

A GLIMPSE OF OUR PAST

Research on Bodies of the Executed in German Anatomy: An Accepted Method That Changed During the Third Reich. Study of Anatomical Journals From 1924 to 1951

SABINE HILDEBRANDT*

Division of Anatomical Sciences, Department of Medical Education, University of Michigan Medical School, Ann Arbor, Michigan

While it is known that bodies of the executed were used for anatomical research in Germany during the Third Reich, it is unclear whether this type of work was unique to the time period or more common in Germany than elsewhere. The dissected persons and the anatomists involved have not been fully investigated. This study of anatomical journals from 1924 to 1951 shows that 166 out of 7,438 [2.2%] German language articles mentioned the use of "material" from the bodies of executed persons. In comparison, only 2 out of 4,702 English language articles explicitly mentioned bodies of the executed. From 1924 to 1932, 33 of a total of 3,734 [1%] German articles listed the use of the executed. From 1933 to 1938 the number rose to 46 out of 2,265 [2%], and increased again from 1939 to 1945 to 73 out of 984 [7%]. After the war 15 out of 455 [3%] still dealt with "material" from the executed. German anatomists' familiarity with the use of the executed as a standard for healthy tissues even before 1933 may have contributed to the ease with which they accepted the "opportunities" (large-scale studies and research on women) presented to them by unlimited access to bodies of the executed provided by the abusive National Socialist (NS) legislation and continued using them for some years after the war. German postwar anatomy was built in part on the bodies of NS victims. Information given in some publications will help with further identification of these victims. *Clin. Anat.* 26:304–326, 2013. © 2012 Wiley Periodicals, Inc.

Key words: National Socialist anatomy; bodies of the executed; Nazi victims; anatomical dissection

*Correspondence to: Sabine Hildebrandt, Division of Anatomical Sciences, Department of Medical Education, University of Michigan Medical School, 3767a Medical Science Building II, 1137 Catherine Street, Ann Arbor, MI 48109-5608, USA.
E-mail: shilde@umich.edu

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"The existence of the horrible in each particle of air; it deposits itself in you, becomes hard, takes on sharp geometric forms between your organs; for all the agony and terror that came to pass in places of execution, in torture chambers, madhouses and operating theatres, under the arches of bridges in late autumn: all this is of a tenacious and imperishable persistence, it insists on itself and clings, envious of everything that exists, to its own dreadful truth. People would like to be allowed to forget much of this [...]"

Rainer Maria Rilke in "Malte Laurids Brigge"
(translation by author)

INTRODUCTION

Since the beginning of scientific anatomy, the use of bodies of executed persons for anatomical dissection has been a legalized custom that is still ongoing in parts of the world (Hildebrandt, 2008). In the 1980s, however, revelations concerning the use of "material" from bodies of the executed obtained directly in chambers of execution of the National Socialist (NS) regime for German anatomical research came as a shock to the general public (Aly, 1987, 1994). The report on these findings was part of a wider historical questioning focused on the history of anatomy in the Third Reich, which was pursued by medical students, publicists, and historians (Hildebrandt, 2009a; Weindling, 2012; Seidelman, 2012). Research since then has shown that, as numbers of executions soared in Germany from 1933 to 1945 due to the abusive practices of the ruling NS regime, the bodies of executed persons were commonly used for anatomical purposes. Following pre-existing and reinforced legal practice, these bodies were distributed to all anatomical institutions, where they were used for educational and research purposes (Noack and Heyll, 2006; Hildebrandt, 2009a,b).

It is well known that bodies of the executed were not only used for medical education, e.g., in anatomical dissection and histology courses, but also for research performed in Germany and a few other countries between 1933 and 1945 (Aumüller and Grundmann, 2002; Hildebrandt, 2009b). However, it is unclear whether this type of research and its publication was unique to the time period or if it was more common in Germany than elsewhere. Neither is it known what the exact content of most of the investigations were or which anatomists, other than Hermann Stieve and Max Clara, were most prominently involved in this (Winkelman and Schagen, 2009; Winkelman and Noack, 2010).

The following study analyzes publications in German and Anglo-American anatomical journals from 1924 to 1951 in order to assess the number of articles citing the use of "material" from the bodies of the executed, their authors, the scientific problems studied, and the number of bodies involved. The question is addressed whether the articles give any indication of the identity of the persons who were executed and used for the research reported. Identification of the victims is necessary to restore their individuality and the realization of their humanity. The problem of the motivation of the anatomists for their work with these bodies will be discussed in view of the surprising historical evidence presented here that the use of "material" from the executed was perceived as a standard of qualified histological work by

German and other European anatomists before 1933. The study will also provide insights into the changes in anatomists' use of the bodies of the executed that developed during the Third Reich. It will be argued that these findings are of relevance for the evaluation of the history of anatomy in the Third Reich.

This investigation is part of an ongoing series of studies of anatomy in the Third Reich that aims to provide a factual data base for its history as a means for an analysis of the ethical decisions of anatomists of the time period (see Hildebrandt 2006, 2009a,b,c, 2012a,b).

MATERIAL AND METHODS

Data Collection

Selection criteria for articles. Articles were studied for the explicit use of the words "Hingerichtete" or "executed" and "Decapitatus" or "Dekapitierter" or "Enthaupteter" or "decapitated." The description "plötzlicher Tod" or "sudden death" was considered ambiguous, as it could also include persons who died due to an accident or a suicide. Articles with a mention of "sudden death" were only then included in the study, when their authors had clearly used bodies of the executed for similar work in previous studies and it was highly likely that authors were still working with this material. The term "sudden death" was used in postwar publications, when an admission of the use of bodies of the executed was no longer politically acceptable.

Selection criteria for journals. Articles from the following journals and years were analyzed for the explicit mention of use of the bodies of executed persons in the studies presented:

German language journals.

- *Zeitschrift für Zellforschung und mikroskopische Anatomie* (later: Cell and Tissue Research): 1924–1951
- *Zeitschrift für Anatomie und Entwicklungsgeschichte* (later: Anatomy and Embryology): 1924–1951
- *Zeitschrift für mikroskopisch-anatomische Forschung*: 1924–1951
- *Anatomischer Anzeiger* (later: Annals of Anatomy): 1924–1951/52
- *Verhandlungen der Anatomischen Gesellschaft*: 1924–1951
- *Gegenbaurs morphologisches Jahrbuch*: 1924–1951
- *Ergebnisse der Anatomie und Entwicklungsgeschichte* (later: Advances in Anatomy, Embryology and Cell Biology): 1924–1951
- *Zeitschrift für Morphologie und Anthropologie*: 1924–1951

Another German language journal called *Anatomische Nachrichten* was not included in the statistics due to the only short time period of its existence from 1949 to 1951.

English language journals.

- *Journal of Anatomy* (Great Britain): 1924–1951
- *American Journal of Anatomy*: 1924–1951
- *Anatomical Record* (US): 1924–1951

German and English language journals were selected that represented the majority of work produced by anatomists in their respective country of publication. The German language journals represented the results from members of the *Anatomische Gesellschaft* (anatomical society), an international organization based in Germany (Winkelmann, 2012). The *Journal of Anatomy* (founded in 1906) was the journal of the Anatomical Society of Great Britain and Ireland and was thus the representative organ of anatomists in the United Kingdom and the British Commonwealth. *The Anatomical Record* (founded 1906) was the journal of the American Association of Anatomists, the American Society of Zoology and the Wistar Institute of Anatomy. The older *American Journal of Anatomy* (founded in 1901) also represented American Association of Anatomists and the Wistar Institute of Anatomy.

The time period from 1924 to 1951 was chosen because it includes a representative number of years before the beginning of the NS regime in 1933 and after its end in 1945. The years before 1933 were marked by legislation of the Weimar Republic, and after 1945 by the legislation of the Allied Forces in the different occupied sectors of Germany and later on by that of the Federal Republic of Germany and the German Democratic Republic.

Data Analysis

The articles explicitly mentioning the use of the executed were analyzed in terms of quantity, authorship, place and type of research, number of bodies studied, and information conducive to identification of the persons executed.

While the general topics of all articles were noted, it was not an aim of this study to provide a complete statistical analysis of the content of all German and English language anatomical journals published between 1924 and 1951.

Explanation of Terminology in This Study

"Material" for research. The term "material" for studies of tissues from animals and humans was and is common and exact phrasing in scientific anatomical literature and is generally used without the quotation marks. However, in the context of executions by a criminal regime like the National Socialists, addressing the tissues of the executed as "material" or "*Werkstoff*" (literally: stuff of which something is made) has been interpreted as acquiescence of the researcher with the demeaning purposes of the regime that aimed at the depersonalization of the victim (e.g., Klee, 2004; p 95ff). Thus the term "material" is used in quotation marks throughout this article to mark a distancing to the possible depersonalization implied in the word and to demonstrate respect for the persons whose tissues were used for research without their voluntary consent.

Victim of the NS regime. In this study, all persons who were executed during the Third Reich following civilian and military court proceedings will be called victims of the NS regime, irrespective of the crimes they were convicted of. During the Weimar Republic capital punishment verdicts were handed

down in 1,061 cases (1,141 according to Siebenfeiffer, 2005) and led to a total of 184 executions (Evans, 1996; p 915–916). Executions were suspended from 1928 to 1929 due to an active public discussion about the abolition of the death penalty and became extremely rare in the last years of Weimar (Evans, 1996; p 561). During the Third Reich the death penalty was given in 16,570 civilian and an estimated 16,000 military cases and led to executions in an estimated 90%, with most of the executions taking place during the war years (Evans, 1996; Hildebrandt, 2008). Although the crimes mandating capital punishment in the Weimar Republic were exclusively capital offenses like murder, the spectrum of crimes leading to the death penalty changed dramatically under NS legislation with its ever widening definition of treason, black marketeering, and special laws concerning Poles and other foreigners (Hildebrandt, 2009b). Thus, only a very small minority of the executed during the Third Reich were so-called "real criminals," that is murderers, who were far more likely to be executed under NS-legislation than in the atmosphere of clemency in the late Weimar Republic. Moreover, as this article is written from a modern point of view at a time when half of the world's countries have abolished capital punishment, the point can be made that any execution is inhumane and makes the person executed a "victim," no matter what the crime that led to the person's conviction (Hildebrandt, 2008).

Thus, the use of the term "victim of the NS regime" in this study is wider than implied by the definition employed by the Federal Republic of Germany in its Federal Law for the Recompensation for Victims of National Socialist Persecution (*Bundesgesetz zur Entschädigung für Opfer der nationalsozialistischen Verfolgung*, BEG). This definition holds that a "victim of NS persecution" has to have been persecuted because of political dissent against National Socialism, race, religion or personal beliefs and must have suffered harm through this persecution to body, health, freedom, property, personal assets, or to the person's professional or economical career (BEG, 2009). While this definition applies to most of the executed persons who were used for anatomical purposes, it does not apply for all.

German anatomical departments. The term "German anatomical departments" refers to all university-associated departments of anatomy that were located within the boundaries of Germany in 1943. Thus they include older and then newly created "German" universities in occupied territories in Strassburg (Alsace), Poznan (Posen, Poland), Prague (Czech Republic), Innsbruck, Vienna and Graz (Austria, Hildebrandt 2009a).

RESULTS

General Numbers of Manuscripts and "Materials" Used

The majority of the German language articles originated in Germany/Austria, the majority of the English language articles in the United Kingdom and in the United States.

TABLE 1. Frequency of Articles Overall (Total) and Number and Percentage (%) of Articles Naming "Material" From Bodies of Executed Persons (Exec) Published by German Anatomical Departments in German Language Anatomical Journals 1924–1951

	1924–1932		1933–1938		1939–1945		1946–1951		Overall	
	Total	Exec. [%]	Total	Exec. [%]	Total	Exec. [%]	Total	Exec. [%]	Total	Exec. [%]
Z Mikr Anat F	535	14 [3%]	318	22 [7%]	237	30 [13%]	46	-	1,136	66 [6%]
Z Zellf Mikr Anat	503	6 [1%]	451	4 [1%]	152	15 [10%]	71	4 [5%]	1,177	29 [3%]
Z Anat Entw	826	5 [0.6%]	382	6 [2%]	140	10 [6%]	78	7 [9%]	1,426	28 [2%]
Anat Anzeiger	874	2 [0.2%]	436	5 [1%]	219	11 [5%]	111	2 [2%]	1,640	20 [1%]
Verh Anat Ges	577	5 [1%]	317	4 [1.3%]	51	0	91	1 [1.3%]	1,036	10/23 [1%]
Gegenbaurs Mo J	273	1	223	2	118	3	41	1	655	7 [1%]
Erg Anat Entw	37	0	13	0	12	4 [33%]	-	-	62	4 [6%]
Z Morph Anthr	109	0	125	2 [2%]	55	0	17	0	306	2 [1%]
Total	3,734	33 [1%]	2,265	45 [2%]	984	73 [7%]	455	15 [3%]	7,438	166 [2.2%]

Z Mikr Anat F = Zeitschrift für mikroskopisch-anatomische Forschung; Z Zellf Mikr Anat = Zeitschrift für Zellforschung und mikroskopische Anatomie; Z Anat Entw = Zeitschrift für Anatomie und Entwicklungsgeschichte; Anat Anzeiger = Anatomischer Anzeiger; Verh Anat Ges = Verhandlungen der Anatomischen Gesellschaft; Gegenbaurs Mo J = Gegenbaurs Morphologisches Jahrbuch; Erg Anat Entw = Ergebnisse der Anatomie und Entwicklungsgeschichte; Z Morph Anthr = Zeitschrift für Morphologie und Anthropologie.

The eight German language anatomical journals studied published 7,469 articles in the time period from 1924 to 1951. The three English language anatomical journals presented 4,702 articles during the same time period. The articles included morphological and functional studies, reviews, and commentaries. The tissues used originated from humans, animals, and only rarely plants. Animal and human studies varied from experimental investigations on function and physiology to morphology, comparative anatomy, embryology and cell-biological research.

German and English language articles on human anatomy frequently omitted any explanation of the provenance of the human tissues used. "Materials" explicitly listed originated from: routine anatomical dissection in medical education, autopsies in pathological departments, surgical specimens, embryological specimens from gynecological departments and autopsies, historical collections, X-ray studies on living persons, anthropological studies on living and dead persons, volunteer living persons providing, e.g., biopsy material, and executed persons.

All journals published contributions not only from their home countries but also from other parts of the world including various European countries, the US, Japan, India, the Soviet Union, and South Africa. Very few manuscripts were written in languages other than German or English, notably Italian and French.

Number of Articles Reporting the Use of "Material" From the Executed

Table 1 lists the overall number of articles published in eight German language anatomical journals from 1924 to 1951 as 7,469 and the number of articles citing the use of "material" from bodies of the executed by German anatomical departments as 166 [2.2%] (see Appendix A), whereby 3 of the 166 were studies from departments of pathology. An additional 17 articles citing the use of tissues from the executed originated in other European countries, among them 7 from Switzerland, 4 from Austria before the "Anschluss" (annexation by NS Germany) in 1938, 2 from Estonia, 2 from Hungary, and 2 from Sweden (see Appendix B).

During the Weimar Republic, here: from 1924 to 1932, 33 of a total of 3,734 articles [1%] listed the use of the executed. In the early NS period from 1933 to 1938 the number rose to 46 out of 2,265 [2%], and increased again during the war years from 1939 to 1945 to a frequency of 73 out of 984 articles [7%]. After the war, from 1946 to 1951, the number was 15 out of 486 articles [3%]. In comparison, the British publication *Journal of Anatomy* presented 1,154 articles from 1924 to 1951, none of which mentioned the use of the executed. Similarly, the US-American journals *Anatomical Record* and *American Journal of Anatomy* published a total of 2,711 and 837 articles, respectively, with only one article in each journal mentioning the use of material from executed persons. Gillman from South Africa reported the use of "material" from

TABLE 2. Number of Articles Naming "Material" From Bodies of Executed Persons per German Anatomical Department, 1933–1951 (Chairmen in Brackets, see Hildebrandt, 2009a)

Leipzig	38	[Clara 1935–42, Dabelow 1943–1945]
Breslau	14	[von Eggeling –35, Blotevogel 1935–1945]
Königsberg	13	[Heiss]
Berlin	12	[Stieve 1935–1952]
Bonn	9	[Sobotta –35, Stöhr 1935–1945]
Würzburg	9	[Petersen –40, Elze 1940–1952]
Munich	5	[Mollier –35, Vogt 1935–1941, Clara 1942–1945]
Innsbruck	4	[Sieglbauer –46, Mathis Histology 38–45]
Tübingen	3	[Oertel –36, Wetzel 1936–1945]
Halle	3	[Stieve –35, Haller von Hallerstein –38, Nagel-45]
Heidelberg	3	[Kallius –35, Goerttler 35–45]
Cologne	3	[Veit –37, Boeker 38, Stadtmüller 39–45]
Frankfurt	3	[Pfuhl 35–38, Hirt 38–41, Schreiber 41–45]
Marburg	2	[Goepfert –34, Nauck 34–35, Zeiger 35–36, Becher, 36–40, Benninghoff 1941–1951]
Kiel	2	[Benninghoff –40, Freerksen 1940–1945]
Greifswald	2	[Peter –36, Hirt 36–38, Pfuhl 36–46]
Rostock	2	[Elze –36, Neubert 36–45]
Prague	2	[Grosser –45, Watzka Histology 37–45]
Erlangen	1	[Hasselwander, –45]
Vienna	1	[Pernkopf –45, Patzelt Histology-56]
Posen	1	[Voss –45]
Danzig	1	[Spanner –45]
Freiburg	1	[Möllendorff –35, Nauck 35–45]

bodies of "Bantu males" (Gillman, 1934) and Jones from Indiana studied the foot of a "young (22 years) executed criminal" (Jones, 1941; p 7).

The journal with the highest output of studies using "material" from the executed was the *Zeitschrift für mikroskopisch-anatomische Forschung* that was founded in 1924 under the editorship of Hermann Stieve. From its initiation on this journal printed more articles using "material" from the executed than any of the other journals, with 14 out of 535 [3%] from 1924 to 1932, 22 out of 318 from 1933 to 1938 [7%], and 30 out of 237 [13%] in 1939 to 1945; that is, it published nearly as many such articles as the other seven German language journals combined, with the exception of the postwar years.

Anatomical Departments and Authors

Table 2 lists the number of published articles naming "material" from bodies of executed persons per anatomical department in 1933 to 1951 as well as the chairmen of these departments during the time period. Twenty-three of the 31 German anatomical departments existing in 1943 (Hildebrandt, 2009a) published research on the executed. Six of

TABLE 3. Selected Authors of Articles Using the Bodies of the Executed and Number of Papers in Surveyed Journals 1924–1951

Clara, Max	10
Hayek, Heinrich v.	9
Wallraff, Josef	8
Stöhr, Philipp Jr.	6
Bargmann, Wolfgang	6
Schiller, Erich	6
Stieve, Hermann	5
Voss, Herrmann	4
Meyer, Richard	4
Ferner, Helmut	3
Herrlinger, Robert	2
Möllendorff, Wilhelm v.	2

them accounted for three quarters of all the articles. Max Clara's group in Leipzig took a clear lead with 38 publications, followed by Wilhelm Blotevogel's in Breslau with 14, Robert Heiss' in Königsberg with 13, Hermann Stieve's in Berlin with 12, Philipp Stöhr Jr.'s in Bonn with 9, and Hans Petersen's and Curt Elze's group in Würzburg with 9. The rest of the articles were divided between 17 other anatomical departments.

Table 3 lists a selection of the most prolific and/or postwar prominent authors of articles using the bodies of the executed and the number of articles they published from 1924 to 1951. These numbers do not include all the publications of the individual authors, but only those within the journals surveyed in the current study. Among the most productive authors were Max Clara (Winkelmann and Noack, 2010), Heinrich von Hayek, Wolfgang Bargmann, and Hermann Stieve.

Motivations for Use of "Material" From the Executed

Standard for healthy tissues before 1933.

Generally, bodies of the executed were preferred "material" for histological studies because the expected time of death was known, so the removal of tissues could be planned in advance and the "freshness" of the tissues could be ensured (Hildebrandt, 2008). Several authors mentioned the importance of using "fresh" material as a method to exclude artificial variations in results due to time-related postmortem changes in tissues. Hoepke addressed this problem in a 1928 study on sweat glands: "A great part of the differences of opinion [on the subject] surely originates in the fact that not always fresh material was available" (Hoepke, 1928; p 341; translation by author). Wallraff later reiterated this argument by referring to a high variability in findings due to different postmortem tissue removal times and mandated that cytological studies of human hypophyses should only be carried out on "*lebensfrischem Material*" (literally: fresh as in life, Wallraff, 1939; p 87). Other anatomists like Pfuhl, Stieve (1930), and Alverdes (1927) underlined the value of obtaining "*lebenswarme Organe*" (literally: organs warm as in life) which, Pfuhl stated, "could only be procured from executed persons" and

under "often difficult conditions" (Pfuhl, 1927; p 209). Stieve referred to "*lebenswarm*" processed testes of men executed by decapitation or shooting in one of the first articles of his new journal in 1924 (Stieve, 1924; p 495). Also, it was felt that the immediate processing of "fresh" organs was the one method that led to the highest quality anatomical preparations for further investigation (Möllendorff, 1927; p 442; Spee, 1928; p 308). Thus, anatomists considered tissues from the executed as the normal control, as "*Normalfälle*" (normal cases, Gagel and Bodechtel, 1929; p 132) or "*Vergleichsorgan*" (organ for comparisons, Pfeiffer, 1928; p 499), and as a standard for healthy tissues (Stieve, 1931; p 214). Mall regretted not having had "fresh material from decapitated persons" available in an earlier study of the lymphatics, but was glad to have gained access to this "fresh material" later (Mall, 1933; p 525 and 542). Other German, Austrian and Hungarian manuscripts published between 1924 and 1932 also referred explicitly to the use of "fresh" or "*lebenswarm*" tissues from the executed (Heidenhain und Werner, 1924; p 558; Patzelt, 1926; p 372; Hartmann and Bennett, 1927; p 622; Röhlich, 1932; p 21).

Obtaining tissues from the bodies of the executed was difficult during the Weimar Republic due to the scarcity of executions. Thus this "material," which was thought of as an ideal standard, became very precious. Gagel and Bodechtel complained that procurement of "normal cases, for example executed persons, is very difficult, nearly impossible" (Gagel and Bodechtel, 1929; p 132). Accordingly, this important but rare "material" was shared between colleagues, and authors acknowledged the generous help from other anatomists. In 1931, Bargmann reported the use of 14 kidneys, which were mostly organs obtained from executed persons and were "kindly made available" by his colleagues Heidenhain (Tübingen), Henneberg (Giessen), Peter (Greifswald), Petersen (Würzburg), Volhard (Frankfurt), and Fischer-Wasels (Frankfurt) (Bargmann, 1931; p 85). In 1933, Volkmann, who worked at this time in Switzerland, thanked his Berlin colleague Kopsch for sharing "material" from the brain of a "decapitated person" with him (Volkmann, 1933; p 219). By the time when executions had become more frequent in 1937, Bachmann still thanked his boss Max Clara for the "valuable gift" of "adrenal glands from three executed persons" (Bachmann, 1937; p 436).

New "Opportunities" after 1933. As the numbers of executions rose after 1933, so did the use of the bodies of NS victims for anatomical purposes. Anatomists seized the "opportunities" given by access to this greater number of bodies and seemed to discover never before described advantages of the "material," advantages that went beyond its value as a standard for healthy tissues. Meyer explained how the direct injection of heads of three decapitated victims allowed the extraction of epiphyses from brains that avoided these organs' frequent destruction that was deplored by authors who used conventional "material" (Meyer, 1936; p 87). Stöhr recognized early on that the new "material" now allowed investigations that had been difficult if not impossible to perform

until then. In a study on ganglia cells in 12 adrenal glands from executed persons, he explained that there were hardly any data available on the subject in the literature due to the previously existing lack of access to "fresh material" (Stöhr, 1935). Clara also extolled the virtue of working with adrenal glands and other organs that were processed "as soon as possible postmortem" (Clara, 1936; p 225; Clara, 1937; p 656). In a study on arteries associated with joints and the influence of the contraction of musculature on these vessels, Hayek used his direct access to freshly executed NS victims in August 1934 and February 1935 to elicit contraction of the person's musculature by injection immediately postmortem (Hayek, 1935; p 26). Weissberg described the advantage of using colon specimens from bodies that were processed immediately after execution compared to conventional material and called these specimens "quasi fixed intravitaly" (Weissberg, 1937; p 739). By 1940 Hayek saw it as a given that "of course the lungs of younger executed persons" were "most suitable" for his investigation of pulmonary tissues in situ (Hayek, 1940; p 405).

Clara recognized the unique opportunity presented by the fact that his "material" hailed from imprisoned victims of the NS regime. He performed at least one published experiment on a living prisoner, to whom he administered Vitamin C for 5 days before the execution date in order to study postmortem the Vitamin C distribution in nervous tissue (Clara, 1942; Winkelmann and Noack, 2010). He shared the organs of this victim with his pupils Lothar Heckel, Rolf Müller, and Erich Schiller (Heckel, 1942; Müller, 1942; Schiller, 1942).

By 1935 "material" from the executed had become plentiful in some departments of anatomy, e.g., in Königsberg (Sperling, 1935; p 242), and by 1943 anatomical institutions in Jena and Innsbruck ran out of storage space and had to refuse acceptance of more bodies (Bussche, 1989; p156ff). Up to 1933 authors reported only rarely on the use of "material" from more than one or two executed persons (exceptions: Stieve, 1924, 1931; Bargmann, 1931). However, especially during the war years, anatomists regularly published studies on large series of "material" from the executed with as many as 24 (Wallraff and Bednara-Schöber, 1943) or 38 bodies (Schiller, 1942). The departments with the highest number of publications also appear to have had the largest collections of "material" from the executed, notably Leipzig, Breslau, Königsberg, Berlin, and Bonn (see Table 2 and Appendix A).

One of the most obvious changes that occurred after 1933 was the fact that bodies of executed women became available, as no women were executed during the Weimar Republic. Several investigators used "material" from the bodies of executed women together with those from male victims for larger study series, e.g., Erich Schiller in his research on the fat content of livers (Schiller, 1943) and Sigfried Zitzlsperger in his study on the histology of the human heart (Zitzlsperger, 1943). Hermann Stieve, who had been working on the influence of psychological stressors on reproductive organs in animals and men since the 1920s, realized the "opportunities"

that the legal practices of the NS regime provided in giving him for the first time access to the bodies of executed women. He used them for investigations of the effect of psychological stress on the reproductive organs, whereby he defined imprisonment as a chronic stressor and the announcement of the execution date as an acute stressor (Stieve, 1942a; 1943; 1952).

After 1945: Unpublished results and new data from old "material." This study identified 15 articles using "material" from the executed that were published after the war between 1945 and 1951 (see Appendix A). It is highly likely that most of this "material" stemmed from the NS period based on the identity of the authors and the sources listed. Erich Schiller published three articles on large series of "apparently healthy" individuals, who "died of a sudden death" (Schiller, 1949a,b, 1950). Schiller referred to his former employment in Leipzig, and the "material" from the 1949 articles seems to match the one from Schiller's 1942 study mentioned above. Philipp Stöhr Jr. also authored three articles on "material" from the executed, whereby the study on the histology of ganglia cells expressly used the tissues from his 1943 investigation, i.e., "material" from 19 executed persons (Stöhr, 1943, 1948). Similarly, Hayek published a study on lung tissue in 1950 (Hayek, 1950), in which he declared to have used "material" from 1941, which originated from executed young males (Hayek, 1941). Robert Herrlinger's articles on the spleen (Herrlinger, 1947, 1949) definitely hailed from his time in Poznan, as his bibliographer listed the 1947 article as having been published first at the "*Posen Akademie*" (academy of Poznan) in 1944 (Feiner, 1970). Herrlinger described having had bodies available 40 to 80 seconds after death and having procured blood from pulsating carotids that were close to an opened esophagus (Herrlinger, 1947; p 228). The only investigation that may have used not only "material" from NS victims but also from persons who were executed after the war may have been the study on adrenal glands by Laeschke in 1947, who expressly referred to having used the same "material" as Stieve. In 1946 Stieve described a study on adrenal glands and reproductive organs of 421 healthy men and women "who had died suddenly through external violent forces and were dissected in the first hours after death" (Stieve, 1946). The body registry of the Berlin anatomical department showed entries of the acceptance of bodies of the executed until the year 1949 (Winkelmann, 2008).

Information on Identity of Executed Persons

Many articles reporting the use of "material" from bodies of the executed stated the number of bodies used as well as the gender and age of the person. Up to 1937 the bodies of males exclusively were used, from then on female victims also became the object of anatomical research (see Appendix A, columns "Number of bodies" and "ID"). The age range until 1932 was 18 to 44 years, and from 1933 to 1951 the

range was 17 to 75 years. There was rarely more information available with notable exceptions: investigations by Clara and his group, Stieve's studies on the influence of psychological stressors on human reproductive organs and a similar work by Karl Saller.

Karl Saller's 1930 investigation on testes from a "white European" murderer quoted extensively from the court files: data from the psychopathological evaluation, details of the murder, birth and execution dates as well as length of imprisonment. Saller probably included this information as a possible explanation for the altered histology of the person's testicular tissue (Saller, 1930). Similarly, Stieve had access to court files and other sources (Winkelmann and Schagen, 2009) when he reported information on the personal background of the executed persons whose organs he was investigating (Stieve, 1924; p 500ff; Stieve, 1942a,b, 1943, 1944, 1946). Based on this personal information he had to have noticed early on that he was dealing with a new type of prisoner who ended up being executed in NS Germany. Even though he knew that these victims were rarely murderers he still maintained even in his postwar publications that they had committed "serious, common crimes" (Stieve, 1952; pIII).

In 1937 Clara and his pupils started the use of the first two to three letters of a victim's last name as identifiers for their "material" (Clara, 1937, 1942; Michaelis, 1938; Schulze, 1938; Kretschmar, 1940; Schiller, 1942; Heckel, 1942; Müller, 1942; see Appendix A). Some of these labels were listed in several articles, illustrating the fact that the group shared tissues procured from the same victim.

DISCUSSION: "PEOPLE WOULD LIKE TO BE ALLOWED TO FORGET MUCH OF THIS [...]"

Use of Bodies of the Executed in German Anatomy

A systematic study of German language anatomical journals from the years 1924 to 1951 shows that published research using "material" of the bodies of the executed was not very common with 2.2% (166 out of 7,438) of overall publications. However, this research was not only performed, as previously reported, during the Third Reich and for some years thereafter (Aly, 1987, 1994; Aumüller and Grundmann, 2002; Hildebrandt, 2009b), but also before 1933. In fact, the use of tissues "freshly" procured immediately after execution was seen as an ideal standard, a guarantee for qualified histological investigations recognized by German and other European anatomists. This standard was fully established before the new developments under the NS legislation. After 1933, German anatomists discovered a whole new array of "opportunities" for their research given the increased supply of bodies of the executed. They now had easy access to large numbers of bodies, including women, which provided them with rare and delicate "materials" like hypophyses, adre-

nal glands, and reproductive organs. In addition, there is evidence that three anatomists used living victims of the NS regime for experiments and after their execution performed postmortem investigations: Max Clara in Leipzig (Clara, 1942), Johann Paul Kremer in Auschwitz and August Hirt in Natzweiler (Hildebrandt, 2009a,b,c). After the war, German anatomists clearly continued using their collections of specimens acquired during the NS regime for new scientific questions. They also published data that had been gathered during the war years and had not yet been printed due to the confusion of the time. The current study only explored publications until the year 1951, but it is known from other medical disciplines, e.g., the neuroanatomical studies by Heinrich Gross, that "material" hailing from NS victims was used as late as 1978 (Neugebauer, 1997; Spann, 1999; Czech, 2002). Thus further studies of the postwar literature still need to be done. The problem of the existence of "material" from the NS period in anatomical collections after the war is one of the many questions that have been discussed controversially in the German public since the 1980s (Weindling, 2012).

Future Work: Identification of Victims

The current study has shown that some publications contain personal information on the victims whose bodies were used for dissection. This can be compared with data available on the persons who perished in specific execution chambers that were known to deliver bodies to the anatomical institute in question (Waltenbacher, 2008). At this point biographic information is available for some of the persons executed in Berlin Plötzensee and used by Hermann Stieve, and for persons who had been executed in Dresden and used for research by the Leipzig group of Max Clara. After the war Stieve handed a list with names, birth, and execution dates of persons whose bodies he had used for research during the Third Reich to the Soviet occupying forces (Federal archives Berlin, file number: BA Berlin, Ministerium der Justiz, DP1/6490, f6). In Dresden, Dr. Birgit Sack, director of the Gedenkstätte Münchner Platz Dresden, the memorial for the place of execution in Dresden (Haase and Sack, 2001), has compiled a list of information on the victims of execution. This Dresden list contains names, nationality, dates of birth and execution, place of birth, profession, reason for verdict and more (Sack, 2011). Other authors have previously pointed out the possibility of matching Stieve's information with the names of prominent victims (Winkelmann and Schagen, 2009; Zimmermann, 2007; Klee, 2004). However, while Klee claims to have definitely identified Cato Bontjes van Beek, member of the dissident group "Red Orchestra," as a victim mentioned in Stieve's 1946 article (Stieve, 1946; Klee, 2004; p108), there are several other 22-year-old women on Stieve's list who might also fit Stieve's description and who were not mentioned by Klee. It will be necessary to collect all available information on each victim before they can be identified conclusively.

Comparison With Other Countries

It is hard to explain why anatomists who published in English language journals never mentioned the use of "material" from bodies of the executed. The two exceptions among a total of 4,702 articles were a study by J. Gillman from the University of Witwatersrand in South Africa, who reported on thyroid glands from "executed Bantu males" in *The Anatomical Record* (Gillman, 1934; p 211, 212). The other article was an investigation into the mechanics of the human foot by Russell J. Jones from Indiana, who procured "material" from "the body of a young (22 years) executed criminal" (Jones, 1941; p 7). Two questions have to be asked: first, did Anglo-American anatomists truly not use "material" from the executed or did they simply see no need to mention this fact explicitly? And second, how did they fare without the standard and other "opportunities" so valued by their German colleagues?

As to the first question: while none of the English language authors explicitly mentioned the use of bodies of the executed, it seems doubtful that the many studies on large numbers of unclaimed bodies from the anatomical dissection laboratories of medical schools in the US did not include one or the other executed person. Many US states at the time had legislation for capital punishment and performed executions. Also, while the use of the bodies of the executed for anatomical purposes was expressly forbidden in the UK since the Warburton Act in 1832, countries of the British Commonwealth had not all passed similar legislation by the 1930s (Hildebrandt, 2008). Thus it is quite possible that executed persons were among the number of unclaimed bodies used for anatomical dissection. At the same time, this apparent lack of the importance of mentioning bodies of the executed as a special source of tissue gives an answer to the second question: anatomists who published in English language journals (and there was little overlap as to who published in English language journals and who published in German language journals) apparently did not miss the standard and other "opportunities" provided by "material" from the bodies of the executed. They investigated similar questions as their German colleagues, but often did so with routine postmortem and surgical material or in animal models. For example, William M. Shanklin from the American University of Beirut, Lebanon, performed a series of studies on hypophyses from autopsy material (Shanklin, 1951) and Rasmussen from Minnesota investigated 111 normal male adult hypophyses from cases of "sudden and usually accidental death" (Rasmussen, 1928). Thus it is at least debatable whether there was a true scientific need for this standard.

Just as US and UK authors did not mention the use of "material" from the executed, neither did anatomists who worked in the Soviet Union. Until 1933 German language journals frequently published articles by Soviet authors, many of them studies of large numbers of bodies. A typical example was the research by A. Chanamirjan from the North-Ukrainian State University in Rostow/Don, who investigated 260 bodies of fetuses, neonates, and adults (Chana-

mirjan, 1929). It has to be assumed that the bodies in these large-scale studies were unclaimed and, given Soviet politics at the time (Snyder, 2010), may have included bodies of executed persons. Again, Soviet anatomical research thrived without the standard valued by German anatomists. E. Stankiewitsch from the Belarus State University in Minsk addressed this problem in a scientific manner: he stated the great difficulty of obtaining fresh human material as "cases of dissection immediately after death occur rarely" (Stankiewitsch, 1934; p 82). Thus he investigated the question of time dependence of postmortem cell deterioration in neuronal cells from dogs. He found that the cells remained structurally intact until 24 hours after death and thus saw the use of "older" postmortem tissues justified.

It should be noted that in terms of the ethical provenance of anatomical "material," the tissues from the executed were not the only problematic source of human tissues found in the current study. William Montagna and James B. Hamilton from Brown University in Rhode Island and State University of New York published an investigation of the distribution of lipids in human testes in 1951. They reported: "The materials used were obtained from 11 total orchidectomies of men from 18 to 38 years of age. All of these men were mentally deficient and sex misdemeanants" (Montagna and Hamilton, 1951; p 636). These "mentally deficient" men had most likely undergone involuntary but at the time legal surgical castration. Similarly, Warren Andrew and Nancy V. Andrew from universities in Missouri and Washington D.C. were grateful for sharing V. Cowdry's "excellent human biopsy material" and explained: "The specimens were excised from volunteers, most of them feeble-minded but otherwise normal [...]" (Andrew and Andrew, 1949). The concept of a "feeble-minded volunteer" is an oxymoron to modern thinking.

Difference in Attitude

What can be the possible explanations for the difference in attitude toward working with "material" from the executed between German and Anglo-American anatomy? Anatomists from both backgrounds had certainly been used to working with bodies from the executed throughout several centuries of scientific anatomy (Hildebrandt, 2008). Historical anatomical collections in the UK, the US, and Germany held specimens and models from the bodies of executed persons (Worden, 2003; Chaplin, 2005; Grundmann and Aumüller, 2012). Maybe it was simply a tradition of German language articles to expressly mention "*Hingerichtete*" (executed persons). However, this would not account for German anatomists' view of these tissues as a gold standard, an attitude that was not shared in other parts of the world. At this point there is not enough information to explain why anatomists trained in the German tradition felt the need to refer to this standard before 1933 and were not content with available alternatives from surgical and autopsy specimens or animals. However, German anatomists' familiarity with the use of the executed for published research

before 1933 may explain why they so easily and often gladly accepted the "opportunities" opening up to them through the execution practices of the NS regime. In fact, they felt entitled to the use of these bodies, as common complaints from anatomists to authorities in the 1930s and even after the war show (GDR Ministry of the Interior, 1950; Noack and Heyll, 2006). In 1938 Stieve had called it "his duty" to make use of this "*Werkstoff*" in every way (Zimmermann, 2007). Hans Elias, who had fled Germany in 1933, received a letter from his colleague and friend Stieve after the war, in which Stieve reported on the NS period as having been hard, but a productive period for anatomists as they were able to receive a plentiful supply of completely fresh bodies of healthy persons that made for a good dissection material (Hildebrandt, 2012a). In the first years after the war German anatomists' attitude only changed insofar as they did not explicitly mention "material" of executed persons any more but referred to tissues from persons who "died a sudden death" (e.g., Schiller, 1949a,b).

Relevance for Evaluation of History of Anatomy in the Third Reich

While the fact of the use of bodies of the executed as a quality standard in German anatomical research before 1933 may explain the anatomists' eager acceptance of research on NS victims, it can not serve as an exculpation for their doing so. They certainly knew or could have known about the identity of these victims and either did not care about them or tried to suppress their knowledge or developed an abnormal clinical detachment rationalized by their own sense of duty (for an introductory debate of the ethics of anatomy in the Third Reich, see Hildebrandt, 2009c). They have to be held responsible for their actions, or, as the German Jewish emigrant and anatomist Hans Elias put it: "Every German, whether Jew or Christian, has to account for his actions between 1933 and 1945" (Hildebrandt, 2012a).

Knowing about this familiarity of German anatomists with the bodies of the executed even before 1933 puts a different perspective on previous judgments about individual anatomists whose involvement in such research led to the first public discussions on the subject. In 1987 Götz Aly alerted a wider audience to Robert Herrlinger's research on the executed that was published after the war (Aly, 1987, 1994). Herrlinger and his boss Hermann Voss were well known by generations of medical students as authors of a popular manual of anatomy. Robert Herrlinger published several reports on the histology of the spleen based on work that he had performed on blood and spleens extracted from eight victims "three minutes postmortem" in the execution chambers of Poznan in 1943 (Herrlinger, 1947, 1949; p 342). The public reaction (e.g., this author's) to these details and Aly's report on Voss' hate-revealing diary was one of deep consternation and a feeling of betrayal by these admired teachers. While the facts of Voss' and Herrlinger's actions in Poznan still remain the same, at least Herrlinger's work has to

be viewed within the continuum of the development of German anatomists' attitude toward the bodies of the executed. From his point of view, he was following "best practices" for the procurement of human spleen tissue of the highest quality. The spleen was among the many organs that were considered to mandate investigation in the freshest state possible due to their tendency to fast postmortem deterioration. Several authors before Herrlinger explicitly reported the use of "fresh material" from the spleen of the executed, among them Wolfgang Bargmann from Leipzig and Karl Röhlich from Hungary (Hartmann and Bennett, 1927; Jäger, 1929; Röhlich, 1934; Herrath, 1935; Bargmann, 1941; Harting, 1944). However, none of these other authors' articles were ever criticized in the same manner. Again, this shift of perspective can and should not be used as an exculpation, but shows the need for a closer look at the background of a phenomenon like the use of the executed to understand its meaning in terms of the ethics of individual anatomists.

Herrlinger is at this point the only anatomist who is said to have regretted his work after the war. He is also the only one who was involved in a controversy because of his publications on the executed (Aly, 1987, 1994). However, all other anatomists listed in Table 3 and who performed research on the executed had thriving postwar careers in Germany and Austria, with the exception of the active National Socialist Max Clara (Winkelmann and Noack, 2010). Heinrich von Hayek became chairman of anatomy in Vienna, Philipp Stöhr Jr. continued as chair in Bonn, Stieve remained chair in Berlin, Voss had a chair in Jena, Helmut Ferner in Homburg, Heidelberg and Vienna, Josef Wallraff was an anatomist in Munich and Erich Schiller continued to work on anatomical topics (Staubesand, 1998; Hildebrandt 2009a, c; Winkelmann and Noack, 2010). Wolfgang Bargmann became possibly the most prominent German anatomist after the war and was highly respected internationally for his work on neurosecretion as well as for his efforts to bring German anatomy back in contact with its colleagues worldwide (Fleischhauer, 1979; Hildebrandt, 2012). The history of their science in the first half of the twentieth century was not openly discussed by German anatomists until the beginning of the twenty-first century (for a historiographic background see Hildebrandt, 2009a). More research into the lives of these anatomists is necessary to understand their actions during and after the war.

CONCLUSION

What happened in German execution chambers during the Third Reich was horrific and the exploitation of the newly dead by anatomists was shameful and without excuse from a modern ethical point of view. The new insights presented here show that German anatomists' familiarity with the use of the executed even before 1933 may have contributed to the ease with which they accepted the "opportunities" presented to them by the nearly unlimited access to bodies of the executed between 1933 and

1945. German postwar anatomy was built in part on the bodies of NS victims. All anatomists who represented German anatomy after the war, independent of their political convictions, had been complicit in this appalling work in teaching on bodies of the executed and many of the most active ones also in their research. Personal involvement may have contributed to German anatomy's long resistance against a public evaluation of its history during National Socialism (Hildebrandt, 2006; Seidelmann, 2012). This attitude has finally changed with the first German symposium on the subject held by the Anatomical Society in 2010 and a special issue of the *Annals of Anatomy* on the history of anatomy in National Socialism (Hildebrandt, 2011, Hildebrandt and Redies, 2012). In addition, the Anatomical Society has placed a chapter on this history in the celebratory issue for its 125-year anniversary, which includes a memorial to the victims, i.e., the persons whose bodies were used for anatomical purposes and the anatomists whose careers were disrupted through NS policies ("*Jubiläumsausgabe*," Hildebrandt and Aumüller, 2012; Hildebrandt, 2012). Further work is necessary to identify the victims whose bodies were used for anatomical research. If, according to Timothy Snyder, the National Socialists turned people into numbers, the German anatomists of the time turned them into tissues and cells. To paraphrase Snyder: "It is for us scholars, to seek these numbers [tissues and cells] and put them into perspective. It is for us humanists to turn the numbers [tissues and cells] back into people" (Snyder, 2010; p 408).

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APPENDIX A: ARTICLES REPORTING RESEARCH ON "MATERIAL" FROM BODIES OF THE EXECUTED 1924-1951

Journal	Year	Author	Department	Title/topic	No. bodies	ID
ZAE 72(3-6):556-608	1924	Heidenhain, M	Tübingen	Über die Epithelien des Corpus epididymis beim Menschen	2	m
ZMAF 1:149-152	1924	Stieve, H	Halle	Untersuchungen über die Wechselbeziehungen zwischen Gesamtkörper und Keimdrüsen	Part of 34	m
AA 60:309-313	1925	Lubosch, W	Würzburg	Der Gefäßnervenkanal in der Kniekehle	1?	m
ZAE 75(3-4):319-360	1925	Neuffer, E	Tübingen	Der Bau der Papillae filiformes der menschlichen Zunge	?	19-30y,?
ZAE 76(1-3):142-158	1925	Kopsch, Fr	Berlin	Das Binnengerüst, Endopegma, in den Zellen der Tränendrüse des Menschen und der Epidermis der Cyclostomen	1	22y/m
ZAE 76(4-5):421-462	1925	Schulze, W	Würzburg	Untersuchungen über die Capillaren und postcapillären Venen lymphatischer Organe	1	?
Z Zellf 2(2):203-241	1925	Marcus, H.	Munich	Über den feineren Bau des menschlichen Herzmuskels	1	m
Z Zellf 2(5):783-862	1925	Benninghoff	Kiel	Form und Bau der Gelenkknorpel in ihren Beziehungen zur Funktion	1	m
ZMAF 5:221-284	1926	Kopsch, Fr.	Berlin	Das Binnengerüst in den Zellen einiger Organe des Menschen	2	22y/m, 44y/m
ZMAF 6:191-240	1926	Kasche, F	Jena Pathologie	Die Histologie der Pars intermedia der Hypophyse beim erwachsenen Manne	1	m in his 30s
ZMAF 10:207-224	1927	Pfuhl, W	Greifswald	Form und Lage der Sternzellen in der Leber eines 22-jährigen gesunden Mannes	1	m
Z Zellf 5(5):620-628	1927	Hartmann, A	Munich	Über das Balkengerüstwerk in der menschlichen Milz	1	36y/m
Z Zellf 6(3):441-450	1927	Möllendorff	Kiel	Einige Beobachtungen über den Aufbau des Nierenglomerulus	1	m
ZMAF 11:172-180	1927	Alverdes, K	Königsberg	Der Zentralgeisselapparat der Epithelzellen im Rete testis des Menschen	1	41y/m
GMJ 60: 1-46	1928	Kuhn, JK	Marburg	Die Topographie und Funktion der Halsfaszien, des Tractus omodilvaris und das Spatium interfasciale suprasternale	1	24y/m
VAG 37:65-70	1928	Quast, P	Bonn	Zur Histologie der Zirbeldrüse des Menschen	(Material as VAG38:209-211, 1929)	
VAG 37:124-131	1928	Neubert, K	?	Zur Morphologie der Talgdrüsen	1	m
VAG 37:302-306	1928	Spee, F	Kiel	Zur Vorweisung von Präparaten menschlicher Lungen, die in natürlicher Spannung konserviert wurden	?	?
ZAE 87(3-4):319-353	1928	Hoepke, H	Heidelberg	Der epidermale Teil des Ausführungsganges der ekkrinen Schweißdrüsen	1	m

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Journal	Year	Author	Department	Title/topic	No. bodies	ID
ZMAF 15:472-598	1928	Pfeiffer, E	Halle	Die Entwicklung der keimleitenden Wege des Mannes	1	23y/m
VAG 38:209-211	1929	Quast, P	Bonn	Mikroskopische Präparate zur Histologie der Zirbeldrüse des Menschen	?	20.5y/m;?
VAG 38:211	1929	Petersen, H	Würzburg	Präparate vom Anus eines Hingerichteten	1	m
Z Zellf 8(3):578-601	1929	Jäger, E	Leipzig Pathologie	Die Gefäßversorgung der Malphigischen Körperchen in der Milz	1	38y/m
AA 69:239-243	1930	Saller, K	Göttingen	Das Vorkommen von Steinchen im menschlichen Hoden	1	35y/m
ZMAF 19:557-601	1930	Stieve, H	Halle	Die Harnröhrenschleimhaut des Mannes	Part of 11	18-35y/m
ZMAF F 22:73-79	1930	Alverdes, K	Königsberg	Die Beziehungen der Blutgefäße zum Epithel im Vestibulum nasi des Menschen	1	41y/m
ZMAF 23: 335-433	1930	Quast, P	Bonn	Beiträge zur Histologie und Cytologie der normalen Zirbeldrüse des Menschen I. Das Parenchympigment der Zirbeldrüse	4	25-40y/m
ZMAF 24:38-100	1931	Quast, P.	Bonn	Beiträge zur Histologie und Cytologie der normalen Zirbeldrüse des Menschen. II Zellen und Pigment des interstitiellen Gewebes der Zirbeldrüse	(Same as 1930)	
ZMAF 24:213-234	1931	Stieve, H	Halle	Verhornungserscheinungen im Epithel der menschlichen Speiseröhren- und Scheidenschleimhaut	11	m
Z Zellf 14(1/2):73-137	1931	Bargmann, W	Frankfurt	Über Struktur und Speicherungsvermögen des Nierenglomerulus	14	22y/m
ZMAF 28:158-182	1932	Voss, H	Leipzig	Die Beobachtungen eines drüsenartigen Lumens mit Sekret in der Nebennierenrinde des Menschen	1	m
ZMAF 28:565-577	1932	Berg, W	Königsberg	Über den Übertritt von Kernstoffen in das Cytoplasma	1	43y/m
ZMAF 28:609-643	1932	Alverdes, K	Königsberg	Die apokrinen Drüsen im Vestibulum nasi des Menschen	1	41y/m
ZAE 100(4):521-558	1933	Mall, GD	Tübingen	Über den Wandbau der mittleren und kleineren Lymphgefäße des Menschen	1	?
ZAM 34:436-458	1934	Wagenseil, F	Schanghai	Bemerkungen über den innersekretorischen Apparat der Chinesen	?	
VAG 42:197-209	1934	Lanz, T	Munich	Der Samen Speicher des Menschen	1	31y/m

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Journal	Year	Author	Department	Title/topic	No. bodies	ID
AA 78:321-331	1934	Fujita, T	Breslau	Die motorische Innervation der genuinen Aurikularmuskeln beim Menschen, nebst Bemerkungen zu ihrer phylogenetischen Herkunft	1	25y/m
AA 79:288-292	1934	Palme, F	Prague	Über ein verlagertes Epithelkörperchen des Menschen am Paraganglion supracardiale	1	30y/m
ZMAF 35:146-180	1934	Berg, W	Königsberg	Über den mikroskopisch nachweisbaren Übertritt von Stoffen aus dem Cytoplasma in den Kern der Leberzelle	2	18y/m;43y/m
ZMAF 34:517-528	1934	Meyer, R	Königsberg	Über den histologischen Nachweis von Eisen in normalen Leberzellkernen	2	24y/m;43y/m
ZAE 104(5):475-490	1935	Stöhr, Ph.	Bonn	Zur Innervation der menschlichen Nebenniere	12	20-26y/?
ZAE 105(1):25-36	1935	Hayek, H	Rostock	Das Verhalten der Arterien bei Beugung der Gelenke	2?	1m,?
ZMAF 37:257-324	1935	Lanz, Walltraff	Munich	Der Nebenhodenschweif des Menschen als Samenspeicher	1	31y/m
ZMAF 37:389-406	1935	Herrath, E	Cologne	Vergleichend-quantitative Untersuchungen an acht verschiedenen Säugermilzen	?	?
ZMAF 38:241-252	1935	Sperling, G	Königsberg	Die Form der apokrinen Haardrüsen des Menschen	?	42y/m
ZMAF 38:241-252	1935	Körner, F	Leipzig	Über die direkte Teilung der Herzmuskelkerne	2	23y/m;42y/m
ZMAF 38:644-659	1935	Berg, W	Königsberg	Über Fett- und Pigmenteinschlüsse in den Leberzellkernen des Menschen	1	34y/m
GMJ 78:237-285	1936	Niessing, K	Kiel	Über systemartige Zusammenhänge der Neuroglia im Grosshirn und über ihre funktionelle Bedeutung	3	?
VAG 44:134-137	1936	Becher, H	Marburg	Über die Wirkung und Bedeutung regulatorischer Einrichtungen an der arteriola afferens der menschlichen Niere	?	m
AA 82:1-20	1936	Froriep, E	Tübingen	Zur Frage der SERTOLI'schen Zellen	1	27y/m
ZMAF 39:105-115	1936	Boenig, H	Berlin	Beiträge zur Kenntnis der Vasa efferentia in der menschlichen Niere	1	34y/m
ZMAF 39:231-242	1936	Clara, M	Leipzig	Über das argyrophile Gewebe ("Gitterfasern") in der menschlichen Bauchspeicheldrüse	4	30-45y/m; 42y/m
ZMAF 40:29-56	1936	Körner, F	Leipzig	Über die Verknüpfung der Muskelfasern des Herzens durch gewisse Bindegewebsfasern des Perimyrium internum	1	23y/m
ZMAF 40:147-280	1936	Clara, M	Leipzig	Vergleichende Histobiologie des Nierenglomerulus und der Lungenalveole	?	30y,42y, 39y, all m
ZMAF 40:381-401	1936	Speer, M	Leipzig	Über die Verteilung der albuminösen und mukösen Anteile in der Glandula submandibularis und in der Glandula sublingualis des Menschen	3	39y,30y, 30y all m

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Journal	Year	Author	Department	Title/topic	No. bodies	ID
ZMAF 40:455-473	1936	Schmidt, M	Königsberg	Die mechanische Bedeutung des adventiellen Bindegewebes an den mittelgrossen Gefässen	?	?
Z Zellf 25(1):83-98	1936a	Meyer, R	Königsberg	Über den morphologisch fassbaren Kernstoffwechsel der Parenchymzellen der Epiphysis cerebri des Menschen	3	23y,24y,31y/m
Z Zellf 25(1):173-180	1936b	Meyer, R	Königsberg	Das Verhalten mehrer nucleolärer Blasen im Kernstoffwechsel der Pinealzellen des Menschen und die Entstehung der Kernfalten	3	(same as 1936a)
Z Zellf 25(2):221-235	1936	Clara, M	Leipzig	Über die physiologische Regeneration der Nebennierenzellen beim Menschen	4	m
Z Zellf 25(4):605-613	1936c	Meyer, R	Königsberg	Die Entstehung des Paranechympigmentes in der menschlichen Epiphysis cerebri	3	(same as 1936a)
ZAM 36:39-150	1937	Wagenseil, F	Schanghai/Bonn	Untersuchungen über die Muskulatur der Chinesen	6	m
ZAE 107(4):427-460	1937	Winterstein, J	Halle	Über die Abscheidung von Hypophysenwirkstoffen auf dem Arterienwege im Rahmen einer periodischen Tätigkeit der Hypophyse	3	32y,35y,38y;1f,2m
ZAE 107(6):738-781	1937	Weissberg, H	Cologne	Beitrag zur Morphologie des menschlichen Dickdarms	?	21y/m
ZMAF 41:131-150	1937	Körner, F	Leipzig	Über Drosselvenen im Schwellgewebe der Nasenschleimhaut	1	30y/m
ZMAF 41:321-347	1937	Clara, M	Leipzig	Zur Histobiologie des Bronchialepithels	?	?
ZMAF 41:433-446	1937	Bachmann, R	Leipzig	Über die Bedeutung des argyrophilen Bindegewebes (Gitterfasern) in der Nebennierenrinde und im Corpus luteum	3	?
ZMAF 41:453-468	1937	Krüger, O	Greifswald Pathologie	Versuche zur Fixierung des Funktionszustandes der Hauptstücke der menschlichen Niere und zur Bedeutung der Kuppenbläschen der Epithelien	1	24y/m
ZMAF 42:418-432	1937a	Voss, H	Leipzig	Vergleichende Untersuchungen über den Aufteilungsgrad der kontraktilen Masse in den Skelettmuskeln	?	?
ZMAF 42:509-524	1937b	Voss, H	Leipzig	Untersuchungen über Zahl, Anordnung und Länge der Muskelspindeln in den Lumbricalmuskeln des Menschen und einiger Tiere	4	30-50y, ?
Z Zellf 25(5):655-693	1937	Clara, M	Leipzig	Über das Vorkommen von Atraktosomen in den Schleimzellen der menschlichen Drüsen	8+	30yKo, 40yFa

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Journal	Year	Author	Department	Title/topic	No. bodies	ID
GMJ 81:158-186	1938	Schreiber, H	Frankfurt	Zur Entstehung der Längsgewölbe des menschlichen Fusses	2	20y/m; 22y/m
VAG 46:360-365	1938	Winterstein, J	Halle	Über hassalähnliche Körperchen an den Arterien der Hypophyse	?	?
VAG 46:394-401	1938	Gehlen, H	Heidelberg	Neuere Auffassungen über die Retraktionskraft der Lunge und ihre anatomischen Grundlagen	?	?
ZAE 108(3):337-355	1938	Hass, E	Munich	Über die elastischen Netze der Pleura	2	22y/m; 33y/m
ZMAF 43:567-580	1938	Michaelis, W	Leipzig	Variationsstatistische Untersuchungen über die Kerngrößen und das Verhältnis von ein- und zweikernigen Zellen in der menschlichen Leber	4	39yNI, 29ySchmi; 21yGru, 30yKo; m?
ZMAF 44: 451-488	1938	Ferner, H	Leipzig	Über die Entwicklung der Langerhansschen Inseln nach der Geburt und die Bedeutung der versilberbaren Zellen im Pankreas des Menschen	3	?
ZMAF 44:489-497	1938	Schulze, H	Leipzig	Über den Fettgehalt in dem Epithel des Gallengangsystems bei verschiedenen Säugetieren	3	30yKo, 39yNI, 21yGru, all m
AA 87:257-275	1939	Schreiber, H	Frankfurt	Zum Bau und Entleerungsmechanismus der Gallenblase	5	22-36y
AA 87:275-292	1939	Winterstein, J	Halle	Zur Kenntnis der Hypophysenarterien	?	35y/f; 32-38y/m
Z Zellf 30(4):	1939	Schneider, HJ	Leipzig	Über die Speicherung von Vitalfarbstoffen im Thymusretikulum	?	m
ZMAF 45:179-199	1939	Appelt, H	Leipzig	Untersuchungen über die Arterioleae afferentes und über die Gefäßkörperchen (Goormaghtigh-Bechersche Zellgruppen) in der Niere des Menschen und der Maus	8	23-31y, ?
ZMAF 45:266-290	1939	Tischendorf	Leipzig	Histologische Beiträge zur Kenntnis der venösen Lebersperre	?	m/f
ZMAF 45:631-667	1939	Wallraff, J	Breslau	Beitrag zur Morphologie und Morphogenese der Hypophysenzellen des erwachsenen Menschen	3	24y/m, 27y/m, 27y/f
AA 90:161-172	1940	Clara, M	Leipzig	Über die Beziehungen zwischen dem Epithel und den Blutkapillaren	2	41/m;52/f
AA 90:273-296	1940	Hewel, J	Berlin	Über die Beweglichkeit der menschlichen Leber	1	m
ZAE 110 (3):391-404	1940	Ferner, H	Leipzig	Über den Bau des Ganglion semilunare (Gasser) und der Trigemiuswurzel des Menschen	3	28y/f; 30y/m; 41y/m
ZAE 110(3):405-411	1940	Hayek, H	Würzburg	Die Läppchen und Septa interlobaria der menschlichen Lunge	?	?

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Journal	Year	Author	Department	Title/topic	No. bodies	ID
Z Zellf 31(4):630-647	1941	Bargmann, W	Leipzig	Zur Kenntnis der Hülsenkapillaren der Milz	1	30y/m
GMJ 87:193-215	1942	Spanner, R	Danzig	Besonderheiten an der Gefäßwand der grossen Mundspeicheldrüsen, sowie der Bauchspeicheldrüse	?	m
AA 93:149-155	1942	Hayek, H	Würzburg	Über Bau und Funktion der Alveolarepithelzellen	?	?
AA 93:155-159	1942	Hayek, H	Würzburg	Über Kurzschlüsse und Nebenschlüsse des Lungenkreislaufes	(same as ZAE 1940)	
AA 93:264-267	1942	Schultze-Jena	Innsbruck	Elastischer Knorpel in der Gaumentonsille	1	39y/m
ZAE 111:91-150	1942	Schreiber	Frankfurt	Das Muskelager der menschlichen Gallenblasenwand im Vergleich zu der vierfüßiger Säuger	8	19-36y,?
ZAE 111(1):533-544	1942	Hayek,H	Würzburg	Über arterio-venöse Anastomosen und die postcapillaren Venen der menschlichen Tonsille	5	?
ZMAF 51:40-72	1942	Wallraff,J	Breslau	Systematische Untersuchungen an den Nebennieren des erwachsenen Menschen mit der Plasmalreaktion	14	m
ZMAF 51:206-229	1942	Wallraff	Breslau	Histochemische Untersuchungen am Nervensystem des erwachsenen Menschen mit der Plasmalreaktion	4	?
ZMAF 51:309-321	1942	Schiller, E	Leipzig	Über den Fettgehalt der Leber beim gesunden Menschen	38	34m,4f; Table with abbreviated names
ZMAF 51:498-501	1942	Schinkele, O	Vienna	Über das Vorkommen von Geschmacksknospen im kranialen Drittel des Oesophagus	1	
ZMAF 51:581-609	1942	Wallraff, J; Bednara-Schöber, M	Breslau	Vitamin-C- und Plasmaluntersuchungen an den Geschlechtsorganen des Mannes	14	20-40y,m
ZMAF 51:87-107	1942	Hertwig, G	Berlin	Der volumetrische Nachweis von Verdoppelungs- und Zwischenklassen an den Zellkernen des Zentralnervensystems des Menschen	?	?
ZMAF 52:359-392	1942	Clara, M	Leipzig	Beiträge zur Histotopochemie des Vitamin C im Nervensystem des Menschen	15	?;Svo 33 3/4y,m
ZMAF 52:393-417	1942	Heckel, L	Leipzig	Untersuchungen über das Vorkommen von Vitamin C in der Nebenniere des Menschen	26	25m,1f names abbr.
ZMAF 52:440-454	1942	Müller, R	Leipzig	Untersuchungen über das Vorkommen von Vitamin C im Hoden des Menschen	23	[nearly Heckel identical ZMAF 52: 393-417, 1942]
ZMAF 52:480-501	1942	Weber, W	Leipzig	Über den Bau der muscularis mucosae im Verdauungsschlauch des Menschen	?	20-57y, ?

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Journal	Year	Author	Department	Title/topic	No. bodies	ID
ZMAF 52:572-589	1942	Skutta, L	Breslau	Untersuchungen über die Färbung des Schleimes mit Tannineisen	6	?
ZMAF 52:590-616	1942	Stosiek, K	Breslau	Untersuchungen an Magen und Bauchspeicheldrüse des Menschen mit dem Tannineisenverfahren nach Salazar und der Tannineisen-Azocarmin-Toluidin-blau-Färbung nach Wallraff	14	m
Z Zellf 32:335-338	1942	Hett, J	Erlangen	Becherzelloster in den Speicheldrüsenausführungsgängen	1	20y/f
Z Zellf 32(3):341-365	1942	Bauer, KF	Munich	Prinzipien der Histologie	2	29/my, 35y/m 17-44y,?
Z Zellf 32(3): 394-400	1942	Bargmann, W	Königsberg	Über Kernsekretion in der Neurohypophyse des Menschen	10	
AA 94:88-91	1943	Märk, W	Innsbruck	Gaumenzipfchen mit Lymphbalg	1	39y/m
AA 94: 97-100	1943	Bargmann, W; Scheffler, A	Königsberg	Zur Frage der parthogenetischen Furchung menschlicher Ovarialeizellen	1	28y/f
AA 94:108-115	1943	Schiller, E	Leipzig	Über die Beziehungen zwischen Grundhäutchen und Basalmembran in der Leber und in endokrinen Organen des Menschen	2	17.5y/m; 36y/m
AA 94:416-424	1943	Märk, W	Innsbruck	Die mechanische Bedeutung der argyrophilen Fasern	1	28y/m
ZAE 112(1):221-228	1943	Hayek, H	Würzburg	Kurz- und Nebenschlüsse des menschlichen Lungenkreislaufes in der Pleura	?	?
ZMAF 53:1-40	1943	Zitzlsperger	Berlin/Kiel	Interstitielle Zellen (Cajal) im Papillarmuskel des	9	19-52y,m/f
ZMAF 53:41-45	1943	Watzka, M	Prag	menschlichen Herzens Über freie, chromierbare Paraganglien beim erwachsenen Menschen	1	34y/m
ZMAF 53:102-121	1943	Wallraff, J; Bednara- Schöber	Breslau	Vergleichende Untersuchungen über die Darstellbarkeit des Leberglykogens nach Best und Bauer Über Follikelsprung, Gelbkörperbildung und den Zeitpunkt der Befruchtung beim Menschen	24	?
ZMAF 53:467-582	1943	Stieve, H	Berlin		?	f patient histories
Z Zellf 32(5):587-635	1943	Stöhr, Ph.	Bonn	Studien zur normalen und pathologischen Histologie vegetativer Ganglien. I	19	17-70y,?

APPENDIX A: (Continued)

Journal	Year	Author	Department	Title/topic	No. bodies	ID
GMJ 89:249-279	1944	Horstmann, E	Heidelberg	Über die Mesenterialgefäße und ihren Einbau in die Darmwand	?	17-35y,?
EAE 34:3-59	1944	Harting, K	Bonn	Vergleichende Untersuchungen über die mikroskopische Innervation der Milz des Menschen und einiger Säugetiere	?	?
EAE 34:151-243	1944	Hayek, H	Würzburg	Die menschliche Lunge und ihre Gefäße, ihr Bau unter besonderer Berücksichtigung der Funktion	?	?
EAE 34:244-368	1944	Stöhr, Ph	Bonn	Zusammenfassende Ergebnisse über die mikroskopische Innervation des Magen-Darmkanals	[same as Z Zellf 32(5): 587-635]	
AA 95:161-191	1944	Schaffentroth	Breslau	Vitamin-C-Untersuchungen an Magen, Darm Leber und Bauchspeicheldrüse des Menschen,	12	?
AA 95:310-326	1944	Kick, U	Breslau	Beitrag zur Frage des bestmöglichen geweblichen Glykogen nachweis	6	?
ZAE 113(1):187-203	1944	Schneider, H	Innsbruck	Zur Anatomie des Bewegungsapparates des Auges	2	34y/m; 39y/m ?
ZAE 113(1):164-173	1944	Zitzelsperger	Kiel	Neue Methoden zur Untersuchung der Reaktionskinetik histologischer Färbungen	1	
ZAE 113(1):233-246	1944	Schwarz, W	Königsberg	Die Kinematik des Bandapparates am Kniegelenk	1	21y/m
Z Zellf 33(1-2), 5-13	1944	Bargmann, W	Königsberg	Über den Saum des menschlichen Darmepithels	18	17-51y,?
ZMAF 54:131-144	1944	Matzke, H	Breslau	Histologische Vitamin-C-, Fett-, Plasmal- und Glykogenuntersuchungen an den Schilddrüsen erwachsener Menschen	21	20-40y,?
ZMAF 54:358-395	1944	Clara, M	Munich	Histopochemische Untersuchungen über das Vitamin C in der Schleimhaut des	Magen-Darm-Kanales beim Menschen 15	30
ZMAF 54:598-603	1944	Schiller, E	Leipzig	Über Kernsekretion in der Nebennierenrinde	19	17-70y,?
Z Zellf 33(1-2): 109-142	1945	Stöhr, Ph.	Bonn	Studien zur normalen und pathologischen Histologie vegetativer Ganglien.II	8	19-40y,?
Z Zellf 33(1-2): 143-150	1945	Ziesche, KT	Königsberg	Zur Histologie des Tubercinereum des Menschen	11	18-49y/m
Z Zellf 33(3): 412-423	1945	Steege, H	Königsberg	Über den histopochemischen Nachweis von Vitamin C in der menschlichen und tierischen Schilddrüse		

APPENDIX A: (Continued)

Journal	Year	Author	Department	Title/topic	No. bodies	ID
Z Zellf 33(3): 424-438	1945	Hagen, E	Bonn	Über das Vorkommen und die Bedeutung mehrkerniger Ganglienzellen im vegetativen Nervensystem	2	32y/m; 36y/m
AA 96:1-15	1947	Laeschke,R	Berlin	Die Nebennierenrinde des Menschen bei Störungen der Keimdrüsentätigkeit und bei Fettsatz trotz Mangelernährung	same material as Stieve, 1946 (see text)	m (same as Z Zellf 32(5): 587-635, 1943)
AA 96:226-235 ZAE 114(1-2): 14-52	1947 1948	Herrlinger, R Stöhr, Ph	? Bonn	Das Blut in der Milzvene des Menschen Studien zur normalen und pathologischen Histologie vegetativer Ganglien.II	8 19	
Z Zellf 34(1):1-54	1948	Stöhr, Ph	Bonn	Mikroskopische Studien zur Innervation des Magen-Darm-Kanales	1	
ZAE 114(3):185-215	1949	Stöhr, Ph	Bonn	Beobachtungen zur Histopathologie des Muskel-und Nervengewebes im menschlichen Ösophagus	1	44y/m
ZAE 114(4):341-365	1949	Herrlinger, R	Heidelberg	Neue funktionell-histologische Untersuchungen an der menschlichen Milz	8	? ?
ZAE 114(4):400-419	1949	Graf, P	Tübingen	Eigenartige Strukturverhältnisse in der Muskulatur der menschlichen Uvula	? ?	? ?
Z Zellf 34(4):362-427	1949	Wallraff, J	Cologne	Histochemische Untersuchungen an den Nebennieren des erwachsenen Menschen	12	? ?
Z Zellf 34(4):337-355	1949	Schiller, E	Leipzig	Variationsstatistische Untersuchungen über Kerneinschlüsse und -Kristalle der menschlichen Leber	25	17-73y,m,f
Z Zellf 34(4):356-361 VAG 97: 239-240	1949 1950	Schiller, E Schiller,E	Leipzig Hornberg	Kerneinschlüsse und Amitose Die morphologische Manifestation von Kernstoffwechselstörungen	part of 50 1	16-73y, ? 34y/f
ZAE 114(5):511-524	1950	Hermann, H	Bonn	Mikroskopische Studien an menschlichen Herzganglien. Ein Beitrag zur Individualanatomie	? ?	? ?
ZAE 114(5):539-588	1950	Neubert, K	Rostock	Die Basalmembran des Menschen und ihr Verankerungssystem	1	27y/m
ZAE 115(1):88-94	1950	Hayek, H	Würzburg	Die Muskulatur im Lungenparenchym des Menschen	4	Young m
GMJ 91:447-482	1951	Kügelgen,A	Freiburg	Über den Wandbau der grossen Venen	2	19y/m; 21y/m

ID: identifying information on victims who were dissected; m = male, f = female, ? = gender not mentioned. ZAM: Zeitschrift für Anthropologie und Morphologie. GMJ: Gegenbaurs Morphologisches Jahrbuch. EAE: Ergebnisse der Anatomie und Entwicklungsgeschichte (Advances in Anatomy, Embryology and Cell Biology). VAG: Verhandlungen der Anatomischen Gesellschaft. AA: Anatomischer Anzeiger. ZAE: Zeitschrift für Anatomie und Entwicklungsgeschichte (Today: Brain structure and function; formerly: Anatomy and embryology; formerly: Anatomische Hefte). ZMAF: Zeitschrift für mikroskopische und anatomische Forschung. Z: Zellf: Zeitschrift für Zellforschung und mikroskopische Anatomie.

APPENDIX B: ARTICLES REPORTING RESEARCH ON "MATERIAL" FROM BODIES OF THE EXECUTED FROM OUTSIDE GERMANY 1924-1951

Journal	Year	Author	Department	Chair	Title/topic	No. of bodies	ID
ZMAF 5:371-462	1926	Patzelt, V	Vienna, Austria		Zum Bau der menschlichen Epidermis	?	?
ZMAF 13:343-372	1928	Mathis, J	Innsbruck, Austria		Über Sekretionserscheinungen in Drüsenausführungsgängen	1?	m
ZMAF 18:520-552	1929	Zimmermann	Bern, Switzerland		Über den Bau des Glomerulus der menschlichen Niere	4	19y,22y, 24y,43y/m
ZMAF 20:608-618	1930	Aunap, E	Estland/Tartu		Über die intraepithelialen Drüsen der Nasenschleimhaut des Menschen	2	?
AA 74:21-25	1932	Röhlich, K	Pécs/Hungary		Endoepitheliale Drüsen der Prostata	1	31y/m
ZMAF 34:313- 329	1933	Baecker, R	Vienna, Austria		Über die Muscularis mucosae des menschlichen Darmes	1	f
ZAE 102(2-3):211-231	1933	Volkman, R	Basel, Switzerland		Morphologie, Entstehung und Vorkommen des Abnutzungspigmentes im Epithel des menschlichen Plexus chorioideus	1	22y/m
VAG 43:240-246	1935	Röhlich, K	Pécs, Hungary		Beitrag zur Kenntnis der Kapillarröhren der Milz	2	31y/?; 34y/?
Z Zellf 24(2/3):320-35	1936	Poska-Teiss, L	Estland/Tartu		Ein Beitrag zur Frage des Mesothels. Epikardialmesothel des Menschen	1	25y/m
ZMAF 43:451-465	1938	Röhlich, K	Pécs/Hungary		Über die Prostatasekretion	2	31y/m; 35y/m
ZMAF 44:45-55	1938	Bergstrand	Stockholm, Sweden		Zur Morphologie der quergestreiften Ringbinden	1	35y/m
Z Zellf 28(1):99-102	1938	Bargmann	Zurich, Switzerland		Über die Gitterfasern des Nierenglomerulus des Ductus Epididymis des Menschen	1	m
ZMAF 50:190-206	1941	Gentele, H; Swensson, Å	Stockholm, Sweden		Über die Kaliberhältnisse der hinteren Rückenmarkswurzeln beim Menschen	1	30y/m
ZAE 111: 224-245	1942	Möllendorff	Zurich, Switzerland		Beiträge zum Verständnis der Lungenkonstruktion	1	28y/m
AA 95:395-424	1944	Bucher, O	Zurich, Switzerland		Über den Bau der Blutgefäße des menschlichen Herzens	3	1m, other 2?
ZAE 113(1):180-186	1944	Faller, A	Zurich, Switzerland		Die Oberflächengestaltung des Epithels in den ductuli efferentes des menschlichen Nebenhodenkopfes	2	32y/m;?/m
Z Zellf 33(1-2):289-298	1945	Faller, A	Zurich, Switzerland		Über den mikroskopisch nachweisbaren Austritt von Kernstoffen in das Zellplasma der Epithelzellen	2	32y/m; ?

ID: identifying information on victims who were dissected; m = male, f = female. ZAM: Zeitschrift für Anthropologie und Morphologie. GMJ: Gegenbaur's Morphologisches Jahrbuch. EAE: Ergebnisse der Anatomie und Entwicklungsgeschichte (Advances in Anatomy, Embryology and Cell Biology). VAG: Verhandlungen der Anatomischen Gesellschaft. AA: Anatomischer Anzeiger. ZAE: Zeitschrift für Anatomie und Entwicklungsgeschichte (Today: Brain structure and function; formerly: Anatomy and embryology; formerly: Anatomische Hefte). ZMAF: Zeitschrift für mikroskopische und anatomische Forschung. Z: Zellf: Zeitschrift für Zellforschung und mikroskopische Anatomie.