

Verfolgte Pathologinnen und Pathologen im Nationalsozialismus: Opferstatus, Lebenswege  
in der Emigration (USA) und die Rolle (emigrierter) Frauen in der Pathologie

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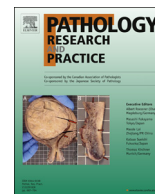
## **Auflistung der Publikationen**

### Publikationen, welche die Dissertation darstellen:

- **Hendrik Uhlendahl**, Dominik Gross, Victim or profiteer? Gerhard Domagk (1895-1964) and his relation to National Socialism, Pathology – Research and Practice 216 (2020), 152944, DOI: 10.1016/j.prp.2020.152944
- **Hendrik Uhlendahl**, Nico Biermanns, Janina Sziranyi, Dominik Gross, Success or failure? Pathologists persecuted under National Socialism and their careers after emigrating to the United States, Pathology - Research and Practice 218 (2021), 153315, DOI: 10.1016/j.prp.2020.153315
- **Hendrik Uhlendahl**, Stephanie Kaiser, Nico Biermanns, Dominik Groß, Pioneers in pathology and female role models: The Jewish scientists Rahel Rodler, Ruth Silberberg, Lotte Strauss and Zelma Wessely, Medical History 66/4 (2022), 304-322, DOI: <https://doi.org/10.1017/mdh.2023.2>

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- Dominik Gross, Christina Graef, **Hendrik Uhlendahl**, Mathias Schmidt, Jens Westemeier, Carl August Krauspe (1895-1983) –Founder and Honorary Member of the “European Society of Pathology” and “Politically Reliable” National Socialist, Pathology –Research and Practice 215/2 (2019), 395-403, DOI: 10.1016/j.prp.2018.12.001
- Dominik Gross, Stephanie Kaiser, Christina Gräf, **Hendrik Uhlendahl**, Mathias Schmidt, Between fiction and reality: Herwig Hamperl (1899-1976) and the Third Reich as reflected in his autobiography, Pathology –Research and Practice 215/4 (2019), 832-841, DOI: 10.1016/j.prp.2018.12.019
- Mila J. Evers, Nico Biermanns, **Hendrik Uhlendahl**, Dominik Gross, From emigration to remigration: The Jewish Pathologist Fritz Meyer (1875-1953) and his extraordinary life course, Pathology – Research and Practice 221 (2021), 153411, DOI: 10.1016/j.prp.2021.153411
- Jens Westemeier, Sebastian Scheib, **Hendrik Uhlendahl**, Dominik Gross, Mathias Schmidt, Hans Wolfgang Sachs (1912-2000): Vom nationalsozialistischen „Volkstumskämpfer“ und „Leitenden Pathologen beim Reichsarzt-SS“ zum Lehrstuhlinhaber in der Bundesrepublik, Pathologie 41 (2020), 168-176



# Victim or profiteer? Gerhard Domagk (1895–1964) and his relation to National Socialism\*

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## ABSTRACT

As the discoverer of sulfonamides and Nobel Prize winner for medicine, Gerhard Domagk (1895–1964) is without doubt one of the most important pathologists of the 20th century. Domagk has repeatedly been sketched out as a Nazi victim – especially with reference to the fact that he had been briefly imprisoned and that the Nazi regime prevented him from accepting the Nobel Prize. In particular, the life memoirs of Domagk (1995), edited by Bayer, and a Domagk biography by Ekkehard Grundmann (2001) contributed to consolidating the dictum that Domagk was far from Nazi ideology. These depictions are juxtaposed with recent works that sketch Domagk as close to the regime and as a profiteer of the Nazi system.

This paper aims to explore Domagk's actual relationship to National Socialism by comparing the discrepant interpretations with the historical facts. The analysis is based on primary sources from various archives and a critical re-analysis of the available secondary literature.

The assertion that Domagk was critical of Nazi ideology cannot be objectified. Domagk adapted to the regime, allowed himself to be integrated, enjoyed privileges and thus indirectly contributed to making the regime presentable. In this respect he fulfils the classic characteristics of a political follower.

## 1. Material and methods

The present investigation is based on various primary sources regarding Gerhard Domagk, including those from the State Archive of Nordrhein-Westfalen in Duisburg (LA NRW), the University of Münster Archive (UAM) and the Bayer AG company archive in Leverkusen (BAL). These sources were compared with the available secondary literature about Domagk. The investigation also included relevant background research about the topics of medicine under National Socialism as well as the history of pathology and antibiotic therapy.

## 2. Gerhard Domagk – his life and work

Gerhard Johannes Paul Domagk (Fig. 1) [1,2] was born in Lagow (in the Brandenburg district of Ost-Sternberg) on October 30, 1895, as the son of a school principal [3]. In 1914, he started pursuing a degree in medicine in Kiel, which he interrupted in less than one semester in order to participate in the First World War [4]. He first served as a frontline soldier before being appointed to the position as a medical officer after sustaining an injury in December 1914 [4]. Following the

end of the war, he resumed his studies in Kiel and passed the state medical exam in 1921. He received his Dr. med. title for his thesis titled "Influence of creatinine excretion in the urine through muscular activity" [3,5]. After a brief time serving as a medical intern at the municipal hospital in Kiel [2], Domagk worked as an assistant to Georg Hoppe-Seyler at the local university from 1922 to 1923 before eventually transferring to work with Walter Gross at the pathology institute at the University of Greifswald. It was here that Domagk pursued a post-doctoral degree in the area of pathology and pathological anatomy in 1924; at which time he wrote his thesis titled "Destroying infectious diseases through the reticuloendothelium and the development of amyloid" [6]. In 1925, he married Gertrud Strübe and the couple subsequently became parents of three sons and one daughter. In 1925, he and Gross transferred to the Pathology Institute in Münster, where Domagk worked as an assistant until 1927 before being named as Associate Professor in 1928 [3]. His university career ended upon assuming research activities at a laboratory for experimental pathology that was specifically created for him at the I.G. Farben company in Wuppertal-Elberfeld, which he headed starting in 1927 [7]. It was here that, in 1932, Domagk made a breakthrough discover for applying

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Fig. 1. Portrait of Gerhard Domagk [1].

therapy to bacterial infections using sulfonamides. This was discovery would only be published in 1935 due to the critical stance that the National Socialist regime took towards animal testing (Domagk had experimented on mice) [8]. In 1936, Bayer started to sell the active ingredient sulfamidochrysoïdine under the trade name "Prontosil" [7]. Domagk was meant to receive the Nobel Prize for medicine in 1939 on account of this discovery, but the National Socialist regime prohibited him from accepting the award. He would go on to later receive the award in 1947 [9].

Along with the Nobel Prize, Domagk accumulated various national and international awards and honorary titles. These includes the medals "El Soleil del Perú" (1952), the "Pour le mérite für Wissenschaften und Künste" (1952), the Spanish "Civil de Sanidad" (1953), the "del Lobertador" from the Republic of Venezuela (1957) and the Japanese "Medal of the Rising Sun 2nd Class" (1960) as well as the Grand Cross with Star of the Order of Merit of the Federal Republic of Germany (1955) [10–13]. Domagk also received honorary doctoral titles from the universities of Bologna (1941), Münster (1945), Lima (1949), Cordoba (1949) and Buenos Aires (1949), he was an honorary senator of the universities of Münster and Greifswald and an honorary professor of the University of Valencia [2]. Additionally, Domagk held honorary memberships at various professional associations [2]. In contrast to many well-known colleagues of his time, Domagk was not active in professional politics before and during the Third Reich. It was not until 1952 that he became chairman of the German Society of Pathology [14].

Domagk remained at his position at I.G. Farben until his retirement in 1961 [15]. The discovery of Prontosil was not to be Domagk's only professional achievement: he also made important contributions to the development of drugs to treat tuberculosis and cancer with his post-war work on thiosemicarbazones deserving special mention. In 1951, he

researched the antimicrobial effects of isoniazid, which was soon introduced into the treatment of tuberculosis. The active ingredient is still in use today: in HIV patients, for example, prophylactic treatment with isoniazid can reduce the number of tuberculosis cases and also the total number of deaths. Gerhard Domagk passed away on April 24, 1964, at the age of 68 [16].

In his home country of Germany, he received significant posthumous fame, which continues into the present. Examples are the cities of Munich and Münster: In Munich there is the "Domagkpark area" and a "Domagkstraße" [17]. In Münster there is the foundation "Krebsforschung Professor Dr. Gerhard Domagk" (Cancer Research Professor Dr. Gerhard Domagk), established in 1961 and still in existence today, which awards an annual research prize of 10,000 euros for scientific achievements in cancer therapy [18], the "Gerhard Domagk Institute for Pathology" at the University Hospital [19] and also a "Domagkstraße" [20].

### 3. Gerhard Domagk in the Third Reich

#### 3.1. The discovery of sulfamidochrysoïdin (1932–1935) and its medicohistorical significance

Sulfamidochrysoïdin was the very first chemotherapeutic agent to be developed; as its discoverer, Gerhard Domagk can thus be classified as a pioneer of modern antibiotic therapy [21–23]. This discovery was made at the very beginning of the Third Reich: the authoritative publication in which Domagk described its efficacy against bacterial diseases was published in 1935. In the same year, the active ingredient was synthesized by Josef Klarer and Fritz Mietzsch at Bayer in Wuppertal-Elberfeld. The azo dye was also the first drug from the sulfonamide group. It became known under the trade name "Prontosil". Sulfamidochrysoïdin was mainly effective against streptococci, staphylococci and coli bacteria. The fundamental importance of the discovery was immediately recognized – this can be seen from the fact that the time interval between the initial description of the active ingredient (1935) and its award by the Nobel Prize Committee (1939) was exceptionally short at just four years.

After the introduction of penicillin in 1942 [24], whose antibiotic effects were first discovered by Alexander Fleming in 1929 [25], sulfonamides faded into the background. However, Prontosil was used extensively during the Second World War, especially in the Third Reich, as penicillin was not yet available. It was administered as a preventive measure against wound infections, especially in the case of injuries. Today, the drug is no longer available on the international market.

#### 3.2. Domagk's memberships in National Socialist organizations

Domagk was a member of the "German Working Front" (DAF), the "National Socialist People's Welfare Organization" (NSV), the "National Socialist Association of Germany Technology" and the "National Socialist Medical Association". He did not, however, join any of the core National Socialist organizations, such as the "National Socialist German Worker's Party" (NSDAP), the "Schutzstaffel" (SS) or the "Sturmabteilung" (SA) [26].

#### 3.3. Prohibition from receiving the Nobel Prize (1939)

Since the conferral of the Nobel Peace Prize to pacifist Carl von Ossietzky in 1935, the German government under Adolf Hitler entered into conflict with the Nobel Committee. Ossietzky had been imprisoned by the National Socialists in 1933 and sent to the concentration camp in Sonnenburg bei Küstrin in the same year, where he allegedly died due to his incarceration in 1938. In 1937, in response to Ossietzky receiving the award, Hitler banned German citizens of the Reich from accepting the award [27,28].

On October 26, 1939, Domagk received a call from a Swedish

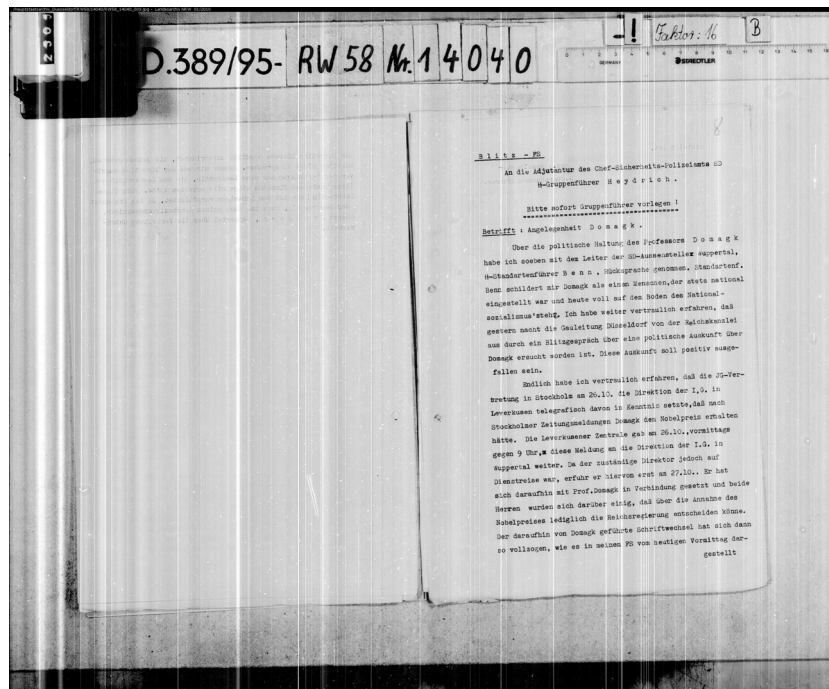


Fig. 2. Undated letter from SS-Obersturmbannführer Haselbacher to SS-Gruppenführer Heydrich concerning political information about Gerhard Domagk in the course of his detention (excerpt) [31].

journalist who asked him about his research on bacterial infections [29]. One day later, the rector of the Karolinska Institute in Stockholm sent him a telegraph informing Domagk that the Nobel Prize for Physiology and Medicine had been awarded to him for his discovery of the active ingredient Prontosil [28]. Domagk turned to the rector of the University of Münster, Walter Mevius, with the news. Mevius made an appeal to the National Socialist regime to treat the conferral of the scientific Nobel Prize from Sweden to a German citizen differently than the Nobel Peace Prize from Norway. Domagk also did what he could: he thanked the Karolinska Institute, expressed his delight in being recognized for his discovery and promised to provide a concrete response in due time. Additionally, Domagk attempted to win the favor of the "NSDAP Office of the Führer" (KdF) with a letter in which he pledged to make a donation of 100,000 mark for Germany's injured in the war. Soon thereafter, the Foreign Office requested the he hand over a transcript of his correspondence with Stockholm. On November 17, 1939, Domagk was ultimately arrested by the Gestapo [30]. The reason for his arrest was to allow the authorities to verify his personal trustworthiness as well as any possible (critical) contacts abroad. Once Domagk was deemed to be politically trustworthy (Fig. 2) [31], he was released. First, however, he had to accept two conditions: first, he was only allowed to correspond with the Reich Ministry of Education or the Foreign Office and was prohibited from corresponding directly with the Karolinska Institute [32] and, second, he was told to sign a letter of explanation to the Karolinska Institute in which he turned down the prize [33].

### 3.4. Domagk – a victim of the National Socialist regime?

The most common perception regarding Domagk is that of a German scientist who suffered under the oppression of the National Socialist regime and was therefore a victim. This view is supported by three findings: (1) the fact that Domagk was briefly arrested and banned from receiving the Nobel Prize for political reasons; (2) the statements made by Domagk in the context of his denazification, which were widely circulated; and (3) the fact that he never joined the core National Socialist organizations (the NSDAP, the SS and the SA). Considering this

background, our intent here is to investigate these circumstances more critically and compare them with the available sources.

First, the argument that Domagk was prohibited from accepting the prize is doubtful. Second, the statements he made during his denazification also appear to be different than commonly believed: Domagk dramatized the events surrounding his arrest and painted them as having been an existential threat to his life and person. As mentioned, the purpose of his arrest was merely to verify his integrity in terms of political trustworthiness. In contrast, Domagk claimed that this arrest in November 1939 was executed without grounds due to his nomination for the Nobel Prize. Moreover, he claimed to have suffered from states of panic and insomnia during his incarceration. Finally, he recorded that, after his release, the regime kept him under constant surveillance. He avoided any contact with the NSDAP, insofar as this may have been for the safety of his family. He is said to have refused offers from the head of the Reich Central Office at the Central Office for Public Health of the NSDAP Reich leadership and head of the German University Commission in the department of "Deputy of the Führer", Professor Franz Wirz, [34] to consult with National Socialist leaders and receive compensation for the incident he endured [35]. Domagk's statements before the denazification committee and the fact that he was not a member of the NSDAP, SS or SA ultimately led him to receive the favorable classification of Category V ("exonerated") [23]. Remarkably, the fact that Domagk was employed by I.G. Farben, a company with deep ties to the National Socialist system, was not an issue in his denazification process.

Domagk's account of his incarceration conditions and their consequences proved to be decisive while his political stance and his relation to National Socialism remained unquestioned for a long time. This outcome was well reflected in the memoirs edited in 1995 and a biography released in 2001: in 1995, the Pharma business sector of Bayer AG published one of Domagk's editions as a typescript of his handed-down memoirs. This edition was, however, a significantly shortened version of the original: the resultant mini book contained only 108 typewriter pages of the complete 700. The Bayer edition is particularly mum about the period from 1933 to 1942. It makes no mention whatsoever about the National Socialists' rise to power, as all

content in the book relates to events surrounding Domagk's own work [36]. For the period prior to 1944, there is merely one critique of the violence and suffering caused by the war in general, yet not about the policies of the Nazi regime [37]. Only in the entries for the period around 1944/1945 - as the war was clearly progressing to the detriment of Germany - does Domagk complain about Hitler's military failings, the false promises of National Socialism and the lack of free of expression under the Third Reich. Moreover, he objected to the large number of human lives lost and the catastrophic character of the war, which he says ultimately could have been ended by the Wehrmacht [36]. In light of this, he formulates his idea about a united European union of states, marked by international cooperation [36]. He also retrospectively criticizes the fact the National Socialist ideology and medicine were closely intertwined: "The so-called 'political medicine', which served by National Socialist regime but not the sick, gained ever-greater significance in the 1930s. Medical science was unable to enrich itself in the least bit as it ignored the ethical foundations of the medical practice." [36].

Domagk's abridged memoirs allow us to arrive at two conclusions: (1) In consideration of the representations of the period before 1944, it appears that Domagk was an opponent of war and violence, yet not a critic of Nazi ideology. The distressing events that unfolded between 1933 and 1944, the gradual rise of antisemitism, the daily deprivation of rights and the general brutalization of society were not mentioned even once, just as the memoirs lack political commentary and categorizations altogether. This leads us to conclude that certain statements found in the complete memoirs of Domagk were intentionally left out of the shortened version or, rather, that Domagk first assumed a critical stance towards National Socialism after the fall of the Third Reich. The following chapter is dedicated to investigating this very assumption.

First a few words about the second hitherto influential work about Domagk: Ekkehard Grundmann published the first closed biography about Gerhard Domagk in 2001. Starting in 1963, Grundmann was himself one of Domagk's pupils for eight years at the Institute for Experimental Pathology at Bayer AG. The primary source of information he used for this biography were Domagk's memoirs themselves. Grundmann outlines Domagk in an almost hagiographic manner, comparing him to the likes of Albert Einstein and Max Planck and claiming that Domagk started "an era in medical history unimagined victories over infectious diseases [...]" [37]. Not only is the lack of distance to Domagk as the "object of investigation" disconcerting, but also Grundmann's uncritical and unprofessional handling of historical sources: he erroneously labels the memoirs frequently quoted by him as a "journal", even though the latter, as a temporal snapshot, comprises an entirely different category of sources (i.e. retrospective - memories with a temporal distance to the actual occurrences) [36]. Domagk's relation to National Socialism is similarly presented euphemistically, as in the summary of his memoirs mentioned above: Domagk's findings were said to have been received with skepticism by the National Socialists, which Grundmann attributes to the fact that Domagk was not a party member as well as his alleged refusal to hang the swastika flag from his window on national holidays. Rumors about deaths caused by Prontosil were subsequently spread, which Domagk was, however, able to disprove by demonstrating that the cited deaths were cases of sulfonamide-resistant illnesses [37]. Yet, Grundmann fails to provide any real evidence to support his statements. He insinuates that the rumors about deaths associated with Prontosil were spread/exaggerated by the Nazis. Possible motives for taking such an action, however, remain obscure - ultimately, the National Socialist regime could have suppressed Domagk's research at any time if the regime had wanted to harm him.

Apart from that, Grundmann repeats Domagk's statements in reference to his denazification [37]. Grundmann interprets the fact that Domagk reported mass killings carried out by the Allied Powers but the German concentration camps or murders of Jewish people in his memoirs as proof of the assumption that Domagk did not have any knowledge of the crimes against the Jewish population. He allegedly

only found out in 1946 that sulphonamides had been tested on Polish resistance fighters interned at the Ravensbrück concentration camp [35]. This claim also seems dubious - yet no counterproof can be offered to refute it. In general, Grundmann paints Domagk as a "German patriot", implying that the latter always felt a sense of obligation to his home country as a scientist but not to the ideology of National Socialism [37].

Thomas Hager (2006) presents a similar image of Domagk, arguing that science was always his main focus while he kept his political views to himself. As a patriot, he was ever ready to serve his country, despite his apathy towards National Socialism. Hager explains the critical statements that Domagk would later make about National Socialism in the 1940s as an ultimate expression of his long pent-up rejection of National Socialism [38]. For the most part, Hager is loyal to the biography by Grundmann. In reference to the circumstances surrounding the Nobel Prize nomination, he simply repeats Domagk's own account [38]. For these reasons, Hager's explanations provide us no further insights - they have simply served to further spread and solidify the interpretations provided by previous publications.

### 3.5. Domagk – a loyal benefactor of the National Socialist regime?

Starting in 2016, Detlev Stummeyer attempted a comprehensive revision of the long-established image of the person of Domagk during the time of National Socialism by critically analyzing the authoritative claims made by Grundmann and, specifically, by assessing Domagk's professional network and his political stance [39]. In order to do so, Stummeyer also looked at Domagk's original typescripts.

He interprets Domagk's arrest in the context of the Nobel Prize nomination as a one-off event that is wholly explained by the prohibition Hitler placed on the acceptance of Nobel prizes in 1937: Domagk's attempt to obtain special permission for accepting his prize as well as his correspondence with Sweden were affectively deemed by Hitler to be an overreach as well as disloyal [39]. A file kept at the NRW State Archive from the "Secret State Police" (Gestapo) confirms this assumption: during his arrest, Domagk remained under temporary surveillance that was justified by his Nobel Prize nomination and the associated letter exchanged with Sweden [29–33]. These files contain a number of correspondences related to the prize nomination; evidence of long-term (secret) surveillance of Domagk are, on the other hand, not to be found. Moreover, Stummeyer cites a positive assessment from 1941 of Domagk's political reliability that is noted in his personnel file at the University of Münster (Fig. 3) [40] as well as a corresponding report by the SD Branch Office Wuppertal from during Domagk's arrest [31]. According to Stummeyer, both of these documents provide evidence refuting Domagk's alleged distance from the Nazi regime [39].

We were able to view and analyze both of these documents and found Stummeyer's interpretation and assessment to be completely accurate. In light of this, the claim made by Domagk in the course of his denazification process of having been subject to continued surveillance after his temporary arrest [35] appears to be groundless and can, in fact, be read as an exculpation strategy on his part in the context of denazification.

Stummeyer attempted to prove that Domagk benefited from National Socialist policies by analyzing his personal network. He points to Domagk's scientific and professional connections to diverse doctors, some of whom were proven criminals, as well as colleagues employed at I.G. Farben, a company deeply entwined with the regime [39]. It stands without a doubt that the Nazi regime and Domagk mutually benefited from one another: the regime was able to use Domagk's research about "war-vital" human testing [39] and Domagk received various concessions such as repeated trips abroad, of which Stummeyer found evidence in archival documents [39]. As Stummeyer admits, however, we cannot prove that Domagk had concrete knowledge of the testing of sulfonamides on humans, for which his research was used and for which several people from his personal network were responsible.

A b s c h r i f t .

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Nationalsozialistische Deutsche Arbeiter-Partei  
Gauleitung Düsseldorf

Gaupersonalamt  
II A 5/67 87o  
E./Ro

Düsseldorf, den 26. April 1941  
Eingang: 28. " 1941

An die  
Gauleitung der NSDAP Westfalen-Nord  
- Gaupersonalamt -

M ü n s t e r i. W.

Bismarck-Allee 5.

Betr.: Prof. Dr. Gerhard <sup>D</sup> o m a g h , Wuppertal-Elberfeld,  
Wälküren-Allee 11 - Ihr Schnellbr. v. 9.4.1941 -

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Aufgrund einer telefonischen Anfrage des Parteigenossen  
Hauptamtsleiter Friedrich in Berlin haben wir für den  
Führer, der Prof. Dr. Gerhard D o m a g h für eine be-  
deutende Erfindung geehrt hat, folgende Auskunft gegeben:

"Prof. Domagh ist kein Parteigenosse; politisch ist Nach-  
teiliges nicht bekannt. Er war Freiwilliger im Kriege  
1914/18, ein immer national gesinnter Mann, der einge-  
fleischter kerniger Schlesier ist. D. ist Professor an  
der Universität in Münster. Er betätigt sich ausschließ-  
lich nur als Wissenschaftler."

Heil Hiter !  
Die Gauleitung  
Gaupersonalamt  
(Siegel) gez. E c k l ,  
Gazhauptstellenleiter.

F.d.R.

*Wagf*

Fig. 3. Letter of 26 April, 1941 from the Gaupersonalamt of the NSDAP to the Gauleitung of the NSDAP Westphalia-North concerning political information about Gerhard Domagk [40].

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Wird es den vernünftigen Elementen gelingen, zwischen Deutschland und England Verständnis, ja vielleicht Freundschaft zu schaffen? Ich bin überzeugt, dass in England viele leben, die es wünschen. Als ich nach dem Kriege zum ersten Male nach England kam, habe ich sehr bedauert, dass es möglich gewesen war, dass zwischen Deutschland und England ein Krieg geherrscht hatte; es ergaben sich in Wesen und Sprache so viele verwandtschaftliche Beziehungen, und auch wir könnten noch vom Engländer lernen.

25 Jahre sind nun bald vorüber, seitdem wir in Flandern gegen England angetreten waren. Wir haben uns in Deutschland ehrlich bemüht, neu aufzubauen. ~~Man hätte sich wünschen können, dass man~~ ~~zerstörtes Deutschland~~ ~~veracht!~~ Mißgönnt man uns auch diese Entwicklung?

Und was taten die Drei vom RIR S?

Einer wurde Fregattenkapitän, der andere Landwirtschaftsrat und SA-Standartenführer, einer Professor Dr.med.

Jetzt sind es bald 25 Jahre her, dass wir als 16jährige nach Flandern ins Feld zogen und nun soll sich dasselbe Drama wiederholen? Ich hatte es mir so schön vorgestellt, wenn wir drei Überlebende unserer alten Heimat-Schulklasse zur 25. Wiederkehr unseres Auszuges in den Krieg auf die Schlachtfelder nach Flandern gegangen wären und unseren gefallenen Schulfreunden einen Strauß auf das Grab gelegt hätten. Aber wo werden wir Drei in einem Jahr sein? Wir werden nicht zu Hause bleiben, wenn man uns ruft und werden versuchen, sei es wo es sei, nach innerster Überzeugung unser Bestes zu tun - für Deutschland. Mein Uniformkoffer steht immer noch bereit; ich werde versuchen zu vergessen, worüber man sich an Un-ahrem und Hohlem in Friedenstagen ärgerte und nun nur einer Aufgabe nachstreben: zu helfen, wo es möglich ist, nach menschlichem Wollen und Können.

Ostern 1939:

Der tschechoslowakische Rest-Staat begann zu wanken ohne die Bindungen an das Großdeutsche Reich durch Bahnen, Kanäle, Straßen - und durch die stets beherrschende alte Kultur; er war allein nicht lebensreif. Die Tschechen forderten selbst den Einmarsch deutscher Truppen. So zog Hitler mit seinen Truppen auf der Prager Burg ein.

**Figs. 4-5.** Gerhard Domagk in his memoirs about the German expansion politics in spring 1939 (excerpt) [41].

We also cannot exclude the possibility that Domagk merely turned a blind eye to these tests being conducted on humans.

All in all, Stummeyer arrives at an entirely different conclusion than Grundmann after analyzing the original manuscripts of Domagk's memoirs: in 1940 (and, as such, *after* his arrest), Domagk was a supporter of Germany's expansionist policies and of Hitler, which would only change later on during the progression of the war (Figs. 4-6) [41]. Domagk's network, with close contact to various Nazi criminals, and the continuation of his research work at I.G. Farben following the National Socialists' rise to power in 1933 demonstrate that he fell in line with the political changes and even knew how to take advantage of the new political constellation. In sum, Stummeyer accuses Domagk (and Grundmann) of conscious omissions, a lack of self-reflection and an absence of compassion for the victims of Nazi policies, suggesting deep entanglement with the unjust National Socialist system [39].

Prior to Stummeyer, Elisabeth Crawford (2000) also expressed a critical view of Domagk's role in the Third Reich, arriving at quite a similar conclusion - though her study is primarily concerned with "German scientists and Hitler's vendetta against the Nobel prize" and

not specifically with Domagk himself. Nevertheless, she offers an overarching conclusion in reference to the three German Nobel Prize winners - Richard Kuhn (Chemie, 1938), Adolf Butenandt (Chemie, 1939) and even Domagk: "[...] all three prizewinners were scientists of unquestionable loyalty and utility for the Nazi regime." [42].

#### 4. Discussion

How are we to evaluate these diametrically opposed interpretations of Domagk's political role outlined above? We must take a differentiated approach in answering this question.

First, Stummeyer's critical fact-check is accurate in several important aspects, particularly with reference to the core argument that Domagk was a supporter of Germany's expansionist policies from 1940 and had a very positive perception of Hitler - two facts that can be verified. In his memoirs, Domagk states the following: "On July 19, in the evening, Hitler gave an [impressive - *crossed out*] report on the [splendid - *crossed out*] course of the fighting in the West; large tank armies played a decisive role in this" [41].

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Deutschlands älteste Universität ist wieder deutsch. Wenige Tage vorher fuhr ich von Budapest nach Köln und nichts war zu merken von den Vorbereitungen zu dem genialen, in wenigen Stunden abgelaufenen Handstreich, ohne Blutvergiessen. Wir führen von Deutschlands Ostgrenze bis in den tiefen Westen durch ein Flaggenmeer.

Heldengedenktag! Ein stolzes, erhebendes Gefühl. Wie so ganz anders als noch vor wenigen Jahren! Kaum hat sich die Welt von dieser Überraschung erholt, kehrt auch das Memelland ins große Reich heim.

Polen plagt sein schlechtes Gewissen ob der geraubten deutschen Gebiete. So wird es in die Arme Großbritanniens getrieben. England schliesst mit Polen einen gegenseitigen Beistandspakt, ein letzter Versuch, Deutschland einzukreisen. Ostern 1939!

Spanien tritt dem Antikominternpakt bei, Italien besetzt Albanien. Old merry England!?

Was haben wir England getan? Ebenso wenig wie jeder andere Deutsche, der ehrlich für Deutschlands Aufstieg arbeitete. Was wir tun werden, wenn man uns wiederum die Früchte unserer Arbeit rauben will? Darüber dürfte auch in England kaum ein Zweifel sein. Dann werden wir im Herbst zur 25. Wiederkehr der Flandernkämpfe und zum Gedenken der alten Kameraden nicht nach Flandern fahren .....

Fig. 6. Gerhard Domagk in his memoirs about the military failure of Hitler and the manipulative character of the Nazi politics in 1944 or 1945 (excerpt) [41].

The same applies for the no-less-important determination that Domagk was loyal to the party line, *cum grano salis*, yet was in no way taken to be politically suspicious. The primary sources also offer clear indications of this:

Blitz-FS, Obersturmbann Leader Haselbacher to the adjutancy of the Chief Security Police Office SD SS Group Leader Heydrich, Subject: Domagk

"I have just spoken to the head of the SA Branch Office Wuppertal, SS Standarten Leader Benn, as to the political views of Professor Domagk, Standarten Leader Benn tells me that Domagk has always been nationalist and today fully supports National Socialism. I have also discovered from a reliable source that, last night, the Regional Administration in Düsseldorf was requested by the Reich Chancellery via a lightning call to provide political information about Domagk. This information was supposedly positive." [31].

(Transcript) NSDAP Regional Administration Düsseldorf (signed Eckl, head of Regional Administration) to the Regional Administration of the NSDAP Westfalen-Nord, Münster, Bismark-Allee 5:

"By virtue of a telephone inquiry from party member and Central Office Head Friedrich in Berlin, we provided the Führer, who honored the Prof. Dr. Gerhard Domagk (sic) for a significant discovery, the following information: 'Prof. Domagk (sic) is not a party member; nothing politically damning is known about him. He was a voluntary soldier in the war 1914/18, always a nationally minded man and an inveterate, pithy Silesian. D. is a professor at the University of Münster. he is only employed as a researcher [...]" [40].

In addition, Domagk apparently did not have any scruples when it came to moving among in the corresponding networks oriented to National Socialism. This also coincides with the fact that Domagk frequently received permission to travel abroad, as Stummeyer proves - a concession that certainly was *not* up for discussion for politically unwelcome individuals.

Grundmann provides an almost hagiographic picture of Domagk and distorts Domagk's role in the Nazi state by portraying Domagk as a

critic and victim of National Socialism - while doing no justice to the facts or the actual victims of the Nazi state. In this respect, Stummeyer's criticism is to be endorsed.

Stummeyer's claim that Domagk was deeply involved in National Socialism [39] is, however, an exaggeration in view of the available sources. Therefore, his conclusions are to be put into perspective just as those of Grundmann.

Actually, there is no prove of Domagk's awareness of the aforementioned Nazi crimes. Nor did he enter into any official political commitment: in contrast to 8.8 million of his fellow countrymen, he was not a member of the NSDAP. He also did not join the SS or the SA; his memberships were limited to relatively "apolitical" National Socialist organizations. Admittedly, a lack of party membership is not a priori evidence distance held from the National Socialist system. Counterexamples are provided by pathologist Max Borst [43], gynecologist Frauenarzt Walter Stoeckel [44] and the dental "Dozentenführer" (Lecturer's Leader) Otto Loos [45] - each of whom supported the National Socialist system in some manner yet *without* being party members. Nevertheless, Domagk's lack of party-political consciousness cannot be ignored, as an increasing number of recent individual studies have shown that many well-known university professors for pathology joined the NSDAP during the Third Reich. Prominent examples include Carl Krauspe [46], and Walter Müller [47]. The fact that these examples tend to be more of a rule than an exception could be identified in two cross-sectional analyses, according to which, of the 60 leading pathologists in the Third Reich and in the post-war years, over 60 % had joined the NSDAP - a percentage rate that is significantly higher than the average membership rate of medical doctors during the Third Reich (approx. 45 %). Moreover, two-thirds of the chairmen German Society of Pathology (DGP) appointed in the Federal Republic of Germany until 1986 were former NSDAP members [48]. A similar rate of party membership was recently identified for pathologist awarded the Virchow Prize in the Federal Republic of Germany [49].

Against this background, the fact that Domagk did not join the party seems a relevant point. On the other hand, the singular case of political repression related to the awarding of the Nobel Prize does not ascribe

Domagk to the role of a victim of Nazism. As outlined above, some of the claims and interpretations made by Grundmann that point in this direction are sugarcoated. The same applies for the abridged addition of Domagk's memoirs that were published. The degree to which Domagk's life stood in stark contrast with actual victims of National Socialism has been illustrated by recent studies about pathologists such as Walter Pagel [50], Julius Rothberger [51], Paul Kimmelstiel [52], Hans Popper [53] and Philipp Schwartz [54]: as opposed to Domagk, they all lost their professional perspectives and their livelihoods.

Moreover, a cross-sectional study was recently released that summarizes the essential characteristics shared by victims of National Socialism from the area of pathology. This study investigated 89 pathologists who were removed from their professions and stripped of their rights. The majority of these felt the necessity to emigrate and to restart their professional careers far from their home country; five of these pathologists died at concentration camps and a handful of others were driven to commit suicide [55,56].

## 5. Conclusion

If we apply the characteristic attributes of perpetrator and victim of National Socialism described here to the person of Domagk, based on all available primary sources it is evident that he *cannot* be categorized as a Nazi perpetrator *nor* as a Nazi victim. Indeed, being forced to reject the Nobel Prize awarded Domagk an advantageous position for painting himself as a victim of National Socialism after 1945 - an interpretation later adopted, expanded and entrenched by various biographies.

In truth, Domagk was a *profiteer* of the Nazi regime: he used his (largely National Socialist) professional network to gain privileges such as regular trips abroad while also, as Weindling argues, supporting the "war-medicine research efforts of the National Socialist state" through his scientific contributions [57]. In other words, Domagk molded himself to the regime, allowed himself to become integrated in it and therefore contributed to making it more presentable. As such, he bears the classic designation of a political accomplice.

At the same time, the case of Domagk is an example of the limits of applying the dichotomous classification of perpetrator and victim in black and white terms. In contrast to especially Grundmann's and Stummeyer's assertions, the available primary sources do not allow a judgment in one or the other direction. When appraising historical events and individuals, we must often rely on a strong degree of differentiation and break through conventional categories. In other words, in dialoging with contemporary historian Thomas Nipperdey: "[...] the basic color of history is grey, in endless variations." [58]. Working through these is one of the central tasks of research on National Socialism, and Domagk provides us with a paradigmatic example for addressing this necessity.

## Declaration of Competing Interest

None.

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# Success or failure? Pathologists persecuted under National Socialism and their careers after emigrating to the United States<sup>☆</sup>

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## ABSTRACT

This study examines the biographies of pathologists persecuted by the National Socialists after their emigration from the German Reich to the USA. The work is based on primary sources from various archives and a systematic evaluation of secondary literature on the persons concerned.

The study yields five central results: (1) Out of 118 identified persecuted pathologists, a total of 91 persons left the German Reich, 60 of them demonstrably to the USA. (2) The majority of the pathologists immigrated to the USA between 1938 and 1941. (3) A good two thirds of the pathologists were (again) employed in the USA as university teachers, the majority in the leading position of Full Professor. (4) The preferred area of employment was the East Coast of the USA. (5) The labor market situation was particularly favorable for specialized pathologists.

It can be concluded that the majority of the emigrated pathologists studied succeeded in continuing or even expanding their professional careers in the USA, with existing academic networks playing a noticeable role. Pathology thus occupies a special position in the context of the migration history of persecuted physicians under National Socialism.

## 1. Introduction

Within the community of German physicians, the National Socialist government considered a relatively large portion (around 10 %) to be Jewish or “non-Aryan”. Following Hitler’s assumption of power in January 1933, these individuals were increasingly subject to repression, including the loss of their professional positions, wide-ranging social and economic disenfranchisement, and even deportation to concentration camps and death [1]. The only option for escaping from Nazi persecution in the long term was to resort to emigration. In many cases, however, this meant leaving behind their loved ones, social environment and the life perspectives they had enthusiastically believed in. Moreover, for a number of these individuals, the path to emigration – regardless of the destination country – remained out of reach due to health, financial or other reasons related to their personal situation. One example of such people in such a position is provided by the recently published biographies of pathologists Carl Julius Rothenberger (1871–1945) [2] and Edgar von Gierke (1877–1945) [3].

The three most common destinations for physicians fleeing

persecution under the “Third Reich” were Palestine, Great Britain and the United States. By 1936, at the latest, the United States ranked first as an emigration destination as the country offered relatively good opportunities for pursuing a medical career at this time, especially for those working in the area of university research [1,4,5]. US immigration laws also contained special provisions to simplify the admission of university teachers who had previously been offered a teaching position [4]. Yet, the immigration to the United States was also associated with considerable bureaucratic hurdles [5]. Additionally, the need and demand for medical professionals did not apply to all specializations in equal measure.

Within this context, the present study investigates the career perspectives available for pathologists from the German Reich and its annexed territories, who emigrated to the United States. The study primarily refers to two recent published papers by Sziranyi et al. and Kaiser et al. that specifically investigate pathologists persecuted in the Third Reich. Both studies highlight that most of these professional émigrés encountered promising employment perspectives abroad. However, these two studies do not specifically address the United States

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as a destination country and, as such, do not provide for any direct comparison among the various destination countries; instead, they focus on persecuted pathologists as a whole, including medical professionals who stayed behind in Germany [6,7].

The present investigation seeks to fill this gap. Our first aim, therefore, is to compile a comprehensive overview of the persecuted pathologists who emigrated to the United States along with their socio-demographic profiles (biographical data, gender, reason for persecution). The second part looks into the career phases of the emigrated pathologists to identify professional setbacks or continuities upon settling in the United States. We compare the career status of those in question before their political disenfranchisement in the German Reich to the professional positions they subsequently managed to attain in the United States. Moreover, we determine how many pathologists (once again) were able to assume employment at universities in the United States and which positions they held there. Our investigation likewise seeks to identify if the career paths of specialized pathologists were markedly different from those of general pathologists. Finally, we consider whether certain (geographic) regions within the United States were preferred destinations among these émigrés.

## 2. Material and methods

The present study combines a quantitative and qualitative approach: our identification and classification of the pathologists persecuted under National Socialism draws on various archival sources from the National Archives and Records Administration (NARA) in Washington, D.C., the German Federal Archive in Berlin-Lichterfelde (BArch) and the Austrian State Archive (OeStA) along with a review of related research literature about the history of the medical profession and pathologists during National Socialism (1933–1945). All of the identified individuals have been included in a table which we used to extract the pathologists who emigrated to the United States investigated in this study (Table 1). We applied the following selection criteria:

- 1) Origin: all pathologists whose places of work at the time of their emigration were located within the German Reich or in one of its annexed areas (Austria and parts of Czechoslovakia after 1938).
- 2) Date of emigration: we included pathologists who emigrated to the United States between the years 1933 and 1945. The same applies for individuals who only emigrated to the United States after 1945 but had already left the German Reich at some time between 1933 and 1945. Individuals who emigrated to the United States prior to 1933, or those for whom we cannot reliably exclude an earlier date of emigration, were, on the other hand, excluded – with the exception of the Rudolf Kronfeld, a justified special case which that we elucidate later on.
- 3) Professional qualifications: we only included individuals who completed a university degree to become general or specialized pathologists at some point in their careers – be it prior to or following emigration.

## 3. Results

We identified a total of 118 individuals with a proven history of persecution, of which 91 (around four fifth) emigrated abroad. More than half of the identified pathologists (60 individuals), and nearly two thirds of all emigrants, went to the United States – in many cases directly. There were only three women identified among the émigrés to the United States. The overwhelming majority of pathologists were classified by the Nazis as “Jewish” or individuals of “Jewish ancestry”, while two were labeled as “closely related to Jews” (*Jüdisch versippt*). Three people were politically persecuted, and these were also either of Jewish ancestry ( $n = 2$ ) or “closely related to Jews” ( $n = 1$ ). We were unable to reliably determine the reason for persecution in two cases (Tables 1 and 2).

Along with the reason for emigration, we were also interested in the date of departure. Among the identified pathologists, one left for the United States before 1933: even though he emigrated at an early point in time, we included Jewish oral pathologist Rudolf Kronfeld (1901–1940) on account of his involvement in the “Vienna School”. At the beginning of the 1930s, Kronfeld decided to alter his plans and no longer return to Austria while completing a brief professional stay in the United States; this decision was, in part, due to political developments in the German Reich and mounting antisemitism at the University of Vienna, which had gone hand in hand with significant cases of professional repression [8]. In the wake of the first wave of emigration (1933–1935) following the National Socialists’ assumption of power [1,5], six pathologists verifiably emigrated to the United States. At the same time, a total of sixteen individuals from our group of émigrés to the United States left Nazi Germany but first went to another country. Nine individuals left the German Reich during the second wave of emigration (1935–1938) following the enactment of the repressive anti-Jewish “Nuremberg Laws” [1,5], and eleven went to the United States during this period (some from other countries). The majority of pathologists who fled Germany (34 individuals) and those who specifically emigrated to the United States (32 individuals), did so during the third wave of emigration in response to the “annexation” (*Anschluss*) of Austria, additional legal restrictions and the November Pogroms (1938–1941) [1,5]. Ten individuals emigrated to the United States only after 1945, but these had first gone to other countries. There was only one proven case of remigration from the United States to Germany after 1945 (Table 2).

Our investigation into the age structure of these emigrants also led to interesting findings: nearly one third of all emigrants to the United States were born between 1900 and 1910, and one quarter were born between 1890 and 1899. As such, the majority of the individuals within our group were between the ages of 30 and 40 at the time of emigration. The rest of the group was more or less equally distributed among those born before 1890 and those born after 1910 (Table 2).

Among the 60 individuals who emigrated to the United States, we could identify 47 university professors, of which 30 are proven to have attained positions as Full Professors there. The remaining 17 pathologists from this group largely attained the positions of Assistant Professor or Associate Professor. The 13 who were not employed in academia worked as pathologists in hospitals or laboratories (Table 2).

We also identified the states that could be assigned to the main places of work of the individual émigrés to the United States. The most relevant were New York (16 individuals), Illinois (10 individuals), Massachusetts (6 individuals) and Pennsylvania (5 individuals) (Table 2).

Finally, we investigated how many individuals from the group of the US emigrants published in the German, internationally recognized journal “Virchows Archiv” to work out possible parallels to a successful emigration. It was found that 23 of 60 US emigrants published there before their emigration, which is more than one third of this group. Thereof, 18 persons published between one and five articles, three published between six and ten, two even published more than ten (Table 1).

The following section presents a few prototypical biographies with the aim of moving beyond this quantitative overview and considering relevant qualitative aspects. We have ordered them chronologically in accordance with the date of emigration out of the German Reich. We analyzed a final set of individuals – a group of internationally leading oral pathologists who were part of the “Vienna School” – as a special sub-collective.

### Paul Kimmelstiel (1900–1970)

The Jewish nephropathologist Paul Kimmelstiel had been working at the Institute of Pathology at Hamburg University since 1928 under the guidance of his professor and mentor Theodor Fahr (1877–1945) [9, 10]. Upon receiving his post-doctoral degree (*Habilitation*) in 1930, he attained the position of Senior Physician, which he kept until the

**Table 1**  
Full list of identified persecuted pathologists.

Name (Biographical data)	Emigration?	Country of emigration (Year)	Longest workplace (US state)	Reason for persecution	Citizenship	Publications in "Virchows Archiv" before US-emigration
Aterman, Kurt (1913–2002)	yes	Great Britain (1939), USA (1948), Canada (1958)	New York	J	CZ	0
Bauer, Heinz (1914–2003)	yes	British Kenya (1938), USA (1946)	Atlanta	J	AT	0
Bauer, Theodore Thomas (1885–1946)	yes	Netherlands (1938), USA (1939)	Washington	J	AT	1
Bayer, Gustav (1879–1938)	no			H	AT	
Berblinger, Walther Emil (1882–1966)	yes	Switzerland (1938)		R	GER	
Bettinger, Hans Frederick (1897–1975)	yes	China (1936), British Hong Kong (1938), Australia (1939)		R	GER	
Bielschowsky, Max (1869–1940)	yes	Netherlands (1933), Spain (1935), remigration German Reich (1936), Great Britain (1939)		J	GER	
Burkhardt, Ludwig Max Hermann (1903–1993)	no			P	GER	
Casper, Julian (1899–1968)	yes	Palestine (1934)		J	GER	
Corten, Martin Heinrich (1889–1962)	no			J	GER	
Coutelle, Carl (1908–1993)	yes	USSR (1933), Spain (1937), Great Britain (1939), China (1940), British Raj (1943), remigration Germany [Soviet Zone] (1945)		P	GER	
Dietrich, Albert Ernst Theodor (1873–1961)	no			P	GER	
Ehrich, William Ernst (1900–1967)	yes	USA (1935)	Pennsylvania	R	GER	1
Eichbaum, Francisco (1906–1980)	yes	Czech Republic (1933), Great Britain (1939), Brazil (1940)		J	CZ [formerly GER]	
Eisler-Terramare, Michael (1877–1970)	no			J	AT	
Emmerich, Emil (1882–1937)	no			J	GER	
Epstein, Emil (1875–1951)	no			H	AT	
Everett, Frank George (1907–1976)	yes	USA (1939)	Oregon	J	AT	0
Gierke, Edgar Otto Konrad von (1877–1945)	no			H	GER	
Goldschmid(t), Edgar (1881–1957)	yes	Switzerland (1933)		J	GER	
Gottlieb, Bernhard (1885–1950)	yes	Palestine (1938), USA (1940)	Texas	J	AT	0
Gropp, Alfred (1924–1983)	no			H	GER	
Gross, Walter (1878–1933)	no			P	GER	
Gruenwald, Peter (1912–1979)	yes	USA (1938)	New York	J	AT	0
Gudemann, Josef (1897–1972)	yes	Great Britain (1938), USA (1938)	New York	J	AT	0
Guggenheim, Albert (1901–1982)	yes	USA (1934)	Colorado	J	GER	0
Guttman, Eric (1896–1948)	yes	Great Britain (at the latest 1939)		?	GER	
Haslhofer, Leo (1901–1970)	no			J	AT	
Heim, Fritz (1900–1958)	yes	China (1933), British North Borneo (at the latest 1946)		?	GER	
Heinrichsdorff, Paul (1876-?)	no			J	GER	
Herxheimer, Gotthold (1872–1936)	no			J	GER	
Jacobsthal, Erwin (1879–1952)	yes	Guatemala (1934)		J	GER	
Jacoby, Fritz (1902–1991)	yes	Great Britain (1933)		J	GER	
Jaffé, Rudolf Benno Siegfried (1885–1975)	yes	Venezuela (1935/36)		J	GER	
Jellinek, Stefan (1871–1968)	yes	Great Britain (1939)		J	AT	

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Table 1 (continued)

Name (Biographical data)	Emigration?	Country of emigration (Year)	Longest workplace (US state)	Reason for persecution	Citizenship	Publications in "Virchows Archiv" before US-emigration
Joel, Walter (1898–1978)	yes	Egypt (1933), <b>USA (1948)</b>	Oklahoma	?	GER	0
Joseph, Herman (1887–1960)	yes	Great Britain (1939), <b>USA (1940)</b>	Illinois	J	GER	3
Kallmann, Franz Josef (1897–1965)	yes	<b>USA (1936)</b>	New York	J	GER	0
Karplus, Heinrich (1905–1965)	yes	Palestine (1936)		J	AT	
Kaunitz, Hans (1905–1996)	yes	Philippines (1938), <b>USA (1940)</b>	New York	J	AT	0
Kimmelstiel, Paul Herbert (1900–1970)	yes	<b>USA (1934)</b>	North Carolina	J	GER	5
Kino, Frederick Favel (1882–1951)	yes	Great Britain (at the latest 1939)		J	?	
Koss, Leopold George (1920–2012)	yes	Switzerland (1942), <b>USA (1947)</b>	New York	J	PL	0
Kraus, John Erik (1887–1955)	yes	<b>USA (1939)</b>	New York	J	CZ	19
Kronfeld, Rudolf (1901–1940)	yes	<b>USA (1929)</b>	Illinois	J	AT	0
Kuczynski-Godard, Maxime (1890–1967)	yes	France (1933), Venezuela (?), Peru (1936)		J	GER	
Ladewig, Peter Paul (1909–1992)	yes	Turkey (?), <b>USA (1947)</b>	West Virginia	?	GER	3
Laser, Hans (1899–1980)	yes	Great Britain (1934)		J	GER	
Lasnitzki, Arthur (1896–1952)	yes	Great Britain (at the latest 1938)		?	GER	
Lesser, Arthur Jack Henry (1908–1974)	yes	Great Britain (1938), <b>USA (1939)</b>	California	J	AT	0
Lewey, Frederic Henry (1885–1950)	yes	Great Britain (1933), <b>USA (1934)</b>	Pennsylvania	J	GER	1
Loeffler, Louis (1893–1964)	yes	France (1933), <b>USA (1934)</b>	Illinois	J	GER	5
Lowbeer, Leo (1901–1988)	yes	<b>USA (1938)</b>	Oklahoma	J	AT	0
Lowenstein, Ernst (1878–1950)	yes	Great Britain (1938), <b>USA (1938)</b>	California	J	AT	0
Lowenthal, Karl (1892–1944)	yes	Turkey (1933), <b>USA (1938)</b>	Massachusetts	J	GER	4
Mathias, Ernst (1886–1971)	yes	<b>USA (1938)</b>	Wisconsin	J	GER	3
Mayer, Edmund (1889–1987)	yes	Denmark (1933), Lebanon (1936), <b>USA (1941)</b>	Connecticut	J	GER	6
Medak, Hermann (1914–1991)	yes	<b>USA (1939)</b>	Illinois	J	AT	0
Meyer, Fritz (1875–1953)	yes	<b>USA (1936)</b> , remigration Germany [US Zone] (1948)	New York	J/P	GER	0
Meyer, Oskar Ludwig Wilhelm (1881–1957)	no			P	GER	
Meyer, Robert Otto (1864–1947)	yes	<b>USA (1939)</b>	Minnesota	J	GER	0
Neuberger, Albert (1908–1996)	yes	Great Britain (1933)		J	GER	
Neubuenger, Karl Theodor (1890–1972)	yes	<b>USA (1938)</b>	Colorado	J	GER	6
Oberdorfer, Siegfried (1876–1944)	yes	Turkey (1933)		J	GER	
Odenheimer, Kurt John Sigmund (1911–1986)	yes	<b>USA (1937)</b>	Pennsylvania	J	GER	0
Orbán, Bálint Valentin (1899–1960)	yes	<b>USA (1938)</b>	Illinois	J	RO	1
Pagel, Walter Traugott Ulrich (1898–1983)	yes	France (1933), Great Britain (1933)		J	GER	
Panofsky, Walther Johannes Karl Arthur (1883–1951)	no			H	GER	
Pick, Ludwig (1868–1944)	no			J	GER	
Pollak, Eugen (1890–1953)	yes	Great Britain (1938)		J	AT	
Pollak, Otokar Jaroslav (1906–2000)	yes	Netherlands (1938), <b>USA (1939)</b>	Pennsylvania	J	CZ	0
Popper, Hans (1903–1988)	yes	<b>USA (1938)</b>	New York	J	AT	9
	no			P	AT	

(continued on next page)

Table 1 (continued)

Name (Biographical data)	Emigration?	Country of emigration (Year)	Longest workplace (US state)	Reason for persecution	Citizenship	Publications in "Virchows Archiv" before US-emigration
Portele, Karl Alfons (1912–1993)						
Pribram, Hugo (1881–1943)	no			J	CZ	
Putschar, Walter Guido Josef (1904–1987)	yes	<b>USA (1935)</b>	Massachusetts	R/P	AT	2
Rappaport, Henry (1913–2003)	yes	France (1938), <b>USA (1940)</b>	Illinois	J	AT	0
Reif, Arnold Eugene (1924–2018)	yes	Great Britain (1936), <b>USA (1947)</b>	Massachusetts	J	AT	0
Reiner, Leopold (1911–2004)	yes	Austria (1933), Belgium (1938), <b>USA (1939)</b>	New York	J	GER	0
Reiter, Tiberius (1903–1972)	yes	Great Britain (1933)		?	?	
Reuter, Fritz (1875–1959)	no			P	AT	
Rezek, Philipp Raphael (1894–1963)	yes	<b>USA (1938)</b>	Florida	J	AT	3
Ricker, Gustav August Wilhelm Joseph (1870–1948)	no			P	GER	
Rodler, Rahel Anna Ruth, née Zipkin (1878–1944)	no			J	GER	
Rothberger, Carl Julius (1871–1945)	no			J	AT	
Rotky, Hans (1879–1965)	no			J	AT	
Schajowicz, Fritz (1912–1992)	yes	Italy (after 1938), Argentina (?), <b>USA (1980's)</b>	Missouri	?	AT	0
Schiller, Walter (1887–1960)	yes	Canada (1936), <b>USA (1937)</b>	Illinois	J	AT	4
Schoenheimer, Rudolf (1898–1941)	yes	<b>USA (1933)</b>	New York	J	GER	2
Schuster, Paul (1867–1940)	yes	Great Britain (1938)		J	GER	
Schwartz, Philipp (1894–1977)	yes	Turkey (1933), <b>USA (1953)</b>	Pennsylvania	J/P	GER [formerly AT]	0
Sicher, Harry (1889–1974)	yes	<b>USA (1938)</b>	Illinois	J	AT	0
Silberberg, Martin (1895–1966)	yes	Canada (1934), Panama (1936), <b>USA (1937)</b>	Missouri	J	GER	11
Silberberg, Ruth, née Katzenstein (1906–1997)	yes	Canada (1934), Panama (1936), <b>USA (1937)</b>	Missouri	J	GER	3
Silberstein, Friedrich (1888–1975)	yes	Great Britain (1938)		J	AT	
Skubiszewski, Ludwik Marcin (1886–1957)	no			P	PL	
Spitzer, Alexander (1868–1943)	no			J	AT	
Sprinz, Helmuth Simon Elias (1911–1990)	yes	<b>USA (1936)</b>	Missouri	J	GER	0
Stahr, Hermann (1868–1947)	no			J	GER	
Stern, Hedwig Henry (1903-?)	yes	Great Britain (1933)		?	?	
Stern, Kurt (1909–2003)	yes	<b>USA (1938)</b> , Israel (1969)	Illinois	J	AT	0
Stern, Richard (1878–1942)	yes	Czech Republic (1938)		J	GER	
Stoerk, Herbert Carl (1908–1978)	yes	Italy (1938), France (1938), <b>USA (1940)</b>	New York	J	AT	0
Strassmann, Fritz (1858–1940)	no			J	GER	
Strassmann, Georg (1890–1972)	yes	<b>USA (1938)</b>	Massachusetts	J	GER	0
Strauss, Arnold Ferdinand Artur (1902–1965)	yes	Netherlands (1933), <b>USA (1935)</b>	Virginia	J	GER	1
Strauss, Lotte (1913–1985)	yes	Italy (1933), <b>USA (1938)</b>	New York	J	GER	0
Tannenberg, Joseph (1895–1971)	yes	<b>USA (1935)</b>	New York	J	GER	0
Ungar, Henry Zwi (1906-?)	yes	<b>USA (1934)</b> , Palestine (1935)	New York	J	GER	0
Volk, Bruno William (1909–1992)	yes	<b>USA (1938)</b>	California	J	AT	0
	yes	Great Britain (1938), <b>USA (1939)</b>	Massachusetts	J	AT	0

(continued on next page)

Table 1 (continued)

Name (Biographical data)	Emigration?	Country of emigration (Year)	Longest workplace (US state)	Reason for persecution	Citizenship	Publications in "Virchows Archiv" before US-emigration
Wachstein, Maximilian (1905–1965)						
Weinmann, Joseph Peter (1896–1960)	yes	USA (1938)	Illinois	J	AT	1
Wenger, Franz (1913–1988)	yes	Portugal (1938), Bolivia (1939), Venezuela (1945)		J	AT	
Wessely, Zelma, geb. Apfelbaum (1914–2004)	yes	Great Britain (1938), Remigration Austria (1950), USA (1952)	New York	J	AT	0
Wiesner, Richard (1875–1954)	no			H	AT	
Wohlgemuth, Julius (1874–1948)	yes	Palestine (1938)		J	GER	
Wohlwill, Joachim Friedrich (1881–1958)	yes	Portugal (1933), USA (1946)	Massachusetts	J	GER	3
Wolff, Eric Karl (1893–1973)	yes	British Ceylon (1934), Great Britain (1955)		?	GER	
Zak, Frederick Gerard (1915–2005)	yes	Switzerland (1939), USA (1939)	New York	?	AT	0

**Reason for persecution:**

J = Jewish ancestry.

H = "Half-Jew" (*Jüdischer Mischling*).R = "closely related to Jews" (*Jüdisch versippt*).

P = politically persecuted.

? = unknown.

**Citizenship:**

GER = German Reich.

AT = Austria.

CZ = Czech Republic.

PL = Poland.

RO = Romania.

revocation of his teaching qualification and his dismissal in 1933 and in the wake of the National Socialists' assumption of power. Kimmelstiel emigrated to the United States in 1934, where he was hired by the Mallory Institute of Pathology at Harvard University with the help of George Kenneth Mallory (1900–1986), whom Kimmelstiel had become acquainted with during his time in Hamburg and whose father had founded the institute. He received additional support by way of a recommendation letter written by his mentor Theodor Fahr. Kimmelstiel worked at the Medical College of Virginia in Richmond from 1935 to 1940. He assumed the role of director of the pathology section at the Memorial Hospital in Charlotte, North Carolina, from 1940 to 1958. In 1958, Kimmelstiel was appointed Professor at Marquette University Milwaukee in Wisconsin and concurrently worked as a pathologist at the local county hospital. In 1966, he assumed a professorship in the area of Pathology at the University of Oklahoma Medical Center, a position he kept until his death in 1970. After his emigration, Kimmelstiel (together with Clifford Wilson), imparted his name to the diabetic kidney disorder "Kimmelstiel Wilson syndrome", which turned him into one of the most important nephrologists in the world. During his life, Kimmelstiel was the recipient of numerous international awards [9,10].

**Martin Silberberg (1895–1966)/Ruth Silberberg (1906–1997)**

The Jewish couple Martin and Ruth Silberberg (Fig. 1) [11] both had established careers at the Jewish Hospital in Breslau (present-day Wrocław): Ruth was employed as an assistant until 1933 and Martin held the position of laboratory director until 1934. They both emigrated in 1934, first making a stop in Canada, where they found employment at the Pathology Department of Dalhousie University in Halifax, Nova Scotia. After a brief period spent in Panama, where Martin Silberberg worked at a hospital, the couple emigrated to the United States in 1937. The Silberbergs assumed positions at the Department of Pathology at the Washington University School of Medicine in St. Louis, Missouri, under

Leo Loeb (1869–1959), an individual with whom Martin Silberberg had already worked there in the context of the "Rockefeller Traveling Fellowship" between 1928 and 1929. In 1941, they moved to New York University on a fellowship before returning to Washington University in 1944. The couple engaged in joint research about the aging process and arthritis until Martin Silberberg's death in 1966 [12–15]. First employed as an instructor, Ruth Silberberg was appointed as Assistant Professor in 1950, before advancing to an Associate Professor in 1957 and finally to a Full Professor in 1968. She assumed emeritus status in 1974 and continued giving lectures. A few years after, Ruth Silberberg emigrated to Israel where she dedicated the rest of her already advanced years to medical research [14,15].

**William (Wilhelm) Ernst Ehrich (1900–1967)**

William Ernst Ehrich – who was labeled as "closely related to Jews" on account of his non-Aryan wife – was a private lecturer at the Institute of Pathology at the University of Rostock until 1935 under Walter Fischer (1874–1967). In 1929, he had received a fellowship at the Rockefeller Institute Hospital in New York, where he was able to complete his first publications [16,17]. During his time in Germany, Ehrich was a member of the National Socialist Teachers Federation [18]. At the time, even professors who were considered "closely related to Jews" faced the threat of repression – one illustrative example being the biography of the recently studied pathologist Walther Berblinger (1882–1966), who was dismissed from the University of Jena in 1937 [19]. At the time, Ehrich himself anticipated that this sort of disenfranchisement would befall him, as well. Heeding the advice given to him by Fischer, he decided to emigrate to the United States in 1935. By 1936, Ehrich gained a position alongside Edward Bell Krumbhaar (1882–1966) at the University of Pennsylvania's Department of Pathology in Philadelphia. Two years later, he advanced to the position of Assistant Professor and, subsequently, to Associate Professor in 1944. In

**Table 2**  
Categories within the identified pathologists.

General	Number
persecuted pathologists	118
emigrated pathologists	91
US emigrated pathologists	60
<b>Gender (US emigrants)</b>	<b>Number</b>
male	57
female	3
<b>Reason for persecution (US emigrants)</b>	<b>Number</b>
according to NS criteria “Jewish”, “Jewish ancestry” or “Half-Jew”	54
according to NS criteria “closely related to Jews”	2
politically persecuted	3 (thereof 2 at the same time “Jewish ancestry” and 1 at the same time “closely related to Jews”)
unknown reason for persecution	4
<b>Time of emigration (US emigrants)</b>	<b>Number</b>
emigration from Germany/ to the USA before 1933	1
emigration from Germany 1933–1935	16
emigration to the USA 1933–1935	6
emigration from Germany 1935–1938	9
emigration to the USA 1935–1938	11
emigration from Germany 1938–1941	34
emigration to the USA 1938–1941	32
emigration after 1945 from Germany	0
emigration after 1945 to the USA	10
remigration to Germany after 1945	1
<b>Age (US emigrants)</b>	<b>Number</b>
born before 1890	13
born 1890–1899	14
born 1900–1909	19
born 1910–1919	12
born from 1920	2
<b>Field of work (US emigrants)</b>	<b>Number</b>
University teacher/ thereof Full Professor	47/ 30
Non-University teacher	13
<b>Longest place of activity (US emigrants)</b>	<b>Number</b>
New York	16
Illinois	10
Massachusetts	6
Pennsylvania	5
Missouri	4
California	3
Colorado	2
Oklahoma	2
Atlanta	1
Connecticut	1
Florida	1
Minnesota	1
New Jersey	1
North Carolina	1
Oregon	1
Texas	1
Virginia	1
Washington	1
West Virginia	1
Wisconsin	1

1942, he also became the Head of Anatomical Pathology at Philadelphia General Hospital. Finally, in 1946/47, he was appointed Professor of Pathology and Chairman of the Department of Pathology at the Graduate School of Medicine in Pennsylvania, a position he would hold until entering emeritus status in 1966. Ehrlich was one of the first to identify the process of antibody production in cell systems of lymphocytes and plasma cells. Besides numerous memberships and awards in the United States, Ehrlich was also inducted into the German National Academy of Natural Sciences Leopoldina and awarded an honorary doctoral degree



**Fig. 1.** Ruth and Martin Silberberg sitting at a desk, circa 1949 (with kind permission of the Backer Medical Library of the Washington University School of Medicine) [11].

from the Medical Faculty of Freiburg University in Breisgau [16,17].

#### Joseph Tannenber (1895–1971)

Joseph Tannenber was a (non-state employed) Associate Professor at the Pathological-Biological Institute Frankfurt am Main under the guidance of Bernhard Fischer-Wasels (1877–1941). Prior to this, he had worked at the Hygienic Institute in Marburg under hygienist Heinrich Bonhoff (1864–1940) until receiving his post-doctoral degree (*Habilitation*) in 1921. Owing to his Jewish ancestry, Tannenber was stripped of his authorization to teach, after which he was able to find employment as a prosector and the director of the Department for Pathology and Anatomy at the Cecilien Hospital in Berlin. He finally emigrated to the United States in 1935. In the same year, he became the director of research at the Bender Hygienic Laboratory in Albany (New York), where he remained until 1939. He was ultimately appointed to the position of Associate Diagnostic Pathologist at the Division of Laboratories and Research at the New York State Department of Health and a pathologist at the Montefiore Hospital New York City and Bedford Hills (New York), a position he held until 1941. In 1940, Tannenber became laboratory director for the New York Association of Oral Clinical Pathology and, one year thereafter, he assumed the role of director for the Genesee Laboratory Batavia in New York. Tannenber served as a consultant for various hospitals in the period after 1945. His primary research interests focused on the pathology of insulin shock, the peripheral vascular system and the lungs as well as perinatal illnesses. In his lifetime, Tannenber was a member of around a dozen American medical associations [20–23].

#### Franz Josef Kallmann (1897–1965)

The neuropathologist and psychiatrist Franz Josef Kallmann served as the director of the Herzberge Hospital Department of Pathology in Berlin until 1935. In the wake of the “Nuremberg Laws”, he was forced into early retirement on account of his Jewish ancestry, an order that he managed to evade earlier in 1933 on account of his status as a frontline soldier during the First World War. Along with his position at the Pathology Department, Kallmann also worked for race hygienist Ernst Rüdin (1874–1952) at the German Research Institute for Psychiatry (DFA) in Berlin. During this time, Kallmann took part in discussions about the “prevention of offspring with hereditary diseases” and exhibited an affirmative attitude towards forced sterilization. Rüdin was instrumental in Kallmann’s career advancement and assisted him with attaining an easy path towards immigration to the United States via the

Rockefeller Foundation. After arriving, Kallmann first worked as a senior and as an associate research scientist in the area of Medical Genetics at the New York State Psychiatric Institute. Thanks to glowing referrals provided by Rüdin, Kallmann was able to enter the scientific community in the United States. In the 1940s, he was once again working on research related to race hygienics and introduced scientific discourses from Germany to the United States. Kallmann was promoted to the Chief of Psychological Research at the New York State Psychiatric Institute in 1952. Soon thereafter in 1955, he was appointed Professor of Pathology at Columbia University, where he remained until achieving emeritus status in 1963. Today, Kallmann is considered to be the pioneer of psychiatric genetics in the United States. In 1950, he participated in the establishment of the American Society of Human Genetics, which he chaired starting in 1951. Kallmann was also involved in the founding of the American Journal of Human Genetics, as well as being one of its first publishing authors. Kallmann's research projects repeatedly received funding from diverse institutions [21,24–30].

#### *Hans Kaunitz (1905–1996)*

Vienna-born Hans Kaunitz (Fig. 2) [31] served as director of a clinical laboratory at the university clinic in his hometown from 1934 to 1938. Being of Jewish ancestry, Kaunitz left following the “annexation” of Austria, emigrating to the Philippines by way of Great Britain and the United States, where he established a clinical laboratory at the University of the Philippines. In 1935, he became acquainted with the dean of the College of Medicine at the University of the Philippines, who invited Kaunitz to set up the laboratory at this time. Though initially turning down the offer, Kaunitz returned in 1938 in the face of a very much changed situation at home. On account of the Second World War, Kaunitz subsequently emigrated from the Philippines to the United States in 1940. In 1941, he obtained a position as a research associate at the Department of Pathology at Columbia University's College of Physicians and Surgeons in New York. In 1962, he was appointed Assistant



Fig. 2. Portrait of Hans Kaunitz (with kind permission of the AOCS Press.) [31].

Clinical Professor of Pathology at Columbia [32,33]. Kaunitz kept this position until retiring into emeritus status in 1973. He was specialized in the area of experimental pathology and dietary medicine, with a specific interest in fat and mineral metabolism as well as arteriosclerosis [31].

#### *Karl Theodor(e) Neubuerger (Neubürger) (1890–1972)*

Jewish pathologist Karl Theodore Neubuerger, who converted to Catholicism in 1925, was the head of neuropathology office at the Haar Eglfing Asylum (near Munich) until 1935 and worked at the German Research Institute for Psychiatry (DFA) until 1938. As a staff member of Jewish descent, he would have been subject to dismissal in 1933 but managed to elude this action since he had been a frontline soldier in the First World War and thanks to support from DFA director Walther Spielmeyer (1879–1935). Following the enactment of the “Nuremberg Laws”, Neubuerger was ultimately forced to step down from his position of director of the neuropathology office. He has been able to carry on with his research until 1938 through funding from the Rockefeller Foundation as well as backing from Spielmeyer's successor Ernst Rüdin. Once Neubuerger was forced to give up this position, he emigrated to the United States the very same year and assumed a position as an instructor at the School of Medicine at the University of Colorado in Denver. He was quickly promoted to Assistant Professor by 1939 and to Associate Professor by 1944. In 1946, he was appointed Professor of Pathology with a concentration in Neuropathology, where he remained until retiring into emeritus status in 1958. Moreover, from 1951 to 1960, Neubuerger worked as a pathologist at the General Rose Memorial Hospital in Denver. He published numerous works in various scientific journals and the DFA awarded him the “Golden Kraepelin Medal” in 1966 [21,34–36].

#### *Hans Popper (1903–1988)*

Jewish hepatopathologist Hans Popper worked as an assistant at the University of Vienna's Pathology Department until 1938 while also holding a job at the university's 1st Medical Clinic. In 1937, the Vienna-born pathologist received an offer from Cook County Hospital in Chicago, which he only later accepted (with worse conditions) in response to Austria's “annexation” into Nazi Germany and his subsequent dismissal. He finally emigrated to the United States in 1938. During his time in Vienna, Popper offered post-graduate courses to US-American physicians, which had allowed him to establish contacts in the United States. In 1941, Popper obtained a Master of Science in Pathology, followed by a Doctor of Pathology and Physiology, both at the University of Illinois. From 1943 to 1945, as he had already obtained citizenship, Popper served in the U.S. Army and served the army as an advisor for pathology. In 1943, he founded the Hektoen Institute for Medical Research and served as its scientific director until 1957. Popper then became the director of the Pathology Institute at Mount Sinai Hospital in New York. During this time, he was involved in the establishment of the Mount Sinai School of Medicine, for which he would serve as dean and later president. He entered emeritus status in 1973. Popper is considered to be the pioneer of modern hepatopathology. He received numerous international awards and recognition during his lifetime as well as posthumously. This includes two different versions of the “Hans Popper Prize” – one in the United States (awarded by the Falk Foundation since 1989) and one European (awarded by the Austrian Society of Pathology since 2014) – as well as the annual “Hans Popper Lecture” at the Vienna Medical Faculty [37–39].

#### *Henry (Heinrich) Rappaport (1913–2003)*

The young physician and subsequently trained hematopathologist Henry Rappaport worked at the Vienna Hospital until 1938. On account of his Jewish background, he was dismissed from his position upon Austria's “annexation” and left for France via Switzerland in 1938. Soon

thereafter, in 1940, he emigrated to the United States. From 1943 to 1946, Rappaport joined the U.S. Army where he served in the war as a Medical Corps officer. After the end of the war, he became an Assistant Professor at the George Washington University School of Medicine, a position he kept until 1954. Rappaport maintained his links to the U.S. Army: from 1947 to 1949, he worked as a pathologist and laboratory supervisor at the Veteran's Administration Hospital and, from 1949 to 1954, as department head for reticuloendothelial pathology and hematology at the Armed Forces Institute of Pathology, both located in Washington, D.C. He became an Associate Professor of Pathology in 1954 and Associate Professor of Oncology at the University of Chicago in 1958. Rappaport finally achieved the position of Full Professor for the area of Oncology in 1962 and for the area of Pathology in 1965. Since 1971, he was also a Visiting Professor at the University of Paris and conducted research at the Institut de Cancérologie d'Immunoténétique (INSERM) at Hôpital Paul Brousse in Villejuif (France). Rappaport entered emeritus status in 1975, became the director of the Department of Anatomic Pathology at the City of Hope National Medical Center in Duarte (California) and also acted as a consultant for various (military) hospitals. He was famous for the (now obsolete) classification of malignant lymphomas, which were named after him [40–44].

*Herman(n) Josephy (1887–1960)*

The Jewish physician Herman Josephy (Fig. 3) [45] was the professor and acting director of the Neuropathology Department of the University of Hamburg. He was named Associate Professor in 1930. Josephy was one of 16 professors at the University of Hamburg Medical Faculty who were dismissed in 1933. As he had been a frontline soldier in the First World War and recipient of a Class 2 Military Service Cross, Josephy was first able to maintain his license to serve as a physician. He worked as a specialist for neurological diseases in Hamburg as well as a counselor at the Israelite Hospital until 1938, when he was held at the Sachsenhausen concentration camp for one month. In 1939, Josephy first emigrated to Great Britain at the age of 50, where the Society for Protection of Science and Learning (SPSL), which he had contacted in 1933, granted him a research position at the Runwell Hospital in Essex, albeit unpaid. In 1940, Josephy was incarcerated for one month on the charge of being an "enemy alien". Upon his release, he moved to the United States and began his professional career there by completing an

internship at the Lincoln State School and Colony in Illinois. He passed the state board medical examination in 1941 and worked in Lincoln as a certified physician until 1944. In 1945, Josephy assumed the position of Laboratory Director at the Chicago State Hospital. In 1946, he became certified by the Specialty Board in Psychiatry and Neurology and by the American Board of Pathology in 1947. In the same year, Josephy took on the role of Head of Pathology at the Bethany Methodist Hospital and the Swedish Covenant Hospital, which he kept until his death in 1960. From 1949 to 1951, he was also an Associate Professor of Neurology at the Chicago Medical School. Hermann Josephy was elected Vice President of the American Academy for Cerebral Palsy and Developmental Medicine until 1960 [21,45–48].

*Bruno William (Wilhelm) Volk (1909–1992)*

The Viennese Bruno William Volk, who was of Jewish origin and only 28 years old at the time of Austria's "annexation", passed through probably the most career stages in emigration. He worked at the Pathology Institute at the University of Vienna until 1938, at which point Volk emigrated to the United States, where he was first employed at Provident Hospital and at the Training School Chicago. From 1939 to 1941, he was hired as a pathologist at Cottage Hospital and at the Training School Chicago. From 1942 to 1949, he held a position at Cook County Hospital in Chicago. During this period, he was also a research fellow and subsequently a research associate and assistant pathologist at the Department of Pathology at Hans Popper's Hektoen Institute for Medical Research. He held both of these positions while serving as Chief of Laboratory Services for the 178th and 98th General Hospital of the U. S. Army. Starting in 1947, Volk also held a professorship at the University of Chicago's Pathology Institute. In 1949, he moved to Kingsbrook Jewish Medical Center in Brooklyn (New York) where he served as head of the laboratory and later as the director of the Isaac Albert Research Institute. Volk became a Clinical Associate Professor starting in 1960, a Clinical Professor in 1965 and finally a Professor at the Department of Pathology at the University of California in Irvine as of 1975. In between (1956–1960), he spent a period as a Visiting Associate Professor of Pathology at the Albert Einstein College of Medicine in the Bronx, New York, and became a member of the Department of Pathology at Downstate Medical Center S.U.N.Y. in Brooklyn, New York, in 1960. He resigned from all of his functions in 1977 but remained at the

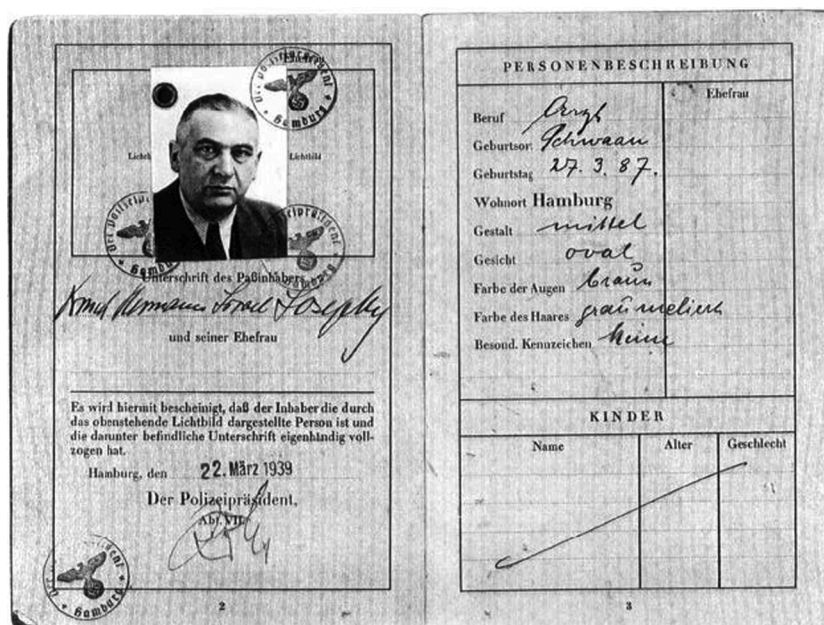


Fig. 3. Passport of Herman Josephy, 22nd March 1939 (with kind permission of Jan-Patrick Stellmann) [45].

University of California as a Professor in Residence as well as an employee for pathology and veteran's administration at the Long Beach Medical Center in California. Volk also served as President of the New York Pathological Society for a time [21,49,50].

#### *The oral pathologists of the "Vienna School"*

The "Vienna School" is a special case among the persecuted pathologist émigrés. The school's representatives included Bernhard Gottlieb (1885–1950) – founder of the Vienna School –, Rudolf Kronfeld (1901–1940), Bálint Orbán (1899–1960), Joseph Peter Weinmann (1896–1960), Harry Sicher (1889–1974), Frank G. Everett (1907–1976) and Herman Medak (1914–1991), all of whom were of Jewish descent. Each one of them, with the exception of Medak, completed their medical studies and went on to specialize in the area of dentistry and oral pathology at the post-graduate level. On account of their extensive educational backgrounds and their specialized expertise as oral pathologists, they had gained international renown even before emigrating abroad. In this study, we have decided to treat them collectively, as this group offers an illustrative example of just how great demand for (specialized) pathologists was in the United States during this period.

While Rudolf Kronfeld, as mentioned, had already left for the United States in 1929 (on a two-year contract) and decided against returning to Europe in the 1930s, the rest of the Vienna School group was actively employed at the University of Vienna up until 1937/1938. It is worth noting that Bálint Orbán completed a two-year guest professorship at Loyola University Chicago (Illinois) from 1927 to 1929 (which Kronfeld took over), after which point he returned to Vienna. Considering the contacts he had made in the United States, it comes as no surprise that Orbán ultimately decided to emigrate there shortly before Austria's "annexation" into the German Reich. Joseph Peter Weinmann chose the direct path to the United States while Harry Sicher (first via Great Britain), Frank Everett and Herman Medak settled on American soil one year later. The last to follow was Bernhard Gottlieb, the founding member of the "Vienna School" [51–60].

Chicago was soon to become the school's American hub. Upon assuming a position at Loyola University Chicago in 1929, Kronfeld became the youngest professor at the entire institution. He taught Histopathology at the Chicago College of Dental Surgery (CCDS) [8,59]. However, the seriously ill professor committed suicide in 1940 and was one out of a small group of eight pathologists who are proven to have taken their lives during this period – in the German Reich or after emigrating [6,61].

Orbán went on to become Kronfeld's successor. He first assumed the directorship of the university's research foundation and then became a professor for Periodontology starting in 1948. In 1952, Orbán founded the Colorado Dental Foundation in Colorado Springs [58,62].

Harry Sicher was an Associate Professor at Loyola University Chicago from 1939 to 1942 before being promoted to Professor of Anatomy and Histology and appointed to the board of the Institute of Anatomy [58,63].

Joseph Peter Weinmann held the position of Assistant Professor of Oral Pathology, likewise at Loyola University Chicago from 1939 to 1946 until moving to the University of Illinois at Chicago in 1946, first being appointed as an Associate Professor at the Department of Histology and subsequently as a Full Professor and director of the Division of Oral Pathology [58,64].

Herman Medak, who was forced to emigrate at a young age just before completing his medical examination, went through numerous educational and professional training programs in the United States to become a dentist, oral pathologist and anatomist. Starting in the mid-1940s, he specialized in oral pathology and worked as a research assistant at the University of Illinois as of 1948. After serving in the U.S. Army as a medic for a short period of time, Medak returned to work at the University of Illinois, becoming an Instructor of Oral Pathology in

1953, Assistant Professor in 1959, Professor and acting Head of the Department of Oral Diagnosis and Oral Medicine in 1964 and, finally, Professor of Preventive Medicine and Community Health in 1967 [60].

Frank Everett (Fig. 4) [56] was the only oral pathologists who chose to settle on the West Coast. He immigrated to Oregon in 1939, obtained various academic degrees and became an Instructor at the Oregon School of Dentistry in 1941, where he specialized in pathology of the periodontium. Everett also amassed some notable professional acclaim. He was named Assistant Professor in Oregon in 1948. He became an Associate Professor and Head of the Periodontal Department in 1952 and, ultimately, Professor of Periodontics in 1957. Everett was dedicated to the cause of assisting dentists forced into migration; he organized a program that helped give freed-up spots at universities to immigrants so they could obtain an American degree in the area of dentistry [59].

Gottlieb likewise did not settle in Chicago, even though he had enjoyed close connections with the university during his time in Vienna and even helped send his disciples Orbán and Kronfeld there. After spending a short period at the Kellogg Foundation's Training Institute in Ann Arbor, Michigan, he was appointed as Professor of Oral Pathology and Department Head at the Dental School der Baylor University in Dallas, Texas. By the time he immigrated to the United States in 1939, he was already 54 years old. Unlike his mostly much younger colleagues, Gottlieb had difficulties adjusting to his new home, to American culture and to the language. Dallas was far away from Chicago and Gottlieb lost his ties to his former students Orbán, Sicher and Weinmann, who engaged in close cooperation at Loyola University Chicago and would soon go on to found "The Vienna Group of Illinois" [65]. Gottlieb's early death in 1950 bestowed international renown on him once again [66].

#### **4. Discussion**

How can we evaluate the collected data and extended examples of these pathologist émigrés who were persecuted by the Nazis and also situate their biographies within the more general context of emigration (by medical physicians) to the United States?

The first notable finding is that the proportion of persecuted pathologists who ended up emigrating (77 %) is higher than that of the overall community of physicians (around two thirds) [67]. Similar differences can be seen for those who emigrated to the USA: here, too, the proportion of pathology specialists (almost two-thirds of all emigrants) is significantly higher than for emigrated physicians, about half of whom went to the USA [5]. Statistical differences can also be identified between physicians and pathologists in relation to the émigré university professors who were again able to find positions as Full Professors in the United States. Around two thirds of university professors for Pathology regained their professorships, much higher than physicians in general, only half of whom were able to do the same [1]. The emigrated pathologists thus assume a distinguished position among all medical professionals in terms of the immigration to the United States as well as the academic career positions they managed to attain in the United States as their destination country.

The aforementioned preference for settling on the East Coast of the United States does not prove to be remarkable in any regard, as this pattern proves common in medical migration research [68]. The time periods between the various waves of migration is also similar among the pathologists and the overall medical community [5].

The fact that women only account for only a very small portion of the pathologists who were persecuted in general and those who emigrated to the United States [6] owes to the fact that it was rare for a woman to obtain an academic degree during this period of investigation – a finding that also applies to the general community of emigrated physicians [1].

The percentage of US emigrated pathologists who published in "Virchows Archiv" before their emigration marks a particularly high number, especially if one considers that "Virchows Archiv" was a journal for general pathology and that the group of persons includes a considerable number of specialized pathologists who mainly published in other

No. **20683**

**UNITED STATES OF AMERICA**

**DECLARATION OF INTENTION**  
(Invalid for all purposes seven years after the date hereof)

UNITED STATES OF AMERICA } In the UNITED STATES DISTRICT } Court  
DISTRICT OF OREGON } ss: } of OREGON } at PORTLAND, OREGON }

I, **FRANK GEORGE EVERETT - Formerly Franz Ehrenfest**  
now residing at **607 NE Pacific Street, Portland, Multnomah, Oregon**  
occupation **Student**, aged **31** years, do declare on oath that my personal description is:  
Sex **male**, color **white**, complexion **ruddy**, color of eyes **brown**  
color of hair **brown**, height **5** feet **10** inches; weight **145** pounds; visible distinctive marks  
**None**.  
race **Hebrew**; nationality **German**  
I was born in **Vienna, Germany** on **Dec. 28th, 1907**  
I am **un** married. The name of my wife or husband is **Loa Leonis**  
we were married on **Oct. 18th, 1937** at **Vienna, Germany**; she or he was  
born at **Vienna, Germany** on **Oct. 3rd, 1916**; entered the United States  
at **New York, N.Y.** on **April 20, 1939** for permanent residence therein, and now  
resides at **Portland, Oregon**. I have **no** children, and the name, date and place of birth,  
and place of residence of each of said children are as follows: **no**

I have **not** heretofore made a declaration of intention: Number \_\_\_\_\_ on \_\_\_\_\_  
at \_\_\_\_\_  
my last foreign residence was **London, England**  
I emigrated to the United States of America from **Southampton, England**  
my lawful entry for permanent residence in the United States was at **New York, N.Y.**  
under the name of **Franz Ehrenfest** on **April 20, 1939**  
on the vessel **SS Queen Mary**  
I will, before being admitted to citizenship, renounce forever all allegiance and fidelity to any foreign prince, potentate, state, or sovereignty, and particularly, by name, to the prince, potentate, state, or sovereignty of which I may be at the time of admission a citizen or subject; I am not an anarchist; I am not a polygamist nor a believer in the practice of polygamy; and it is my intention in good faith to become a citizen of the United States of America and to reside permanently therein; and I certify that the photograph affixed to the duplicate and triplicate hereof is a likeness of me.  
I swear (affirm) that the statements I have made and the intentions I have expressed in this declaration of intention subscribed by me are true to the best of my knowledge and belief. So help me God.

*Frank George Everett - Formerly Franz Ehrenfest*  
Subscribed and sworn to before me in the form of oath shown above in the office of the Clerk of said Court, at **PORTLAND, OREGON**  
this **25th** day of **September**, anno Domini, 19**39**. Certification No. **2-66083** from the Commissioner of Immigration and Naturalization showing the lawful entry of the declarant for permanent residence on the date stated above, has been received by me. The photograph affixed to the duplicate and triplicate hereof is a likeness of the declarant.

[SEAL] Clerk of the UNITED STATES DISTRICT Court.  
By *[Signature]* Deputy Clerk.  
Form 2205-1-34 U. S. DEPARTMENT OF LABOR IMMIGRATION AND NATURALIZATION SERVICE

14-5000  
A GOVERNMENT PUBLICATION

No. 325113




Fig. 4. Petition for Naturalization of Frank George Everett [56].

journals. Moreover, within the group of US emigrants there are many younger people who had not published much before emigrating. This further narrows down the group of those who are eligible for publications in “Virchows Archiv”, which is why the proportion appears even higher. When looking at the professional positions of the corresponding group of persons, however, no uniform pattern of correlation to the number of articles published in “Virchows Archiv” can be identified. For example, there were a few individuals with the rank of full professor that published in “Virchows Archiv” before their emigration, but this was not the majority, since a similar number of persons from this group worked in hospitals or in non-university research settings. Nevertheless, there is a connection between the publications in “Virchows Archiv” and professional recognition or success in general. As a leading international journal, “Virchows Archiv” shows that Germany was an important and attractive scientific location for pathology, which is an indication of why pathologists from German-speaking countries were welcome in the USA. Accordingly, we can speak of a connection between publications in “Virchows Archiv” and successful professional resumption in emigration.

Despite the relatively favorable conditions that physicians researchers encountered, the obstacles that stood in the way of successfully immigrating to the United States must also be discussed. The United States introduced a quota in 1924 on the number of visas that could be issued annually, limited to around 26,000 immigrants from Germany. In order to obtain a quota allocation, a migrant needed to present an affidavit from a U.S. citizen [5,67,69]. During the 1930s, this

quota allocation was once again frozen completely, leading to long waiting times for obtaining a visa [69]. According to Villiez, actually getting the required affidavit from a U.S. citizen often demanded “great efforts, lucky coincidences and a gift for improvising” [5]. Besides the challenges of obtaining a visa due to the quota system, physicians were also confronted with the additional requirements of passing board exams and completing a period as an unpaid medical assistant in order to have the opportunity to get relicensed. Eric Kohler provides an overview of the conditions involved in the relicensing process for physicians as set out by the license boards in each individual state. The license boards were chaired by professional politicians from the medical field, who, in many cases, tended to be opposed to immigrant physicians being allowed to practice their profession as these were seen as competitors during a time of overall economic difficulties. The issuing of new licenses was often subject to a rather arbitrary application of the law [5,67,70]. The conditions for relicensing as a physician varied in the individual US states, which contributed significantly to the choice of place of work. For example, the conditions for admission were particularly favorable in New York, where until 1936 even foreign medical state examinations were generally recognized. Later, however, emigrants had to take an additional exam here as well, and only in isolated cases could the Board of Regents recognize foreign licenses [68,70]. This shows that the recognition of professional status as a physician in the United States varied both regionally and over time.

At the same time, the professional politicians and bureaucratic hurdles mentioned above were, in part, counterbalanced by a range of help

organizations for persecuted physicians. Nevertheless, according to Kathleen M. Pearle, these organizations could only help to a limited extent [68]. She points out that migrant physicians were only welcomed if part of a small circle of established and/or professionally outstanding individuals [68] or if there was a need for specialists in a certain area. As analyzed by Herbert A. Strauss, Pearle and Helga Embacher, it follows, then, that the conditions limiting the acceptance of medical practitioners from abroad finally eased once the United States entered the war in 1941, which led to a lack of physicians at home, followed by the economic boom during the post-war years [4,68,69].

In their study about pathologists persecuted under National Socialism, Sziranyi et al. identified that satisfying the medical qualification requirements and creating professional connections posed few problems for pathologists. As our investigation shows, this especially applied for the United States as a target country for migration (which was not specifically studied by Sziranyi et al.). One reason for this was the shortage of pathologists working at hospitals (more acute in some states of the U.S. compared to others), which improved the prospects for this group of immigrants [6]. This also partially explains the differences we identified between this group and physicians in general. What is also noteworthy is that a significant number of the pathologists investigated here took on practical employment in hospitals prior to moving to an academic career and many paired their work at university with part-time assignments at a hospital – a completely common practice in the United States. Kimmelstiel, for example, was the director of the Pathology Department at a hospital in Charlotte from 1940 to 1958 before moving to Marquette University in Milwaukee, where he then also engaged in part-time work at the local county hospital. Herman Josephy first worked as a medical intern before assuming an academic career. During his career, he also combined clinical service with academic work: up until his death, he headed the pathology section at Bethany Methodist Hospital and the Swedish Covenant Hospital along with the position of Associate Professor at the Chicago Medical School.

As we can identify from the biographies outlined here, most pathologists were able to gain a foothold at a university institution by way of a fellowship or as a research assistant (in many cases with modest pay or of a limited duration) before ascending in their academic careers. The extent to which affidavits leveled the playing field is only verifiable for very few cases. There is, however, ample evidence demonstrating that many pathologists had existing connections in the United States, as was the case for Kimmelstiel (contact with Mallory), the Silberberg couple (contact with Loeb), Hans Popper (contacts via the post-graduate courses he offered for physicians from the United States) and the Vienna oral pathologists (contacts via earlier work done by Kronfeld and Orbán in Chicago). These sorts of connections likely reduced the bureaucratic hurdles involved in immigrating to the United States. Many pathologists could also fall back on help organizations, such as the Rockefeller Foundation, to facilitate their immigration process – as Silberberg, Ehrlich, Kallmann and Neuburger did. Kaunitz and Popper were even offered positions prior to moving, which immensely simplified their immigration process. The examples cited above support Pearle's assertion relating to the degree of acceptance for especially qualified migrant physicians. However, our study also includes individuals such as Rappaport and Volk, who only completed their professional degrees (which permitted them to have successful careers) after immigrating. In some cases, pathologists who already had a professional status in Germany have passed subsequent examinations in the United States. Herman Josephy, for example, passed the medical state board examination in 1941, having previously only worked as a medical intern. However, he is an exception among the pathologists discussed in this study, which shows that the process of relicensing seems to have caused fewer problems for pathologists than for other physicians.

Embacher concludes that age at the time of immigration also played a role. Older individuals often had a more difficult time accepting assistance or conceding to inferior professional positions, as this was often associated with downward social movement. Younger individuals,

on the other hand, often considered migration to be a challenge they must overcome [69]. Moreover, Strauss highlights that young immigrants were frequently recruited for service in the U.S. military, which brought with it advantages for their future careers and facilitated integration [4].

It is notable that the majority of pathologists who emigrated to the United States were young. Only 13 of the 60 individuals identified for this study were born prior to 1890. Examples such as Herman Josephy and Bernhard Gottlieb lend support to Embacher's assertion that the careers of older émigrés far less frequently ended in success compared to their younger counterparts. Moreover, the examples of Rappaport, Volk and Medak illustrate that young émigrés simply had more time to climb the professional ladder, starting at the lower rungs and ending up in leading positions. Additionally, these cases confirm Strauss' argument about the integral roles of military service: all three immigrants spent their early years serving in the U.S. military.

Another outcome of our study is the realization that specialized pathologists, in particular, were quickly able to achieve career success. Along with the influential and often highly successful representatives of oral pathology from Vienna, the cases of Kimmelstiel (nephropathology), Popper (hepatopathology) and Henry Rappaport (hemopathology) were pioneers in their respective areas internationally. There is also evidence of special funding (e.g., via the Rockefeller Foundation) given to neuropathologists, especially to those working at DFA, such as in the cases of Kallmann and Neuburger. It is remarkable that Kallmann received funding specifically on account of his research of race hygienics. The career paths of the Viennese oral pathologists are particularly striking. Balint Orbán and Rudolf Kronfeld had already started research activities in the United States before Austria's "annexation", allowing them to establish a professional network that very likely helped them subsequently establish their careers. This is particularly evident based on the observation that all the representatives of the "Vienna School", except for Bernhard Gottlieb and Frank Everett, were working in Chicago where Kronfeld and Orbán attained professorships in the area of histopathology.

Being part of this group of oral pathologists from Vienna brought with it an additional advantage, as well: most representatives of this group continued their university careers in the United States at dental colleges, where they assumed exceptional positions. American dentists only had to complete a degree in dentistry. This study was very much practically oriented. American dentists therefore possessed little basic knowledge of medicine and pathology, whereas oral pathologists from Austria were fully trained and qualified medical physicians who specialized in dentistry and oral pathology in the course of a further professional degree once attaining their medical license as physicians. As such, the Austrians were more qualified than their American counterparts when moving to the area of oral pathology. This certainly conferred onto the oral pathologists from Vienna a significant advantage in the professional selection process. Concurrently, on account of their broad medical education, the Viennese oral pathologists and dentists also enjoyed an advantage vis-à-vis German dentists, who were also not fully trained and qualified physicians. As such, once they had successfully immigrated, the German dentists had to directly compete with their practically trained American counterparts to a much greater degree. In a significant number of cases, this often meant that the émigré German dentists were ultimately unable to find an adequate professional position in the United States and often ended up working as dental technicians or in areas not related to their original professions [71,72].

On the whole, it is noteworthy that nearly all of the pathologists in our group stayed in the United States after 1945, which is certainly an indication of a successful immigration process. Fritz Meyer (1875–1953) was only identified case remigration from the United States back to Germany after 1945. Meyer returned to Germany in 1948 at the age of 70 – and did so without his family. Upon returning, he gave medical lectures in Marburg and West Berlin and continued his research on tuberculosis that he had started in the United States. For him,

returning to Germany was primarily a matter of duty. In a letter dated January 13, 1952, Meyer wrote about his life in Germany: “For as long as I can continue producing at least the minimum, it will be my obligation to take on this task” [73].

One topic that we have not yet addressed is the extent to which other countries offered émigré pathologists similar opportunities as the United States. There are, indeed, some indications that a number of pathologists were able to continue their careers as university professors in other countries. These included Walther Berblinger, who settled in Switzerland [19], Walter Pagel (1898–1983) in England [74], Hans Frederick Bettinger (1897–1975) in Australia [75] or Philipp Schwartz (1894–1977) in Turkey [76]. However, these were isolated cases that represent an exception that proves the rule. In fact, no other country offered as many pathologists a new professional home as the United States.

England and Switzerland were pitfalls in terms of immigration: although Walter Berblinger was able to gain a professional foothold in Switzerland and get a position as director of a tuberculosis institute after being dismissed as a professor in Jena (1937), he never succeeded in obtaining a professorship. Moreover, he was stripped of his position on the editorial board for the internationally circulated “*Centralblatt für allgemeine Pathologie und pathologische Anatomie*” (Central Magazine for General Pathology and Pathological Anatomy) due to political reasons in 1939, despite the fact that his work in this role had been exemplary while in Davos. As such, he was not completely shielded from Nazi repression, even in Switzerland, as Sziranyi et al. argue, but “became painfully aware that the ‘long arm’ of the National Socialists extended as far as Switzerland” [19]. Walter Pagel was also deprived of having an illustrious academic career while in England. He primarily worked as a pathologist at various hospitals in London and assumed the role of head of the Pathology Department at Central Middlesex Hospital starting in 1939. In 1956, he moved to the “Clare Hall Sanatorium” in the Barnet borough of London, where he worked until 1967.

Other pathologists had even a harder time in England than Pagel. As mentioned above, Josephy first emigrated to Great Britain, where he was only able to get an unpaid research position at Runwell Hospital in Essex (1939) and was subsequently incarcerated for being an “enemy alien” in 1940. Considering this, it is no wonder that he went on to emigrate to the United States after his release. The oral pathologists Harry Sicher and Bernhard Gottlieb hardly had better fortunes. Sicher also fled to England after the “annexation” of Austria in 1938 but was unable to find employment, leading him to try his luck in the United States [65,77]. Bernhard Gottlieb had the same experience upon arriving in England: even though he was already a corresponding member of the Royal Society of Medicine in London as well as a member of the British Dental Association, he failed to break through into British academia, as the conditions had become much too restrictive by the time. Gottlieb thereupon also decided to emigrate to the United States. However, the United States were only his third choice: prior to going to England, Gottlieb already attempted to settle in Palestine. Though he did manage to find a position at the Hebrew University in Tel Aviv, he was confronted with drastic infrastructural shortcomings such as libraries, laboratories and equipment, leading him to leave Palestine for Great Britain after just a short time [66]. Kurt Aterman (1913–2002), who would later become an experimental pathologist, also sustained a blow to his career upon immigrating to Great Britain. After completing a six-year course of study, the young physician emigrated from the annexed Czechia to England in October 1939. However, his new host country only recognized two years of his studies, meaning that Aterman had to enroll as a student once again [78].

Bettinger and Schwartz fared better in Australia and in Turkey, respectively. Bettinger became the director of the newly built Department of Pathology at the prestigious Royal Women’s Hospital in Melbourne in 1939 [75] and Schwartz assumed a professorship for Pathology and became the director of Pathology Institute at the University of Istanbul. In the period that followed, Schwartz only published

sporadically: “The pathologist’s scientific activities suffered from the adverse political conditions during that time, but also from his commitment to the placement of German academics and the reform of the Turkish scientific system” [76].

It is clear that few pathologists sought refuge in Australia, Turkey or Palestine. In contrast, while England was a much sought-after country for emigration, the country offered few professional opportunities and turned out to be just a pit stop for the way to the United States (Josephy, Sicher, Bernhard Gottlieb).

Finally, we should point out that this study has likely not included every pathologist who emigrated to the United States on account of persecution by the Nazis. One may assume that less renowned careers are not as well documented in the available sources, rendering the corresponding individuals hard to (completely) trace. At the same time, however, we may surmise that these source restrictions also apply to individuals from other medical disciplines in equal measure, allowing us to make a valid comparison of statistics within the medical community.

## 5. Conclusion

The findings from this study lead us to conclude that the large majority of the persecuted pathologists identified here eventually succeeded in resuming the professions they had left behind or even in significantly developing their careers further upon immigrating to the United States. Most of the émigré pathologists identified for our investigation were university professors. Overall, the younger pathologists had an easier time adapting than their senior counterparts; moreover, they had more time to ascend the career ladder in their new host country. Remarkably a full two thirds managed to rise to the position of Full Professor, which is far above average compared to the other medical professions. The remaining pathologists were generally employed full time at hospitals or in laboratories. Specialized pathologists went on to have the most illustrious careers; nevertheless, general pathologists were also in demand in the United States.

The most advantageous geographic environment for immigrant pathologists was clearly the East Coast of the United States, where the majority of this group settled, and the most popular states for these immigrant pathologists were New York, Illinois, Massachusetts and Pennsylvania.

Many managed to overcome the rather significant hurdles in the way of immigrating to the United States through existing professional networks, individually tailored recommendations from renowned pathologists in Germany or specific help organizations (especially the Rockefeller Foundation). One essential factor for why these pathologist émigrés succeeded professionally in the United States owes to the fact that American hospitals – as well as medical departments and university dental colleges – faced a shortage of qualified pathologists. Finally, serving in the U.S. military offered young pathologists, in particular, a good opportunity to further their social and professional integration.

## CRedit authorship contribution statement

**Hendrik Uhlendahl:** Conceptualization, Data curation, Formal analysis, Investigation, Writing - original draft, Writing - review & editing. **Nico Biermanns:** Data curation, Investigation, Writing - review & editing. **Janina Sziranyi:** Data curation, Investigation, Writing - review & editing. **Dominik Groß:** Data curation, Investigation, Writing - review & editing.

## Declaration of Competing Interest

The authors report no declarations of interest.

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ARTICLE

# Pioneers in pathology and female role models: the Jewish scientists Rahel Rodler, Ruth Silberberg, Lotte Strauss and Zelma Wessely

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## Abstract

So far, female physicians have played a minor role in scientific studies of Nazi victims; this also applies to specialists in pathology. Against this background, the present study examines the biographies of the outstanding Jewish pathologists Rahel Rodler (1878–1944), Ruth Silberberg (1906–97), Lotte Strauss (1913–85) and Zelma Wessely (1914–2004). The focus is on their roles as women scientists and their fateful careers after the Nazi rise to power, embedded in the context of the position of women in medical studies and the medical profession of their time as well as in the subject of pathology. The study is primarily based on archival sources from various German, Austrian and Swiss state and university archives, from the British National Archives and from the National Archives and Records Administration in Washington DC. The paper provides three key findings: (1) The four female pathologists were rare exceptions in the contemporary pathological scientific community with a quantitative share of less than 5%. (2) They experienced discrimination on two levels (gender and ‘race’). (3) Thanks to professional excellence and continued dedication, three of the four female pathologists were able to escape from Nazi Germany and achieve remarkable careers in emigration. It can be concluded that Rodler, Silberberg, Strauss and Wessely rose to female role models and pioneer scientists in contemporary pathology.

**Keywords:** Pathology; Women scientists; Gender; National socialism; Persecution; Emigration and immigration

## Introduction

For a long time, historical research on the medical profession under National Socialism has focused on perpetrators and, moreover, overwhelming on men. Since the beginning of the 2000s, research into disenfranchised, persecuted and displaced medical physicians has also come into focus. For pathologists, recent studies have revealed that this professional group is decidedly comprised of victims, as well. Two cross-sectional studies have identified 118 pathologists, mostly university professors and lecturers, who were persecuted under National Socialism,<sup>1</sup> of whom one hundred portraits have recently been published by Biermanns and Groß in the form of a memorial book.<sup>2</sup> Examining these studies as well as the purely biographical work of Biermanns and Groß, it is notable that women appeared to be remarkably underrepresented among this group, which included just four female individuals. They

<sup>1</sup>Janina Sziranyi *et al.*, ‘Disfranchisement, Expulsion and Persecution of Pathologists in the Third Reich – A Sociodemographic Study’, *Pathology – Research and Practice*, 215, 9 (2019), 152514, <https://doi.org/10.1016/j.prp.2019.152514>; Hendrik Uhlendahl *et al.*, ‘Success or Failure? Pathologists Persecuted Under National Socialism and Their Careers After Emigrating to the United States’, *Pathology – Research and Practice*, 218 (2021), 153315, <https://doi.org/10.1016/j.prp.2020.153315>.

<sup>2</sup>Nico Biermanns and Dominik Groß, *Pathologen als Verfolgte des Nationalsozialismus. 100 Portraits* (Stuttgart: Franz Steiner, 2022).

accounted for only 3.4% of those identified. At the time, women pathologists were, indeed, a rarity<sup>3</sup> – even compared to the proportion of women in medical professions in general.<sup>4</sup>

The four women in this group were pathologists Rahel Rodler (1878–1944), Ruth Silberberg (1906–97), Lotte Strauss (1913–85) and Zelma Wessely (1914–2004). Based on the aforementioned gender ratio within the field of pathology, they represented an exception in their profession simply because of their gender. Moreover, they were all of Jewish ancestry, which is why they were persecuted by the National Socialist regime. At the same time, their careers were marked by extraordinary professional success in the face of a wide variety of difficult conditions. This study thus focuses on the hitherto insufficiently investigated group of the female victims of National Socialism who had, contrary to the image of women prevalent during their lifetime, made a successful professional career. In contrast to the aforementioned previous works on pathologists persecuted by the Nazis, the purpose of this investigation is not the remembrance of these individuals nor a purely biographical approach to these women. Instead, the racial and especially gender-specific obstacles experienced by these four women over the course of their lives and careers will be examined. This study concludes that Rodler, Silberberg, Strauss and Wessely not only became pioneers in the field of pathology, but also became female role models in the sociohistorical context.

Their biographies – and any cross-references – form the basis of this study. We start by presenting a concise overview of their individual life paths. With this, we connect the historical classification of women in contemporary medical studies and in the medical profession in general as well as with pathology. We place particular focus on gender-based barriers and also shed light on disenfranchisement of these individuals as well as on potential forced migrations by the National Socialist regime. Numerous parallels in the life histories of these four women are particularly noteworthy, as well as comparisons with male pathologists of Jewish ancestry. We are furthermore interested in the extent to which proven acts of discrimination and repression led to career breaks or other significant life events for these individuals. With this background in mind, we investigate the further professional paths as well as the medical research careers of these women *after* the National Socialists assumed power in 1933.

## Material and methods

The study is primarily based on archival sources from various German, Austrian and Swiss state and university archives, from the British National Archives and from the National Archives and Records Administration in Washington DC, all regarding Rahel Rodler, Ruth Silberberg, Lotte Strauss and Zelma Wessely. In order to reconstruct the individual life and career stages of the four individuals, we worked primarily with matriculation and examination registers, emigration documents, civil status registers and marriage certificates.

We investigate the individuals considered in this study in the German-speaking context of the German Kaiserreich (1871–1918), the Weimar Republic (1918–33) and the Third Reich (1933–45). Additionally, we also consider their trajectories in the United States (Silberberg, Strauss and, later, Wessely) and in Great Britain (initially, Wessely) between 1933 and the late post-war period, as this time span was decisive for the careers of the emigrants.

Incorporating historical gender research, this study takes a decidedly collective biographical contextualising approach. Therefore, the lives of the four female pathologists are treated here in a particularly extensive and detailed manner. This is justified by the importance of their individual career stages for the subsequent contextual classification into the prevailing gender relations of the periods under investigation. This refers both to the gender relations existing in these periods in general and

<sup>3</sup>Uhlendahl *et al.*, *op. cit.* (note 1).

<sup>4</sup>Hans-Peter Kröner, *Die Emigration deutschsprachiger Mediziner im Nationalsozialismus*, *Berichte zur Wissenschaftsgeschichte* 12, Sonderheft (Weinheim: VCH, 1989), 11; Uhlendahl *et al.*, *op. cit.* (note 1).

explicitly in the medical professional setting. Without being able to refer to the respective details of the presented biographies, a precise classification in the sociohistorical context – and thus the elaboration of the main argument of this study – would not be possible.

This article aims to make an insightful contribution to historical gender research. It is clear that the professional and gender-related achievements of these four women, who were subject to completely different conditions than their male colleagues, have not yet received recognition in retrospective. Accordingly, the study is also intended as an impetus for future research on the role of women within the medical profession during the Third Reich especially since it is very likely that such pioneering women are also as yet unexposed in other medical fields. Furthermore, this work provides a contribution to research on victims of National Socialism, which, despite some progress, continues to be neglected in contrast to research on perpetrators.

### Rahel Anna Ruth Rodler, née Zipkin (1878–1944) – the first woman in the German Pathological Society

The Russian-German pathologist and laboratory physician Rahel Anna Ruth Zipkin was born on 16 January 1878 in the town of Kojetanoff near Minsk in former Russia (present-day Dsjarschynsk, Belarus). She was the daughter of Mowcha (Moses) Zipkin (1845–1907), an affluent Jewish merchant, and Darja Zipkin, née Neumann.

As women in czarist Russia had virtually no prospect of attending university, and as the German medical faculties were not admitting any women at the time, Zipkin went to Bern, Switzerland, to study medicine like many other daughters born to affluent families.<sup>5</sup> In 1902, she received her doctoral degree with the thesis ‘Kenntnis der gröberen und feineren Struktur-Verhältnisse des Dünndarmes von Inuus Rhesus’ (‘Understanding the Fine and Rough Structural Relationship of the Small Intestine of the Inuus Rhesus’)<sup>6</sup> at the Laboratory of the Institute of Anatomy at the University of Bern under professor Hans Strasser (1852–1927) and subsequently passed the state medical exam.<sup>7</sup> Zipkin first remained in Bern and served as an assistant under her instructor and benefactor Theodor Langhans (1839–1915) at the Institute of Pathology until 1906.<sup>8</sup> Zipkin was, at the time, the only female research assistant and one of only two women on the entire faculty of the University of Bern, along with the Russian Jewish private lecturer Anna Tumarkin (1875–1951) from the area of the history of philosophy.<sup>9</sup>

In 1904, Zipkin became the first female member of the German Pathological Society [Deutsche Pathologische Gesellschaft (DPG), today known as the Deutsche Gesellschaft für Pathologie (DGP)]. One year later, she gave a lecture at the annual DPG event titled ‘Hyalinähnliche kollagene Kugeln als Produkte epithelialer Zellen in malignen Strumen’ (‘Hyaline-like collagen orbs as products of epithelial

<sup>5</sup>Matriculation numbers 8098 and 8099, StA Bern (Bern State Archives), BB IIIb.

<sup>6</sup>Rahel Zipkin, ‘Beiträge zur Kenntnis der gröberen und feineren Strukturverhältnisse des Dünndarms von Inuus Rhesus’, *Anatomische Hefte* 23 (1903), 113–85.

<sup>7</sup>Meeting of 26 November 1902, StA Bern (Bern State Archives), BB 05.10.02, 230; Exam with Miss Rahel Zipkin from Minsk, StA Bern (Bern State Archives), BB 05.10.34, 121.

<sup>8</sup>Election of Rahel Zipkin as the third assistant at the Institute of Pathology of the University of Bern, StA Bern (Bern State Archives), RRB 4742/1902; Election of Rahel Zipkin as the second assistant at the Institute of Pathology of the University of Bern, StA Bern (Bern State Archives), RRB 3822/1902.

<sup>9</sup>Biermanns and Groß, *op. cit.* (note 2), 227–9; A. Agaimy, ‘Dr. med. Rahel Zipkin. Die Schicksalsreise einer außergewöhnlichen Pionier-Pathologin von Minsk über Bern nach Nürnberg’, in Deutsche Gesellschaft für Pathologie e.V. (ed.), *Pathologie im Wandel – Betrachtungen zum 120-jährigen Jubiläum der DGP* (DGP: Berlin, 2017), 38–41; J. Aiden Carney, ‘Hyalinizing Trabecular Tumors of the Thyroid Gland: Quadruply Described but Not by the Discoverer’, *The American Journal of Surgical Pathology*, 32 (2008), 622–34; Bernd Höffken, *Schicksale jüdischer Ärzte aus Nürnberg nach 1933* (Berlin: Metropol, 2013), 322–3; Franziska Rogger, *Der Doktorhut im Besenschränk: Das abenteuerliche Leben der ersten Studentinnen – am Beispiel der Universität Bern* (Bern: eFeF, 1999), 164–75; Barbara Bachmann and Elke Bradenahl, ‘Medizinstudium von Frauen in Bern 1871–1914’ (unpublished MD thesis: University of Bern, 1990), 64.

cells in malignant goitre'), likewise as the very first female expert.<sup>10</sup> The renowned pathologist Ludwig Aschoff (1866–1942) was impressed by her pioneering work: 'Until today, I had not wanted to believe in the epithelial origins of the hyalin, but I will now pay special attention to this'.<sup>11</sup> Zipkin published the results of her research in the renowned academic journal *Virchows Archiv*.<sup>12</sup> Pathologist J. Aiden Carney was also impressed by her research: 'who, a century previously, had provided a meticulous description of the type of hyalin-producing thyroid tumour that I thought my colleagues and I had introduced in 1987'.<sup>13</sup>

The focus of Zipkin's research was the pathology of giant cells in inflammations and tumours, the structural relationship of the small intestine of the rhesus monkey ('Inuus Rhesus'), the appearance of fat in the muscles of the body and the adeno-rhabdomyoma of the lungs. Zipkin regularly published works in *Virchows Archiv* until 1909, most before she turned 30.<sup>14</sup> In 1906, she left the University of Bern, where she was succeeded by the pathologist Sophia Getzowa (1872–1946) in the fall of the same year.<sup>15</sup>

Zipkin took up residence in Berlin as of 1907. One year later, she married the Nuremberg specialist physician for dermatology, venerology and urology Karl Adam Rodler (1877–1935) and assumed his name. Karl Rodler was considered 'Aryan' according to the National Socialist understanding and was therefore not affected by the regime's disenfranchisement and oppression. The couple moved to Nuremberg in 1908/9 and opened a medical practice that Karl Rodler led, including a laboratory for medical diagnostics run by Rahel Rodler. On 20 December 1909, the couple had a daughter, which they named Johanna. Rodler continued to enjoy professional recognition, with her lectures and pathology demonstrations held at mostly regional medical societies being regularly mentioned in communications by the regional physician's association in Nuremberg. In 1916, she was even awarded the Bavarian König-Ludwig-Kreuz for her special service to the well-being of the state.<sup>16</sup>

Rodler converted to Christianity in 1925. While a considerable proportion of German Jews like Rodler entered so-called 'mixed marriage' with a Christian and their descendants mostly also became Christians, conversion to Christianity was rather an exception in the Weimar Republic: In that period, about two hundred people converted from Judaism to Protestantism every year (only very few chose Catholicism)<sup>17</sup> – in contrast, in the period from 1871 to 1909, about fifteen thousand conversions to the Christian faith (about four hundred per year) are documented.<sup>18</sup>

In the Third Reich in 1935, the Nuremberg Laws considered her marriage as a 'privileged mixed marriage' on account of their child whose father was 'Aryan'. As a result, Rodler initially did not suffer

<sup>10</sup>Zipkin and Aschoff, 'Mitgliederliste der Deutschen Pathologischen Gesellschaft', *Verhandlungen der Deutschen Pathologischen Gesellschaft*, 8 (1904), 191–4; Rahel Zipkin and Ludwig Aschoff, 'Vortrag Fräulein Zipkin-Bern u. Diskussion Herr Aschoff', *Verhandlungen der Deutschen Pathologischen Gesellschaft*, 9 (1905), 153–4; Biermanns and Groß, *op. cit.* (note 2); Agaimy, *ibid.*

<sup>11</sup>Zipkin and Aschoff, *ibid.*

<sup>12</sup>Rahel Zipkin, 'Hyalinähnliche collagene Kugeln als Produkte epithelialer Zellen in malignen Strumen', *Virchows Archiv für Pathologische Anatomie und Physiologie und für Klinische Medizin*, 182 (1905), 374–406.

<sup>13</sup>Carney, *op. cit.* (note 9), 627.

<sup>14</sup>Zipkin, *op. cit.* (note 6); Zipkin and Aschoff, *op. cit.* (note 10); Zipkin, *op. cit.* (note 12); Rahel Zipkin, 'Auftreten von Fett in der Körpermuskulatur bei Durchquetschung des Halsmarkes', *Virchows Archiv für Pathologische Anatomie und Physiologie und Klinische Medizin* 185, (1906), 478–83; Rahel Zipkin, 'Über Riesenzellen mit randständigen Kernen in Sarkomen', *Virchows Archiv für Pathologische Anatomie und Physiologie und Klinische Medizin*, 186 (1906), 240–58; Rahel Zipkin, 'Über ein Adeno-Rhabdomyom der linken Lunge und Hypoplasie der rechten bei einer totgeborenen Frucht', *Virchows Archiv für Pathologische Anatomie und Physiologie und Klinische Medizin*, 187 (1907), 244–64; Rahel Zipkin, 'Über einen Fall von akuter großzelliger lymphatischer Leukämie mit generalisierter Hauterkrankung', *Virchows Archiv für Pathologische Anatomie und Physiologie und Klinische Medizin*, 197 (1909), 135–67.

<sup>15</sup>Biermanns and Groß, *op. cit.* (note 2), 227–9; Rogger, *op. cit.* (note 9), 198–212; Carney *op. cit.* (note 9), 627.

<sup>16</sup>Biermanns and Groß, *op. cit.* (note 2), 227–9; Agaimy, *op. cit.* (note 9); Höffken, *op. cit.* (note 9); Carney *op. cit.* (note 9), 627.

<sup>17</sup>Werner Fölling, *Zwischen deutscher und jüdischer Identität. Deutsch-jüdische Familien und die Erziehung ihrer Kinder an einer jüdischen Reformschule im 'Dritten Reich'* (Wiesbaden: Springer, 1995), 90.

<sup>18</sup>Volker Rolf Berghahn, *Imperial Germany, 1871–1914: Economy, Society, Culture and Politics*, (New York: Berghahn Books, 1995), 102–3.

from anti-Semitic repression by the National Socialists despite her Jewish ancestry. She would, however, ultimately lose this protection in October 1935 when her husband passed away. She was forced to cede guardianship over her grown daughter, who suffered from a mental condition. She was permitted to keep running her laboratory (from her home) for some time. ‘Racial’ discrimination directed at her person and the associated, ever-growing boycotts against her profession finally led Rodler to give this up in 1938. Her licence to practice medicine was ultimately revoked upon the passing of the Reich’s Citizen Law in July 1938, followed by the plunder of her laboratory in the wake of the pogroms on 9 November of the same year. As of 1 September 1941, Rodler was forced to wear the ‘Star of David’ badge. She was arrested by the Gestapo not long thereafter. On 17 January 1944, Rodler was transferred from Nuremberg to Theresienstadt Ghetto on the last Jewish transport.<sup>19</sup> After the German invasion of Poland in 1939, such ghettos were set up to temporarily station Jews living in these areas before deporting them to extermination camps.<sup>20</sup> Established in 1941, Theresienstadt Ghetto in German-occupied Czechoslovakia was not only used as a transit camp, but also portrayed as ‘settlement’ for elderly Jews by the Nazi propaganda in order to conceal their real fates.<sup>21</sup> About thirty-three thousand people died in Theresienstadt, primarily from malnutrition, disease, execution or suicide.<sup>22</sup> It was here that Rodler, at the age of 66, passed away on 15 April of the same year under circumstances that remain unknown.<sup>23</sup> Documentation only exists of her cremation the following day.<sup>24</sup>

### Ruth Silberberg, née Katzenstein (1906–97) – an exceptional career as an experimental pathologist in the United States

Experimental pathologist Ruth Katzenstein (Figure 1) was born in Kassel on 20 March 1906, as the daughter of Jewish parents. Her father, Ludwig Katzenstein (\*1879), was an industrialist, and her mother was Käthchen Katzenstein, née Plaut (\*1884).<sup>25</sup> She studied medicine at the universities of Freiburg im Breisgau, Berlin, Göttingen, Vienna and Breslau. She passed the state medical exam in 1931 and obtained per doctorate in Breslau for her work ‘Untersuchungen über die Umwandlungsfähigkeit der Lymphzellen’ (‘Studies into the transformational capability of lymph cells’), published in *Virchows Archiv*.<sup>26</sup> Katzenstein went on to work as an assistant at the Institute of Pathology at the University of Breslau, where she met her academic lecturer and subsequent (Jewish) husband Martin Silberberg.<sup>27</sup>

On account of their Jewish ancestry, Ruth Katzenstein and Martin Silberberg were removed from their positions in 1933 upon passing of the ‘Law on the Restoration of the Professional Civil Service’ and worked at the Jewish hospital in Breslau for a short period of time. The couple got married in December 1933. Facing growing anti-Semitic disenfranchisement, the Silberbergs emigrated in 1934, first going to Canada, where both found positions at the Department of Pathology at Dalhousie University in Halifax, Nova Scotia – Ruth Silberberg as a volunteer and her husband as an Andrew Carnegie Fellow. The couple

<sup>19</sup>Transport of 18 June 1943 to Theresienstadt, Arolsen Archives, 8227402, Doc. ID 11195023.

<sup>20</sup>Christopher R. Browning, ‘Before the “Final Solution”: Nazi ghettoization policy in Poland (1940–1941)’, in *Ghettos 1939–1945. New Research and Perspectives on Definition, Daily Life and Survival. Symposium Presentations* (Washington DC: United States Holocaust Museum, 2005), 1–13.

<sup>21</sup>Matthew R. Smallman-Raynor and Andrew D. Cliff, ‘Theresienstadt: A Geographical Picture of Transports, Demography, and Communicable Disease in a Jewish Camp-Getto, 1941–45’, *Social Science History*, 44, 4 (2020), 615–39.

<sup>22</sup>*Ibid.*

<sup>23</sup>Biermanns and Groß, *op. cit.* (note 2), 266–70; Agaimy, *op. cit.* (note 9); Höffken, *op. cit.* (note 9); Carney *op. cit.* (note 9), 627.

<sup>24</sup>Cremation – Terezin: Rodler, Dr Anna, Arolsen Archives, 11422001, Doc. ID 5114391 – Anna Rodler.

<sup>25</sup>Biermanns and Groß, *op. cit.* (note 2), 266–70; Notarization of the marriage between Ludwig Katzenstein and Käthchen Plaut from 4 September 1953, HLA/HHStAW (Hessian State Archives Wiesbaden), Personenstandsregister Kassel; W. Röder and H.A. Strauss (eds), *International Biographical Dictionary of Central European Emigrés 1933–1945, Vol. II/Part 2: The Arts, Sciences, and Literature* (München: Saur, 1983), 1081.

<sup>26</sup>Ruth Katzenstein, ‘Untersuchungen über die Umwandlungsfähigkeit der Lymphzellen’, *Virchows Archiv für pathologische Anatomie und Physiologie und Klinische Medizin*, 281, 1 (1931), 172–90.

<sup>27</sup>Biermanns and Groß, *op. cit.* (note 2), 266–70; Röder and Strauss, *op. cit.* (note 25).



**Figure 1.** Ruth Silberberg at the reception for the Martin Silberberg Memorial Fund Exhibit, April 1967. Washington University School of Medicine Library, April 14, 1967 (VC083008); reproduced with kind permission of the Becker Medical Library, Washington University School of Medicine.

then spent a short period in Panama, where Martin Silberberg assumed a position at the university there.<sup>28</sup>

The couple immigrated to the United States in 1937 (Figure 2). They found positions at the Department for Pathology at the Washington University School of Medicine in St. Louis, Missouri, under Leo Loeb (1869–1959), whom Martin Silberberg had known from previous stays abroad. Apart from a position linked to a fellowship from 1941 to 1944 at New York University, the couple continued their careers at Washington University – Martin until his death in 1966 and Ruth until 1975. The Silberbergs worked closely alongside one another for their entire lives and conducted research on topics such as the aging process and osteoarthritis. They also both practiced clinical medicine: Ruth Silberberg was a senior pathologist at the Barnard Skin and Cancer Hospital in St. Louis from 1946 to 1947 before assuming the same role at the City Hospital, where she worked until 1959. From 1956 to 1959, she was also a senior pathologist at the Missouri Pacific Hospital. While at the City Hospital, Ruth worked together with her husband, who acted as a senior pathologist there from 1945 until his death.<sup>29</sup>

During her time at Washington University, Ruth Silberberg's career advanced considerably. She was promoted from instructor to assistant professor in 1950 and to associate professor 7 years later. Finally, in 1968, 2 years after the passing of her husband, Ruth Silberberg assumed the position of Full Professor of Pathology. Starting in 1969, she also worked as a senior pathologist at the Barnes Jewish Hospital in St. Louis. She kept both positions until entering emeritus status in 1975. Despite her advanced years, Silberberg did not lose sight of her passion: Upon emigrating to Jerusalem, she continued to dedicate herself to medical research for many years. Ruth Silberberg passed away from cancer in 1997 at the old age of 91.<sup>30</sup>

<sup>28</sup>Biermanns and Groß, *op. cit.* (note 2), 266–70; Röder and Strauss, *op. cit.* (note 25); Uhlendahl *et al.*, *op. cit.* (note 1), 5–7.

<sup>29</sup>Biermanns and Groß, *op. cit.* (note 2), 266–70; Röder and Strauss, *op. cit.* (note 25); Uhlendahl *et al.*, *op. cit.* (note 1), 5–7; Petition for Naturalization No. 422031: Martin Silberberg, NARA (National Archives and Records Administration), RG 21/5700802; Petition for Naturalization No. 422032: Ruth Silberberg, NARA (National Archives and Records Administration), RG 21/5700802; Transcript: Ruth Silberberg (Washington University School of Medicine Oral History Project, 1976); available online at <http://beckerexhibits.wustl.edu/oral/transcripts/silberberg.html> (last accessed 29 June 2022).

<sup>30</sup>*Ibid.*

No. 45722

**TRIPPLICATE**  
(To be given to declarant)

## UNITED STATES OF AMERICA

### DECLARATION OF INTENTION

(Invalid for all purposes seven years after the date hereof)


The United States of America } In the \_\_\_\_\_ District. } Court  
 Eastern District of Missouri } } United States } St. Louis, Mo. }

I, Ruth Silberberg  
 now residing at 4536 Lindell Blvd., St. Louis, Mo.  
 occupied Medical Research wife, aged 31 years, do declare on oath that my personal description is:  
 Sex Female, color White, complexion Medium, color of eyes Blue  
 color of hair Brown, height 5 feet 2 inches; weight 136 pounds; visible distinctive marks  
None  
 race Hebrew; nationality German

I was born in Kassal, Germany, on March 20, 1906  
 I am married. The name of my husband is Martin Silberberg  
 we were married on December 27, 1932, at Breslau, Germany  
 born at Rybuik, Germany, on October 17, 1895, entered the United States  
 at New Orleans, La., on January 11, 1937, for permanent residence therein, and now  
 resides at St. Louis, Mo. I have NO children, and the name, date and place of birth,  
 and place of residence of each of said children are as follows:

I have NOT heretofore made a declaration of intention: Number \_\_\_\_\_, on \_\_\_\_\_  
 at \_\_\_\_\_  
 my last foreign residence was Panama City, Republic of Panama  
 I emigrated to the United States of America from Cristobal Canal Zone  
 my lawful entry for permanent residence in the United States was at New Orleans, La.  
 under the name of Ruth Silberberg, on Jan 11, 1937  
 on the vessel SS Metapan

I will, before being admitted to citizenship, renounce forever all allegiance and fidelity to any foreign prince, potentate, state, or sovereignty, and particularly, by name, to the prince, potentate, state, or sovereignty of which I may be at the time of admission a citizen or subject; I am not an anarchist; I am not a polygamist nor a believer in the practice of polygamy; and it is my intention in good faith to become a citizen of the United States of America and to reside permanently therein; and I certify that the photograph affixed to the duplicate and triplicate hereof is a likeness of me: So HELP ME GOD.



Ruth Silberberg.

Ruth Silberberg

Subscribed and sworn to before me in the office of the Clerk of said Court,  
 at St. Louis, Mo. the 20th day of July  
 anno Domini 1937. Certification No. 12-14900 from the Commissioner of Immigration and Naturalization showing the lawful entry of the declarant for permanent residence on the date stated above, has been received by me. The photograph affixed to the duplicate and triplicate hereof is a likeness of the declarant.

[SEAL] Ruth Silberberg Clerk of the 3rd District Court.  
 By [Signature] Deputy Clerk.

FORM 5202-L-A  
 U. S. DEPARTMENT OF LABOR  
 IMMIGRATION AND NATURALIZATION SERVICE

No. 65675

Figure 2. Declaration of Intention of Ruth Silberberg, 20 July 1937. NARA (National Archives and Records Administration), RG 21/5700802; public domain.

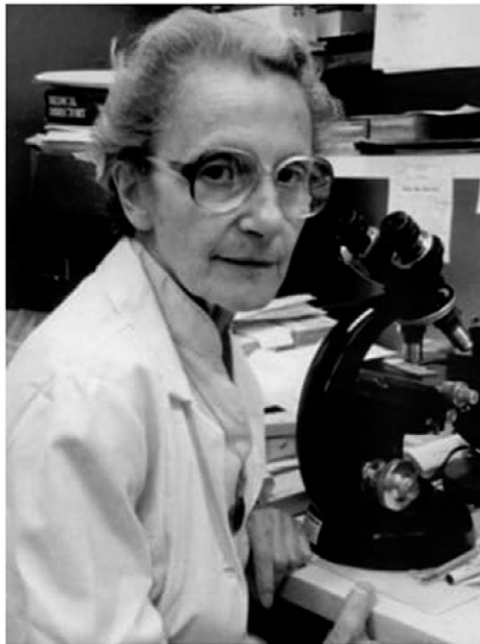
During her time in the United States, Ruth Silberberg was an elected member of various medical research associations, including the American Society for Experimental Pathology, the Society for Experimental Biology and Medicine, the Gerontological Society of America, the Society for Developmental Biology, the American Society of Human Genetics and the St. Louis Pathological Society.<sup>31</sup>

<sup>31</sup>Ibid.

### Lotte Strauss (1913–85) – discoverer of Churg–Strauss syndrome

Jewish pathologist Lotte Strauss (Figure 3) was born in Nuremberg on 15 April 1913, daughter of merchant Ernst Strauss (1877–1968) and his wife Hedwig Strauss (1887–1982), née Fichtelberg. She commenced her medical studies in 1932 at the universities of Freiburg im Breisgau and Munich. At the age of just 20, Strauss had to flee to Italy to escape persecution by the National Socialists. While there, she completed her degree at the University of Siena in 1937 and received her doctorate with a Dr med. at the Institute for Bacteriology.<sup>32</sup> When the fascist regime in Italy likewise passed racist laws in 1938, the 24-year-old Strauss emigrated to the United States (Figure 4), where she held a position as a resident assistant in bacteriology at the Beth Israel Hospital in New York until 1941.<sup>33</sup>

Influenced by a contact she made in the United States with renowned pathologist Sydney Farber (1903–73), Strauss moved from the area of bacteriology to pathology. She went through a number of short career phases in her new field: she was a medical intern at the New York Infirmary from 1941 to 1942, she completed a residency in pathology at Mount Sinai Hospital in New York with Paul Klemperer (1887–1964) from 1942 to 1943 and she did another residency at the Children’s Hospital in Boston, Massachusetts, from 1943 to 1944. Strauss obtained her U.S.-American citizenship in 1944 and married Jewish pathologist Peter Grünwald (1912–79), to whom she remained married until 1949. After completing her position in Boston, Strauss returned to Mount Sinai Hospital and worked there as a fellow in pathology until 1947 and then as a resident assistant in bacteriology until 1949. She then



**Figure 3.** Portrait of Lotte Strauss. F.P.F. De Campos and S.A. Geller, Churg–Strauss Syndrome: a syndrome described on clinical observation and autopsy findings, *Autopsy and Case Reports*, 3, 2 (2013), 1–4; reproduced with kind permission of Stephen A. Geller, MD.

<sup>32</sup>Biermanns and Groß, *op. cit.* (note 2), 291–3; M.T. Ramieri and M. Marino, ‘Strauss, Lotte (1913–1985)’, in J.G. van den Tweel (ed.), *Pioneers in Pathology* (Utrecht: Springer, 2017), 499–501; Jaques Cattell Press, *American Men and Women of Science*, 5th edn (New York: Bowker, 1986), 1088.

<sup>33</sup>Biermanns and Groß, *op. cit.* (note 2), 291–3; Ramieri and Marino, *ibid.*; Jaques Cattell Press, *ibid.*; Petition for Naturalization No. 277158: Lotte Strauss, NARA (National Archives Records Administration) RG 21/3000057.

No. 426295

**TRIPPLICATE**  
(To be given to declarant)

## UNITED STATES OF AMERICA

**Je**      **DECLARATION OF INTENTION**  
(Invalid for all purposes seven years after the date hereof)

STATE OF NEW YORK  
SOUTHERN DISTRICT OF NEW YORK      In the \_\_\_\_\_ Court  
of UNITED STATES at NEW YORK, N. Y.

I, LOTTE STRAUSS  
now residing at 160 W. 87th St., New York, New York, NY  
occupation none, aged 26 years, do declare on oath that my personal description is:  
Sex female, color white, complexion fair, color of eyes brown  
color of hair brown, height 5 feet 3 inches; weight 117 pounds; visible distinctive marks  
race Hebrew, nationality German  
I was born in Munich, Germany on April 16, 1913  
I am not married. The name of my wife or husband is \_\_\_\_\_  
we were married on \_\_\_\_\_ at \_\_\_\_\_; she or he was  
born at \_\_\_\_\_ on \_\_\_\_\_ entered the United States  
at \_\_\_\_\_ for permanent residence therein, and now  
resides at \_\_\_\_\_ I have no children, and the name, date and place of birth,  
and place of residence of each of said children are as follows: \_\_\_\_\_

I have not heretofore made a declaration of intention: Number \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_  
my last foreign residence was Sienna, Italy  
I emigrated to the United States of America from Le Havre, France  
my lawful entry for permanent residence in the United States was at New York, NY  
under the name Lotta Strauss on Oct. 27, 1928  
on the vessel Manhattan

I will, before being admitted to citizenship, renounce forever all allegiance and fidelity to any foreign prince, potentate, state, or sovereignty, and particularly, by name, to the prince, potentate, state, or sovereignty of which I may be at the time of admission a citizen or subject; I am not an anarchist; I am not a polygamist nor a believer in the practice of polygamy; and it is my intention in good faith to become a citizen of the United States of America and to reside permanently therein; and I certify that the photograph affixed to the duplicate and triplicate hereof is a likeness of me.

I swear (affirm) that the statements I have made and the intentions I have expressed in this declaration of intention subscribed by me are true to the best of my knowledge and belief. So help me God.

*Lotte Strauss*  
Subscribed and sworn to before me in the form of oath shown above in the office of the Clerk of said Court, at New York, NY, this 23rd day of December, anno Domini, 1938. Certification No. 614005 from the Commissioner of Immigration and Naturalization showing the lawful entry of the declarant for permanent residence on the date stated above, has been received by me. The photograph affixed to the duplicate and triplicate hereof is a likeness of the declarant.

By *[Signature]*  
U. S. DEPARTMENT OF LABOR  
IMMIGRATION AND NATURALIZATION SERVICE

FORM 2002-L.A. 12-23-38  
14-2028  
U. S. GOVERNMENT PRINTING OFFICE

[SEAL]      [RECEIVED]

No. 248551




Figure 4. Declaration of Intention of Lotte Strauss, 23 December 1938. NARA (National Archives Records Administration) RG 21/3000057; public domain.

transferred to Lebanon Hospital in the Bronx, New York, where she worked as an assistant pathologist until 1952/3.<sup>34</sup>

Her breakout career moment occurred in 1951: Together with Jacob Churg (1910–2005), she discovered and described the so-called eosinophil granulomatosis with polyangiitis a granulomatous inflammation of the blood vessels, since known as Churg–Strauss syndrome. She returned to Mount

<sup>34</sup>Biermanns and Groß, *op. cit.* (note 2), 291–3; Ramieri and Marino, *op. cit.* (note 32); Jaques Cattell Press, *op. cit.* (note 32).

Sinai Hospital in 1953 where she again worked with Klemperer, who encouraged her to specialise in the area of paediatric pathology. After that, she continued on as an associate pathologist in paediatric pathology until 1966. She also worked at the College of Physicians and Surgeons at Columbia University, where she advanced to the position of assistant professor. She remained on the faculty here until 1966. Strauss was involved in the founding of the Society for Pediatric Pathology in 1965, after which point she assumed the position of Full Professor of Pathology at the Mount Sinai School of Medicine in New York. She also worked as a consultant for paediatric pathology and, starting in 1971, as a specialist consultant in perinatal pathology at the National Institute of Neurological Disorders at City Hospital Center in Elmhurst, Illinois. She kept these positions until her death on 4 July 1985.<sup>35</sup>

Lotte Strauss is considered to be a pioneer in paediatric and perinatal pathology. In 1983, she was awarded the Jacobi Medal from the Mount Sinai Alumni; since 1986, the Society for Pediatric Pathology, which she co-founded, has been awarding the Lotte Strauss Prize, as a posthumous honour – the society is the successor of the Pediatric Pathology Club, to which Strauss also belonged. During her life, Strauss held numerous memberships and offices, such as at the New York Pathological Society, the American Association of Pathologists, the International Academy of Pathology, the New York Academy of Sciences and the New York Pediatric Society.<sup>36</sup>

### Zelma Wessely, née Apfelbaum (1914–2004) – clinician and tumour researcher

Jewish pathologist Zelma Apfelbaum was born in Kraków (then Austria and present-day Poland) on 7 June 1914. She commenced her studies in medicine at the University of Vienna in the winter semester of 1932/3. Upon Austria's 'Anschluss' (annexation) into the German Reich in March 1938, Apfelbaum was forced to end her studies early on account of her Jewish ancestry (Figure 5).<sup>37</sup> She emigrated to Great Britain in 1938. She continued her studies at the University of Manchester. After completing her degree, Apfelbaum went on to work in Manchester as a house physician. In 1942, she married her peer Hans Wessely (\*1913), who had also immigrated to Manchester from Vienna.<sup>38</sup> Having since gained British citizenship, Zelma Wessely returned to Vienna between 1950 and 1952 and subsequently emigrated to the United States via Manchester, where she and her husband settled in the Bronx, New York.<sup>39</sup>

<sup>35</sup>Biermanns and Groß, *op. cit.* (note 2), 291–3; Ramieri and Marino, *op. cit.* (note 32); Jaques Cattell Press, *op. cit.* (note 32); Eberhard Jürgen Wormer, *Angiologie – Phlebologie: Syndrome und ihre Schöpfer* (München: Medikon, 1991), 23–5.

<sup>36</sup>*Ibid.*

<sup>37</sup>Uhlendahl *et al.*, *op. cit.* (note 1); Zelma Apfelbaum, UAW (Wien University Archives), Med, Nat, 1933–1938; Hugo Gold, *Geschichte der Juden in Österreich: Ein Gedenkbuch* (Tel Aviv: Olamenu, 1971), 175; Herbert Posch, Doris Ingrisch and Gert Dressel, *'Anschluß' und Ausschluss 1938: Vertriebene und verbliebene Studierende der Universität Wien* (Wien: Lit, 2008), 356, 499; Katharina Kniefacz, 'Zelma Apfelbaum (Wessely)', Gedenkbuch für die Opfer des Nationalsozialismus an der Universität Wien 1938; available online at <https://gedenkbuch.univie.ac.at/page/1/person/zelma-apfelbaum-wessely> (last accessed 29 June 2022).

<sup>38</sup>Biermanns and Groß, *op. cit.* (note 2), 311–13; Zelma Apfelbaum, UAW (Wien University Archives), Med, Nat, 1933–1938; July–September 1942, Wessely, England and Wales Marriage Registration Index; January–March 1964, England and Wales Death Registration Index; Cunard White Star Limited, Names and Descriptions of British Passengers embarked at the Port of Southampton, NA (British National Archives), BT 26/1282/143; Female Enemy Alien – Exemption from Internment-Refugee, Wessely, Zelma, NA (British National Archives), HO 396/101; Male Enemy Alien – Exemption from Internment-Refugee, Wessely, Hans, NA (British National Archives), HO 396/114; Census of England and Wales, 1911, NA (British National Archives), RG 14/23993; Registration District and Sub-District 464–2, NA (British National Archives), RG 101/4471D; Registration District and Sub-District 465–2, NA (British National Archives), RG 101/4624I.

<sup>39</sup>Biermanns and Groß, *op. cit.* (note 2); Kniefacz, *op. cit.* (note 37); Gold, *op. cit.* (note 37); Posch, Ingrisch and Dressel, *op. cit.* (note 37); July–September 1942, Wessely, England and Wales Marriage Registration Index; January–March 1964, England and Wales Death Registration Index; Cunard White Star Limited, Names and Descriptions of British Passengers embarked at the Port of Southampton, NA (British National Archives), BT 26/1282/143; Female Enemy Alien – Exemption from Internment-Refugee, Wessely, Zelma, NA (British National Archives), HO 396/101; Male Enemy Alien – Exemption from Internment-Refugee, Wessely, Hans, NA (British National Archives), HO 396/114; Census of England and Wales, 1911, NA (British National Archives), RG 14/23993; Registration District and Sub-District 464–2, NA (British National Archives), RG 101/4471D; Registration District and Sub-District 465–2, NA (British National Archives), RG 101/4624I.

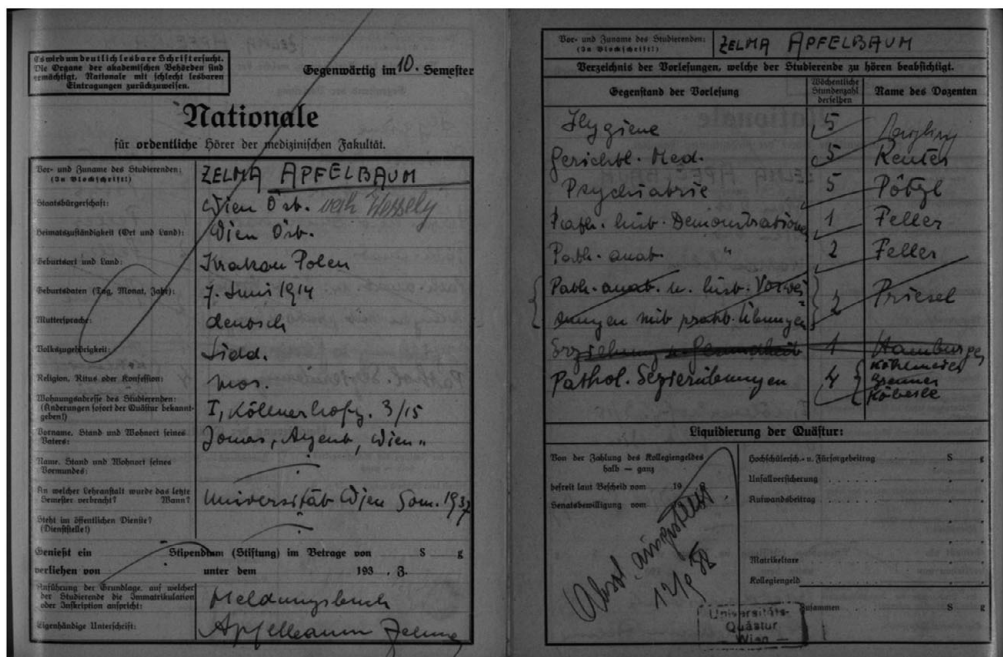


Figure 5. Matriculation file of Zelma Wessely in the last semester before emigration. Zelma Appelbaum, UAW (Wien University Archives), Med, Nat, 1933–1938; reproduced with kind permission of the Vienna University Archives.

In 1954, Zelma Wessely gained her licence to practice medicine and became a citizen of the United States in 1957. Until the end of the 1980s, she worked as a pathologist at the Department of Pathology at the Queens Hospital Center in New York City, where she also had a very active research career. In this period, she published approximately thirty pieces of research, mostly as a co-author. Though she had diverse research areas, she dedicated a significant amount of time to researching tumours. Wessely worked on retroperitoneal desmoid, thymus tumours, haemangioma, malignant melanoma, neoplasms in female reproductive organs, embolisms, lung tuberculosis, myocardial hypertrophy, fibromuscular hyperplasia, myocardial sarcoidosis, transhepatic cholangiography, lupus erythematosus, actinomycosis and the thromboses.<sup>40</sup> Zelma Wessely passed away on 22 May 2004 at the age of 89 in New York.<sup>41</sup>

**Between bans and repression: the ‘female academic’ in the German Reich until the takeover of the National Socialists and the experiences of Rodler, Silberberg, Strauss and Wessely**

What distinguishes these four women in terms of their professional careers and gender? Can we identify any parallels in terms of their biographies, such as common career factors or similar experiences of discrimination and repression, or do they each represent singular, incomparable biographies? To address these questions, it would be useful to first review the development of medical university studies among (Jewish) women in the German-speaking world at the time.

Prior to 1900, German women wishing to pursue degrees were forced to do so abroad, as universities in Germany only admitted men. For those interested in pursuing a degree in medicine or dentistry, most

<sup>40</sup>Biermanns and Groß, *op. cit.* (note 2), 311–13; Posch, Ingrisch and Dressel, *op. cit.* (note 37).

<sup>41</sup>Biermanns and Groß, *op. cit.* (note 2), 311–13; Kniefacz, *op. cit.* (note 37); Posch, Ingrisch and Dressel, *op. cit.* (note 37); Home Aide Convicted of Stealing \$1.5 Million from Doctor, 88, *The New York Times*, 15 July 2006, B2.

went to Switzerland or to the United States.<sup>42</sup> It was not until the end of the nineteenth century that the ‘question of women’ (their acceptance to medical degree courses) became a serious topic of discussion among the German public. One contributing factor behind this was the first wave of the women’s movement, whose proponents advocated for the voting, employment and educational rights of women. Nevertheless, this movement fundamentally still remained anchored to conservative notions of the woman in her role as a mother. Moreover, many male professors remained decidedly opposed to the admittance of women into degree courses in medicine and dentistry – embedded in the fact that the women’s movement, with its increasing success, also produced an increasing number of opponents in general.<sup>43</sup> Starting around 1900, the German Reich (1871–1918) finally permitted women to pursue degrees in medicine. While women were eventually deemed to be suitable for at least serving as physicians to other women and to children over time, few supported the idea of women pursuing academic careers in the area of medicine.<sup>44</sup> As such, hardly any women held post-doctoral degrees permitting them to serve as university professors in the 1930s.

It is noteworthy that Jewish women were initially overrepresented among women studying medicine. There were several reasons for this: First, the so-called liberal professions (physician, dentist and lawyer) were particularly desirable among the Jewish population as they offered a stable financial basis without the need to work as civil servants for the state (an option often not available to Jewish individuals). Additionally, many Jewish families wanted their daughters to also have access to higher education. Two factors were important here: Many among the Jewish population considered a university education and career, and an independent life, to be a value in itself and therefore desirable. Moreover, it was certainly not easy for Jewish women in Germany to find a suitable husband of Mosaic belief. This was due to the fact that the vast majority of young Jewish women married a partner from their own religious community, thus drastically reducing the number of potential husbands. As such, it was all the more important for daughters who would remain unmarried to achieve professional and financial independence through higher education.<sup>45</sup>

Jewish female university students did, however, have to contend with exclusion and discrimination from the very beginning. They were, for example, excluded from joining certain student associations.<sup>46</sup> During the Weimar Republic (1919–33), this exclusion only increased, culminating in the complete ban of Jewish university students under the Third Reich.<sup>47</sup> Once licences were no longer granted to ‘non-Aryan’ medical students in October 1933, compounded by the requirement of holding a medical licence

<sup>42</sup>E. Brinkschulte (ed.), *Weibliche Ärzte: die Durchsetzung des Berufsbildes in Deutschland* (Berlin: Hentrich, 1993); Johanna Bleker, *Der Eintritt der Frauen in die Gelehrtenrepublik: Zur Geschlechterfrage im akademischen Selbstverständnis und der wissenschaftlichen Praxis am Anfang des 20. Jahrhunderts* (Husum: Matthiesen, 1998); J. Bleker, ‘Frauenpraxis: Die Berufsrealität deutscher Ärztinnen bis zum Beginn der Weimarer Republik’, in T. Maurer (ed.), *Der Weg an die Universität: Höhere Frauenstudien vom Mittelalter bis zum 20. Jahrhundert* (Göttingen: Wallstein, 2010), 236–51; Dominik Groß, *Die schwierige Professionalisierung der deutschen Zahnärzteschaft (1867–1919)* (Frankfurt am Main: Lang, 1994); Dominik Groß, *Die Geschichte des Zahnarztberufs in Deutschland: Einflussfaktoren – Begleitumstände – Aktuelle Entwicklungen* (Berlin: Quintessenz, 2019), 63.

<sup>43</sup>*Ibid.*; C. Bruns, ‘Vertreibt der weibliche Zugang zum Logos den Eros? Zu einer erstaunlich aktuellen Debatte unter Studentinnen der 1920er Jahre’, in U. Auga et al. (eds), *Das Geschlecht der Wissenschaften. Zur geschichte von Akademikerinnen im 19. und 20. Jahrhundert* (Frankfurt/New York: Campus Verlag, 2010), 43–74.

<sup>44</sup>T. Maurer, ‘Einführung: Von der Gleichzeitigkeit des Ungleichzeitigen: Das deutsche Frauenstudium im internationalen Kontext’, in T. Maurer (ed.), *Der Weg an die Universität: Höhere Frauenstudien vom Mittelalter bis zum 20. Jahrhundert* (Göttingen: Wallstein, 2010), 7–22.

<sup>45</sup>Johanna Bleker and Sabine Schleiermacher, *Ärztinnen aus dem Kaiserreich: Lebensläufe einer Generation* (Weinheim: Deutscher Studienverlag, 2000), 65; Claudia Huerkamp, *Bildungsbürgertum. Frauen im Studium und in akademischen Berufen 1900–1945* (Göttingen, Vandenhoeck & Ruprecht, 1996), 25–6.

<sup>46</sup>A. Hoffmann-Ocon, ‘Pionierinnen – Mitstreiterinnen – Ausgegrenzte: Jüdische Lehrerinnen und Studentinnen in Deutschland’, in T. Maurer (ed.), *Der Weg an die Universität: Höhere Frauenstudien vom Mittelalter bis zum 20. Jahrhundert* (Göttingen: Wallstein, 2010), 211–35.

<sup>47</sup>Hoffmann-Ocon, *ibid.*; U. Ferdinand, ‘Vertreibungen im Umgestaltungsprozess der Medizinischen Fakultäten an deutschen Universitäten im “Dritten Reich”’, in T. Beddies, S. Doetz and C. Kopke (eds), *Jüdische Ärztinnen und Ärzte im Nationalsozialismus: Entrechtung, Vertreibung, Ermordung* (Berlin/Boston: De Gruyter, 2014), 117–48.

in order to obtain a post-doctoral degree entitling one to serve as a professor, medical studies were no longer attainable for Jewish men and women in Germany.<sup>48</sup> Just 1 year prior to this, in the winter semester of 1932/3, women made up about one-third among all Jewish students. Female students also made up about one-third of Jewish students in the field of medicine. This figure was indeed significantly higher than the overall gender balance among all medical students – Jewish and non-Jewish – with females making up about 20%.<sup>49</sup> To put this into relation, it is helpful to have a look at the total number of Jews in Germany: According to the census of June 1933, the German Reich had a population of about sixty-five million and half a million professed the Jewish faith.<sup>50</sup>

How do the life paths of the four pathologists investigated here relate to the context of female students at the time as well as the academic landscape for Jewish students in general? As many girls from affluent Russian and German families, Rahel Rodler went to liberally oriented Switzerland to study in Bern. From 1882 to 1913, the portion of women students at all Swiss universities was a remarkable 19%, 62% of whom were from the Russian Empire, 74% of which studied at one of the medical faculties.<sup>51</sup> Another remarkable fact is that Rodler was the first female member of the German Pathological Society as early as 1904, and likewise allowed to give lectures, at a time when not all places in Germany even allowed women to enter university. Along with her extraordinary academic performance, this also owed to the support she received from her benefactor, Theodor Langhans.

Ruth Silberberg enrolled herself at university in 1925, at a relatively advantageous point in time, and was therefore able to complete her degree by 1931, before the National Socialists assumed power in 1933 and before the accompanying phase of political repression. She would, however, be forced to leave her position as an assistant 2 years later.

Lotte Strauss, on the other hand, entered university in 1932, but would have to interrupt her studies in less than a year in the wake of the National Socialists' ascent to power. The fact that she immediately emigrated out in 1933, at the age of 20, is as noteworthy as the fact that she once again had to flee from anti-Semitism 1 year after obtaining her degree from Siena in 1937, ultimately reassuming her career in the United States.

As an Austrian, Zelma Wessely was first confronted with the brunt of National Socialist repression in 1938, when the country was annexed by Germany. Up to that point, she had studied medicine for ten semesters in Vienna. As anti-Semitic measures were applied immediately in the wake of Austria's 'Anschluss' at universities across the country, she was forced to hastily emigrate at the age of 23. She was also only able to complete her degree once abroad.

### Career development despite barriers: the further life paths of Rodler, Silberberg, Strauss and Wessely

Just how did these four women enter professional life and develop their careers as pathologists? To answer this question, we must also consider the existing professional conditions in Germany at the time.

Choosing the medical professional also had significant private implications for these early female physicians, alongside the aforementioned social and institutional barriers they faced<sup>52</sup>: Nearly half of the first generation of female physicians remained unmarried. For the other half, which did marry, we can identify a notable development: Around 60% ended up marrying a colleague (another physician) from their profession. In some cases, this fact had far-reaching consequences: For the couples who sought to open a medical practice, typically only the husband was considered in the allocation of an official medical insurance-accredited licence; despite her own academic degree, the woman in this constellation officially

<sup>48</sup>Ferdinand, *Ibid.*, 133.

<sup>49</sup>Kröner, *op. cit.* (note 4).

<sup>50</sup>W. Gruner (ed.), *The Persecution and Murder of the European Jews by Nazi Germany, 1933–1945. Volume 1: German Reich 1933–1937* (München: De Gruyter Oldenbourg, 2008), 36.

<sup>51</sup>Daniela Neumann, *Studentinnen aus dem Russischen Reich in der Schweiz (1867–1914)* (Zürich: Hans Rohr, 1987), 17–18.

<sup>52</sup>Bleker and Schleiermacher, *op. cit.* (note 45), 210.

remained unemployed or rather merely ‘worked for’ her husband. This widely applied regulation during the Weimar Republic did not only apply to Jewish physicians but to German physician couples in general.<sup>53</sup> The situation faced by academics was no less challenging: Female physicians, provided they were not single, also had to find a way to harmonise their career development with their social role as a wife and a mother. Academic visibility and recognition were, as such, only possible for women of extraordinary talent and output.<sup>54</sup>

Female physicians had received a greater degree of recognition in the scope of the First World War, as they often had to assume positions at hospitals and medical practices on account of a lack of men, who were serving in the war. This made the fact of women in the medical professions more common, to some degree, thereby at least temporarily increasing the acceptance of female physicians. The situation did, however, remain difficult. While the Weimar constitution officially prescribed the equal treatment of men and women in terms of access to scientific institutions and public offices,<sup>55</sup> the reality on the ground was quite different. In the view of the male-dominated medical profession, the increasing number of women in medical professions was clearly seen to be an issue. This led to the fact that after 1918, war veterans in particular (and thus male doctors) were given preference in filling public positions recognised by the health insurance funds. After 1932, female doctors married to income-earning husbands were removed from public positions. Under the Third Reich, the displacement of women from the medical professions became even more pronounced. Even female physicians who were highly successful or those with teaching licences at universities were often fired in favour of their ascending male colleagues, a fact that has been proven for women in the area of dentistry.<sup>56</sup> Many clinics also refrained from hiring female physicians.<sup>57</sup> The basis of this development was the patriarchal politics of National Socialism, in which women were seen primarily in their role as mothers and housewives. Women were required to fulfil their duty as mothers for the good of the ‘Volksgemeinschaft’ (people’s community). Additional activities intended for women were primarily related to involvement in Nazi associations.<sup>58</sup>

The anti-Semitic repression measures introduced by the National Socialist regime – for women *and* men – were even more dramatic: One in five physicians were removed from their professions due to their ‘non-Aryan’ background. Three stages led to the full-fledged elimination of Jewish individuals from the medical professions: First, the events immediately after the National Socialists came to power in 1933. On 1 April, a large-scale boycott of Jewish stores and banks, as well as the establishments of lawyers and physicians, took place. Defamatory posters were put up in front of the respective facilities, and in some cases, they were also graffitied or damaged. One week later, the ‘Law on the Restoration of the Professional Civil Service’ was enacted, enabling the rulers to dismiss Jewish and ‘politically unreliable’ civil servants from the service. With further decrees of 24 April and 4 and 6 May, this regulation was also extended to employees and workers. Exceptions were made for frontline fighters in the First World War and for women whose husbands had died in said war. Finally, by decree of 22 April, all ‘non-Aryan’ or allegedly communist physicians had their health insurance licences revoked.<sup>59</sup> The ‘Bund Deutscher

<sup>53</sup> *Ibid.*

<sup>54</sup> J. Buchin, ‘Die mühsame Suche nach den “weiblichen Ärzten”: Zur Entstehungsgeschichte der Dokumentation: Deutsche Ärztinnen im Kaiserreich’, in E. Brinkschulte (ed.), *Weibliche Ärzte: Die Durchsetzung des Berufsbildes in Deutschland* (Berlin: Edition Hentrich, 1993), 156–8.

<sup>55</sup> Bleker 2010, *op. cit.* (note 42), 250–1; J. Bleker, ‘Anerkennung oder Unterordnung? Ärztinnen und Nationalsozialismus’, in E. Brinkschulte (ed.), *Weibliche Ärzte: Die Durchsetzung des Berufsbildes in Deutschland* (Berlin: Edition Hentrich, 1993), 126–35.

<sup>56</sup> Dominik Groß, ‘Maria Schug-Kösters (1900–1975) – Erste habilitierte Zahnärztin in Deutschland’, *Zahnärztliche Mitteilungen*, 111, 3 (2021), 263–6; Dominik Groß and Julia Nebe, ‘Elsbeth von Schnizer (1900–1998) – Kieferorthopädin und Professorin mit Karrierebruch’, *Zahnärztliche Mitteilungen*, 111, 4 (2021), 276–9.

<sup>57</sup> Bleker, *op. cit.* (note 55), 127.

<sup>58</sup> Michael Wildt, ‘Volksgemeinschaft’, *Informationen zur politischen Bildung*, 314, 1 (2012), 46–62.

<sup>59</sup> S. Doetz and C. Koepke, ‘Die antisemitischen Kampagnen und Verfolgungsmaßnahmen gegen die jüdische Ärzteschaft seit 1933’, in T. Beddies, S. Doetz and C. Koepke (eds), *Jüdische Ärztinnen und Ärzte im Nationalsozialismus: Entrechtung, Vertreibung, Ermordung* (Berlin/Boston: De Gruyter, 2014), 36–57.

Ärztinnen' (Association of German female Physicians), which was concerned for its existence in the face of blatant gender discrimination, aligned itself and excluded all Jewish members as of July 1933.<sup>60</sup>

The second stage was essentially marked by the anti-Semitic 'Nuremberg Laws' (1935), which resulted in Jewish physicians being dismissed from service at public and free non-profit hospitals.<sup>61</sup>

Finally, the events of 1938 marked the definitive end of Jewish medical practice in Germany. With the 'Anschluss' of Austria in March, the anti-Semitic measures were extended to the Jews of the neighbouring country.<sup>62</sup> The fourth decree of the 'Reich Citizenship Law' issued on 25 July caused the cancellation of the medical licence of Jewish physicians as of 30 September. A few were still allowed to treat Jewish patients exclusively. The final step marked the November pogroms on 9 and 10 November 1938, in the course of which various Jewish facilities were destroyed and Jews were arrested on a large scale and deported to concentration camps – a development that ultimately led to the Holocaust.<sup>63</sup>

Bringing these aspects together, Jewish women thus had to deal with both anti-Semitic and gender discrimination.<sup>64</sup>

All four of the women investigated here were married for at least some period of time, and thereby exposed to the gender role conflicts outlined above. This situation would later bring with it numerous challenges in the post-war period and, particularly in Germany, was only recognised and addressed as a serious issue for gender politics much later.<sup>65</sup> Rahel Rodler had a daughter who suffered from a mental issue that required additional assistance in order for her to live her life. She is the only one among the four female pathologists, who has been known to have had children. At the time of her daughter's birth, the compatibility of family and career was hardly given for women, since the German Empire envisioned the role of women as housewife and mother<sup>66</sup> – at the same time, as already described, Rodler was already in an unusual professional situation for women. Nevertheless, Rodler had given up her academic profession 3 years before her daughter was born and dedicated herself to pathology as a medical practice. Interestingly, she apparently did not make this decision (on her own): According to Carney, she instead did so 'in accordance with the wishes of her family'.<sup>67</sup> As such, the reason for the early end of her university career was directly rooted in traditional patterns of thinking, marked by an opposition between family and one's academic career.

It is also notable that the husbands of all four were likewise physicians, and pathologists in some cases. This fact was even at times a definitive advantage: Martin Silberberg, for example, acted as an instructor and patron for his later wife, Ruth, and, following their emigration, the couple worked closely alongside one another. Rahel Rodler, for her part, indirectly benefited from the medical career of her husband: The diagnostic laboratory housed at his medical practice offered her the opportunity to continue her medical laboratory work, even if not in an academic environment. She also did not appear as a scientific author after 1909.

Lotte Strauss was certainly an exception in this regard, as she entered into a marriage with Peter Grünwald only after completing her professional development and divorcing him after a few years. Strauss ultimately achieved success in her medical career without the help of a husband. Moreover, she was more successful and reached a higher position than her short-time husband, who was an associate professor.<sup>68</sup>

<sup>60</sup>Bleker and Schleiermacher, *op. cit.* (note 45).

<sup>61</sup>Doetz and Koepke, *op. cit.* (note 59).

<sup>62</sup>Kröner, *op. cit.* (note 4); Uhlendahl *et al.*, *op. cit.* (note 1), 2–6.

<sup>63</sup>Doetz and Koepke, *op. cit.* (note 59).

<sup>64</sup>Anna von Villiez, 'The Emigration of Women Doctors from Germany Under National Socialism', *Social History of Medicine*, 22, 3 (2009), 553–67.

<sup>65</sup>Buchin, *op. cit.* (note 54), 156; Birgit Hibbeler and Heike Korzilius, 'Arztberuf: Die Medizin wird weiblich', *Deutsches Ärzteblatt*, 105, 12 (2008), 609–12.

<sup>66</sup>Bleker and Schleiermacher, *op. cit.* (note 45), 12.

<sup>67</sup>Carney, *op. cit.* (note 9), 627.

<sup>68</sup>W. Röder and H.A. Strauss (eds), *International Biographical Dictionary of Central European Emigrés 1933–1945*, Vol. II/Part 1: *The Arts, Sciences, and Literature* (München: Saur, 1983), 1140; Uhlendahl *et al.*, *op. cit.* (note 1), 3.

In summary, the four women in this study confirm the rule that contemporary female physicians often either married a professional colleague (such as Rodler, Silberberg and Wessely) or (as Strauss) spent the formative years of their (professional) lives without a partner.

### Continuity or disruption? The careers of Silberberg, Strauss and Wessely after emigration

Johanna Bleker estimates the number of female physicians persecuted by the National Socialists at around six hundred individuals. Provided that they managed to emigrate, most were unable to successfully resume their careers in their new home countries.<sup>69</sup> In Great Britain, German medical degrees were not acknowledged until the end of 1940, which means that emigrated physicians either had to study again (which was only possible in Edinburgh, Scotland) or work as nurses. With the recognition of German qualifications, relicensing became easier, provided one had not emigrated further to another destination in the meantime.<sup>70</sup> In the United States, there were special licence boards for the relicensing of emigrated physicians, for which the conditions varied widely among the individual states. In general, the local professional politicians tended to work against the emigrant physicians, as they were perceived as competitors to American physicians in economically difficult times. Thus, new licencing was often based on an arbitrary application of the law.<sup>71</sup> Basically, good conditions for physicians were offered by the U.S. East Coast, above all New York. Until 1936, foreign medical degrees were generally recognised there; later, except in a few cases, physicians had to pass subsequent examinations. Professional policy in the United States accepted emigrant physicians almost exclusively in cases of particularly outstanding performance or if there was a corresponding need in a particular field.<sup>72</sup>

To what extent do these observations apply to the émigrés in this study (Silberberg, Strauss and Wessely), or do they, in fact, represent an exception to the rule?

Rodler, for her part, is a special case in that she did *not* forcibly emigrate after 1933 but rather remained in Germany, and with lethal implications, as she was deported to the Theresienstadt ghetto, where she died. While Rodler had immigrated to Switzerland from Russia in 1896, this was a conscious, planned and temporary and did not share the commonality of forced migration after 1933.

The cases of Silberberg, Strauss and Wessely, on the other hand, were different. Despite the difficulties faced by women in the medical professions, Silberberg held a position as an assistant at the Institute for Pathology at the University of Breslau from 1931 to 1933 before emigrating. Strauss and Wessely, in contrast, were only able to commence their medical careers after emigrating. Ultimately, all three were highly successful in their new homelands and did indeed distinguish themselves from their majority of immigrant female (and male) physicians, whose careers lost steam or even came to a halt altogether.<sup>73</sup>

In general, one may note that the destination countries for Silberberg, Strauss and Wessely (the United States and Great Britain) were places in which women were already accepted at universities, either by the first half (United States) or the second half (Great Britain) of the nineteenth century; however, this did not apply to all fields and the women's movements in these two countries had to fight

<sup>69</sup>Bleker, *op. cit.* (note 55), 127–8.

<sup>70</sup>A.E. von Villiez, 'Emigration jüdischer Ärzte im Nationalsozialismus', in T. Beddies, S. Doetz and C. Kopke (eds), *Jüdische Ärztinnen und Ärzte im Nationalsozialismus: Entrechtung, Vertreibung, Ermordung* (Berlin/Boston: De Gruyter, 2014), 190–202.

<sup>71</sup>Uhlendahl *et al.*, *op. cit.* (note 1), 11–12; *ibid.*; Linda Lucia Damskis, *Zerrissene Biografien: Jüdische Ärzte zwischen nationalsozialistischer Verfolgung, Emigration und Wiedergutmachung* (München: Allitera, 2009), 12–13, 90–2, 190–3; Eric Kohler, 'Relicensing Central European Refugee Physicians in the United States: 1933–1945', *Simon Wiesenthal Center Annual*, 6 (1989), 2–32.

<sup>72</sup>Uhlendahl *et al.*, *op. cit.* (note 1), 11–12; Kohler, *ibid.*; Kathleen M. Pearle, 'Ärzteemigration nach 1933 in die USA: Der Fall New York', *Medizinhistorisches Journal*, 19, 1/2 (1984), 112–37.

<sup>73</sup>Bleker, *op. cit.* (note 55), 127–8.

for women to be admitted to each university separately.<sup>74</sup> Against this backdrop, one may assume that citizens in both destination countries were long accustomed to female academics, which likely had a positive influence on their social acceptance.

In the United States, women were able to obtain licences to practice medicine as of 1912, a process that was, however, complicated by the fact that these had to be approved by examination committees comprised completely of men.<sup>75</sup> As a general rule, the openness of the all-male governing bodies towards women in academic professions across Europe and the United States depended heavily on the employment market: The more professionals were needed at a given time, the more these men were inclined to accept women in certain professional fields.<sup>76</sup> In the United States, in particular, universities were in search of pathologists. Sziranyi *et al.* and Uhlendahl *et al.* have shown that the majority of female and male pathologists who emigrated out of the Third Reich were (successfully) able to resume their careers here.<sup>77</sup>

Silberberg, Strauss and Wessely clearly benefitted from these generally favourable conditions. In their specific case as pathologists, gender was not the determining factor in the United States, rather the need for professionals in the area of pathology – and demand was sufficiently high.<sup>78</sup> At the same time, it would be erroneous to assume that the United States enjoyed wide-reaching gender equality at the time. While the situation for women there was more beneficial than in Nazi Germany or in the subsequent Federal Republic under Adenauer, Silberberg, Strauss and Wessely owed their career success, first and foremost, to their own performance and the fact that they had acquired expertise in a specialised area. Silberberg became an expert in experimental pathology, particularly skeletal growth and aging and the pathogenesis of osteoarthritis, Strauss went on to become a pioneer in paediatric and perinatal pathology and Wessely developed her specialty in clinical medicine and also focused on tumour research. As such, these three women were not only able to find positions as pathologists, they also established formidable careers. This conclusion also corresponds with recent findings related to the early university careers of female German dentists: The rise of the first emerging female researchers to professorships was likewise primarily based on the development of specialised expertise and unique differentiators, such as in the areas of paediatrics and orthodontics.<sup>79</sup> The example of dentists shows – also regardless of gender – that specialisation and expertise were of essential importance for a successful career as an emigrated physician (especially in the United States). American competition among non-specialised dentists was so high that many German emigrants were forced to work as dental technicians or in completely different professions.<sup>80</sup> Overall, among all medical disciplines, about two-thirds of the German emigrants in the United States were able to reach the position of a full professor, which is a considerable number.<sup>81</sup> Among the pathologists (male and female) who emigrated to the United States, as many as 77% reached this position.<sup>82</sup> With regard to female physicians as a whole, Villiez found that they had significantly better

<sup>74</sup>Ilse Costas, 'Die Öffnung der Universitäten für Frauen: Ein internationaler Vergleich für die Zeit vor 1914', *Leviathan*, 23, 4 (1995), 496–516; P. Mazón, 'Die erste Generation von Studentinnen und die Zulassung der "besseren Elemente" 1890–1914', in U. Auga *et al.* (eds), *Das Geschlecht der Wissenschaften: Zur Geschichte von Akademikerinnen im 19. und 20. Jahrhundert* (Frankfurt/New York: Campus Verlag, 2010), 113–26.

<sup>75</sup>Costas, *ibid.*

<sup>76</sup>*Ibid.*, 508–9.

<sup>77</sup>Sziranyi *et al.*, *op. cit.* (note 1); Uhlendahl *et al.*, *op. cit.* (note 1).

<sup>78</sup>*Ibid.*

<sup>79</sup>Dominik Groß, 'Herta Byloff-Clar (1914–2008) – erste Universitätsdozentin für Kieferorthopädie in Österreich', *Zahnärztliche Mitteilungen* 111, 5 (2021), 374–7; Dominik Groß, 'Gisela Schützmannsky (1920–2013) – die erste Professorin für Kinderzahnheilkunde an einer deutschen Universität', *Zahnärztliche Mitteilungen*, 111, 7 (2021), 610–13; Dominik Groß, 'Dorothea Dausch-Neumann (1921–2013) – Die erste Lehrstuhlinhaberin in der deutschen Zahnheilkunde', *Zahnärztliche Mitteilungen*, 111, 8 (2021), 714–17.

<sup>80</sup>Uhlendahl *et al.*, *op. cit.* (note 1), 12; Michael Köhn, *Zahnärzte 1933–1945. Berufsverbot, Emigration, Verfolgung* (Berlin: Edition Hentrich, 1994), 57–61; Matthis Krischel and Dominik Groß, 'Zahnärzte als Täter und Verfolgte im "Dritten Reich"', *Zahnärztliche Mitteilungen* 110, 1–2 (2020), 24–7.

<sup>81</sup>Damskis, *op. cit.* (note 71), 87–92.

<sup>82</sup>Uhlendahl *et al.*, *op. cit.* (note 1), 2, 10.

prospects for continuing their careers in emigration than women from other professions – although many female physicians also made professional sacrifices in favour of their husbands.<sup>83</sup> The latter makes Silberberg, Strauss and Wessely once again outstanding personalities.

### Persecuted female pathologists under National Socialism: a quantitative classification

We finish by offering a quantitative comparison in order to better classify the *vitae* of the female pathologists investigated here within the overall context of the persecution, displacement and emigration of Jewish professionals. At 3.4% (4 of 118 individuals), the portion of persecuted female (nearly all Jewish) pathologists<sup>84</sup> is significantly *lower* than the proportion of women within the Jewish medical field. Before 1933, there were about 572 female Jewish doctors in the Reich, which represented 8.8% of all Jewish physicians (about six thousand five hundred individuals). We know that in 1932, there were about three thousand, four hundred women doctors overall in Germany out of the approximately fifty-thousand physicians of both genders (6.8%).<sup>85</sup> The per cent of women among Jewish medical students enrolled in the winter semester of 1932/3 did, however, amount to 29%,<sup>86</sup> a number that shows just how few women later specialised in the area of pathology.

Of these 118 pathologists, the migration of ninety-one is evidenced, two-thirds of which ( $n = 60$ ) went to the United States.<sup>87</sup> In other words, there was one woman for every thirty male pathologists who emigrated in general and, when considering those who went to the United States, this number falls to one in every twenty. This also makes the careers of Silberberg, Strauss and Wessely quite exceptional. They established themselves in a male-dominated area and developed into female role models as well as pioneers in their field.

As most male pathologist émigrés,<sup>88</sup> Strauss and Wessely settled on the East Coast of the United States, where the admittance conditions were comparatively liberal; moreover, the East Coast was home to numerous and well-endowed universities and clinics, offering promising chances for employment. As such, cities on the East Coast, along with Chicago, were the preferred destinations for émigré physicians.<sup>89</sup> Silberberg was an exception here, having settled in the Midwest to pursue a career at Washington University in St. Louis, Missouri. Her choice likely largely had to do with the fact that her husband, Martin Silberberg, had previously worked together with resident Leo Loeb prior to their joint migration. Ruth Silberberg was not, however, academically dependent on her husband. On the contrary, her career continued to advance following the passing of Martin Silberberg; in fact, she achieved her highest position, as Full Professor of Pathology, just 2 years *after* the death of her husband.

Of the sixty pathologists who immigrated to the United States, forty-seven were university professors, of which thirty achieved the position of Full Professor.<sup>90</sup> The three female pathologists in our study perfectly reflect this statistic: Silberberg and Strauss represented the two out of three who pursued university careers, and both achieved the position of full professor. In contrast, Wessely conducted her research at a hospital, where clinical medicine took priority.

The fact that Rodler was the only one of the four pathologists who did not emigrate likely had to do with her specific situation: After Hitler assumed power, she kept herself under the protection of her 'Aryan' husband and, at the time of his sudden death, she was already 57 years old. Here, it would also be worth making a comparison with the overall collective of pathologist forced to emigrate. Of the

<sup>83</sup>Villiez, *op. cit.* (note 64), 564.

<sup>84</sup>Sziranyi *et al.*, *op. cit.* (note 1); Uhlendahl *et al.*, *op. cit.* (note 1), 2–6.

<sup>85</sup>Villiez, *op. cit.* (note 64), 558; Johanna Bleker and Christine Eckelmann, 'Der Bund Deutscher Ärztinnen (BDÄ) 1933 bis 1936', *Die Ärztin* 61, 3 (2014), 6–8.

<sup>86</sup>*Ibid.*, 11.

<sup>87</sup>Uhlendahl *et al.*, *op. cit.* (note 1), 2–6.

<sup>88</sup>*Ibid.*

<sup>89</sup>Villiez, *op. cit.* (note 70); Uhlendahl *et al.*, *op. cit.* (note 1), 10; Pearle, *op. cit.* (note 72).

<sup>90</sup>Uhlendahl *et al.*, *op. cit.* (note 1), 2.

pathologists born before 1880, we only have evidence of two individuals successfully emigrating.<sup>91</sup> Remaining in the Third Reich at an advanced age, despite persecution by the National Socialist regime, can, in most cases, be explained by strong rootedness to one's homeland, decreased willingness (or ability) to adapt to a new context in a foreign country (in terms of language, culture or research environment) as well as accumulated financial reserves and needs to provide for others, which many feared would be lost by emigrating. Younger physicians, on the other hand, literally had less to lose, making it easier for them to set out on a new beginning.<sup>92</sup> The matter of rootedness surely played a decisive role in Rodler's case as she had a daughter with a mental disability that required special care.

## Conclusion

The results of this study lead us to the conclusion that Rahel Rodler, Ruth Silberberg, Lotte Strauss and Zelma Wessely managed to assert themselves and become pioneers in the male-dominated field of pathology. As Jewish women, they suffered from traditional gender inequality imposed by German society and the academic medical field as well as anti-Semitism under the National Socialist regime and the resulting process of disenfranchisement. While Rahel Rodler ultimately faced death in Theresienstadt, the other three pathologists managed to establish themselves as role models professionally and academically upon emigration also. Rodler achieved this as the very first woman to be a member of the German Pathological Society, Strauss as the discoverer of Churg–Strauss syndrome, Silberberg as an experimental pathologist and Wessely through her double focus as a clinician and a published academic. We should also highlight that Silberberg and Strauss advanced to the highest position of Full Professor in the university context. None of these four pathologists owed their careers exclusively or to any large degree to their husbands (who were also pathologists). All of them shone on account of their personal determination, professional passion and sustained performance. This made each one of them become a symbol for the emancipation of their contemporary female academics.

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<sup>91</sup>*Ibid.*, 3–5.

<sup>92</sup>H. Embacher, 'Vertreibung und Emigrationserfahrungen mit Fokus auf Akademiker und Akademikerinnen 1934–1945', in J. Koll (ed.), 'Säuberungen' an österreichischen Hochschulen 1934–1945: Voraussetzungen, Prozesse, Folgen (Wien/Köln/Weimar: Böhlau, 2017), 91–120.

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## **Erklärungen**

### **Erklärung § 5 Abs. 1 zur Datenaufbewahrung**

Hiermit erkläre ich, dass die dieser Dissertation zu Grunde liegenden Originaldaten

- bei mir, **Hendrik Uhlendahl, Wiesental 3, 52068 Aachen,**

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hinterlegt sind.

## Eidesstattliche Erklärung gemäß § 5 Abs. (1) und (2), und § 11 Abs. (3) 12. der Promotionsordnung

Hiermit erkläre ich, **Hendrik Uhlendahl** an Eides statt, dass ich den wesentlichen Anteil an der Publikation

Hendrik Uhlendahl, Dominik Gross, Victim or profiteer? Gerhard Domagk (1895–1964) and his relation to National Socialism, Pathology – Research and Practice 216 (2020), 152944, DOI: 10.1016/j.prp.2020.152944; geleistet habe.

Die Anteile an der Arbeit sind wie folgt verteilt:

	Hendrik Uhlendahl	Univ.-Prof. Dr. Dr. Dr. Dominik Groß	Nick C. Gemell	Summe (%)
Datengewinnung (Archivdurchsicht, Durchsicht von Primär- und Sekundärliteratur)	80	20	0	100
Studiendesign/Konzeption	80	20	0	100
Datenauswertung	80	20	0	100
Bereitstellung von Materialien	90	10	0	100
Interpretation der Datenauswertung	70	30	0	100
Verfassung des Manuskripts	100	0	0	100
Korrektur des Manuskripts	0	100	0	100
Übersetzung des Manuskripts	40	0	60	100

Aus diesem wesentlichen Anteil ergibt sich selbstverständlich die Stellung als Erstautor.

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Hendrik Uhlendahl, Nico Biermanns, Janina Sziranyi, Dominik Gross, Success or failure? Pathologists persecuted under National Socialism and their careers after emigrating to the United States, Pathology - Research and Practice 218 (2021), 153315, DOI: 10.1016/j.prp.2020.153315; geleistet habe.

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Datengewinnung (Archivdurchsicht, Durchsicht von Primär- und Sekundärliteratur)	40	10	40	10	0	100
Studiendesign/Konzeption	80	20	0	0	0	100
Datenauswertung	80	0	20	0	0	100
Bereitstellung von Materialien	20	20	20	40	0	100
Interpretation der Datenauswertung	80	10	10	0	0	100
Verfassung des Manuskripts	100	0	0	0	0	100
Korrektur des Manuskripts	0	70	30	0	0	100
Übersetzung des Manuskripts	30	10	0	0	60	100

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Hendrik Uhlendahl, Stephanie Kaiser, Nico Biermanns, Dominik Groß, Pioneers in pathology and female role models: The Jewish scientists Rahel Rodler, Ruth Silberberg, Lotte Strauss and Zelma Wessely, Medical History 66/4 (2022), 304-322, DOI: <https://doi.org/10.1017/mdh.2023.2>; geleistet habe.

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Datengewinnung (Archivdurchsicht, Durchsicht von Primär- und Sekundärliteratur)	40	20	10	30	0	100
Studiendesign/Konzeption	70	30	0	0	0	100
Datenauswertung	80	10	0	10	0	100
Bereitstellung von Materialien	20	20	10	50	0	100
Interpretation der Datenauswertung	60	20	10	10	0	100
Verfassung des Manuskripts	100	0	0	0	0	100
Korrektur des Manuskripts	0	60	20	20	0	100
Übersetzung des Manuskripts	30	10	0	0	60	100

Aus diesem wesentlichen Anteil ergibt sich selbstverständlich die Stellung als Erstautor.

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