

The supply of bodies to the Erlangen Institute of Anatomy during National Socialism

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ABSTRACT

During the Nazi era, the Institute of Anatomy of what is now Friedrich-Alexander University Erlangen-Nürnberg received bodies from institutions involved in Nazi crimes. As the body register (Leicheneingangsbuch) from April 1933 to September 1946 is missing, the provenance of anatomical body procurement at Erlangen during this period and certain specimens within the anatomical legacy collection there have remained unclear. Archival material from municipal, state and national archives, university records, and the specimens themselves were examined. Primary sources were analysed to identify the scientific use of human remains from victims of National Socialism. Secondary literature was reviewed to contextualise findings within previous research.

391 people, whose bodies were brought to the Institute of Anatomy in Erlangen from 1933 to 1944, were counted, and for 323 of them names could be reconstructed. The bodies were delivered from hospitals, nursing homes, prisons, workhouses, and execution sites. Vulnerable groups – such as patients, forced labourers, and children – were affected. The Erlangen anatomical legacy collection contains 84 datable Nazi era histological specimens (1936–1942), including identifiable victims from Munich-Stadelheim prison. Personnel and institutional continuities existed after 1945.

This study offers the first in-depth analysis of Erlangen's anatomical body procurement during National Socialism, documenting identifiable Nazi victims. Although the original body register is missing, the findings demonstrate the need for systematic provenance research across all macroscopic and microscopic holdings and case-based investigations of identified individuals. The study provides a foundation for further, interdisciplinary research into the provenance and ethical reassessment of the anatomical collection in Erlangen.

1. Introduction

As early as November 1929, representatives of the National Socialist German Students' Union (*Nationalsozialistischer Deutscher Studentenbund*; NSDStB) won an absolute majority of seats in the General Students' Committee (*Allgemeiner Studentenausschuss*; ASTA) of Friedrich Alexander University (*Friedrich-Alexander-Universität Erlangen-Nürnberg*; FAU) in elections (see [Wachter, 2021](#)). It is therefore not surprising that the university was described as "Germany's most National Socialist university" in the "*Blätter für Deutschum und Judentum*" (Journal for German Culture and Judaism) in June 1931. Questionable honours came from the highest authority: Adolf Hitler himself is said to have stated that he "will never forget this university, whose youth were the first to declare their support for me" ([Jakob, 2024](#), p. 19 f.). After the student

bodies in Munich, Nuremberg (Business School), and Würzburg had organised and carried out public book burnings on 10 May 1933 as part of the "*Aktion wider den undeutschen Geist*" (Action against the Un-German Spirit), the Erlangen student body followed suit two days later (see [Kühnert, 2021](#)). The university and its members, including professors and students, acted as supporters and promoters of nationalist and *völkisch* ethno-nationalist and racist structures and practices in the university world. It is evident that its anatomical institute played a specific role and was part in this development. In contrast to other locations, however, little has been published in recent years about anatomy in Erlangen during the National Socialist dictatorship (apart from short passages in [Leven et al. \(2016\)](#) and [Leven et al. \(2018\)](#)).

This article presents findings from a research group from Erlangen, focusing on body procurement for the Erlangen Institute of Anatomy.

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The group is interdisciplinary, consisting of historians and anatomists. While the history of body procurement at the Munich and Würzburg anatomical institutes has been studied, similar work does not yet exist for Erlangen; however, the latter is of greatest relevance in the provenance research for the Erlangen anatomical legacy collection. This research is contextualised by the well-established fact that anatomical institutes in the German Reich benefited massively from legal changes during this time and National Socialist crimes (Hildebrandt, 2016). This resulted in a significant increase in bodies, particularly from executions – for Erlangen, from Munich-Stadelheim prison and Gestapo shootings in rural areas.

Erlangen is the last anatomical institute in Bavaria lacking a central publication on body procurement during the Nazi era, although isolated references exist (Ude-Koeller, 2016; Voggenreiter and Ude-Koeller, 2024). While procurements from Munich-Stadelheim prison have been generally addressed (Schütz et al., 2017; Noack, 2012), this article clarifies those delivered to the Erlangen Institute of Anatomy with new findings. We present the first comprehensive overview of body deliveries to the Erlangen Institute of Anatomy (1933–1945), investigate possible Nazi crimes and post-war continuities. This work contributes to a growing body of research in this field (Anatomische Gesellschaft, n.d.), with the aim of providing a foundation for further studies in Erlangen.

This study uses contemporary terminology in diagnoses and descriptions of individuals that is considered derogatory today. This is done to ensure historical accuracy. Where possible, names are presented using full first names and the initial of the surname. This approach allows for the naming and commemoration of previously unknown victims while preserving a degree of anonymity, should surviving relatives be located who prefer this.

2. Sources

A major difficulty is the destruction of the Erlangen Institute of Anatomy's original body register for April 1933–September 1946, at the time attributed to “high humidity” during air raid evacuations (see UAE A6/3 Nr. 62). However, the [Body register \(1896–1933\)](#) shows no water damage, putting this assertion somewhat into question.

Research therefore relied on sources from institutions that delivered bodies and on administrative files from various archives. These are located in the city archives of Erlangen (StadtAE), Nuremberg (StadtAN), Regensburg (StadtAR), Weißenburg in Bayern (StadtAWUG), and Fürth (StadtAF), the University Archive of Erlangen (UAE), the State Archives of Nuremberg (StAN) and Amberg (StAAM), the Bavarian Main State Archive (BayStA), the Arolsen Archives (AA), the Federal Archives in Berlin (BArch), the Archive of the Regens Wagner (ARW), successor institution to the Michelfeld deaf-mute care facility, *Taubstummenanstalt*, and the Historical Archive of medbo (HAmmedbo), successor institution to the Regensburg Sanatorium and Nursing Home, *Heil- und Pflegeanstalt*. In addition, this study was informed by literature on the contemporary anatomists at the Erlangen institute.

The missing body register and the wide scope of the archival sources make it impossible to completely reconstruct the deliveries, as – much like the records held by the Erlangen Institute of Anatomy – the documentation preserved at the delivering institutions is often incomplete. Therefore, subject to future findings, this article presents preliminary results from over six years of research on the anatomical collection, the history of anatomy in Erlangen, and associated sources. These reconstructions and the discovery of microscopic and macroscopic specimens from the Nazi era will require further processing.

3. The procurement of bodies at the Erlangen Institute of Anatomy during the Nazi era and its legacy today

3.1. General overview of body procurement

The Erlangen Institute of Anatomy has received bodies since its 1743

founding, but body registers (*Leicheneingangsbücher*) have only been kept since 1896. Even these 1896–1933 registers are incomplete, lacking entries for “semester-free” periods, which are only partially verifiable via other sources. The Erlangen body register then ends abruptly on 28 March 1933. The next surviving register begins 21 September 1946; as stated previously, the intervening book was reportedly destroyed by “high humidity” during air raid precautions (see UAE A6/3 Nr. 62). This damage is attested only by Karl Friedrich Bauer, no other documents support the claim of the destruction of the body register or the “valuable study specimens” also allegedly lost. While air raid precautions existed, the specific cause and why the pre-1933 book was undamaged remains unknown at this point. In May 1945, the “collection and library, which had been brought to safety”, was returned (according to UAE C3/1 Nr. 387, p. 76). The Erlangen Institute later claimed “no bodies whatsoever” were received after the 16 April 1945 American liberation (see StAN LRA Erlangen Abg. 1987 Nr. 952). Yet the 1946/1947 body register lists six post-war deliveries. It nevertheless highlights the massive body shortage after April 1945. Despite these gaps in documentation and the lost body register, 391 bodies are documented as having been received by Erlangen anatomy for the years 1933–1944. Within these, 323 bodies are identified by name, while 68 people whose bodies were delivered to Erlangen remain unnamed.

During this period, the key figures at the institute – alongside the director, Albert Hasselwander (1877–1954), who had led it since 1918 – included Andreas Pratje (1892–1963), who had been at the institute since 1922 and served as curator and as a specialist in racial research established his own “race collection” (Braun, 2017). In addition, Johannes Hett (1894–1986), having previously been employed under Hermann Stieve (1886–1952) in Halle, joined the institute in 1936 as the successor to Arnold Siegmund Spuler (1869–1937) and assumed the role of head of the histological department.

The Surgical Hospital in Erlangen also held dissection courses (according to StadtAN C23/1 Nr. 498), with sources indicating cooperation between the Institute of Anatomy and the Surgical Hospital by the early 20th century (see UAE C3/1 Nr. 282). While the Institute of Anatomy likely maintained administrative control, accounting books verify that bodies were delivered from external institutions directly to the Surgical Hospital (UAE F3/9 collection). Both the Institute of Anatomy and the Surgical Hospital also prominently reported their interest in obtaining bodies (1910) and jointly complained of shortages (1920) (see UAE C3/1 Nr. 282 and StadtAR ZR1 3199). During 1933–1945, both used the same transport service (*Firma Fritz Cazalet, Erlangen, Germany*; see StadtAE III.10.C.1 Cazalet), and some individuals noted in the documents of the delivery source as being sent “to the Institute of Anatomy” can be traced via account books as having actually been delivered to the Surgical Hospital (e.g. in UAE F3/9 Nr. 50). Both institutions also paid for deliveries from Munich, presumably for deliveries of bodies of persons executed at Munich-Stadelheim prison, but the Institute of Anatomy always covered all funeral costs, and “surgical bodies” were verifiably buried in the anatomical grave of FAU (see UAE F3/9 Nr. 116 and 118). For the years 1933–1945, the university account books document three names of persons whose body-transfer was paid for by the Surgical Hospital (in UAE F3/9 Nr. 50 and 72): Polish forced labourer Julian N. (died on 22 August 1940 by suicide), Wienand D. (died on 11 May 1939 in custody), and a third individual known only by his surname. This collaboration between the Institute of Anatomy in Erlangen and the Surgical Hospital in Erlangen requires further investigation, but it is therefore plausible that Nazi victims were sent to the Surgical Hospital for surgery courses.

Archival files in UAE A6/3 Nr. 70 trace 246 bodies delivered from 1930 to 1937, including five years for which data from the body register at the Institute of Anatomy in Erlangen are missing (1933–1937). Strikingly, the numbers for 1930–1932, for which a register exists, deviate significantly from this source: The body register only lists 42 of the 96 bodies counted in UAE A6/3 Nr. 70 by name. This confirms that even the existing body register is highly incomplete. Further archival

research (StadtAE 594.A.157–158; StadtAF AGr5 1091; files of the Erlangen Institute of Anatomy) led to the identification of additional names, to a total of 92, leaving only four unidentified.

For 1933–1937, Albert Hasselwander listed 150 persons (in UAE A6/3 Nr. 70) whose bodies came to the Institute of Anatomy, including “6 persons who were executed by the guillotine and 2 persons who bequeathed themselves”. The two persons who bequeathed their bodies were identified by name and date (Gustav G. on 25 May 1931; Emil S. on 31 January 1934). Two of the six executed were identified (Felix S. on 9 May 1933 in Weiden; Anton L. on 29 July 1936 in Regensburg). Both are mentioned in publications (Dachs, 2009; Redaktion onetz, 2006). The remaining executed individuals remain unknown.

For 1933–1937, 111 individuals (74 % of Hasselwander's count during that time) were identified based on archival data available. Hasselwander reported 30 (1933), 40 (1934), 35 (1935), 31 (1936), and 14 (1937) individuals respectively for these years. While the number of individuals identified by name remained lower than Hasselwander's counts for 1934 (19 identified of 40 reported), 1935 (24 of 35), and 1936 (20 of 31), the current analysis identified more individuals than Hasselwander recorded for 1933 (32 vs. 30) and 1937 (16 vs. 14). For 1933, eleven names of bodies of individuals were verified by the extant body register; the rest (1933–1937) were determined via data from the delivery sources (such as StAN Arbeitshaus Rebdorf Nr. 33, StAN Sterbebuch Heil- und Pflegeanstalt Ansbach, StAAm JVA Amberg, 1707, UAE C3/2a Nr. 59, StadtAWUG Sterbebuch, 1935–1939, StadtAWUG Sterbebuch, 1935–1940) or cemetery records (in StadtAE 594.A.157–158). The surplus resulting from a comparison of Hasselwander's count with an analysis of these various archival sources from different institutions,

in 1933 and 1937 may be due to deliveries to the Surgical Hospital, which may have been excluded from Hasselwander's count. Regarding minimum numbers for the years after 1937, a 1946 dissertation (Binder, 1946, p. 23) provides quantitative assessments, referring to 318 bodies for the dissection course (1923–1944) and detailing minimum yearly numbers for 1940–1944 between 6 and 15 bodies for educational purposes (1940/41: 11 bodies; 1941/42: 6 bodies; 1942/43: 14 bodies; 1943/44: 15 bodies). These dissection courses therefore most likely included Nazi victims. Correspondence from 6 February 1941 (BayHStA MK 78180) further confirms the transports of 27 bodies to the anatomy institute in 1939 and 34 between 1 January 1940 and 1 February 1941. While delivery sources are unknown, this raises the minimum total to 374 bodies, assuming each transport included only one body. Of the bodies transported, 24 (1939) and 21 (1940–Feb 1941) were verified by name.

As bodies started to be delivered from the execution site at Munich-Stadelheim prison in 1938, the following analysis is divided into two sections, dealing with the years 1933–1937 and 1938–1944, respectively. It has not yet been possible to reconstruct the transfers of bodies for the year 1945 (until the arrival of the US armed forces).

For the years 1933–1937, the origins of the bodies were highly diverse as can be seen in the multitude of institutions and locations listed in Fig. 1.

A large number of individual places of origin were recorded, though it is sometimes unclear if the location noted is the place of death, residence or birth. Additionally, not all identified or unidentified individuals could be attributed to an origin, which explains why the total number via locations in Figs. 1 and 2 is neither 391 (total countable), nor

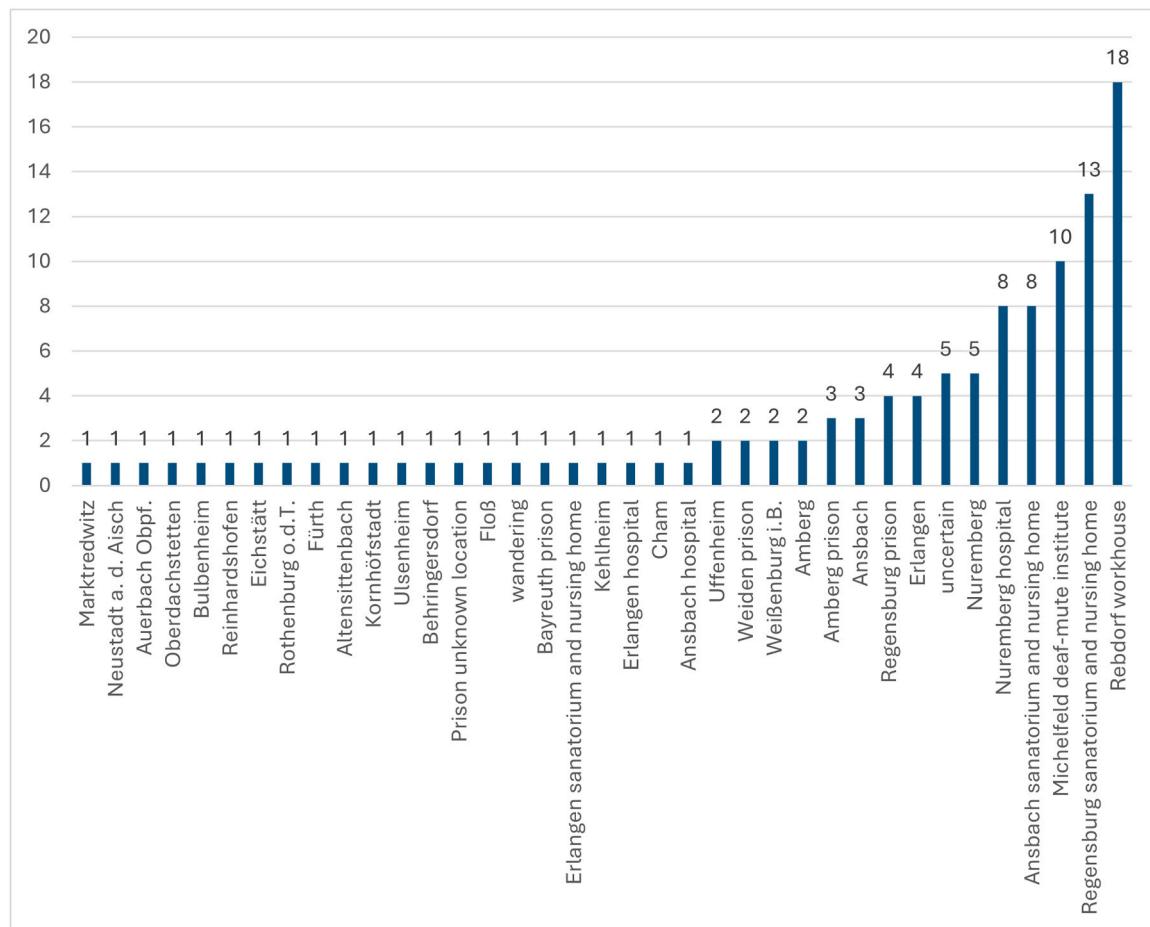


Fig. 1. Number of documented body deliveries (identified and unidentified) to the Erlangen Institute of Anatomy by origin (cities and institutions), based on records for the years 1933–1937; n = 111.

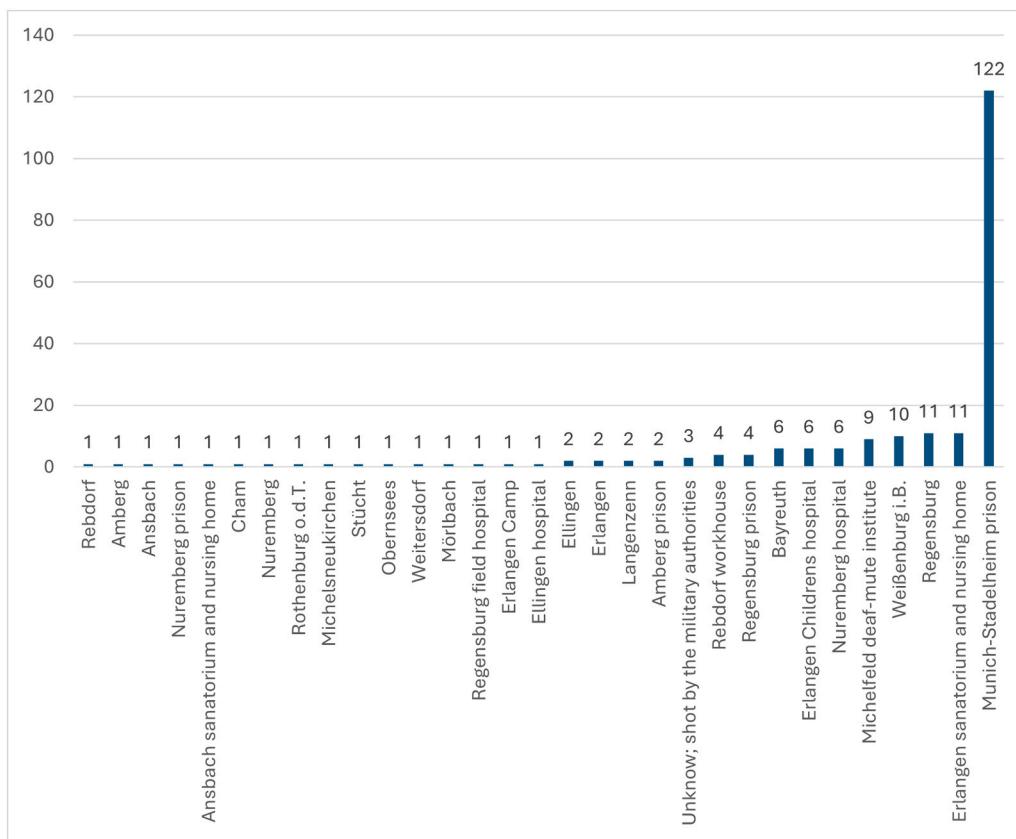


Fig. 2. Number of documented body deliveries (identified and unidentified) to the Erlangen Institute of Anatomy by origin (cities and institutions), based on records for the years 1938–1944; n = 216.

323 (total identified). In rare cases, the place of origin is highly uncertain, and is noted here as such. The main places and institutions from which bodies were transferred to Erlangen anatomy were the Rebdorf workhouse (*Arbeitshaus Rebdorf*), the *Michelfeld deaf-mute care facility*, the City of Nuremberg (institutions/prisons/clinics), and the two sanatoriums and nursing homes in Regensburg and Ansbach. The *Erlangen Sanatorium and Nursing Home* supplied only one body during this time. There were two executions, five suicides, and mostly apparently natural causes of death (e.g., six diagnoses of stroke were among them). The average age of death among the persons whose bodies were delivered to the anatomy institute was approximately 56 years, and at that lower than the age of death of the general population, as indicated by contemporary mortality tables.

The picture changed dramatically for the period 1938–1944. While some locations (like the *Michelfeld deaf-mute care facility*) continued deliveries, others stopped (e.g. *Rebdorf workhouse*: 19 August 1941; *Ansbach Sanatorium and Nursing Home*: 10 November 1938). After deliveries to Erlangen ceased, the *Ansbach Sanatorium and Nursing Home* delivered brains to Eglfing-Haar, possibly for the Kaiser Wilhelm Institute for Brain Research, as traced in Ansbach's Sanatorium and Nursing Home death register (In accordance with information from the accession register of the Brain Pathology Department of the Kaiser-Wilhelm-Institute for Psychiatry in Munich (1939–1948), which was analysed by the project “Brain Research at Institutes of the Kaiser Wilhelm Society in the Context of National Socialist Injustices” and ([StAN Heil- und Pflegeanstalt Ansbach Sterbebuch](#)). Deliveries from Regensburg were stopped after 1943 due to an oversupply in Erlangen. Post-war, a government report (6 August 1946, [BayHStA MInn 110383](#)) confirmed this, as the Erlangen university “rejected offers due to an excess of bodies”. This change stemmed from new death penalty regulations and tightened criminal laws, causing a massive increase in prisoners who died in custody or were executed. These changes are also clearly shown in Fig. 2

for the years 1938–1944.

Of the at least 216 bodies (1938–1944; see Fig. 2), 212 were identified by name based on a comprehensive analysis of various archival sources, 122 originating from Munich-Stadelheim prison. The average age dropped from 58 to 38 due to executions of more young people. Of the 122 bodies from Munich-Stadelheim prison, 51 are reliably traced to the Erlangen Institute of Anatomy; one previously documented ([Schütz et al., 2017](#)) as delivered to the Munich Institute of Anatomy is now confirmed for Erlangen by funeral data; 38 are assumed (with residual uncertainty) to Erlangen; 36 remain unclear (Munich or Erlangen Institutes of Anatomy, from here on referred to as “M/E”). One body about which uncertainty remained was attributed to Munich ([BArch R3001/186921](#)) and is not in the 122 count. Another uncertain delivery has been verified from the tissues still remaining in the legacy collection. Of these 36 “M/E” deliveries, four were recorded between 14 January and 3 February 1941. However, documents from the Federal Archives ([BArch R3001/21478](#)) show that only three bodies were actually sent to Erlangen during this period. No identification by name was possible, making it unclear which one of the four remained in Munich. The total number for which there is uncertainty therefore remained at 36, but for this interval any further analysis must take this limitation into account.

Of the at least 391 bodies counted, 323 have been identified by name (though some Munich-Stadelheim prison deliveries remain assumptions). In addition to Hasselwander's numbers (45 in 1933–37; 60 in 1939–41), at least five bodies were not identified by name and were known only as deliveries of groups of executed persons from Langenzenn in 1944 ([Wendehorst, 1993](#)) and in 1940–41 ([BArch R3001/21478](#)).

It is important to note that this initial overview of body procurement for Erlangen anatomy during the Nazi era remains incomplete at this time, particularly for the years after 1937, and, as outlined in the above calculations, represents a clear underestimate of the actual number of bodies received by Erlangen anatomy at the time.

3.2. Sanatoriums and nursing homes

Four sanatoriums and nursing homes were regular, important suppliers to the Erlangen Institute of Anatomy (1933–1944): those in Erlangen, Ansbach, and Regensburg, and the Michelfeld deaf-mute care facility. These deliveries had long traditions: Ansbach and Erlangen had been suppliers since at least 1908, Regensburg since 1911 (Ansbach already supplied Würzburg before 1908; see [StAN Ansbach Nr. 203](#)). As welfare institutions, they were integrated into the supply network, designated for body delivery by an order from as early as 1795 (see [UAE A6/3 Nr. 47](#)). The *Michelfeld deaf-mute care facility*, a Catholic-run institution, was a main supplier. Since 1929 (according to [StAAm Regierung der Oberpfalz 14814](#)), it had housed not only “deaf-mutes”, but also “mentally ill” patients. Its first delivery was 29 December 1932; the last verifiable delivery was 30 April 1941. The last verifiable delivery from the Sanatorium and Nursing Home in Erlangen was 16 May 1942 (see [StAN Heil- und Pflegeanstalt Erlangen Patientenakte 24864](#)), though more are possible as its death register is considered lost. This chronological classification shows that there was a temporal overlap with the “Aktion T4” and the decentralised “euthanasia” murders. This suggests that victims of these patient murder programs were possibly included in the deliveries to the Institute of Anatomy.

When these institutions considered patients near death, they searched for relatives, while noting that delivery to an anatomical institute would save the municipality funeral costs, if no relatives paid (e.g., [StAN Ansbach Nr. 4630](#)). This process was sometimes initiated years before the actual death of a person. For example, a woman was considered to be in her final hours on 12 April 1928, but she actually died 6 years later on 2 April 1934, when her body was de facto assigned to the Institute of Anatomy presumably without her knowledge ([StAN Ansbach Heil- und Pflegeanstalt Patientenakte, 8791](#)). No further search for relatives was undertaken at her death. This was not an isolated case and also occurred in Regensburg and Michelfeld. The inadequacy of the search for relatives is illustrated by the case of a woman from the Michelfeld deaf-mute care facility. She had previously been transferred between institutions, such as the Regensburg Sanatorium and Nursing Home – a process during which records of her next of kin were likely lost. Consequently, she was handed over as “without relatives” and buried in Erlangen on 8 August 1938. However, in the 1960s, her relatives reported her missing (file in Medbo Historical Archive and the Archive of Regens Wagner).

Economic factors contributed to the transfer of bodies of members of impoverished families. For example, the brothers of a man who died on 26 December 1938 in the Erlangen Sanatorium and Nursing Home were unable to pay funeral costs, so the body was sent to the Institute of Anatomy (in [StAN Erlangen Patientenakte 22629](#)).

In some cases, causes of death were recorded after dissection and reported back to the original institution. In one instance, at the Regensburg Sanatorium and Nursing Home, the report of the examination of a macerated skull was later included in the patient file, showing that deliveries sometimes were used to document cases of specific pathological interest for both institutions.

Patients in sanatoriums and nursing homes were a particularly vulnerable group, as, in addition to their internment in institutions connected to “Aktion T4” and the “euthanasia” patient murders, they were often previously criminalised, subjected to the “Gesetz zur Verhütung erbkranken Nachwuchses” (Law for the Prevention of Offspring with Hereditary Disease) and/or institutionally neglected. One case of a criminalized patient was from Regensburg. He was scheduled for transfer to the Dachau concentration camp but successfully resisted and later died of natural causes. His body was subsequently sent to the Institute of Anatomy in Erlangen. In Erlangen, the use of so-called “hunger bodies” – People who starved to death in the institutions due to systematic food deprivation in connection with the decentralised T4 action – is documented ([Voggenreiter and Ude-Koeller, 2024](#)). However, no specific delivery can be clearly proven of a person directly affected by

the *Hungerkosterlass* (starvation decree). Following this decree by the Bavarian Ministry of the Interior of 30 November 1942, special wards and departments had been set up in Bavarian psychiatric institutions where selected residents were deliberately killed by starvation diets (malnutrition) and often by the additional administration of medication. For the Regensburg and Ansbach institution, the available sources make the delivery of the bodies of hunger victims unlikely, and for Erlangen no conclusion can be drawn due to the missing records, especially a body register. Thus, a fuller reconstruction of these cases is still pending. Bodies of patients who were also victims of the “Law for the Prevention of Offspring with Hereditary Diseases” and later died in these institutions may have been sent to the Institute of Anatomy. In one case the body of a patient in Erlangen, who died by natural causes but was possibly forcibly sterilised years before, came to the Institute of Anatomy ([StAN Erlangen Patientenakte 22629](#)). Female patients at the Michelfeld deaf-mute institute, would have only been sterilized if the procedure had occurred elsewhere, as a 1937 letter ([StAAm Regierung der Oberpfalz 14814](#)) notes that “some of the occupants [...] are hereditarily diseased” but “the sterilisation procedure has not been carried out [...] because permanent security can be expected”. During 1941–42, four bodies from the Erlangen Sanatorium and Nursing Home were part of a transport of a vulnerable group of patients from Gremsdorf nursing home (Pflegeanstalt Gremsdorf); four of seven bodies in this period came from this predecessor institution to the Sanatorium and Nursing Home in Erlangen ([StAN Heil- und Pflegeanstalt Erlangen Patientenakten 25246, 24914, 25328 and 24864](#)). The Gremsdorf patients had been transferred to the Erlangen care facility, where they suffered a mortality rate due to malnutrition or neglect that with 60 % was particularly high, even for this institution ([Voggenreiter et al., 2024](#), p. 237).

3.3. Prisons, workhouses, migratory labour institutions

Prison inmates and interned persons had been designated as “anatomical bodies” since anatomy’s beginnings (e.g., Erlangen 1750: “all infamous persons or those condemned to the workhouse for life” [UAE A6/3 Nr. 6](#) and, in general, [Stukenbrock, 2001](#)). This tradition continued during the National Socialist period but differed decisively from earlier times in the reasons for arrest and internment, in the treatment of inmates, and in the resulting extreme overcrowding of prisons and camps.

For Erlangen, the prisons of Amberg, Regensburg, Nuremberg, and the Rebdorf workhouse are relevant in this context (cf. [Figs. 1 and 2](#)), along with forced labour camps such as the “Silbermühle” in Weißenburg in Bavaria.

The Rebdorf workhouse and the “Silbermühle” primarily interned homeless individuals classified as “asocials” for offences such as begging, subjecting them to forced labour. This “offence” was not new, but from 1933 onwards, the German State drastically expanded the law, conducting “actions” for the “suppression of begging”, sending people to Dachau concentration camp, and overcrowding the workhouses, which were “special prisons for beggars and vagrants” (see [Ayaß, 2023](#)). Persons labelled as “asocial” also faced forced sterilization. These individuals were long not regarded as Nazi victims; they were denied compensation, and postwar society sometimes viewed their internment positively ([Ayaß, 2023](#), p. 9 ff.). This study considers them victims, especially as some causes of death were directly connected to the internment (e.g., suicide or accident in the Rebdorf quarry; see [StAN Arbeitshaus Rebdorf Nr. 33](#)). “Asocials” included “dangerous habitual criminals” and persons subjected to detention for “begging, vagrancy, prostitution, unwillingness to work, or addiction [...]” ([Ayaß, 2023](#)).

Twenty-one bodies were delivered from the Rebdorf workhouse (1933–1941), and twelve from the Municipal Hospital Weißenburg (1936–1941), all previously living in the Silbermühle camp. Two persons from Silbermühle (see [Documents with names from FELDMANN](#) and [Documents with names from MESEC](#)) and one from Rebdorf (see [Documents with names from HELI](#)) had previously been interned in

Dachau concentration camp as “Polizeihäftlinge” (pre-trial detainees) in 1936, likely during raids against “asocials”. In the postwar period, Rebdorf also interned homosexuals (so-called “175er”, after the respective paragraph in German law; [Ettle, 2007](#), p. 40), until its closure in 1958. Even in this postwar period, between 1948 and 1951, the delivery of two bodies from Rebdorf to the Erlangen Institute of Anatomy has been documented.

Regular prisons, which also held victims of Nazi justice, were also delivery sources. While few cases are fully reconstructed, the case of Wienand D. clearly shows the reasons for imprisonment: Wienand D., of Luxembourg nationality, was arrested as a “propagandist” for alleged negative statements about Hitler, and sentenced on 24 June 1938 by the Special Court Nuremberg to one year and seven months imprisonment for an “offence against the Heimtückegegesetz” (see [StAAm JVA Amberg 263](#)). Wienand D. died in Amberg Hospital on 11 May 1939 from untreated “purulent otitis media and purulent meningitis”, which he acquired at Grassersdorf camp (Lager Grassersdorf). When he arrived at the hospital, the disease had spread to the bone, and an emergency operation failed. His body was assigned to the Surgical Hospital (according to [UAE F3/9 Nr. 50](#)) and the burial organized by the Erlangen Institute of Anatomy on 16 April 1941 ([StadtAE 594.A.157](#)). The brother of the deceased was only informed after D.’s death.

Another case ([StAAm JVA Amberg, 1086](#)) documents the strict timing and financial burden for the families of the dead in a telegram sent by the prosecutor’s office to the daughter of Matthias W.: “Father [W.], Matthias died today. If burial in Amberg within 24 hours, transfer 100 RM; otherwise, body to Anatomy.” The daughter transferred the money in time. Whether this approach always succeeded remains uncertain.

A notable exception, illustrating that the regulations were not always strictly enforced, is the case of Ida R., who was found dead on 2 May 1943 in Nuremberg Prison at Mannertstraße 36, whereby the circumstances of her death cannot be conclusively determined. She was Jewish, and according to statements made by her husband – Hermann R., a Nuremberg physician – she had been murdered in the prison ([StAN Spruchkammer Erlangen-Stadt H74](#)). Officially, after having been sentenced to two and a half years’ imprisonment for the theft of three eggs near Cadolzburg, she was declared to have died by suicide. Deputy Gauleiter Karl Holz (1895–1945) had ordered the body to be transferred to the Erlangen Institute of Anatomy. This was possible in his role as deputy to the highest-ranking regional authority of the NSDAP, responsible for the entire party apparatus in the respective territory with supervisory power and disciplinary authority. However, upon special request by her husband to the morgue technician Heider, the latter arranged for an immediate burial, which – according to the accounting records of the Erlangen Central Cemetery – indeed took place on 5 May 1943. It is possible that a personal contact between the physician Hermann R. and the anatomical institute, or rather with its morgue technician, was used to enable the direct burial of his wife’s body without dissection. After the war, Heider referred to this incident – together with statements from employees of the Central Cemetery and from Hermann R. – in his denazification proceedings as a positive example of his political impartiality ([StAN Spruchkammer Erlangen-Stadt H74](#)).

3.4. Munich-Stadelheim prison – executions

Extensive preliminary work ([Schütz et al., 2017](#)) provides a well-founded basis on Munich-Stadelheim prison executions. New findings in Erlangen, which include burial records, account books, and anatomical specimens, add further detail to the information from 2017 (see [Fig. 3](#)).

The 2017 study assumes that a maximum of 122 bodies were delivered to the Erlangen Institute of Anatomy (85 verified, 37 M/E). Additional data now corrects this to 86 verified deliveries and 36 M/E, while the sum 122 remains the same: according to court records, the body of Wilhelm H., executed on 16 December 1938, was picked up by

Munich Anatomy, but ended up in Erlangen, as evidenced by municipal and church burial records. According to the latter, he was buried in Erlangen by the Institute of Anatomy on 28 March 1940. Another body, that of Heinrich L., who was executed on 17 May 1940, had previously been counted as M/E, but can be assigned with greater certainty to Munich: As for 1940, [Schütz et al. \(2017\)](#) record five bodies for Erlangen: four were certainly for Erlangen and one M/E. Correspondence now shows that four bodies were sent from Munich-Stadelheim prison to Erlangen in 1940 ([BArch R 3001/21478](#)), indicating that the body of Heinrich L. went to the Munich institute of anatomy.

In some additional cases, the reception of bodies of executed persons from Munich-Stadelheim prison is verified by local sources: Kunigunde K., Wilhelm H., Robert E., Erich Helmut W., and Ludwig B. were verifiably buried on 28 March 1940, 16 April 1941, and 13 February 1943 at the Erlangen Zentralfriedhof (Erlangen central cemetery), by the Institute of Anatomy ([StadtAE 594.A.157–158](#)). Two persons, Charlotte S. and another female, are identifiable based on the labels (name, age, date of death and gender) on microscopic specimens. Relatives of the latter were found; a joint decision on the handling of these remains is pending. Another microscopic specimen from a 20-year-old male, executed on May 17, 1940, in Munich, is of unknown identity, as it could have been Karl F. or Leonhard S., which however creates difficulties as both were buried in Munich according to their records of execution.

Johannes Hett almost certainly conducted histological examinations in 1942 on the submandibular gland of Charlotte S., publishing them in 1942 ([Hett, 1942](#)). The authors conclude this as the facts recorded in Hett’s publication, including age and sex, as well as timing of the delivery of the body and the publication of Hett’s article, align, though she was not named. It was also Johannes Hett who in his pursuit of particularly “fresh cadaver material”, in January 1940 wrote to the Attorney General in Nuremberg expressing regret that he had not been informed about an execution carried out by the Special Court in Nuremberg, which resulted, in Hett’s allegation, in the loss of valuable “study material” ([BArch R 3001/21478](#)). This letter was subsequently forwarded to the Reich Minister of Justice in Berlin. In another letter, also from January 1940, he proposed that the Attorney General should notify him in advance of executions, and permit the collection of histological tissue samples, even from bodies destined for burial – a practice which, according to Hett, was already in place at the University of Halle when he worked there ([BArch R 3001/21478](#)). Whether this procedure was likewise implemented in Erlangen, possibly explaining the microscopic remains of a 20-year-old from Munich-Stadelheim prison, remains uncertain. Alternatively, it is possible that Karl Friedrich Bauer brought this specimen with him from Munich upon his recruitment to Erlangen.

The reasons for conviction before execution in Munich-Stadelheim prison align with [Schütz et al., \(2017\)](#), but persons convicted by military courts are higher in number (3 % vs. 1 % avg.) in Erlangen. Of only seven such persons in the Stadelheim complex, the Institute of Anatomy in Erlangen received more than half (four).

Several of the individuals from Munich-Stadelheim prison, from whom tissues are either preserved as anatomical specimens, buried in Erlangen, or whose names could only be reconstructed from the execution records of the Munich-Stadelheim prison, are part of the cooperative project #lostwords of the Arolsen Archives and the Bavarian State Archives in Munich, which our research group supports with its findings.¹ At the same time, the project significantly advances the search for surviving relatives and delivers new archival insights.

3.5. Other delivery sources

Other delivery sources require investigation. Notably, the Erlangen Institute of Pathology transferred five children’s bodies (1938–1941) to the Erlangen Institute of Anatomy, including premature infants and one

¹ <https://arolsen-archives.org/mitmachen/lostwords/>

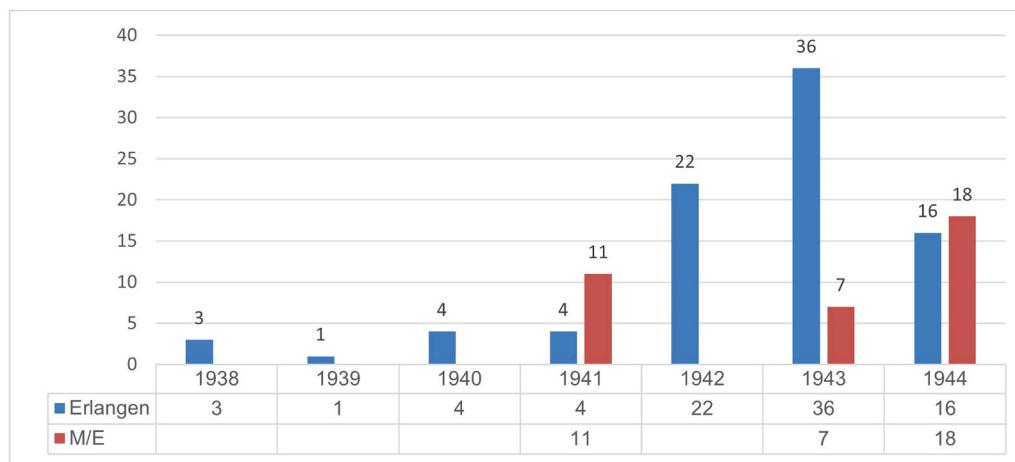


Fig. 3. Confirmed numbers of bodies of the executed delivered to the Erlangen Institute of Anatomy [blue] and number of bodies delivered to Erlangen or Munich (M/E) [red] for the years 1938–1944.

child with trisomy 21; these infants varied in age from six hours to 28 days (see [UAE C3/2a Nr. 60](#)). As a substantial number of child and fetal specimens remain in the micro- and macroscopic collection, the discovery of this transfer of children's bodies is highly relevant and can help to trace their provenance.²

Deliveries also came from executions outside of Munich-Stadelheim prison, often by the Gestapo. For Erlangen, six bodies of such victims can be identified by name, one only by surname: Julian M., Jan S., Stanislaus S., Jozef D., Jan P. and Dybel. Most of them were Polish forced labourers. Uncertainty remains due to the secrecy of these executions. Jan P. and Jozef D. were executed on 11 September 1942 for "immorality" ([Bratkowski, 2025](#), p. 15). Stanislaus S. was executed in Erlangen on 13 August 1943 ([May, 2008](#)). For Julian M., executed on 18 April 1941, and Jan S., executed on 15 May 1942, only dates and places of birth can be determined ([AA DE ITS 2.1.1.1 BY 152 POL 3 ZM](#)). An unknown number of additional bodies came from such "non-centralised" executions. At least one delivery of several bodies came from the camp in Langenzenn, with a note that mentions "3 shot by the military authority" between 1 January 1941 and 16 February 1941, from an incident that has yet to be reconstructed (see [BArch R3001/21478](#)). Soldiers convicted of crimes ([StadtAR Standesamt 5.1 5.1.](#)) and prisoners shot fleeing from "camps" (e.g., Josef S.; see [AA DE ITS 2.1.1.1 BY 038 POL ZM](#)) were also reportedly sent to the Institute of Anatomy.

The case of the Polish forced labourer Dybel caused significant stir in Erlangen and led to postwar murder charges against Albert Hasselwander and Johannes Hett, which were dropped (see [Hildebrandt, 2016](#), p. 301 f.). This case is under examination in a doctoral project (by Said Adrian Muçur) and is not further elaborated here.

3.6. Specimens from the Nazi Era in the Erlangen anatomical collections

The inventoried Erlangen Anatomical Collection of macroscopic specimens, which holds over 1350 objects, is linked to a large collection of histological slides with numbers in the five-digit range and has only recently been reviewed and needs further investigation. First results of provenance research have been published ([Goldmann, 2022](#); [Goldmann et al., 2021](#); [Ruisinger, 2007](#)) and these studies are further actively ongoing with four doctoral projects. Although research on executed persons can be documented until the 1950s ([Hasselwander et al., 1951](#); [Haug, 1958](#)), the first review regarding the Nazi context of the collection only occurred in the late 1980s (see [BayHStA MK 69046](#)). The extent of this review and whether specimens were removed is unrecorded and

questionable (for the actions taken in the 1980s in Germany see [Weindling, 2012](#)).

Among the macroscopic specimens, none can be clearly assigned to the Nazi era, though their presence cannot be excluded. This context must always be considered. Models suggesting Nazi ideology exist and include race plaster skulls and hair colour charts, likely from the collection of Andreas Pratje, who conducted racial research and racial examinations for the courts ([Braun, 2017](#); [Wegner, 1946](#), p. 51ff.). However, they may also have existed before that time in colonial contexts. The histological/microscopic collection contains clearly implicated specimens, which were obviously not part of any searches of collection that might possibly have occurred in the 1980s/1990s examination and potential "cleansing" of anatomical collections ([Weindling, 2012](#)).

A first review identified 84 human microscopic specimens datable to 1936–1942, based on inscription on the slide labels. There are also a number of slides for which the provenance is uncertain. Additionally, several specimens not originally from Erlangen, but with tissues of executed persons, were found there. For example, a slide of unknown provenance with the "mamilla of an executed woman" from "Prof. Lubosch" (Würzburg, datable 1916–1938), or two specimens (cerebellum and pancreas), which can be assigned to Walter G., executed in Halle/Saale (17.05.1935) for murder.³ The latter could be part of a collection brought by Johannes Hett to Erlangen, which is described later in this article. Of the 84 specimens, a few are labelled with names or other identifiers, including a section of "axillary sweat glands" (Charlotte S., 20 years) and sections from another identified female person. Both were execution victims from Munich-Stadelheim prison. A specimen of a "spinal ganglion" (with handwritten date "29 July 1936") likely originates from Anton L., executed that day in Regensburg ([Dachs, 2009](#)), while other specimens additionally bear the surname of Anton L., and therefore likely originate from him. Furthermore, two 1938 specimens ("eye muscle, human", 24-year-old man) may originate from Robert E. (executed in Munich-Stadelheim prison), as the age, sex, and year match, but this identification lacks further documentation at this point. Another specimen labelled "testis and epididymis of an executed 20-year-old" (17 May 1940, "Munich") is difficult to identify, as only two 20-year-old males (Karl F. and Leonhard S.) were executed in Munich-Stadelheim prison on that date, but according to their record of execution, both were buried in Munich.

From various sources, in addition to the anatomical collections of

² The dissertation by TG regarding this topic is in preparation.

³ Based on research by Michael Viebig and Claudia Steinicke. Cf. Saale-Zeitung No. 114 of 17 May 1935.

macroscopic and microscopic specimens in Erlangen, there exists a Medical Collection of FAU, which received specimens from various sources for documentation and preservation, including histological specimens and paraffin blocks. Their return to the Anatomical Institute is in the process of being arranged and will then be included in the above mentioned numbers of specimens from the Nazi period. The set includes human remains embedded in paraffin blocks from persons executed in Torgau (12 September 1933) and Magdeburg (1937). The Torgau victim may be Walter L.⁴ The Magdeburg tissues stem from an unknown 22-year-old male. There is also the placenta of a human, 37 mm embryo, from Bertha G., 43 years old (Halle, 23 August 1935). Further biographical details regarding Bertha G. could not be traced. These specimens were very likely brought to Erlangen by Johannes Hett, who was Professor at the MLU Halle-Wittenberg in Halle/Saale (1921–1936), prior to his move to Erlangen. In particular the placenta may have been examined by Hermann Stieve, who analysed a large number of placentas in Halle and published his findings (for a bibliographic overview see Romeis, 1953, p. 429 ff.). The Medical collection contains other specimens which are clearly not from Halle: an undated uterine tube (12-year-old girl); a 1937 “prostate, human”; a testis specimen (re-embedded 1967, origin unknown); and a 1946 placenta (“embryo Erlangen Nr. 17”).

4. Continuities in the supply of bodies in the postwar period

The end of the war brought changes to the personnel structure of the Erlangen Institute of Anatomy, partly due to the military government. These changes were, however, smaller than expected: after denazification, some persons were rehabilitated or even reinstated after being released. Albert Hasselwander, initially removed, was rehabilitated in 1948, and at the same time became emeritus. Johannes Hett returned to the institute, but without a management position. After 1946, the new long-term director was Karl Friedrich Bauer (Schütz et al., 2013, p. 298).

The statements made by Karl Friedrich Bauer in 1946–1947, cited in earlier chapters, regarding the impossibility of identification of bodies in the Institute of Anatomy must be read with caution. Even in 1958, Herbert Haug’s habilitation thesis mentions the brains of two “decapitated” persons (Haug, 1958, p. 29 f.), fixed 12 and 14 years prior. A precise dating is not possible, but they must have been executed between 1943 and 1945, likely in Munich-Stadelheim prison, since most executions during the Nazi era were by decapitation. A similar case is reported by Hasselwander et al. (1951), who “re-prepared” and photographed executed individuals in the postwar period with the assistance of two aides. There, it is described how he instructed the morgue technician present at the execution to position the body immediately afterwards in a specific way so that it could later be examined in the institute. Even in 1951, he refers to these executed bodies as “particularly valuable”. The existence of datable and identifiable microscopic specimens also documents the continuity of their use. Thus, the users of the tissues were clearly able to identify victims of decapitation in 1951 and 1958.

The member of the personnel with the longest continued presence at the institute was probably senior morgue technician Franz Heider, who worked at the Erlangen Institute of Anatomy for 40 years until 1963 and had an apartment in the institute (see BayHStA MK 39989). A 1948 SPIEGEL interview regarding the renewed body shortage reports that Heider was present at executions in Landsberg or Augsburg to obtain specimens from the freshest bodies. Heider reportedly “[had] about 25 executed and a few hundred naturally deceased [...] under the knife”. This assessment’s variance with the numbers in Chapter 3 limits its value; however, it may refer to the postwar period, which would be remarkable, as it is not known that the Erlangen Institute of Anatomy received bodies of executed persons from the NS trials or other trials

with execution after 1945 for anatomical purposes.

The postwar body register begins only on 21 September 1946, with a delivery from Weißenburg just two weeks after the first reminder from district offices regarding body deliveries (StadtAWUG Rep III, 1032). Only one other delivery occurred that year, also from Weißenburg – a trend that continued in 1947 (two of five bodies). Notably, Weißenburg appears continuously as a delivery location from 1932, throughout the Nazi period, and after 1946. The main source there was the Weißenburg Hospital. Its chief physician from 1896 to 1936, Hans Doerfler (1863–1942), was a student at FAU and known to the anatomists (Mödl and Weichmann, 1985, p. 111ff.). His son and successor, Hermann Doerfler (chief 1936–1946), presumably continued these familiar deliveries.

The persons from Weißenburg in 1946–1948 were not body donors, but German expellees (*Heimatvertriebene*; see Ziegler, 2020). These were persons from the population groups that had been forced to leave the regions East of the newly drawn Eastern borders of Germany when the war ended. Some of them lived in the Würzburg refugee camp, and those who died in the camp – in one case, a murder victim – or suffered accidents and died at the hospital were sent to Erlangen anatomy (StadtAWUG Stadtpolizei 59–60). Two persons were born in today’s Czech Republic. Additionally, a German expellee from the Voggendorf refugee camp near Ansbach was delivered in 1947. In winter 1946/47, an “American Study Commission” investigated the Erlangen Institute of Anatomy for bodies of foreigners remaining there and, according to Karl Friedrich Bauer, “raised no objections.” In response to a 20 August 1947 inquiry about bodies of executed persons or non-Germans, Bauer stated on 11 September 1947 (UAE A6/3 Nr. 62) that “there are still some bodies at this institute [...], but identification is no longer possible.” In fact, identifiable histological specimens from the Nazi period exist today. These were not removed during the early postwar or the 1980s investigations, questioning the thoroughness of these actions and the reliability of Bauer’s testimony. The use of German expellees and foreigners was regarded as unjust by the American military government. In fact, a decree before October 1947 (see StadtAR ZR2 9050) explicitly required institutes not to use them as anatomical bodies.

The delivery of these persons differs only slightly from the actions during the Nazi period and before, though executions by state authority were no longer carried out in these cases. Beyond personnel and local continuities, the social circumstances of the delivered persons recur. While only persons without relatives or with consent were handed over, German expellees were among the vulnerable populations, as they often had been separated from families and communities who could not be reached for death notifications. The handling of such remains has been scarcely discussed and may represent a “continuity” that must be considered. This treatment caused concern among ministry officials and the military government at the time (see BayHStA Minn 110383 and Schütz, 2019, p. 77ff.). This example from Erlangen illustrates the considerations that accompanied the reorganization of body procurement in the anatomical institutes in Bavaria during this time, as described by Schütz, 2019, p. 79.

5. Discussion

This study provides the first comprehensive overview of body procurement at the Erlangen Institute of Anatomy during the National Socialist dictatorship, filling a significant research gap for the history of anatomy during the NS period in Bavaria (Hildebrandt, 2016; Schütz et al., 2017). The central finding – that, despite the (suspicious) destruction of the 1933–1946 body register, 391 deliveries were reconstructed (323 by name) – underscores the institute’s integration into the Nazi regime’s structures, while long-standing delivery infrastructures, already in place before the war, were used during the war and continued again thereafter. All this occurred while the focus shifted, particularly during the war years, to bodies of execution victims from Munich-Stadelheim prison. This is very similar to other Bavarian

⁴ Information according to the histology catalogue of the Institute of Anatomy and Cell Biology of the MLU Halle-Wittenberg

anatomical institutions, especially towards the end of the war.

The primary limitation of this study remains the missing body register. The reconstruction, reliant on peripheral archival sources (from delivering institutions, city archives, and cemetery records), is necessarily incomplete. As stated, the 391 cases likely represent only a part of the actual deliveries, especially before 1940. The full extent of the institute's involvement in the utilization of bodies is therefore presumably much larger than documented here. The claim of "Effect of high humidity" due to storage in an "ice cellar" (UAE A6/3 Nr. 62), attested to only by the post-war director Karl Friedrich Bauer, is highly questionable given that pre-1933 volumes were unaffected.

The analysis of the "origin institutions" confirms that the Erlangen Institute of Anatomy operated within the same systemic procurement network as other German anatomical institutions (Hildebrandt, 2016). The institute benefited from a procurement supply that included sanatoriums and nursing homes (Ansbach, Erlangen, Regensburg), workhouses (Rebdorf), and prisons (Amberg, Nuremberg). Deliveries from concentration camps could not be verified. Furthermore, the documented collaboration with the Surgical Hospital (see UAE F3/9) suggests that the delivery and use of bodies was an accepted interdepartmental practice not only for the Institute of Anatomy.

The specification of deliveries from Munich-Stadelheim prison with 86 verified cases refines the data presented by Schütz et al. (2017), and confirms Erlangen as a major recipient of executed victims. Critically, this study also traces deliveries from non-judicial executions (Gestapo shootings, e.g., the Dybel case), demonstrating a direct link to the most brutal forms of Nazi terror. The Institute also accepted bodies from other sources, including children from the Pathological Institute (UAE C3/2a Nr. 60).

This study also demonstrates continuity of the personnel with Hasselwander, Hett and Heider, and the beginning of post-war body procurement of the Institute of Anatomy in Erlangen, by obtaining the bodies of German expellees from the Wülbzberg refugee camp. This practice, later explicitly forbidden by the American military government (StadtAR ZR2 9050), represents a possible continuity by focusing on a new supposedly kinless and thus vulnerable group. Additionally, it becomes clear that the Institute's director Bauer probably actively misled Allied investigators about the presence of foreign and executed victims' remains or the possibility of identifying them. This continuity extends to the specimens. The use of remains from executed persons in post-war publications (Hasselwander et al., 1951; Haug, 1958) and the identification of histological specimens from victims (e.g., Charlotte S.) in the current collection prove that the institute has only undergone genuine examination in the 21st century. The 1980s "review" (BayHStA MK 69046) was clearly insufficient and, if anything, has severely impeded today's efforts at reconstruction. This finding is similar to other investigations in German anatomical institutes (e.g. Jena, see Redies, 2012, p. 300).

This study, therefore, serves as an essential foundation for further investigations in Erlangen. A systematic, case-by-case interdisciplinary provenance investigation of the macroscopic and microscopic histological collection, including the "Hallensian Collection", is imperative. This finding corresponds to previous interdisciplinary and in-depth provenance studies on this topic for the University of Strasbourg (Toledano, 2016; Bonah et al., 2022). By naming the victims, we not only fulfil a historical and ethical duty, but also provide a basis for future contact with descendants, thereby taking a concrete step toward responsible commemoration.

6. Conclusion

This investigation provides, for the first time, an overview of the Erlangen Institute of Anatomy during the National Socialist period, in terms of personnel and body supply. It also establishes a foundation for thorough further provenance research in Erlangen. Although the body registers for 1933–1946 were lost due to "water damage", the evaluation

of numerous archives and sources enabled the documentation of a total of 391 bodies, 323 of which were identified by name.

The origins of the bodies delivered to the Erlangen Institute of Anatomy ranged from prisons and sanatoriums and nursing homes, to executions in Munich-Stadelheim prison and by the Gestapo. The post-war reuse of bodies of German expellees after 1945 is also documented and requires further investigation. Furthermore, human remains of NS victims were used uncritically in teaching and research during and after the Nazi era.

A thorough investigation of the Erlangen Institute of Anatomy has only just begun and must be vigorously pursued. To fully meet historical responsibility, systematic provenance research of all macroscopic and microscopic specimens is required. In parallel, detailed biographical studies should be conducted for all cases known by name. Only through interdisciplinary research combining anatomy and medical history can the Institute of Anatomy of FAU transparently address its past.

CRediT authorship contribution statement

Fritz Dross: Writing – review & editing, Supervision, Project administration, Investigation, Data curation. **Michael Scholz:** Writing – review & editing, Supervision. **Goldmann Tim Simon:** Writing – original draft, Visualization, Project administration, Methodology, Investigation, Data curation, Conceptualization. **Mathias Schütz:** Writing – review & editing, Resources, Data curation. **Friedrich Paulsen:** Writing – review & editing, Supervision.

Declaration Ethic

In this study all procedures were performed in compliance with laws and institutional guidelines. The privacy rights of human subjects have been observed by only naming first name and initial of the surname. Human remains or data of them were used in interdisciplinary provenance research to discover their context.

Declaration of Competing Interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Given his role as editor-in-chief, Friedrich Paulsen had no involvement in the peer-review of this article and has no access to information regarding its peer-review. Full responsibility for the editorial process for this article was delegated to another journal editor.

Given his role as editor, Michael Scholz had no involvement in the peer-review of this article and has no access to information regarding its peer-review. Full responsibility for the editorial process for this article was delegated to another journal editor. If there are other authors, they 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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