



The execution of the Romanov family at Yekatarinberg

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Abstract

The brutal execution of Tsar Nicholas II, his wife and five children at Yekaterinberg in July 1918 was followed by apparently inept attempts to conceal the bodies. Despite this, the skeletons remained undiscovered until 1979. Even after anthropological and DNA analyses, the absence of two of the children in the grave raised doubts as to the identity of the remains. The discovery of the skeletal fragments of a young woman aged between 18 to 25 years and a boy aged between 10 to 14 years in a shallow grave near the primary burial site in 2007 enabled full DNA investigations of the remains to be undertaken in association with analyses of living Romanov descendants. Autosomal short tandem repeat (STR) testing revealed the sex and familial relationships within the group, and mitochondrial DNA (mtDNA) testing of the two hypervariable regions (HVI and HVII) showed links between the Tsar and Tsarina and living maternal relatives. The same point heteroplasmy in both the Tsar and his brother, Georgii provided further supportive evidence. There appears little doubt that the skeletal remains in the two graves outside Yekaterinburg are those of Tsar Nicholas, his wife and their five children. The genetic analyses and the features of the fragmented remains are all very consistent with the tragic story of the last days of the Romanov family and with the subsequent desecration and destruction of their bodies.

Keywords Tsar Nicholas II · Romanov · Yekaterinberg · Bolshevik revolution · DNA analyses · Anastasia

July 16–17 1918 in Yekaterinburg

On the night of July 16–17 1918, Nicholas, the former “emperor and autocrat of all the Russias”, his wife Empress Alexandra and their five children (Fig. 1) were taken with their doctor and three servants into a basement room of a house in Yekaterinburg and executed by Bolshevik troops. The victims were repeatedly shot and bayoneted, with the killings allegedly taking 20 min to complete [1–4]. The exact role played by Lenin in orchestrating or ordering the deaths remains unclear as written records are lacking. Although the new government announced the death of Nicholas, it was not until 1926 that the murders of the remainder of the family were acknowledged. Stalin subsequently suppressed further discussion of the event in 1938.

Imposters

This led to many years of theories as to their actual fate with one of the most bizarre involving a mentally ill Polish woman, Fraziska Schanzkowska who, living under the name of Anna Anderson proclaimed that she was in fact Anastasia, the youngest daughter of the Tsar [5]. She claimed to have survived the massacre because she had been removed from the basement in an unconscious state by one of the guards. She died in 1984 in Charlottesville, Virginia in the United States proclaiming her royal lineage to the end. Subsequent DNA testing however showed that she had no connection to the Romanov family [3, 5].

Nicholas as Tsar

Tsar Nicholas is a controversial figure as his reign was marked by indecision and rebellion. He inherited his position prematurely in 1881 after his father Alexander III died of kidney disease at the age of 49 [1] and appeared little prepared for such a role. His weakness in decision making was exacerbated by the strong influence that his wife Alexandra, the former

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Fig. 1 Tsar Nicholas, his wife the Empress Alexandra, their four daughters Olga, Tatiana, Maria, Anastasia, and their son Alexie

Princess of Hesse had over him, although he was known for his personal charm and gentleness [6]. Alexandra was a granddaughter of Queen Victoria [7] and so a further complicating factor was the significant illness of their only son, the Tsarevitch Alexis, who suffered from the “Royal disease”, hemophilia [8]. This led to the introduction of Rasputin, a charlatan healer and priest, into the royal court with further untoward effects [9].

Abdication

Nicholas abdicated after the February 1917 Revolution [10]. Initially he was imprisoned with his family in the Alexander Palace in Tsarskoe Selo before they were taken to Tobolsk and then on to in Yekaterinburg under the command of Vasily Yakovlev where they were housed in the Ipatiev House, designated ominously as “The House of Special Purpose”. At one stage there were 300 guards stationed there. The house was surrounded by a high wooden palisade and the windows were covered to further isolate the Romanov family who were not allowed external contacts or visitors. Limited recreation was permitted and both food and water were rationed [7].

The executions

The official version of the events of the night of the executions was that the execution by firing squad of Nicholas, Alexandra, Olga, Tatiana, Maria, Anastasia and Alexie was ordered by the Ural Regional Soviet who were concerned that the Czechoslovak Legion that was fighting with the White

Russian Army was about to recapture the city and liberate the prisoners [11]. After the deaths the bodies were taken to Koptiyaki Forest where they were stripped, mutilated and buried. Following capture of the area by the White Army the grave site was not able to be identified, although the conclusion of investigator Sokolov was that it was most likely that the bodies had been cremated at the Ganina Yama mineshaft. This was based partly on the finding of bone fragments, bullets and possessions around the mine [1].

The sequence and nature of the events that have emerged over the century following the incident surrounding the killings and disposal of the bodies is quite horrific in its barbarity. After shooting Nicholas and Alexandra, in the chest and head respectively, the gunfire became erratic and the cellar filled with smoke and plaster dust to such an extent that it was unclear what was occurring (Fig. 2). It is reported that at least one of the shooters, Peter Ermakov the military commissioner for Verkh-Isetsk, was intoxicated. As the smoke dissipated it was apparent from moans and whimpers that the children were still alive although Maria had been wounded. A possible explanation for their survival, despite shooting at such a close range, was that the jewelry that had been sewn into their clothing had a protective effect. Tatiana and Alexei were eventually dispatched with gunshot wounds to the head and it is possible that 70 bullets were fired. Alexie’s spaniel Joy survived and was eventually repatriated to England, although the carcass of Anastasia’s spaniel, Jimmy, was found in the pit by Sokolov during his early investigation [12].

Disposal of the bodies

After the killings the bodies had been loaded onto a truck and there is record of the female bodies being violated by drunken

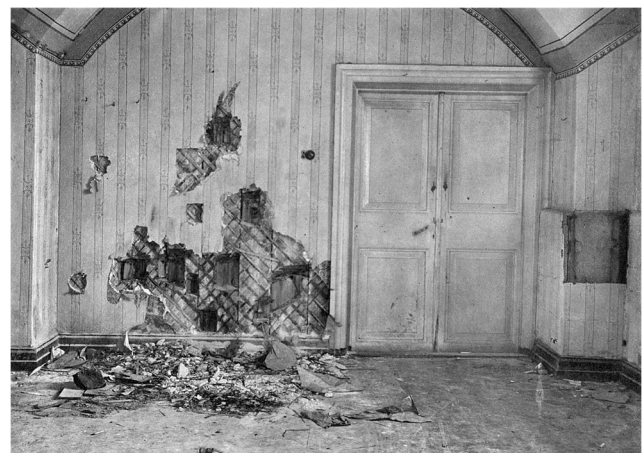


Fig. 2 The basement room in the Ipatiev House where the executions occurred

soldiers, as well as being searched for jewelry. The truck became bogged and so the bodies were then unloaded and taken by carts to a disused mine where they were stripped (and the clothing burnt), disfigured with sulfuric acid and dumped into the shaft [2]. Unfortunately, it was discovered that the shaft was not all that deep and so grenades were used in an attempt to collapse it. When this failed the bodies were hauled out by ropes, reloaded into a truck and were dispatched to be concealed in deeper more distant copper mines. Again the truck transporting the bodies became bogged and so it was decided to dig a grave beside the road and dump the bodies there (Fig. 3). The faces were further disfigured by blunt trauma from rifle butts (Fig. 4) and quick lime was poured over the corpses. Yorovsky decided to take Alexie and one of his sisters some distance away from the main grave, apparently to confuse subsequent exhumations. They were burnt on a fire and the remains smashed with spades before being buried in a smaller pit [1, 2].

Discovery of the remains

The fate of Nicholas and his family was destined to remain a mystery until May 1979 when their remains were found in a shallow grave by a local geologist, Dr. Alexander Avodin [10]. Three skulls were unearthed but these were later returned to the site and the secret was maintained until 1989 when the era of glasnost led to release of the details [13].

DNA analyses

The remains were exhumed in 1991 and careful forensic and DNA assessments were performed. The latter utilized both autosomal short tandem repeat (STR) and mitochondrial DNA (mtDNA) testing of the two hypervariable regions



Fig. 3 The old Koptiyaki Road near to where the graves were located

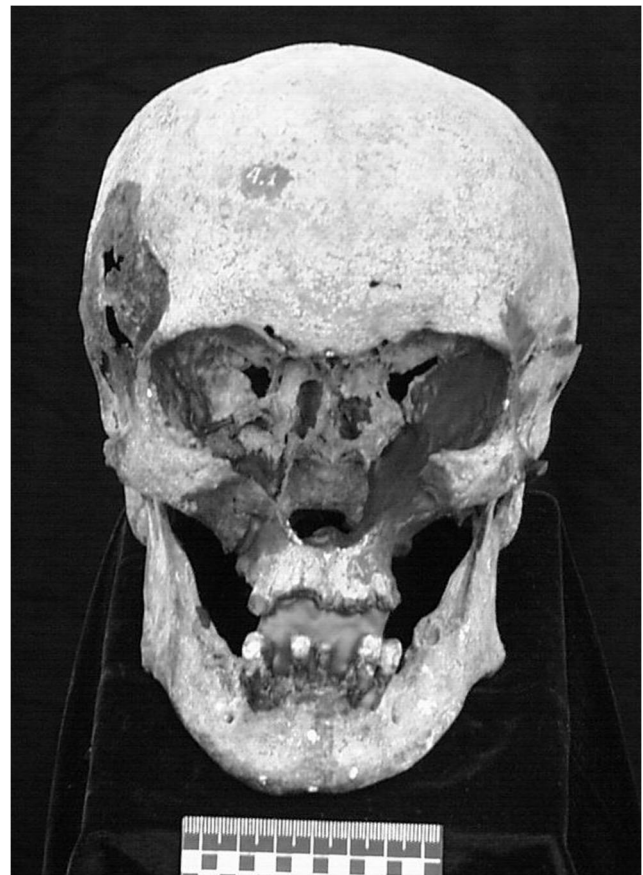


Fig. 4 Massive damage to the facial skeleton of the skull of Tsar Nicholas consistent with the reports of post mortem blunt trauma from rifle butts

(HVI and HVII). STR testing revealed sex and familial relationships within the group while mtDNA showed links between the Tsar and Tsarina and living maternal relatives, with the Tsarina's haplotype being identical in HVI and HVII to her distant cousin HRH Prince Phillip of England [13, 14].

One of the concerns that was raised following the initial investigation was that the Tsar had a C/T point heteroplasmy, which was regarded at the time as either a very rare or non-existent finding. The usefulness of this feature was, however, demonstrated when authorities permitted exhumation and evaluation of the remains of the Tsar's brother, Georgii, who had died of tuberculosis at the age of 28 in 1899 [1]. He also showed the same point heteroplasmy to Nicholas which was a further piece of supportive evidence [13, 15]. The fact that heteroplasmy is now far more readily identified suggests that its "rarity" in earlier years was more a function of the lack of sensitivity of detection methods [13].

Controversy

Testing of a handkerchief and a shirt that had been worn by Nicolas during an assassination attempt with a sabre

have yielded conflicting results. Although a Japanese analysis of blood from the handkerchief did not match that of Nicholas, the work has never been published. Similarly, an examination of hair from Georgii by the same group is thought to have most likely been corrupted by contamination [13]. In contrast, examination of blood from the shirt revealed an autosomal DNA and Y-STR haplotype which matched the skeletal remains [10, 16]. Another group headed by Knight debated the validity of the initial results by questioning whether amplification of such a large fragment from a degraded sample was possible. They were also not able to match DNA taken from a finger bone, allegedly from Empress Alexandra's sister, to samples from Prince Phillip [17]. The essential features of this disagreement are summarized in an issue of *Science* where accusations of a shroud of secrecy around the testing were made [18–21]. Part of the concerns involved the absence of two of the children from the grave [10].

Resolution

After the identification had been performed, however, the remains thought to be those of Nicholas, Alexandra, and the three daughters were laid to rest at a state funeral in the St Catherine Chapel of the Peter and Paul Cathedral in St Petersburg, although the Russian Orthodox Church still did not recognize their legitimacy [13].

In July 2007 the smaller grave was finally discovered near the Old Koptiyaki Road (Fig. 3) approximately 70 m from the main grave. It contained 44 bone fragments and teeth [13, 22]. Anthropological assessment found them to be from a young woman aged between 18 to 25 years and a boy aged between 10 to 14 years. DNA analyses in conjunction with testing from maternal and maternal descendants in current European royal families proved that the remains belonged to Alexi and one of his sisters [16].

Conclusion

On balance there appears little doubt that the skeletal remains in the two graves outside Yekaterinburg are those of Tsar Nicholas, his wife and their five children. Despite some criticism, the genetic analyses and the features of the fragmented remains are all very consistent with the tragic story of the last days of the Romanov family and with the subsequent desecration and destruction of their bodies. Again, this is another extremely important case which demonstrates the value of applying modern

scientific analyses to historical forensic issues and questions [23, 24].

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