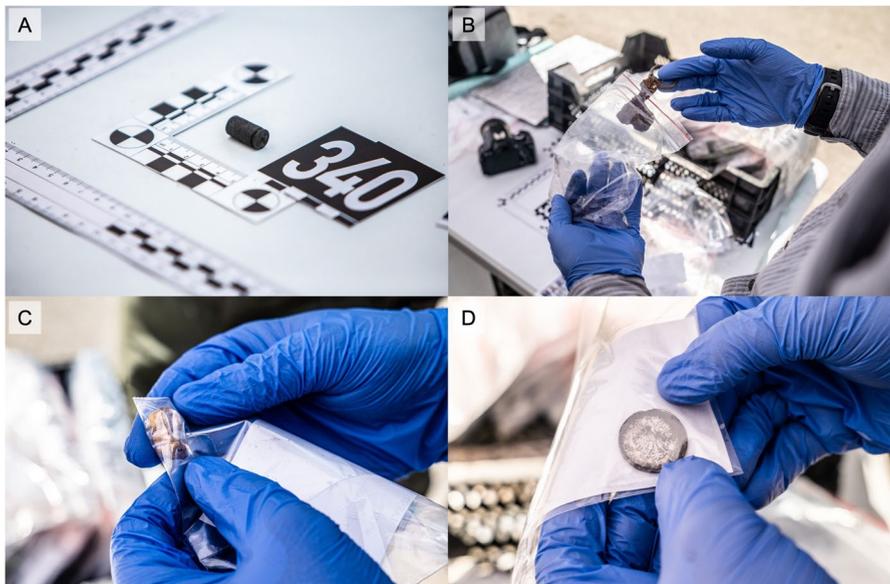
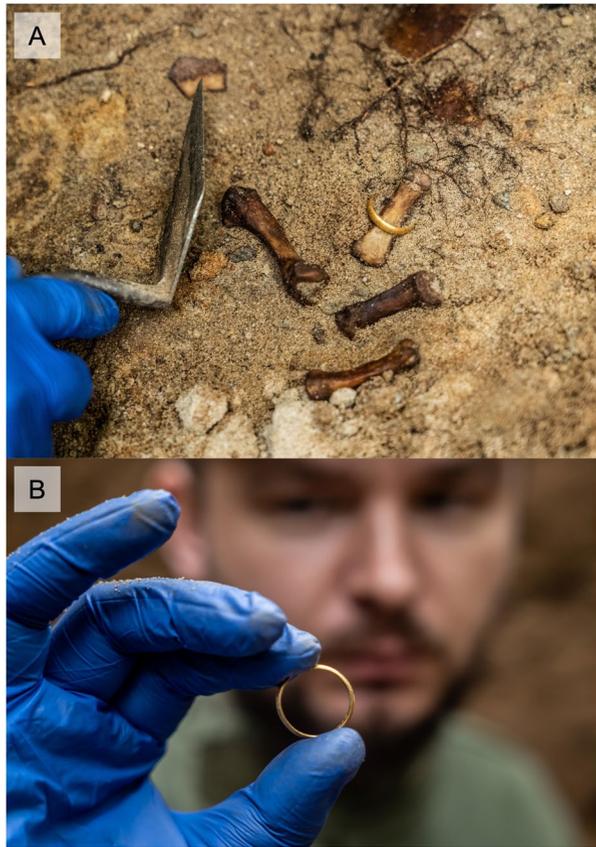


Fig. 13 Material evidence of the crime in the Szpęgawski Forest: **A** pistol shell; **B** door key; **C** gold tooth crown; **D** 1 pre-war Polish złoty (author D. Frymark)

Fig. 14 Material evidence of the crime in the Szpęgawski Forest: **A** women's gold wedding ring still on the victim's phalange. The item has an engraving with the husband's initials and the date of marriage; **B** women's gold wedding ring (author D. Frymark)



fragmentarily legible engraving on the inside. The wedding ring was probably in a high temperature environment, as evidenced by traces of micro-bubbles and the fire patina.

During the examination of the artifacts, no traces of mechanical impact (e.g., in order to destroy or distort them), were found. All traces and effects of destruction and damage were, for the most part, due to long-term retention in mixed soil layers. The largest group of items identified as evidence of crime were pre-war Polish coins (84) minted since 1923, German coins (15) and a French 25 centime coin from 1903. Of the entire collection of coins, only one was made of silver – a 1 Polish Złoty (date of minting is illegible). The second largest group of artifacts (84) were casings and bullets (or their fragments) from rifle and pistol ammunition. These consisted of Mauser system rifle cartridges, the vast majority of which were produced in Germany. A small part of the collection consisted of components of Polish ammunition and a copy of the 8×50 mm R Lebel cartridge. The pistol ammunition consisted of components (cases and bullets) of the 9×19 mm Parabellum and 7.65×17 SR Browning calibers, all of German production. A significant part of the pistol bullets were actually only their remains,

as only the bullet jackets were preserved. The interior of the bullets made of lead alloy bullets was fused, where the melting point of pure lead being 327.5 °C and the brass jacket is over 850 °C.

Another group of artifacts consisted of devotional objects in the form of medallions, crosses (including rosary components), and fragments of rosaries. Most of the medallions are in poor condition. Some of the crosses showed clear signs of high temperatures. These were partial distortions in the form of burning of wooden elements and melting. None of the medallions could be assigned to a specific place of origin (e.g., a holy place, a sanctuary, a religious order) except for one medallion (no. 73 in the inventory of artifacts) from Częstochowa (dating from 1932). The victims' personal belongings include a large group of belt buckles and buckles, trouser pullers, waistcoats, suspenders, and stockings fasteners. Typical women's items include a piece of lipstick in a metal case, two decorative elements in the form of brooches fastened with a safety pin, a handbag handle, and a few women's buttons. A more numerous group of personal items was men's equipment in the form of cufflinks (24), penknives (9), razors (5), lighters and their fragments (3), fragments of pipes and pipes, and pocket and wrist watches.

A separate group of personal items were Polish uniform buttons and hooks and a copy of the wz. 27 from a service cap. Preliminary interpretation of these artifacts, due to the inability of complete identification, allows us to conclude that three uniform hooks came from two jackets or coats – or from one jacket and one uniform coat, as one of the three uniform hooks was marked in contrast to two others. The buttons were signed by two companies. The eagle is of the same size as those made for the State Police, the Post Office, and the State Railway.

Some information about the circumstances of the victims' detention is provided by a significant number of keys found to door locks and padlocks (13). Such a number of keys may indicate that the victims were detained directly on the street, at work, etc. None of the personal items (except wedding rings) had individual features, such as the owner's signature or initials (it may be possible to reveal such on the inside of the watch cases after their conservation). None of the above-mentioned items were of any greater monetary value, which is probably why they were not looted by the perpetrators both in 1939 or during the *Action 1005*.

Objects made of precious metals were rare exceptions. Two wedding rings from the bottom of the burial pit were not found in 1944 when the bodies were exhumed and then burned. The other rings were so badly preserved that they did not appear to be gold. All the watches were damaged, the glass covering the faces were missing. Some of them were incomplete. The coins had no commercial value, the only example of a 1 Polish Złoty (made of silver) was so badly burned that it was only partially legible after careful analysis. Also recovered were scissors, a hammer, and an element, probably a pulley block that could have originally been a tool used in the construction of a structure used to extract the corpses in 1944.

Human Bones as Evidence of the Crime

The skeletal material excavated in 2023 in the Szpegawski Forest included both burned and unburned remains. The material was analyzed macroscopically in terms of fragmentation, degree of burning, sex, and age-at-death. One of the main aims of the analysis was to estimate the minimum number of individuals (MNI) excavated during the field research.

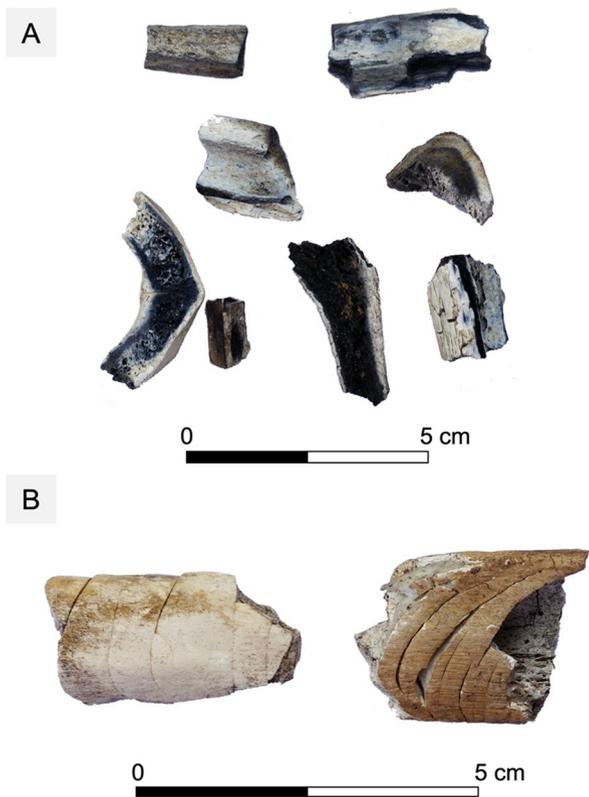
The sex of the individuals was assessed using common methods for evaluating morphological features of the skull (Walker 2008). The age-at-death of adult individuals was estimated based on changes in the morphology of the auricular surface of the ilium bone (Lovejoy et al. 1985) and changes in the morphology of the distal ends of the ribs (Işcan et al. 1984). The age-at-death of the juveniles was determined based on the degree of skeletal development according to Schaefer et al. (2009), measurements of the shaft lengths of the long bones according to Stloukal and Hanáková (1978; see also Piontek 1996), and the width of the metaphysis (Cardoso et al. 2016).

The burned material was characterized by significant fragmentation but was not brittle (Fig. 15). The color of the remains indicated low temperature burning (200–550 °C), as most of the remains recovered were yellowish to brown and black. Only a small amount of bone fragments showed blue (300–700 °C) and white colors, indicating high temperature burning – from 600 °C (De Becdelievre et al. 2015). Additionally, characteristic signs of bone combustion, such as cracking and distortion of the remains, were observed. However, it is likely that the fragmentation of the remains is not solely due to the effect of temperature. Given the fragmented nature of the bones, it is likely that the burned remains suffered additional mechanical damage. It is not possible to determine whether the fragmentation was intentional or occurred as a result of depositional changes (Gonçalves and Pires 2017). Within the material, the fragments with a visible “sandwich effect” (light color of the other layer and dark color of the inner layer of a bone can be observed on the cross section of a bone (McKinley and Tech

Fig. 15 The overall appearance of the remains excavated from grave no. 18 (author D. Frymark)



Fig. 16 Examples of cremated bones from grave no. 18: **A** the “sandwich effect” on chosen cremated remains; **B** the thumb-nail fracture on the fragments of the long bones (author J. Wysocka)



2008) (Fig. 16a) and different patterns of fractures including thumb-nail fractures (Fig. 16b), and bone warping (bending of the diaphysis) were observed.

The bone material included remains of both adults (male and female) and non-adults of various ages. The minimum number of individuals (MNI = 87 individuals) was estimated from the pars petrosa of the temporal bone – 87 right and 84 left temporal bones were observed. Bone remains of at least six juvenile individuals of different ages (3–25 years old) were observed. The age of the youngest child was estimated to be between 3 and 7 years old. No bone fragments indicative of individuals older than 45 years of age were observed in the mass grave. However, due to the state of preservation of the material, this possibility cannot be ruled out. Two dimorphic features were mainly used for sex estimation: the mental protuberance (N total = 45; n male = 16; n female = 4; n indetermined = 12; n undetermined (poorly preserved) = 13) and the nuchal crest of the occipital bone (N total = 55; n male = 24; n female = 11; n indetermined = 9; n indetermined (poorly preserved) = 11). The limited possibilities for sex estimation allowed to conclude that the exhumed mass grave probably contained predominantly male remains. The total weight of burned human remains mixed with coal, lime, and stones, exhumed from the grave was almost 1,400 kg.



Fig. 17 Some of the unburned skeletal material from the bottom of grave no. 18 (author J. Wysocka)

The unburned material included skull fragments, hand and foot bones, individual fragments of the chest bones (ribs, sternum), scapulae, and vertebrae (Fig. 17). The most frequently observed unburned bones were hand bones (including carpals, metacarpals, and phalanges). The material was excavated both in anatomical positions (partial remains of three individuals) and as coningled skeletal fragments. The material suggests an imprecise exhumation of the remains in 1944, with mainly distal parts of the skeleton remaining.

The presence of the “sandwich effect,” bone warping and thumbnail fractures are consistently associated in the literature with the incineration of bones that still contain soft tissue or green remains. However, some discussions have also explored the possibility of identifying these effects in dry bones (Evans et al. 2022; Gonçalves et al. 2011, 2015). This suggests that at least some of the remains were likely still encased in soft tissue during the exhumation in 1944 (see also Kubicki 2019). It is important to consider that the decomposition process varies within mass graves, depending on factors such as burial depth and body positioning, such as the layering of bodies (Troutman et al. 2014). Therefore, the remains may have been in different stages of decomposition at the time of exhumation (Jankauskas 2009), prior to the occurrence of cremation processes. Furthermore, the presence of bone warping and thumbnail fractures is associated with lower burning temperatures (Gonçalves et al. 2015), which is also corroborated by the observation of yellowish- to black-colored bone fragments (De Becdelievre et al. 2015).

Conclusion

The material heritage related to the Second World War and its wider context has become a subject of archaeological interest over the last decades. Archaeologists study prisoners-of-war, labor, and concentration and death camps (Kobińska et al. 2023). Field fortifications also become a form of “archaeological site,” which is documented with the methodology of archaeological field research. Search works and scientific projects are also carried out with the aim of finding mass graves from the period. This framework includes multidisciplinary work carried out as part of the “Archaeology of the Pomeranian Crime of 1939.”

The material evidence of the crimes committed in the fall of 1939 in Gdańsk Pomerania, as well as the entire landscapes associated with the mass extermination of the Pomeranian, broadly understood, intelligentsia (the leading class of Polish society), the mentally ill, and disabled people have so far been of little archaeological interest. In fact, the “Archaeology of the Pomeranian Crime of 1939” is the first attempt of its kind to examine the material traces of them that have survived to the present day, and the contemporary role, meaning, and memory of these events.

The executions in the fall of 1939 and January 1940, as well as the process of covering up their traces that took place in the second half of 1944, have left a great deal of material evidence. Victims murdered in the Szpegawski Forest were not completely deprived of their personal belongings and valuable items that could identify them (e.g., gold wedding rings) were taken selectively. The analysis of the material evidence shows that both women and men were among the victims. Anthropological research has proven beyond doubt that the grave was also filled with burned remains of children.

The victims were killed with long and short firearms filled with German and Polish ammunition (a Polish Mauser system rifle bullet and a Lebel bullet – possibly of Polish manufacturer – were found in the pit as well). Among the murdered were representatives of the intelligentsia, as evidenced by the cufflinks. Some buttons, uniform hooks and Polish eagle wz. 26 from the service cap testify to the presence of representatives of the Polish uniformed services among the group of people whose remains were discovered in 2023 during archaeological research in the Szpegawski Forest. The arrest and transportation of the victims to the death pits in 1939 could take place directly from the street, work, or by summoning them to places of isolation, as evidenced by the large number of found keys to locks and padlocks belonging to the victims. Almost all of the artifacts showed signs of high temperature. These included melted spectacle lenses, melted pistol bullet cores, deformed crosses, and coins. The artifacts consisted of a small amount of non-metallic objects, which are more flammable: plastic buttons, a handbag handle, a rubber heel of a shoe, and a fragment of plastic pipe material. Nonetheless, they were inside the burial pit.

To sum up, the archaeological works document the material evidence of the crimes in the Szpegawski Forest, the way they were covered up, and the preserved traces, which makes it possible to reconstruct many aspects of the crime. Some of

the wedding rings found have engravings on them. Investigations are underway to identify their owners. Bone material has also been collected for DNA testing in order to identify at least some of the victims.

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Declarations

Conflict of Interest The authors declare that they have no conflict of interest.

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