



Reflections on Dermatology: Past, Present, and Future
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Kaspar Hauser, the Child of Europe: Are smallpox vaccination scars the clue to a 2-century-old mystery?



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Abstract We have explored the 19th century mystery of the identity of Kaspar Hauser, the so-called Child of Europe, from the perspective of the smallpox vaccination. We have highlighted the improbability that he was secretly inoculated based on the vaccination policies and methodologies applied at the time. This consideration allows for a reflection on the whole case and the importance of vaccination scars in ascertaining immunization against one of humanity's deadliest killers, especially given the recent monkeypox outbreak.

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Early vaccination campaigns in Europe

The social debate that occurred during the recent pandemic concerning the possibility of the introduction of compulsory vaccination against COVID-19 and the early immunization campaigns against monkeypox bring to mind a time when vaccination was mandatory. This time occurred in 1807 in the Kingdom of Bavaria, preceded by compulsory vaccination in the Swiss canton of Thurgau in 1806 and soon followed by Austria in 1812.^{1,2} In the Bavarian city of Ans-

bach, with a population of more than 236,000 people at the time, there were 500 deaths due to smallpox annually from 1797 to 1799, with a peak of 1,609 deaths reached in 1800. Conversely, after the introduction of compulsory vaccination, only five patients contracted smallpox during the extensive vaccination campaign, none of whom died.³

The mystery of Kaspar Hauser in the light of smallpox vaccination

In addition to its unquestionable role in the early fight against the scourge of smallpox, this preventive practice may

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Figure 1 Johann Georg Laminit (1775-1848) in Johannes Mayer and Peter Tradowsky's *Kaspar Hauser* (1984, p. 306). Reproduced from the public domain (Wikimedia Commons).

also shed light onto one of history's mysteries: the unexplained appearance in Nuremberg of a young lad named Kaspar Hauser (1812?-1833) on May 26, 1828.^{4,5} Allegedly, Hauser had been incarcerated all of his life and had thus never seen a human being. He was hastily taught to read and write when he was freed on the streets of the Bavarian city. He carried two letters detailing part of his history and the address to which he should be delivered. His statements to the authorities are still disputed among medical experts, psychoanalysts, and historians.^{6,7}

The mayor of Nuremberg, Jakob Friedrich Binder (1787-1856), ordered the famous notice to be published on July 7, 1828,⁸ in which speculations were made for the first time that Hauser could belong to a noble family and might have been deprived of his birth rights. This notice triggered a debate that continues to this day on whether he was substituted with another newborn at birth in 1812 and was heir to the throne of Grand Duke Karl Ludwig Friedrich von Baden (1786-1818) and Stephanie de Beauharnais (1789-1860).⁹

Hauser had cowpox inoculation scars, which the residents related to this early Jennerian vaccination. Like Jenner's first inoculated patient, James Phipps (1788-1853),⁹ Hauser also had two brachial incisions superficially penetrating the skin, as reported by von Feuerbach ([a]n beiden Armen zeigten sich die Narben der Impfung).⁴

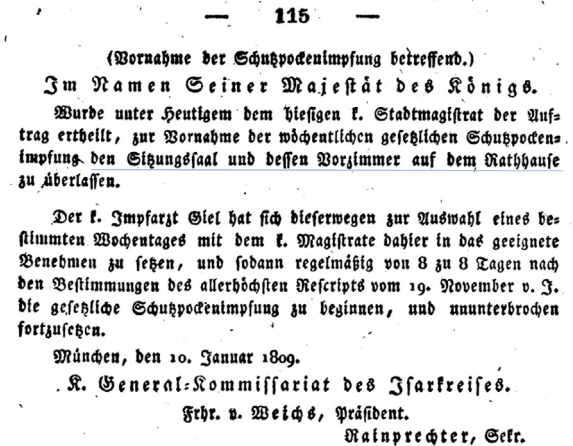


Figure 2 The establishment of a permanent vaccination room and its anteroom in the Munich Town Hall mentioned in Giel^{11p115} (*zur Vornahmen der wochentlichen gesetzlichen Schutzpockenimpfung den Sitzungssaal und dessen Vorzimmer auf dem Rathhause zu überlassen*).

In Bavaria, which at the time was occupying the Tyrol region, this finding would be ordinary and by no means a mark of nobility as in other parts of Europe, where only the upper classes would likely have been vaccinated. The Grand Duchy of Baden and the Electorate of Hesse followed the example of Bavaria in 1815,¹⁰ which, considering Hauser's appearance in 1828, would still make his inoculation marks not unusual, based on purely chronologic reasoning. One point has not been sufficiently stressed in the debate on this peculiar personage: how could he have lived his entire life before 1828 in a state of complete isolation? He would have to have been vaccinated by physicians assigned to this function (*Impfärzte*). Beginning in 1809 in Munich, the capital of Bavaria, there had been a permanent vaccination room located in the town hall at the will of King Maximilian¹¹ (Figure 2). Considering Hauser's alleged birth date in 1812, it seems highly unlikely that he could have been secretly vaccinated. There was in place the adopted practice of arm-to-arm inoculation, which implied the presence of another person from whom the viral material would be collected.

Genetic and historical considerations

Genetic examinations in 1996 and 2002 did not yield precise results, because they were carried out on objects (trousers, hats) or cutaneous appendages (hair) and living descendants of Stephanie de Beauharnais (maternal line). Unfortunately, only popular science reports are available without any scientific studies containing the relevant data.^{12,13} The 1996 study took place at the beginning of ancient DNA studies and can no longer meet today's requirements

regarding anticontamination procedures. According to this report, there was no match between Kaspar Hauser and the noble family of Baden. In the 2002 study, when technical progress had already been made, Hauser's genetic profile was found to be nearly identical to a direct descendant of Stephanie de Beauharnais, except for one nucleotide (cytosine instead of adenine, potentially a single-nucleotide polymorphism).^{14,15}

Conclusions

We are unable to rule out a familial relationship. A renewed investigation, ideally conducted directly on the mortal remains of Kaspar Hauser in Ansbach and those of his parents in the princely crypt in Pforzheim, could advance our knowledge. This inherent limitation is acknowledged. Additionally, the inoculation modality and the laws regulating it at that time in Bavaria corroborate the view that the whole story of the "Child of Europe" is relatively weak. It is shaken by the historical intersection with the advancement and spread of the smallpox vaccination. For modern clinicians, this 19th century report should raise awareness for the role of smallpox and smallpox vaccine-derived lesions, not only from a historical perspective but also for extensive vaccination campaigns, given the monkeypox outbreak and calls from public health authorities.¹⁶

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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