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EUROPEAN JEWISH REFUGEE CHEMISTS IN THE UNITED STATES: ADJUSTMENT, ACHIEVEMENTS AND JEWISH IDENTITY

By

Yael Epstein

A THESIS

Submitted to Michigan State University in partial fulfillment of the requirements for the degree of

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ABSTRACT

EUROPEAN JEWISH REFUGEE CHEMISTS IN THE UNITED STATES: ADJUSTMENT, ACHIEVEMENTS AND JEWISH IDENTITY

By

Yael Epstein

On April 7, 1933 the Nazis enacted the Civil Service Law, which instructed to dismiss anyone who was not Aryan from public positions in Nazi Germany. As a consequence, many Jewish academics were expelled from their positions. Many Jewish academics immigrated to the United States; Laura Fermi called them, the "Illustrious Immigrants". Among those academics were prominent chemists including several Nobel Prize Laureates. My current sample includes 35 Jewish chemists and biochemists, who worked prior to their immigration to the U.S in the European academy or in the chemical industry.

In this thesis, I focus on the European Jewish chemists who migrated to the Unites States, their adjustment to the American scientific community and their incorporation into American society. Many of these chemists had productive new lives in the United States, and actively participated in the development of science and industry. At the same time, some had difficulties of adjustment. Interestingly, part of their attempt to overcome these difficulties was the creation of their own informal self- help network in the United States in order to adjust and find positions more easily.

Moreover, I discuss the Jewish identities of the chemists who were refugees from Nazism. This study fills a gap by exploring the Jewish identity of the refugee chemists and suggests new approach in the research of the intellectual refugee migration from the Nazi regime.

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DEDICATION

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For Oleg Palchik

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Chapter One

An Introduction

Between 1933 and 1945, several thousands refugee European academic scientists and scholars arrived in the United States from the Nazi regime. These men and women had been forced to flee to save their lives and find a free atmosphere in which they could continue their intellectual pursuits. National Socialism, together with Italian and Spanish fascism, in the Axis-conquered European states resorted to every means of intimidation and oppression to make European intellectual life secure for the dictators. Beyond intolerance of dissent, the Nazis invoked a blood feud against their own Jewish citizens, many of whom held important university and scientific posts before the advent of the Third Reich. Where the aims of the Nazi state did not coincide with the aims of free inquiry or with principles of human dignity, the aims of the Nazi state took precedence. Victims of the Nazi onslaught had to look beyond their homelands for refuge.¹ Alvin Johnson, then president of the New School for Social Research, founder of the so-called "University in Exile" and a leading advocate of rescue for émigré scholars, called them "Hitler's gift to American culture." Another prominent academic reportedly put it even more directly when he said; "Hitler shakes the tree and I gather the apples."²

The focus of the current research is European Jewish refugee chemists from the Nazi regime, who fled to the United States during this era. In this study chemists from the academy, as well as chemists who worked prior to immigration in the European chemical industry, are included. One account argues that at the beginning of 1933 there were about

¹ Charles John Wetzel, "The American Rescue of Refugee Scholars and Scientists from Europe 1933-1945," (PhD diss., University of Wisconsin, 1964), 1-2.

² Mitchell G. Ash and Alfons Sollner, eds., Forced Migration and Scientific Change: Émigré German-Speaking Scientists and Scholars After 1933 (Washnigton, D.C: Cambridge University Press, 1996), 3-4.

1000-1200 Jewish chemists and engineers in Germany, to whom about 200 "non –Aryan" chemists and engineers should be added.³ Another estimate is that the total number of chemists and biochemists who were expelled from universities and Kaiser Wilhelm Institutes was 140 (from a total of 535 chemists who were employed in universities in Germany and Austria and the Kaiser Wilhelm Institutes). At least 122 (87% of the 140) had to give up their positions for "racial" reasons; they were either "non- Aryans" or married to a Jew.⁴ Most estimates show chemists to be the largest disciplinary group among the scientists who fled Hitler. The population of refugee chemists during the 1930s may exceed a thousand.⁵

Despite the fact that the number of refugee chemists exceeds the refugee physicists (only about a hundred refugees physicists came to the U.S⁶, a relatively small figure in comparison with more than thousand chemists), most of the attention in the literature has converged on the physicists, due to the fascination with the story of their involvement in the creation of the atomic bomb in the United States. To illustrate, in the famous book *Illustrious Immigrants* by Laura Fermi⁷, which is considered one of the significant books on the intellectual migration from the Nazi regime, we can witness the exclusion of the refugee chemists from the other refugee intellectuals. When she writes about the natural sciences, she dedicates a large chapter on the European- born atomic scientists, (her husband, Enrico Fermi and their circle of friends were physicists), and

³ Doron Niederland, "The Emigration of Jewish Academics and Professionals from Germany in the First Years of Nazi Rule," *Leo Baeck Institute Year Book* XXXIII (1988): 291-292.

⁴ Ute Deichmann, "The Expulsion of Jewish Chemists and Biochemists from Academia in Nazi Germany," Perspectives on Science 7.1 (1999): 15.

⁵ P. Thomas Carroll, "Immigrants in American Chemistry," in *The Muses Flee Hitler- Cultural Transfer* and Adaptation 1930-1945 (Washington, D.C.: Smithsonian Institution Press, 1983), 190.

⁶ McGeorge Bundy, Danger and Survival- Choices About the Bomb in the First Fifty Years (New York: Random House, 1988), 30.

⁷ Laura Fermi, Illustrious Immigrants: the Intellectual Migration from Europe, 1930-41 (Chicago: University of Chicago Press, 1971).

then dedicates a little chapter "More Natural Scientists" to mathematicians, astronomers, medicine and the field of molecular biology. In the small section on molecular biology, she gives a little consideration to biochemists and ignores the field of chemistry. Additional examples are *The Intellectual Migration* edited by Donald Fleming and Bernard Bailyn⁸, in which there are two chapters on the physicists: "A New Site for the Seminar: the Refugees and American Physics in the Thirties" and "Émigré Physicists and the Biological revolution", and *Exiled in Paradise*⁹, in which there is a chapter "The Scientists and the Bomb". Neither focuses on the refugee chemists.

There is an assumption in the literature that the internationalism of science meant that the dismissed European scientists and researchers were better equipped to find work or were in greater demand abroad than their fellow refugees from Nazism who were in the arts and the humanities.¹⁰ It is assumed that, after the initial migration, places in the United States were readily located. One of the main subjects that this research will explore is the adjustment process of the refugee chemists in the United States. The questions to be examined are:

- Finding positions for the refugee chemists, did they have special difficulties?
- How did they overcome the difficulties?

Another gap that this study will try to fill is if the refugee Jewish chemists experienced anti- Semitism in the United States in the American universities or in the American chemical industry. This issue is especially important since anti- Semitism as

⁸ Donald Fleming and Bernard Bailyn, eds., *The Intellectual Migration: Europe and America, 1930-1960* (Cambridge: The Belknap Press of Harvard University Press, 1969).

⁹ Anthony Heilbut, Exiled in Paradise: German Refugee Artists and Intellectuals in America from the 1930s to the Present (New York: The Viking Press, 1983).

¹⁰ Tom Ambrose, *Hitler's Loss- What Britain and America Gained from Europe's Cultural Exiles* (London: Peter Owen Publishers, 2001), 179; Doron Niederland, "The Emigration of Jewish Academics and Professionals from Germany in the First Years of Nazi Rule," *Leo Baeck Institute Year Book XXXIII* (1988): 292.

phenomenon was not studied thoroughly in relation to the refugee migration from the Nazi regime in the U.S. America is mostly portrayed as the Promised Land or as an asylum (especially for intellectuals) to which the immigrants had to escape in order to run away from the hell in Europe. As much as it was true at least partially, this study will try to explore the complexity of the migration experience beyond that.

By reviewing the existing literature about the Jewish refugees chemists from the Nazi regime, one can notice that the literature ignores totally the question of the Jewish identity of these scientists. Sometimes it seems even deliberate. To illustrate, Laura Fermi writes: "I avoided the difficulty of determining the incidence of religions or races in the wave (of the Intellectuals refugees) by ignoring these categories".¹¹ Quite often, the writers of the studies relate to all the refugees as German immigrants or European refugees without any attentiveness to their Jewishness. In this ignorance of the "Jewish Question", we are witnessing here the racial politics of writing History¹² and my belief is that this issue cannot be ignored, otherwise the subject of the immigration of the intellectual refugees cannot be fully understood in depth. After all, they were expelled from Europe because many of them were thought of by the Nazis as Jews.

Therefore, this study will examine the Jewish identity of the refugee chemists by asking several key questions:

- What was the Jewish identity of the Jewish chemists in Germany or in Europe during pre-Hitler time?
- Did the Jewish chemists change their attitude toward their Jewish identification as a result of the Nazi regime actions and the Holocaust in Europe? If so, how?

¹¹ Laura Fermi, 15.

¹² Darlene Clark Hine, "Reflections on Race and Gender systems", in *Historians and Race* (Indianapolis: Indiana University Press, 1996), 60.

• In which ways was their Jewish identity visible, if at all, in the United States?

This issue will be discussed in relation to the general population of the European (mainly German and Austrian) Jewish refugees and their Jewish identity in Europe and in the American context.

For this research I chose a sample of 35 Jewish refugee chemists. I used several sources of information to collect their names. The book Refugees in America by Maurice R. Davie¹³ has an appendix of the names of distinguished refugees according to their scientific field. Another important resource is the International Biographical Dictionary of Central European Émigrés 1933-1945 of the Research Foundation for Jewish Immigration.¹⁴ The book Surviving the Swastika- Scientific Research in Nazi Germany by Kristie Macrakis¹⁵ has an appendix with the names of émigrés from the Kaiser Wilhelm Institutes. An additional significant resource is the study "The Expulsion of Jewish Chemists and Biochemists from Academia in Nazi Germany" by Ute Deichmann.¹⁶ Moreover, the archive of Laura Fermi in the University of Chicago Special Collections Research Center provides lists of names that Laura Fermi collected for preparing her book "Illustrious Immigrants". Another valuable source is the Guide to the Oral History Collection of the Research Foundation for Jewish Immigration, compiled by Joan C. Lessing¹⁷, which presents the oral interviews the Research Foundation for Jewish Immigration holds in its midst and categorizes them according to the interviewees'

¹³ Maurice R. Davie, *Refugees in America- Report of the Committee for the Study of Recent Immigration from Europe* (New York: Harper & Brothers Publishers, 1947).

¹⁴ Herbert A. Strauss and Werner Roder, eds., International Biographical Dictionary of Central European Émigrés 1933- 1945 (New York: K.G Saur Verlag, 1983).

¹⁵ Kristie Macrakis, Surviving the Swastika- Scientific Research in Nazi Germany (New York: Oxford University Press, 1993).

¹⁶ Ute Deichmann, "The Expulsion of Jewish Chemists and Biochemists from Academia in Nazi Germany," *Perspectives on Science* 7.1 (1999): 1-86.

¹⁷ Joan C. Lessing, Guide to the Oral History Collection of the Research Foundation for Jewish Immigration, Jewish Immigrants of the Nazi Period in the USA (New York: K.G Saur, 1982).

profession. Archival materials, which are mentioned in the acknowledgements, autobiographies and oral interviews also helped in finding hidden refugee chemists.

In this study, I will try to convey a different historical narrative than what was prevalent so far in the intellectual refugee migration studies. By shifting focus away from wrong historical assumptions such as the 'internationalism of science' in the story of the refugee chemists, much can be learned about this scientific immigration as sociological and historical phenomena in immigration studies.

Chapter Two

Historical Background

A. The Nazi Accession to Power

The torchlight parade of the jubilantly victorious Nazis streaming past the Reich Chancellery on January 30, 1933, was also a lurid signal to the German Jewish community that revolutionary changes in Germany were in the offing. Until that time, the instrument of the boycott had been applied against them only sporadically. It was a measure whose chief function in Nazi propaganda had been to mobilize Nazi supporters, and Jews had been able to defend themselves against its potential ravages. Now it was suddenly transformed into an essential component of the policy of the new regime, even if initially there was no official declaration to this effect. It was to take several more months before the National Socialist dictatorship consolidated its power. The burning of the Reichstag, the March 1933 elections, and the Enabling Act (on March 23, the Reichstag divested itself of its functions by passing the Enabling Act, giving full legislative and executive powers to Hitler) constituted stages, in swift succession, of an astonishingly rapid process of *Glechschaltung*- the bringing of all spheres of state and economy under Nazi domination. The illusion of a right- wing "coalition government" with a National Socialist minority soon crumbled. The Depression and foreign-policy considerations appeared initially to place limitations on the new rulers, checking their hand in the area of economic policy toward the Jews as well. In actual fact, however, precisely the opposite occurred: it was specifically these first early months of Nazi rule

that were marked by pronounced anti-Semitic violence, directed primarily against Jewish economic activities.¹⁸

B. Creating the Racial State and Marginalizing Jews

Following the so- called 'Machtergreifung' (the Nazi takeover of power), many National Socialists were no longer content to confine their hatred of Jews to verbal calumnies. In some cities department stores owned by Jews were ransacked, and Jewish judges and lawyers were forcibly barred from the courts. SA hooligans and SS auxiliaries rounded up Jews who were Communists or Socialists, or who had distinguished themselves in the struggle against Nazism, and forced them into 'wild' concentration camps. The latter were established in former barracks, factories, breweries, water towers, trade union and Socialist Party buildings, ships, restaurants, bars, and private residences. There were about 100 'wild' concentration camps in Berlin alone, the most notorious being the Columbiahaus, and a barracks on General – Pape- Strasse in Tempelhof, where the abducted were abused, tortured, or murdered. Neither the police nor the judiciary made any attempt to bring those responsible to account. The international press, however, reported these SA atrocities in considerable detail.

This foreign 'horror propaganda' provided the leadership of the NSDAP with a pretext to organize a 'boycott of Jews'. The victims, in other words, were held responsible for the negative international response to the actions of their persecutors.¹⁹ The boycott took place on 1 April 1933 and was targeted at Jewish businesses, Jewish

¹⁸ Avraham Barkai, From Boycott to Annihilation- the Economic Struggle of German Jews, 1933-1943, (Hanover: University Press of New England, 1989), 13.

¹⁹ Michael Burleigh and Wolfgang Wippermann, *The Racial State: Germany 1933-1945* (New York: Cambridge University Press, 1991), 77.

products, Jewish doctors and Jewish lawyers. It was also to be extended out to reach into the smallest farming village in order to strike a blow at Jewish tradesmen, especially in rural areas.²⁰ The boycott affected practically every Jewish business in Germany. Crowds gathered outside Jewish businesses, which were adorned with posters reading: 'Germans, defend yourselves, don't buy from Jews!' or 'Beware, danger to life, Jews out, beware Itzig, go to Palestine.' Similar posters appeared outside the practices and chambers of Jewish physicians and lawyers. However, despite the threatening postures of the everpresent SA men, many Germans ignored the boycott and demonstratively continued to patronize Jewish businesses. It is impossible to speak of a widespread aggressive antipathy to Jews in Germany at this time. Despite this, the Nazis emphasized to their conservative allies and foreign governments that the boycott was a response to anti-Semitic 'public opinion'.

The Law for the Restoration of the Professional Civil Service of 7 April 1933 was of far greater long-term significance than the boycott and begins the story of the great European Jewish refugee migration. Although principally aimed at actual or suspected political opponents of the regime, the law also encompassed Jewish civil servants, in so far as these had not fought at the front in the First World War (I will discuss this Law further in the next section). Passage of this action uprooted intellectuals and scientists and began a major brain drain from Germany to other nations, about which the Nazis expressed indifference.

In April 1933, Jewish physicians were forbidden to work for state-insured institutions, and the local authorities refused to send patients to hospitals with Jews among their administrators. At the same time, the regime introduced a law against the

²⁰ Avraham Barkai, 17.

overcrowding of schools and colleges which restricted the number of Jews to a maximum 1.5 per cent of the total number of students attending schools and universities. On 4 May 1933, all 'non-Aryan' public sector employees, as distinct from tenured civil servants, were dismissed. A further decree issued the same day prohibited promotions of Jews whose jobs were 'protected' by the war veteran clause. This last measure was symptomatic of the ways in which the regime sought to circumvent its earlier, tactical concession to Jewish war veterans. Nazi propaganda maintained that Jews had left the fighting to others.²¹ The range of professions from which Jews were excluded was progressively extended. On June 2 1933 Jews could no longer work for public insurance schemes as dentists or dental technicians. On 17 May 1934 this ban was extended to all medical personnel married to 'non-Aryan' partners. From 26 July 1934 they could no longer work as university teaching assistants. In December, Jewish pharmacology students were no longer allowed to sit at their final examinations, and from 13 December Jews were no longer permitted to submit work entitling them to work as university lecturers.

These formal legal measures against Jews during the first year of Nazi rule were accompanied by a no less invidious process of informal social ostracism. Jews were 'encouraged' to give up their membership in associations of industrialists, regimental veterans' associations, student societies, or humble skate clubs. Informal ties by Germans with Jews were cut. Further anti- Semitic legislation and decrees issued between 1933

²¹ This point can be easily dispelled by anyone who cares to visit the Weissensee cemetery in East Berlin, with its rows of headstones commemorating some of the 12,000 Jews who had fallen for their Fatherland. A further 35,000 Jews had been decorated for bravery. However, facts like these counted for little in the face of Nazi power and dogmatic racist assertion.

and September 1935 were designed to exclude Jews from the 'national community' as a whole and dissociate them from society.²²

<u>C. The Law for the Restoration of the Civil Service</u>

Nazi policy from the very beginning had as one main goal the "purging" of the entire civil service and public sector -- the Nazi state -- of Jews, people of Jewish origin, and those with leftist sympathies. Since in Germany, all universities and technical universities were (and still are) state institutions, civil service laws and decrees applied also to professors and lecturers at universities. These laws and decrees were soon extended also to the independent professions, such as physicians and lawyers. The first and most important of these was the 'Law for the Restoration of the German Civil Service,' passed on 7 April 1933.²³ The law, in euphemistic language, was enacted in order to "reestablish a national career civil service and to simplify the administration" by firing civil servants who did not meet certain requirements. The crux of the law was summarized in paragraph 3- what came to be known as the "Aryan Paragraph"- which stated that civil servants who were not of "Aryan descent" were to be "retired".²⁴ "Non-Aryans" were defined as all persons with at least one Jewish grandparent, irrespective of religion. As a consequence, all Jewish (non-"Aryan") and the very few outspoken liberal or left wing university teachers were immediately dismissed. This was soon followed by dismissals from the Kaiser Wilhelm Institutes. Exemptions were made for World War I

²² Michael Burleigh and Wolfgang Wippermann, *The Racial State: Germany 1933-1945* (New York: Cambridge University Press, 1991), 78-80.

²³ Ute Deichmann, "The expulsion of Jewish Chemists and Biochemists from Academia in Nazi Germany," *Perspective on Science* 7.1 (1999): 10-11.

²⁴ Kristie Macrakis, Surviving the Swastika- Scientific Research in Nazi Germany, (New York: Oxford University Press, 1993), 53.

Jewish front line soldiers, but they no longer applied after the Nuremberg laws were decreed in September 1935 and implemented. Moreover, in many cases politically active National Socialist students organized rallies and boycotts against many Jewish university teachers who as war veterans were allowed to remain faculty members, thus forcing them too to resign.²⁵ As a result of the worsening political climate, a 'brain- drain' ensued, with about one-third of university teaching staff having to flee the country, including some twenty-four Nobel Prize laureates.²⁶ Another estimate is that University faculties lost from 15 to 20 per cent of their personnel.²⁷

At a meeting between Max Planck (famous German scientist and president of the Kaiser Wilhelm Society, from 1930 to 1937) and Hitler, Planck tried his best to save German science. "It is self-destruction to force valuable Jews to emigrate because we need them for our science," Planck told Hitler, "These Jewish émigrés will, above all, benefit countries abroad." Planck's words, however, fell on deaf ears.²⁸ Adolf Hitler responded in these words: "Our national policies will not be revoked or modified, even for scientists. If the dismissal of Jewish scientists means the annihilation of contemporary German science, then we shall do without science for a few years."²⁹

Following the Nuremberg Laws, and, in this context, the equally significant decree on the implementation of the Armed Forced Law of 25 July 1935, which 'released' Jews from service in the forces, the civil status of Jews was reduced to that status they held prior to their Emancipation. That is, they were once again subject aliens,

²⁵ Ute Deichmann, "The expulsion of Jewish Chemists and Biochemists from Academia in Nazi Germany," *Perspective on Science* 7.1 (1999): 10-11.

²⁶ Michael Burleigh and Wolfgang Wippermann, *The Racial State: Germany 1933-1945* (New York: Cambridge University Press, 1991), 81.

²⁷ Edward Yarnall Hartshorne, *The German Universities and National Socialism* (Cambridge: Harvard University Press, 1937), 16.

²⁸ Macrakis, 57.

²⁹ Patricia Rife, Lise Meitner and the dawn of the nuclear age (Boston: Birkhauser, 1999), 108.

no longer citizens, no longer members of the German national community. On the basis of the Nuremberg Laws, Germany's Jews were removed from the positions they had achieved in state, society, and economy since the era in the 19th century of Emancipation. They were disenfranchised on 14 November 1935 under the first decree on the implementation of the Reich Citizenship Law. At the same time, those tenured Jewish civil servants hitherto protected by their status as war veterans were dismissed from public service. The second decree on the implementation of the Reich Citizenship Law banned Jewish notaries, physicians, professors, and teachers from the State service. Further obstacles to the pursuit of their professional careers were imposed soon afterwards on Jewish physicians, lawyers, apothecaries, and so on. These measures continued in subsequent years, until finally in 1938 a total 'Berufsverbot' (forbiddance of profession) was imposed upon all academically- trained Jewish professionals. These decrees marginalized the Jews from both the 'national community' and economic existence.³⁰

When Hitler conquered other European countries such as Austria, the Nazi Laws were also enacted there, among them the Civil Service Law. To illustrate, the *New-York Times* listed sixty-three internationally known professors and physicians who had been arrested, committed suicide or been dismissed from their positions in Austria since the German annexation (the Anschluss) in 1938.³¹ Herman Mark, a Jewish chemist who came to the United States in 1940, describes this in his autobiography: "The "Austro-Nazis" became increasingly aggressive, blowing up public telephone booths, burning cars that were owned by Jews, and preventing Jewish professors from giving their courses at

³⁰ Burleigh and Wippermann, 82, 84.

³¹ "Austrian Savants in Eclipse Listed," New York Times, Jun 26, 1938.

the university³². These actions by the radical Nazi regime created an increased desire by Jewish intellectuals and scientists to emigrate. To illustrate, the philosopher and literary critic Walter Benjamin left Berlin for Paris on March 18. Two days later he wrote to his colleague and friend, Gershom Scholem, who lived in Palestine: "I can at least be certain that I did not act on impulse... Nobody among those who are close to me judges the matter differently." The novelist Leon Feuchtwanger, who had reached the safety of Switzerland, confided in his fellow writer Arnold Zweig: "It was too late for me to save anything.... All that was there is lost."³³

D. United States Policy Regarding Immigrants and Refugees

The US had traditionally been open and welcoming to immigration from Europe, but in the wake of World War I had enacted a new structure of immigration laws, that more strongly restricted immigration and selected among those eager to come The Immigration Act of 1924, known as the National Origin Act, was a temporary measure to reduce immigration overall and to change the quotas to 2 per cent (from three per cent) of the number of foreign born of each nationality, as calculated on the 1890 rather than the 1910 census. As a long-range solution to the immigration problem, it introduced a new concept: national origins quotas ought to be apportioned, not according to the number of foreign- born, but the number of "inhabitants in continental United States in 1920 whose origin by birth or ancestry is attributable to each nationality". The law set at 150,000 the maximum number of immigrants from all countries except the Americas, which were left outside the numerical and quota restrictions. It provided that the "National Origin"

³² Herman F. Mark, From Small Organic Molecules to Large: A Century of Progress, Profiles, Pathways, and Dreams- Autobiographies of Eminent Chemists (Washington D.C: American Chemical Society, 1993), 83.

³³ Saul Friedlander, Nazi Germany and the Jews (New York: HarperCollins Publishers, 1997), 9.

section of the act became effective on July 1, 1927. The principle of national origins produced debate in Congress, and twice Congress passed resolutions postponing enactment of the national origin provision- first until July 1928, and then until July 1929.

The enactment of the new immigration laws had immediate results and changed both the quantity and the quality of immigration to America. Some 1,468,296 persons immigrated to the United States in the five- year period 1926-30. In the next five- year period only 220,209 immigrated, a drop of 85 %. The depression together with the new provision effectively closed the gates to mass immigration and the small residual immigration was in great part comprised of individuals who came from different class origins. The National Origin Act left a door open to intellectuals: the 4d clause of section 4 of the act. It allowed the granting of non-quota immigrant visas to ministers of any religious denomination, to bona fide teachers of higher education who would be teaching in this country, and to their families. These non- quota visas were to prove a blessing for many European intellectuals even when the quota from their country had not been filled, because in general they could be obtained more easily than the quota visas.³⁴

With the onset of the Great Depression, the administration of the National Origin Act was also tightened up by the United States. U.S consuls abroad tightened administration of the visa process to prevent easy entry, weeding out those likely to be public charges or without adequate sponsorship in the U.S. As a consequence of these restrictive practices, during the first years of the Nazi regime Jewish and political refugees fleeing Germany were not permitted to enter the United States in any appreciable numbers. To illustrate, from January 1933 to December 1933: 535 German

³⁴ Laura Fermi, *Illustrious Immigrants- The Intellectual Migration from Europe 1930-41*,2nd ed. (Chicago: The University of Chicago Press, 1971), 24-26.

Jews immigrated, while the annual quota for immigrants who were natives of Germanythat was 25,957 persons, remained largely unfilled. This circumstance continued through out the 1930s.³⁵ The onus was on US consuls abroad, who by law were responsible for issuing or denying immigration visas for the United States. The consuls were not only advised to follow restrictive instructions, but were encouraged to do so. One of many letters to arrive at such New York agencies as the American Jewish Committee and the American Jewish Congress stated that 'it is ... a fact that the officials at the Consulate in Berlin do their best to discourage emigration to the States on the part of Jewish aspirants'. In January 1934, Commissioner MacCormack of the department of Labor accused the State Department of fostering competition among consuls for the lowest percentage of visas issued. He further stated that certain consuls in Europe, including those in Germany, limited visas to not more that 10 per cent of the quotas. Although visa officials repeatedly denied such accusations, the traditional orientation of restriction prevailed in the State Department and continued to influence consuls' decisions in their visa work during the whole period. The crux of Washington's message to the consuls was 'if you must err, err on the side of caution'. Such orientation meant that even eligible aliens were often rejected due to red tape.³⁶

³⁵ Herbert A. Strauss, "The Immigration and Acculturation of the German Jew in the United States of America", *Leo Baeck Institute Year Book* XVI (1971): 64-66.

³⁶ Bat- Ami Zucker, In Search of Refuge- Jews and US Consuls in Nazi Germany 1933-1941, Parkes-Wiener Series On Jewish Studies (Portland: Vallentine Mitchell, 2001), 80-81.

Table 1.	Jewish	Immigration	from German	iy to the	e United	States,	January	1933	to June
1938 ³⁷									

Period	Annual numbers of immigrants	Quota Slots
January 1933 to December 1933	535	25,957
January 1934 to December 1934	2310	25,957
January 1935 to June 1935	658	25,957
June 1935 to June 1936	6750	25,957
July 1936 to June 1937	6750	25,957
July 1937 to June 1938	10,000	25,957
	Total arrived 27,000	

As Nazi anti-Jewish policies progressed in Germany in the mid- and late- 1930s, and then in Austria after mid-1938, the Roosevelt Administration made an effort to meet the expanding problem of German refugees in Europe. To arrange for the rescue, mass care, and resettlement of European refugees, President Roosevelt sent a friendly message on 23 March 1938 to nine European countries and twenty (Latin) American republics asking them to participate in an international conference to establish an intergovernmental organization to deal with all refugees 'wherever governmental intolerance shall have created a refugee problem'. The conference at Evian- les-Bains, France, convened on 6 July 1938, and resulted in the establishment on 14 July of the Intergovernmental Committee on Refugees (IGCR), which held its first meeting in London on 3 August. The IGCR at its first meeting appointed George Rublee, an

³⁷ Herbert A. Strauss, *Leo Baeck Institute Year Book*, 65.

American active in refugee work, as its Director. Rublee, who resigned on 14 February 1939, was succeeded by Sir Herbert Emerson, who then combined his new post with that of the League of Nations High Commissioner for Refugees. The newly established IGCR sought to help refugees, but apart from resolutions, time- consuming committee meetings, missions to individual governments to negotiate for refugee resettlement, studies of resettlement potentialities, and fruitless attempts at direct negotiations with members of the Nazi German government to arrange for a large- scale exodus of Jews, the paucity of tangible assistance to refugees by the IGCR before the outbreak of the Second World War was disappointing.

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The one form of international action that would have provided the most substantial relief for the refugees would have been a widespread lowering of immigration barriers by many countries. Most nations, however, were prepared to do no more than suggest this course of action for their neighbors.³⁸ To illustrate, Britain asked for clarification of the President Roosevelt intent and took to protect her national interest by making her cooperation conditional: the question of Jewish immigration to Palestine was not to be discussed at the conference. Even, for the American delegation, the finding of resettlement areas was far more difficult and entailed a degree of embarrassment not foreseen in the relatively simple task of establishing the IGC. The U.S offered mainly only good intentions.

Before the conference began, the American delegation sought to strengthen its position. American officials suggested a way in which the number of immigrants admitted appears larger than it really was. "For confidential bargaining purposes,"

³⁸ Malcolm J. Proudfoot, *European Refugees 1939-52: A Study in Forced Population Movement* (Evanston: Northwestern University Press, 1956), 30-31.

Breckinridge Long wrote to George Brandt his executive assistant (Breckinridge Long, a State Department official and later appointed Assistant Secretary of State for Special Problems in 1940), "visitor's visas might be included in a fair comparison" with other countries. Myron C. Taylor, the head of the American delegation, in his opening address, made much of the generous American policy for the admission of refugees. "The American government," stated Taylor, "prides itself upon the liberality of its existing laws and practices... I might point out that the American government has taken steps to consolidate the German and former Austrian quota so that a total of 27,370 immigrants may enter the United States on the German quota in one year." Such sleight- of- hand deceived no one. The combination of two quotas prevented the loss of one quota but did not add any new openings. Representatives of the private organizations may well have wondered why, even at the time of the conference, the German quota was still being under-filled. To the other receiving nations, it appeared that the United States had called a refugee conference to persuade them to accept more refugees while itself maintaining a strict "keep out" policy.³⁹

It is true that the United States admitted the largest number of refugees, yet the US fell far behind all other countries in respect to the ratio of this group to the country's population or to the size of the Jewish community in the country.⁴⁰ Additionally, the proportionate burden of the nations bordering the Reich was far greater if one calculated

³⁹ Henry L. Feingold, *The Politics of Rescue- The Roosevelt Administration and the Holocaust, 1938-1945* (New York: Waldon Press, 1970), 26, 30-31.

⁴⁰ Arieh Tartakower, "The Jewish Refugees- A Sociological Survey," Jewish Social Studies IV no.4 (1942): 317.

the ability of nations to absorb immigrants or on the number of immigrants per hundred of native population.⁴¹

Doron Niederland has argued that young Jewish academics and professionals were the leading group among the emigrants.⁴² In the operations of the private committees, the JDC (the Jewish Joint Distribution Committee), HIAS (the Hebrew Immigration Aid Society), the International Relief Association, the Emergency Rescue Committee, and the Unitarian Service Committee, as well as in the Governmental committees, refugee scholars were prominent among those helped to escape from totalitarianism. "We are not a charity in the sense of assisting all those men and women who have suffered at the hands of the Nazis," an official in one agency once declared. "We are the conscious expression of American political and cultural action, designed to save for the post- war world those European who have something of value to contribute to the building of a free Europe and to the benefit of mankind."⁴³ Because such organizations were particularly interested in intellectuals and in men and women whom the Nazis and fascists had singled out as enemies to be persecuted, the more prominent of the professors had powerful friends who worked for them in the United States and Europe. Later, American committees listed distinguished professors as potentially important additions to American life and the war effort. To illustrate, the Advisory Committee on Political Refugees and the State Department together drew up a first list of 27 high ranking intellectuals at 1940, later supplemented, which was sent to consuls in

⁴¹ Feingold, 31.

⁴² Doron Niederland, "The Emigration of Jewish Academics and Professionals from Germany in the First Years of Nazi Rule," *Leo Baeck Institute Year Book* XXXIII (1988): 296.

⁴³ The International Rescue and Relief Committee declared as quoted in the thesis of Charles John Wetzel.

Marseilles, Bordeaux, and Lisbon, for special treatment.⁴⁴ From reading the literature about the refugees from the Nazi regime, one can conclude that already established professors had a preference according to the American immigration policy in getting the right to immigrate and hence to receive visas, thus I believe that the contention of Niederlend saying that most of the academic immigrants were young needs further research.

E. Foundations and International Organizations Aiding Refugees

A major factor of importance in the high percentage of successful transfers in the academic realm, in addition to access to special visas, was the effective aid provided by several committees and agencies. The few most active in the cause of the foreign scholars (including scientists) were the Emergency Committee in Aid of Displaced Foreign Scholars, the Rockefeller Foundation and the Oberlaender Trust⁴⁵ and the Notgemeinschaft Deutscher Wissenschaftler im Ausland.⁴⁶

The Emergency Committee

The Emergency Committee in Aid of Displaced Foreign Scholars was organized in May, 1933, almost immediately after the beginning of Hitler's repression of academic personnel. From then until its dissolution in June 1945, the Emergency Committee had secured places in 145 colleges and universities throughout the country for 288 displaced scholars under its original program. The Emergency Committee approached colleges and

⁴⁴ Charles John Wetzel, "The American Rescue of Refugee Scholars and Scientists from Europe 1933-1945," (PhD diss., University of Wisconsin, 1964), 131-132, 129.

 ⁴⁵ Donald Peterson Kent, The Refugee Intellectual: The Americanization of the Immigrants of 1933-1941, (New York: Columbia University Press, 1953), 115.
⁴⁶ This organization compiled a list Of Displaced German Scholars, Autumn 1936 London, Laura Fermi

⁴⁶ This organization compiled a list Of Displaced German Scholars, Autumn 1936 London, Laura Fermi Papers, Box 8: folders 6-7, Special Collections Research Center, The University of Chicago Library, Chicago.

universities in an effort to place foreign scholars who had held the rank of professor, privat dozenten, or the equivalent in European universities.⁴⁷ For financial support the Committee turned largely to philanthropic foundations. Through June 30 1941, the Committee collected \$658,585 and gave out nearly that amount. Major contributions included the New York Foundation which gave \$317,000, the Rosenwald Family Association, \$199,500, the Nathan Hofheimer Foundation, \$57,000, the American Jewish Joint Distribution Committee, \$60,150, the Rockefeller Foundation, \$10,000, the Jewish National Welfare Association of San Francisco, \$8,000 and the National Coordinating Committee, \$5,000.⁴⁸ With the aid of these funds, the Committee would make a grant to the institution employing the émigré in order to help pay his salary. In this way, it was hoped, American academic establishments could employ foreign scholars without materially increasing their own expenditures or displacing American scholars.⁴⁹ In the early years of its history the Committee usually made a grant of \$2,000 a year to an institution toward the salary of each displaced scholar. If the institution could not place the scholar upon its own budget at the end of the academic year, the Committee sometimes renewed the grant for a second year. Preference was always given, however, to requests from institutions that gave promise of absorbing the scholars into their faculties at an early time.⁵⁰

The Rockefeller Foundation

During the 1920s the Rockefeller Foundation had become a major force in facilitating the international mobility of scientists. Rockefeller Fellowships allowed

⁴⁷ Kent, 115-116.

⁴⁸ Wetzel, 163.

⁴⁹ Kent, 116.

⁵⁰ Stephen Duggan and Betty Drury, The Rescue of Science and Learning- The Story of the Emergency Committee In Aid Of Displaced Foreign Scholars (New York: The Macmillan Company, 1948), 187.

(mainly) young scientists of outstanding promise to acquire experience at a leading academic center, and by 1925 several hundred fellowships were awarded each year. While most Fellowships allowed academics to visit major centers in the United States, it was also possible for European (and other non- U.S.) institutes to attract young postdoctoral research fellows.

Between 1933 and 1940 the primary recipients of funds were the select group of academics who had already received Rockefeller monies. By the time of the Second World War, the Foundation moved to two emergency programs, a 'Deposed scholars' and a 'European Scholars' program. The Deposed Scholars program was for persons already in a country of refuge. Overall, \$229,862 were expended on this program over six years between 1939 and 1945. In August 1940 the Foundation approved an Emergency Program for European Scholars who were still in place but in grave danger. The New School in New York agreed to take in a further 100 scholars. Of the 89 invitations issued, 31 scholars could not be extricated or declined the invitation. Some were already in Britain, as the biochemists Severo Ochoa in Oxford and Wiktor Nowinski in Cambridge. The biochemist Louis Rapkine, who had organized hospitality in France for German and Austrian refugees scientists, drew on his contacts to have French scientists included in this program. Overall, \$437,659 were expended on this program.⁵¹ Generally, the number of scholars placed by the Rockefeller Foundation in the U.S.A between 1933 and 1945 was 313.52

⁵¹ Paul Weindling, "An Overloaded Ark? The Rockefeller Foundation and Refugee Medical Scientists, 1933-45," *Studies in History and Philosophy of Biological and Biomedical Sciences* 31 no.3 (2000): 477-478, 485-486.

⁵² Herbert A. Strauss, ed. "The Migration of the Academic Intellectuals," in *International Biographical Dictionary of Central European Émigrés 1933-1945*. Vol. II (New York: K. G. Saur Verlag, 1983), LXXV.

The Oberlaender Trust

The Oberlaender Trust of the Carl Schurz Memorial Foundation assisted in placing hundreds of scholars, pursuing a policy designed to assist the most competent European scholars without displacing American academicians. During the period under consideration, more than \$300,000 from a fund endowed by Gustav Oberlaender was distributed to aid refugee intellectuals. The directors of the Emergency Committee write that: "The cooperation of the Oberlaender Trust was particularly valuable for the later career of the Emergency Committee when the Trust frequently added to the reduced grant that the Emergency Committee was compelled to make, a sufficient amount to justify a college or university in extending an invitation to a displaced scholar." This cooperation among the various agencies was not uncommon and greatly increased the effectiveness of their operation.⁵³

The Notgemeinschaft deutscher Wissenschaftler im Ausland

The German refugee scholars themselves formed in Switzerland another body, which took a prominent part in the work of rescue. It bore the German title, "*Notgemeinschaft deutscher Wissenschaftler im Ausland*", meaning the "Emergency Society of German Scholars Abroad". Its first home was Zurich; later, from January 1936, it moved its center to England, in order to work in closer collaboration with the Academic Assistance Council and its successor, the Society for the Protection of Science and Learning (an English organization to assist the intellectuals refugees). All the members of its Committee were German, and they were drawn from various faculties. They included Professor Philipp Schwartz, anatomist, in Zurich: Professor Moritz Bonn,

⁵³ Kent, 116.
economist, then in London: Professor Max Born, the physicist, then in Cambridge: Professor Ernst Cassirer, the philosopher, then in Oxford: and Geheimrat Demuth, formerly Director of the Political Academy in Berlin.

When it was founded, the organization thought that the problem was to place about 300 unabsorbed intellectuals in the universities of the world, and so distribute them that there would not be a burden on any single country. Their activity would be concentrated on the countries where no national committee was established for helping the displaced scholars. In practice the countries were Turkey, the Asiatic and the South American countries. They were soon to find that the problem was of larger dimensions; and it was the Notgemeinschaft which, having the fullest knowledge of the particulars of each displaced scholar, in 1936 drew up and published, with the help of the Rockefeller Foundation, a detailed list, including nearly 1500 names, of those dismissed from their academic posts in Germany alone.

The Notgemeinschaft's most remarkable achievement in its initial period was the placing of a group of German university teachers in the new University of Istanbul and in other learned institutes in the renascent Turkish State of Mustapha Kemal Ataturk. In the end over a hundred found a home, permanent or temporary, in the Ottoman land. That enterprise was organized with the help of the Swiss Professor Malche in Geneva. A smaller, but not insignificant, number of scholars were placed through the efforts of the Notgemeinschaft in countries of Central and Southern America and Asia. It was a principle of the Association that any university teacher placed abroad should look for openings for other exiles in professional life as well as in the academic callings. By this system of mutual aid during its fourteen years of life it is reckoned that

the Association placed 2000 persons in all parts of the world. Apart from its academic contingent in Istanbul and Ankara, it contrived to place a few in the new University of Teheran which was founded by Shah Riza Pahlevi of Iran, though the hopes, which were at one time held out, of rivaling the absorption of Istanbul were disappointed. Another bright hope of an Indian Prince, to establish a medical college in his realm, led to the preparation of the files of some hundreds of candidates, but to no practical result.⁵⁴

F. Depression and Anti-Semitism in the United States

The market crash in the U.S had occurred on October 24, 1929. By March, 1933, the banking system had come to a halt. On March 6, Franklin Delano Roosevelt, President of the United States, declared a four-day national bank holiday, which marked a crisis of the first magnitude. While world- wide depression had assisted Hitler's rise to power and created a context for the ruthless policies that pushed a cultural wave of emigration out of Europe, the American crisis pushed in the opposite direction: it increased the scarcity of jobs and tightened funds for institutions which, in turn, slowed the admission of refugees and put a brake on any arriving wave in America. The rise of Hitler pressed an intellectual wave toward the U.S., but the depression in America and American immigration policies limited the size of the wave.⁵⁵

Three majors factors in American life in the 1930s tended to generate public resistance to the immigration of refugees: unemployment, nativistic nationalism, and anti-Semitism. Debate, generally centering on the first two elements, often carried overtones of the third. Indeed, separation of these three factors is nearly impossible. For example,

⁵⁴ Norman Bentwich, The Rescue and Achievement of Refugee Scholars- The Story Of Displaced Scholars and Scientists 1933-1952 (Netherlands: Martinus Nijhoff, 1953), 17-18.

⁵⁵ Fermi, 28.

nativistic nationalism included a general dislike of aliens, which at times shaded over into anti- Semitism. Many people, no more than a generation removed from being immigrants themselves, responded to several years of economic and political insecurity by wholeheartedly accepting the nativist slogan "America for the Americans".⁵⁶

By all accounts it was Henry Ford's publications in the 1920s that launched the unprecedented campaign, which affected significantly the course of American anti-Semitism. In the spring of 1920, Ford set his personal newspaper The Dearborn Independent, to the task of chronicling the supposed Jewish menace. The newspaper became the chief trumpet of anti-Semitism in America in the 1920s. Each week, for 91 issues, the paper carried a major story exposing what it defined as some Jewish-inspired evil. These articles more than any other literary source spread the notion that Jews menaced the United States. With a circulation of 700,000, the paper attracted a grass-roots following, particularly in the Mid- West. When published later in book form, these anti-Jewish articles presented a 'respectable' platform under which American anti-Semites felt free to operate. Copies of the books were sent out free of charge to congressmen, influential politicians, journalists and editors. Historians agree that Ford must have distributed several million copies in the United States and around the world. Social scientist McWilliams concludes that 'it would be difficult to overestimate the damage which Ford's vicious, persistent, and heavily financed anti-Semitic campaign caused the Jews of the world'. It should also be noted that the book was especially popular in Germany. Hitler himself stated that Ford's articles were translated and circulated in millions throughout

⁵⁶ David S. Wyman, *Paper Walls : America and the Refugee Crisis 1938-1941* (Massachusetts: Colonial Press, 1968), 3.

Germany. Ford was the first American to be honored with the Grand Cross of the German Eagle.

Ford's views continued to dominate the anti-Semitic movement and its publications during the 1930s. Several conditions stimulated the spread of anti-Semitism: a severe economic depression, the emergence, albeit on a small scale, of left-wing movements, the beginnings of New Deal reforms, and the rise to power of the Nazi regime in Germany. The fear of revolutionary ideas and the impact of the economic recession were the main motivating factors in the increase in anti-Jewish publications and the emergence of 121 anti-Semitic organizations during the years 1930-40.

Two of the most prominent organizations were the Silver Shirts, headed by William Dudley Pelley, and the National Union for Social Justice, dominated by Father Charles Coughlin, the Catholic 'radio priest'. The Silver Shirts was established in February 1933 and reached a peak of 15,000 members in the summer of 1934. A detailed study of the group demonstrates that it began with 400-800 members in 1933 and, after reaching its peak, declined to 5,000 in 1938. William Dudley Pelley - 'Chief Pelley' - supplied the ideology of the Silver Shirts, decided on the course of action, and subsidized most publications. Pelley arrived at political anti-Semitism only in January 1933, after advocating spiritualism since 1928. A devout Protestant, son of a Methodist preacher, he now viewed the crusade against the Jews as his 'true vocation'. The Silver Shirts was a predominantly Protestant movement. Though it did not explicitly ban Catholics, the fact that many of the ranks and officers came from the Ku Klux Klan leads to the logical assumption that there was little room there for Catholics. Evidence is fragmentary concerning the composition of its membership. What is clear from the name roster is that most of its members came from native American families though it should be noted that German Americans were repeatedly encouraged by Pelley to join. In fact, the Silver Shirts and German Bundists often cooperated on the local level. Using *The Liberation*, a weekly magazine, and *The Silver Legion Ranger*, a weekly newspaper, as well as pamphlets, booklets, and several books that he published, Pelley spread his anti-Semitic propaganda mainly in regions west of the Appalachians.

The second extremist anti-Semite movement to emerge in the 1930s was the Coughlinites. Father Coughlin has been recognized by most scholars as one of the US's most influential right-wing extremists. In 1926, as parish priest in Royal Oak, Michigan, he realized the potentialities of the radio in circulating his ideas. He developed an impressive power base that established his reputation. His radio program turned into a national platform for his causes. His periodical, Social Justice, an extension of his Sunday afternoon talks, became an important means of promoting his views and, from 1936 onwards also a source of personal income. His organization, the National Union for Social Justice formed in 1934 to attack Roosevelt's New Deal and to advance his own economic and social programs, was transformed on 30 November 1938 into an instrument devoted to the promotion of his anti-Jewish crusade. It is estimated that Father Coughlin had an audience of millions for his weekly radio talks. A survey by the Institution of Public Opinion, issued in January 1939, estimates that 3,500,000 persons listened to his talks every Sunday and that two-thirds of that number agreed with his ideas. His weekly Social Justice reached about one million subscribers, most of whom were fanatical devotees and members of the Union, who 'armed with copies [of Social Justice] stood at crowded centers of many cities and importuned passersby'. In addition, his roof organization, the Christian Front, established in the late 1930s, grew to be his political army. Based in New York, the organization was avowedly anti-Semitic, ready to take to the streets on call.

In July 1938, Coughlin stated officially that the Front 'will not fear to be called "anti-Semitic" because it knows that the term "anti-Semitic" is only another pet phrase of castigation in the Communist glossary of attacks'. The Christian Front came to be used as a general term for the groups affiliated to and controlled by Coughlin, for example, The American Patriots, American Women Against Communism, and American Citizens Against Communism.

In many ways the 1930s anti-Semites emulated Ford's model. They adapted it to the conditions of the 1930s, achieving thereby a more receptive climate for their propaganda. The 'International Jew' was again the focus of propaganda. The 'International Jew', according to Pelley and Father Coughlin, was a permanent peril to the world in general and to American society in particular because America had been turned into the headquarters of the Jewish plotters. Pointing at the Jewish organization B'nai-B'rith, in 1939 Pelley assured his readers that it was in practice 'a nationwide espionage organization ... concentrating all efforts to materialize the Jewish grand plot'. It was clear to Pelley that such danger called for an immediate action since "an international clique was at work not only getting the vast reservoirs of wealth that was the United States Treasury and the American banking system, but the morale and stamina of the citizenry as well".

Coughlin urged Americans to stand 'steadfastly' against 'an insidious internationalism'. As early as July 1938, he published The Protocols of the Elders of

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Zion, proclaiming his belief in a Jewish world conspiracy and the role of the 'International Jew' in implementing it. Such a negative view of the 'alien Jew' was widely elaborated. The political and economic pressures provided the anti-Semites of the 1930s with a convenient climate. To Pelley and his Silver Shirts, the Jews constituted an eternal economic, political, religious and moral enemy. Prosperity and morality could be restored, he declared, only after the 'one problem' was solved. By 1936, Pelley demanded that Jews be disfranchised and confined to one city per state. Relocation could be arranged 'without embarrassment to any Hebrew' by an Aryan secretary of Jewry. The main task was 'to challenge and expose the alien plotters'. A similar attitude was evident in Father Coughlin's preachings in the late 1930s. In nine addresses entitled "Am I An Anti-Semite?" he identified the alien Jew as the main obstacle to Americanism and Christianity. The Jews were "a powerful minority in their influence, a minority endowed with an aggressiveness", permanently preventing the restoration of American ideals.⁵⁷

The years from 1938 through 1945 saw anti- Semitism in America rise and even reach a peak. Violence against Jews rose in American cities. Electioneering in New York City in 1940, Joseph E. McWilliams of the Christian Mobilizers, an offshoot of the Coughlinite Christian Front, informed an enthusiastic crowd that "I am the anti- Jewish candidate for Congress!" McWilliams was defeated, but others (such as Republican Congressman Jacob Thorkelson of Montana and Mississippi Democrat John Rankin) with much the same viewpoint held seats in the Congress.

Another anti- Semite movement was the German- American Bund. Composed mainly of lower- middle- class German- born residents of the United States, in effect it

⁵⁷ Bat- Ami Zucker, In Search of Refuge- Jews and US Consuls in Nazi Germany 1933-1941, 20-23.

formed the American Nazi movement. Uniforms, swastika armbands, Nazi flags, Storm Troop units, the Nazi salute, goose- step marching and other activities served notice of the plans that these Hitlerites had for America. About 40 percent of Bundist strength was concentrated in the New York City area, especially Yorkville in Manhattan and parts of Brooklyn, with sizeable contingents also in Detroit, Chicago, Philadelphia, and other cities.

A scholarly presentation of the threat posed by the entry of foreigners into the United States appeared in May 1939, published by the New York State Chamber of Commerce. Dr. Harry H. Laughlin, superintendent of the Eugenics Record Office of the Carnegie Institution of Washington, D.C., offered his 267- page Conquest by *Immigration* as "a research on the essential long-time parallel between conquest following successful military invasion and enforced settlement on the one hand and legalized, peaceful immigration and settlement on the other." The text presented traditional restrictionist arguments as high incidence among aliens of mental disease, criminality, and appearance on relief rolls. The assertion that immigrants take jobs from American citizens appeared. To ward off the foreign threat, Laughlin recommended that a "personality or character- test" be required of prospective immigrants, that the quotas be reduced further by 60 percent, that the deportation laws be tightened, and that all immigration be halted in times of large unemployment. In a thinly veiled burst of anti-Semitism, Laughlin suggested that the U.S should totally exclude persons of "alien races or organizations" whose members already in the country "tend to resist assimilation in the United States." The book closed with the assurance that "no living nation need permit its own conquest by unselected immigrants."

In the matter of popular concepts regarding Jews, five polls from March 1938 through April 1940 consistently found that about three fifths of American respondents believed that Jews had objectionable qualities, When those holding this viewpoint were asked what traits they disliked in Jews, the most frequent answers given were greed, dishonesty, and aggressiveness.⁵⁸

On top of that, overt anti-Jewish prejudice within the American academy seemingly was at a high point in the 1920s and 1930's, when large numbers of the children of the mass earlier immigration began to enter college. This pressure led many schools to impose national origins quotas limiting the admission of Jews to both undergraduate and professional schools. A. Lawrence Lowell, as president of Harvard, and Nicholas Murray Butler, then president of Columbia, openly defended Jewish quotas. And as late as 1945 Ernest M. Hopkins, then president of Dartmouth, justified the use of a quota at his institution on the grounds that "Dartmouth is a Christian college founded for the Christianization of its students." These restrictions carried over even more intensely to faculty appointments. Ledwig Lewisohn reported in his memoirs how he was prevented from teaching English; Edward Sapir was told by his graduate- school professors that as a Jew he could not expect an appointment and had to go to Canada. Lionel Trilling recalled in an article in *Commentary* that he was the first Jew appointed to the English department in Columbia; the Harvard Law School did not appoint another Jew after Felix Frankfurter until 1939, when Paul Freund and Milton Katz were named assistant professors. The City College of New York became one of the first schools to open its doors to Jews, but even CCNY was charged with discrimination at the beginning

⁵⁸ David S. Wyman, *Paper Walls : America and the Refugee Crisis 1938-1941* (Massachusetts: Colonial Press, 1968), 11,14,22.

of the 1930's. Heywood Broun and George Britt pointed out that "only five (Jews) have the rank of full professors... All five are men of exceptional attainments. The percentage of Jews in the lower orders... is much higher than among the more desirable positions. Even in a friendly college, the openings for Jewish professors are distinctly limited".

Seven years later at 1937, a report in the <u>American Jewish Year Book</u> described the national situation in dramatic terms: "It is very difficult these days for Jews to become full professors in the leading universities. In order to attain such rank, they must have achieved distinction in their respective fields of national and international character. While Jews constitute a considerable proportion of the student bodies in the colleges and universities throughout the land, certainly much more than their numerical proportion, they represent but an insignificant proportion of the faculties."

Graduate departments often used the scarcity of positions in the academic job market as a justification for admitting few Jewish students to graduate work. The old (vicious) circular reasoning legitimated the refusal to enlarge the body of Jewish graduate students on the grounds that to do so would mean training people who would not get jobs. Soon after the end of World War II, Albert Sprague Coolidge of Harvard told a Massachusetts legislative committee, "we know perfectly well that names ending in 'berg' or 'stein' have to be skipped by the board of selection of students for scholarships in chemistry." And he explained this practice as stemming from the department's understanding that there were no jobs for Jews in chemistry.⁵⁹ More specifically, Dr. Coolidge explained this "as a result of "a gentlemen's agreement" between university officials and the chemical industry that sponsors the scholarships. The chemical industry

⁵⁹ Seymour Martin Lipset and Everett Carll Ladd, Jr., "Jewish Academics in the United States: Their Achievements, Culture and Politics", American Jewish Year Book 72 (1971): 90-91.

in America happened to be rigidly exclusionist insofar as Jews were concerned. It is perfectly clear, therefore, that university practices in many cases had been brought into alignment with industrial practices.⁶⁰

I. <u>The Image of Scientists and Science in the American Public in</u> the 1930s

In addition to the general attitude of the United States not to accept a lot of Jewish refugees due to the depression and anti-Semitism, the ones that were preferred by the different refugee agencies were the scientists and the scholars. But at the same time, the American public was largely suspicious of science and this too could affect the adjustment of refugee scientists in the United States.

By the 1920s, science had acquired increased social authority in the U.S. Everyone from radical socialists to conservative politicians turned to objective science to justify their activities. In addition, the practical benefits of science and technology were becoming widely accepted, and the confirmation of Albert Einstein's theories of relativity in 1919 and the development of quantum mechanics in the 1920s provided new occasions for the introduction of scientific ideas into general intellectual discourse.⁶¹ In *Shifting Gears: Technology, Literature, Culture in Modernist America,* Cecelia Tichi also describes the very positive depiction of engineers in the mass media, in popular novels, and in early films, from the late nineteenth century through World War I. The engineer appears as the hero in over 100 silent movies and in best- selling novels approaching five million copies in sales between 1897 and 1920. The engineer signified stability in a social

⁶⁰ Carey McWilliams, A Mask for Privilege: Anti- Semitism in America, (Boston: Little, Brown and Company, 1948), 138-139.

⁶¹ Bruce V. Lewenstein, "The Meaning of 'Public Understanding of Science' in the United States after World War II," *Public Understanding of Science* 1 (1992): 46-47.

environment that seemed to require constant change in accommodation to new technologies.⁶²

Looking backward from their vantage point in 1936, Sheldon and Martha Cheney could declare that in 1927 "There was a spreading machine age consciousness." Other students since have pointed to some of the technological achievements of that year alone which sharpened such consciousness: the establishment of radio- telephone service between New York and London, San Francisco and Manila; the development of the first national radio networks; the opening of the Holland Tunnel, the first underwater vehicular tunnel in the world; the introduction of talking films and the production of Henry Ford's fifteen- millionth automobile. By 1927 the words "modern" and "streamlined" were being used not only in reference to design of particular objects but to a whole quality of living, a whole life- style.⁶³ Science and scientists were portrayed as the ones who responsible for creating this modern life style in the U.S.

An important development occurred in the 1930s, labor union membership grew enormously. To illustrate, the membership of the American Federation of Labor increased from 1933 to 1936 by seventy- five per cent.⁶⁴ Additionally, the labor movement produced in this period the largest strikes in American history. To illustrate, in September 1934, a national textile strike became the largest strike in a single industry in American history, involving 400,000 workers from Maine to Alabama. Strikes in California's factories in the fields were the largest agricultural strikes in American history. Moreover, the unions were responsible for a cultural movement in the United

⁶² Steven L. Goldman, "Images of Technology in Popular Films: Discussion and Filmography," Science, Technology, & Human Values 14.3 (1989): 280-281.

 ⁶³ Warren Susman, ed. Culture and Commitment 1929-1945 (New York: George Braziller Inc., 1973), 3,5.
⁶⁴ Dixon Wecter, The Age of the Great Depression 1929-1941 (New York: The Macmillan Company,

^{1948), 108.}

States, that would later be called "the Cultural Front".⁶⁵ As part of this movement, labor interests produced literally hundreds of speeches, articles, pamphlets, and advertisements condemning the harm that mechanization had done to workers, causing technological unemployment to be more than just another labor issue in the 1930s. A significant number of Americans whose jobs were not immediately endangered nonetheless expressed deep and increasing reservations about the new machine age economy. With the Depression, more and more people seemed ready to challenge or at least rethink the assumption that improving the technologies of production always meant progress. That urge brought talk of displacement into common parlance, and criticism of new workplace equipment developed into a staple of 1930s popular culture.

Through the great Depression (1929-1940), American books, movies, humor, and artwork provided space for expressions of alarm, writing a type of collective textbook documenting uncertainty. Just looking around in their everyday lives, ordinary Americans believed they could see a dangerous trend toward the progressive elimination of jobs. "I had a cousin who worked in D.'s checking bills. They got in adding machines and three girls got laid off," one person commented. Another observed, "It used to take four days to load a boat down at the river. Now a machine loads it in nine hours, with only one man working." A chef from California protested to the Labor Department that, on Nevada road construction projects, the new Le Torneau scraper allowed one laborer to move twenty- four yards of earth at once, single- handedly accomplishing a task that previously would have employed seventy- two men and 288 horses. Common sense, the man suggested, should tell anyone that such a sharp reduction in labor needs would create

⁶⁵ Michael Denning, The Cultural Front- the Laboring of American Culture in the Twentieth Century (New York: Verso, 1996), xiv.

social and economic havoc. One New Yorker reported that he found proof of the displacement problem just in his daily commute. "When I left my apartment this morning, I pressed a button... self- service elevator, one man out of job. I then went to the subway station and found one man making change and nine turn- stiles: nine ticket-choppers out of jobs. I then boarded a ten- car express manned by two guards: eight more men out of jobs," he wrote. "Who knows where it will end?"⁶⁶ The soft underbelly of technological progress was exposed in such popular offerings as Charlie Chaplin's 1936 film *Modern Times*. In this film, although the little tramp is found as often in a prison or a restaurant kitchen as a factory, the image of his struggle against the insane rationality of industrial rhythms emerges as the memorable statement against science and technology in the entire depression decade.⁶⁷

Without question, talk of displacement entailed some criticism of science and engineering. In a 1936 speech to the American Society of Mechanical Engineers, Yale president James Rowland Angell threw down the gauntlet by referring to technological unemployment as the most serious of some "ill- advised consequences" stemming from present- day science and engineering. "One of the most conspicuous facts about mechanical inventions is that they may occasion large- scale dislocations of labor," he said. "The time has long passed when we can look upon these developments as simply interesting eccentricities exercising purely local effects." The twentieth century could not truly be considered successful, he told the engineering audience, since the very process of modernization left so many people miserable. "When we are willing to accept the

⁶⁶ Amy Sue Bix, Inventing Ourselves Out of Jobs? America's Debate Over Technological Unemployment 1929-1981 (Baltimore: The Johns Hopkins University Press, 2000), 114-115.

⁶⁷ Carroll W. Pursell, Jr., "Government and Technology in the Great Depression," *Technology and Culture* 20 no.1 (1979): 163.

benefits which engineering progress brings to us in the form of cheaper and better food and raiment and such like blessings, we must be willing to see to it that our neighbors are not compelled to pay in poverty and suffering for the advantages which we enjoy." Other observers similarly called for reforming scientific and technical education, to teach graduates how to bring their fields into harmony with social interests.⁶⁸ The practice of science and engineering must give due weight to issues such as employment, president of the American Federation of Labor William Green insisted, in a symposium on "Benefits from Engineering Progress". Engineering projects ought to incorporate "constructive consideration and counsel" on how the installation of new machinery would affect workers. "Technical progress has brought most difficult problems to workers and industry" Mr. Green said. "Our term technological unemployment, expresses an experience that has often made science seem the enemy of wage earners. But this is because science has been used without taking into consideration the fact that wage earners have an equity in their jobs" he explained.⁶⁹

Green and Angell never even hinted at the idea that society could or should force research to halt, but as concern about joblessness remained high, many voices called scientists and engineers to account for the potential negative social consequences of their work. Even President Roosevelt insisted that America's professional communities must face the evidence suggesting that mechanization hurt labor. In a May 1936 message congratulating General Electric chairman Owen Young upon being honored by the Society of Arts and Sciences, Roosevelt wrote, "I suppose that all scientific progress is, in the long run, beneficial, yet the very speed and efficiency of scientific progress in

⁶⁸ Amy Sue Bix, 170.

⁶⁹ "Green Says Science is Not Foe of Labor," New York Times, October 4, 1931.

industry has created present evils, chief among which is that of unemployment." The President's qualified phrase, "I suppose," amounted to a less than ringing endorsement of science, while his reference to displacement brought a harsh note to an evening of celebration.⁷⁰ The idea that our scientific and technical prowess had somehow outstripped our moral and social ability to control them (and therefore that the former should be restrained until the latter are strengthened) found an echo even in the second inaugural address of Franklin D. Roosevelt. Without government aid, he declared, "we had been unable to create those moral controls over the services of science which are necessary to make science a useful servant instead of ruthless master of mankind." Later that same year the president wrote to Karl T. Compton, President of the Massachusetts Institute of Technology, that the whole subject of engineering responsibility must be opened up to also "consider social processes and problems, and modes of more perfect adjustment to environment, and must cooperate in designing accommodating mechanisms to absorb the shocks of the impact of science".⁷¹

With these kinds of hostile approaches from the government and other public sectors, it is no wonder that Congress cut appropriations for scientific research from approximately \$75.8 million for fiscal 1931-32 by about 12.5 percent to \$66.3 million for fiscal year 1932-33. President Roosevelt and the Democratic Congress took a meatcleaver approach in paring the science budget, provoking Representative Summers of Washington to allege, "A campaign of tremendous proportions is under way all over the United States to have Government research abolished." To illustrate, the government's

⁷⁰ Amy Sue Bix, 170-171. ⁷¹ Carroll W. Pursell, 166.

chief employer of physicists, the National Bureau of Standards, had its operating funds slashed by 70 percent between 1932 and 1934.⁷²

It was in this environment of suspicion against science and its effects on employment, concern about immigration, anti- Semitism and the continuing scarcity of American jobs, that increasing numbers of European Jewish refugee scientists and intellectuals tried to find haven in the U.S. In some cases, assisted by private foundations and organizations the European Jewish refugee intellectuals came in a wave to the U.S during the 1930s and early 1940s, that comprised the highest percent of educated immigrants since the beginning of American immigration.⁷³

 ⁷² Peter J. Kuznick, Beyond the Laboratory- Scientists as Political Activists in 1930s America (Chicago: The University of Chicago Press, 1987), 30-31.
⁷³ 8.47 percent of educated persons of the immigration in the 1930s, against 3.12 percent until then. Judith

 ⁷³ 8.47 percent of educated persons of the immigration in the 1930s, against 3.12 percent until then. Judith Fortney, "Immigrant Professionals A Brief Historical Survey," *International Migration Review* 6.1 (1972):
52.

Chapter Three

Adjustment, Reception and Achievements: The Refugee Chemists from the Nazi Regime

I chose 35 European Jewish refugee chemists from the Nazi regime who arrived in the U.S., to study the adjustment and reception of the newcomers. By Jewish refugees, I mean persons who were considered Jewish according to the Nazi laws. That is, they had at least one Jewish grandparent, but in many cases they were with at least one Jewish parent. In an attempt to obtain a cross section as representative of the group as a whole as possible, I chose chemists who were well known and established before emigrating and others who were not known or famous, but were more ordinary and worked as research chemists in the European chemical industry or academy in Germany and Austria. It is important to note, that the chemists included had already been educated as chemists before coming to the U.S, and this includes at least a bachelor degree in chemistry or professional training. In most cases, it was a graduate degree like Doctor of Chemistry. The refugees from the Nazi regime started coming in the 1930s due to Nazi persecution and continued to come to the U.S after World War II as displaced persons under the Displaced Persons Act, signed in June 1948, allowing 205,000 refugees.⁷⁴ In the studied sample, the period of arrival spanned the years 1933-1945.

Major questions that will be addressed here are if the Jewish refugee chemists encountered difficulties like discrimination as a result of anti- Semitism, or if they encountered specific problems in the scientific community in the American academy or

⁷⁴ William B. Helmreich, Against All Odds- Holocaust Survivors and the Successful Lives They Made in America (New York: Simon & Schuster, 1992), 21, 46.

chemical industry. Stories of adjustment failures or stories of success will be provided as part of the general narrative of the refugee chemists' story. To illustrate general patterns of adjustment, we will explore representative case examples.

	Name of the		Year of Arrival
	Refugee chemist		to the U.S
1	Max	Bergmann	1933
2	Ernst	Berl	1933
3	Hans	Beutler	1936
4	Jacob .J	Bikerman	1945
5	Konrad	Bloch	1935
6	Erwin	Chargaff	1934
7	Zacharias	Dische	1941
8	Immanuel	Estermann	1933
9	Kasimir	Fajans	1936
10	Conrat	Fraenkel	1936
11	James	Franck	1936
12	Herbert	Freundlich	1938
13	Walter M.	Fuchs	1934
14	Gertrud	Kornfeld	1937
15	Rosa L.	Kubin	1938
16	Fritz	Lipmann	1939
17	Otto	Loewi	1940
18	Fritz W.	London	1938

Table 2. The refugee chemists and time of their arrival to US.

19	Herman F.	Mark	1940
20	Otto	Meyerhof	1940
21	David	Nachmansohn	1939
22	Carl	Neuberg	1940
23	Hans	Neurath	1935
24	Eugene	Rabinowitch	1938
25	Otto	Redlich	1938
26	Otto	Rosenthal	1935
27	Rudolf	Schoenheimer	1933
28	Robert	Simha	1938
29	Carl	Sollner	1937
30	Otto	Stern	1933
31	Kurt G.	Stern	1935
32	Leo H.	Sternbach	1941
33	Heinrich	Waelsch	1938
34	Arnold	Weissberger	1936
35	Kurt	Wohl	1942

A few general details about the sample of refugee chemists should be considered here first. The average age of the refugee chemists who came to the United States was 41 years. This highlights that many of the chemists were already established when they immigrated to the U.S. 37 per cent -the highest percentage of the refugee chemists were in the range of ages 40 to 49 years. Refugee chemists that were in the range of 30 to 39 years were 31 per cent. In comparison with the general age of Jewish refugees who came to the U.S, the refugee chemists were much older. According to Arieh Tartakower, in the years 1939-1940 21.5 percent of arriving Jewish refugees were 31-40, and 18.9 per cent were 41- 50. In the years 1940-1941, 20.9 per cent of the general Jewish refugees (not the Jewish refugee chemists specifically) were 31-40 years and 19.6 per cent were in the ages of 41- 50 years.⁷⁵

The refugee chemists came steadily to the U.S all through the 1930s, with the highest percent of the refugee chemists (20% per cent) immigrating to the United States during 1938. After 1941 there was a decrease in the arrival of refugee chemists due to the war and inability to get out of Nazi-occupied Europe. That many refugee chemists came in the late 1930s suggests either that they were slow to run from Nazism or that many were in transition, mainly leaving Germany to live and work in other European nations, before leaving Europe permanently. According to Immigration Service figures for immigrants 1933-1941, the number of immigrant aliens admitted to the United States peaked in 1939.⁷⁶ In our sample, 80 per cent (28 of 35) of the refugee chemists lived in a transition state elsewhere in Europe for different periods of time before coming to America. Some 45 per cent of the refugee chemists immigrated for the first time to transition states in 1932-1934, at the beginning of the Nazi regime. The most popular destination was the United Kingdom; 42 per cent of the chemists studied in the sample. Another 17 per cent of the refugee chemists found temporary refuge in France. A majority, 60 per cent, of the refugee chemists went to one country, while a minority,

⁷⁵ Arieh Tartakower, "The Jewish Refugees- A Sociological Survey," Jewish Social Studies IV no. 4 (1942): 325.

⁷⁶ Donald Peterson Kent, The Refugee Intellectual: The Americanization of the Immigrants of 1933-1941, (New York: Columbia University Press, 1953), 12-13.

20%, actually was in at least two countries. The range of time staying in a transition country varied from a few weeks to 9 years. To illustrate, Otto Loewi, Professor of Pharmacology in Austria, who received the Nobel Prize for Physiology and Medicine in 1936 for the discovery of the chemical transmission of nerve impulses, immigrated to England in 1938 and stayed there until 1940, when he came to the U.S. Fritz Lipmann a prominent biochemist, who would late receive the Nobel Prize for the discovery of coenzyme A and its importance for intermediary metabolism in 1953, stayed in Denmark for seven years, 1932-1939, then immigrated to the U.S.

Doron Niederland has stressed that the high percentage of emigrants among chemists was due to the great demand for this profession in the host countries.⁷⁷ On the other hand, in a study on the impact of German Medical Scientists on British Medicine in Oxford University, Weindling has argued that certain biomedical scientists and chemists came to the United Kingdom as domestic servants or gardeners and pursued careers in fringe industrial laboratories. Moreover, a coordinating committee in Oxford University gave preference to scientists with prospects for re- migration, due to the lack of permanent positions in England. On top of that, after the beginning of the war there was fear of internment as enemy aliens in England by refugee scholars who were considered 'alien academics'.⁷⁸ It appears that the refugee chemists were not so much in demand in the transition countries, but, as temporary refuges, they were able to find temporary positions there, with the common belief that the Hitler regime would not stay for long.

⁷⁷ Doron Niederland, "The Emigration of Jewish Academics and Professionals from Germany in the First Years of Nazi Rule," *Leo Baeck Institute Year Book* XXXIII (1988): 292.

⁷⁸ Paul Weindling, "The Impact of German Medical Scientists on British Medicine: A Case Study of Oxford, 1933-45,"," in *Forced Migration and Scientific Change- Émigré German Speaking Scientists and Scholars after 1933* (Washington, D.C.: Cambridge University Press, 1996), 86, 91, 95, 102.

In regard to country of origin for immigration, 77 per cent of the refugee chemists in the selected sample were emigrants from Germany (27 of 35), while 17 per cent were from Austria (6 from 35). An additional refugee chemist emigrated from Czechoslovakia and another emigrated from Switzerland. Most refugee chemists were from the country that, before Hitler's rise, was the leader of the world in science, including both the academy and the chemical industry.

Most of the chemists in the sample arrived equipped with a doctorate in the U.S (34 of 35). The single exception was Konrad Bloch, then still a graduate student. The positions the refugee chemists had before their emigration were mainly in universities in Germany and Austria and also in the Kaiser Wilhelm Institutes in Germany (82 per cent). A few of the chemists in the sample had positions as researchers in the chemical industry (17 per cent). The positions they held before leaving in the academy were as lecturers, professors, heads of departments, and directors of Kaiser Wilhelm Institutes.

Some 62 per cent (22 of 35) had more than one position in the United States and in many cases more than two positions as well, indicating that many refugee chemists either were mobile among positions or, on the other hand, did not receive tenure in their initial working places and had problems of instability (mostly in academic institutes). To illustrate, Jacob J. Bikerman had five positions in the U.S., four in the American chemical industry and one in the academy. While eight refugee chemists in our sample worked in the American chemical industry at least once in their life, most refugee chemists were mainly oriented to academic work and followed careers in American universities and different academic institutions. 80 per cent of the refugee chemists at least once in their life resettled in the East coast, mainly in the state of New York, Pennsylvania, Massachusetts in the cities New York, Philadelphia, Pittsburgh and Boston. Additionally, 25 per cent resettled at least once in their life in the Midwest, mainly in the cities and university towns: Chicago, Ann Arbor, Cleveland and Minneapolis

An important question to consider as part of gauging the adjustment process of the newcomers is whether the refugee Jewish chemists suffered anti- Semitism in the American scientific environment. The case of James Franck, a scientist who emigrated at age 51 with a Nobel Prize in physics from Germany, who became a physical chemist in the U.S, provides an interesting example. In 1935, he and his family moved to the U.S. where he accepted a professorship at John Hopkins University in Baltimore. At Hopkins, Franck was initially happy with his position and turned down an opportunity to work at the University of Illinois Urbana. But, in 1938 he accepted a call to the University of Chicago, where he would have greater opportunities and support to do his science (such as sufficient equipment, which he lacked in Hopkins) and to work with others.



Figure 1. James Franck

When he did this, he was astonished and humiliated when President Isaiah Bowman of John Hopkins University reproached him, telling him that he acted un-**American** in making the move, and this feeling became unbearable when Provost Berry tried to print a statement in the press accusing Frank of heeding the call to Chicago because it offered better financial arrangements.⁷⁹ Although the statement eventually was not published, Franck was furious about the incident and demanded an apology, which never came. Moreover, Alan D. Beyerchen writes that "James Franck decided to leave Hopkins, at least in part because of the anti- Semitic attitude of some officials there".⁸⁰ These officials included Isaiah Bowman, according to Franck, who emphasized in an interview that the President made life very difficult for Jewish faculty.⁸¹ Interestingly, Isaiah Bowman in addition to serving as the President of John Hopkins University from 1935 to 1948, was an advisor to President Roosevelt on American refugee policy, charged particularly with finding resettlement possibilities for Jewish refugees. In this position, Bowman found every excuse to deny possible schemes and was indifferent to finding real solution to the problem. To illustrate, when he assessed the possibility of Jewish refugee resettlement in Australia in 1939 he wrote: "Regarding Australia now, the

⁷⁹ James Franck to Simon Flexner, 6 June 1938, Simon Flexner Papers, James Franck file, American Philosophical Society.

⁸⁰ Alan D. Beyerchen, "Emigration from Country and Discipline: The Journey of a German Physicist into American Photosynthesis Research," in *Forced Migration and Scientific Change- Émigré German* Speaking Scientists and Scholars after 1933 (Washington, D.C.: Cambridge University Press, 1996), 82; P.K. Hoch, "The Reception of Central European Refugee Physicists of the 1930s: U.S.S.R., U.K., U.S.A.," Annals of Science 40 (1983): 241.

⁸¹ Daniel J. Kevles, The Physicists- The History of a Scientific Community in Modern America (New York: Alfred A. Knopf, 1978), 281.

economic organization is already completed and the danger lies in Jewish control of that organization if too many are allowed into the country and particularly the cities".⁸²

James Franck (together with Gustav Hertz) won the Nobel Prize in 1925 for the discovery of excitations potentials, the amount of energy which an electron must absorb before it can move further away from the nucleus of the atom. His discovery confirmed the quantum hypothesis and Bohr- Sommerfeld atomic theory. In the United States, his subsequent main scientific contributions were in the field of photosynthesis. Franck's important contribution to the field was that he first applied the criteria of physics and physical chemistry to devising experiments, and to the interpretation of their results in photosynthesis.⁸³ At the meeting of the *American Academy of Arts and Sciences* on March 9, 1955, the Rumford Medal and Premium for 1955 was awarded to James Franck. An award established in 1796 to be given to "the author of the most important discovery or useful improvement on heat or on light." The award recognized that James Franck was one of the world's leading authorities in photosynthesis, to which he had made fundamental contributions, both theoretical and experimental.⁸⁴

Rosa Kubin, a chemist who arrived from Austria in 1938, found a position in the University of Oregon Medical School, and also experienced anti- Semitism: "I'll never forget I was in Bar Harbor, in a restaurant, and one of my worst experiences, I must say, was when I was in this country maybe for three or four months, ..., and I was already associated with this research work at the University of Oregon Medical School, when I

⁸² Geoffrey J. Martin, *The Life and Thought of Isaiah Bowman* (Connecticut: Archon Books, 1980), 125-129. Neil Smith, *American Empire- Roosevelt's Geographer and the Prelude to Globalization* (Los Angeles: University of California Press, 2003), 296, 309-310.

⁸³ Eugene Rabinowitch, "James Franck- 1882-1964," 18, James Franck Papers, Box 24; folder 20, Special Collections Research Center, The University of Chicago Library, Chicago.

⁸⁴ Bulletin- the American Academy of Arts and Sciences, Vol. VIII, no. 6, March 1955, James Franck Papers, Box 1: folder 1, Special Collections Research Center, The University of Chicago Library, Chicago.

was approached by one of the professors and he told me, 'Someone said that you are Jewish, is it true?' And I said, 'Yes, it's true.' He said, 'It's not that I have anything against Jews, but I said nobody who would be a Jew would become a member of the faculty at the University of Oregon.' And then he added to it, because he had met my husband, and my husband really didn't look like a Jew, and he said, 'But your husband is gentile.' You know, grasping for a straw that there is something. And I said, 'No, my husband is Jewish from head to toe, and probably more so.' So, this [anti-Semitism] was something which was quite general. Quite general."⁸⁵

Rosa Kubin was one of the few women in the group of refugee chemists. She had received a doctorate in biochemistry from the University of Vienna in 1931. She had filled several positions in Europe before immigrating, mostly doing research in the European chemical industry. After her first position in the University of Oregon Medical School as research assistant, she came to Waltham (because her husband found a job there as a physician), a suburb of Boston. She worked in Waltham Hospital's laboratory for one year. Afterwards, she found a temporary position as assistant professor of chemistry in Middlesex University. She worked there until 1947, when Middlesex closed, and the property became Brandeis University. The new president of Brandeis, Dr. Sachar, decided to fire her due to her German accent. After this she worked temporarily in different colleges in the Boston area, and in the meantime opened her own laboratory for veterinarians. Eventually, in order to receive a regular job with an eventual pension she

⁸⁵ Rosa Kubin, interview by Michael Tietz, June, 1971, tapes 205 and 210, transcript, Oral History Collection of the Research Foundation for Jewish Immigration, New York, 10.

realized she had to work in high schools. Rosa worked in different high schools from 1956 to 1973 as a chemistry teacher.⁸⁶

Although anti- Semitism was broadly prevalent in the American academy, it was not like this in all cases. Herman Mark, who established the first graduate school for polymers in the United States in 1947, the Polymers Research Institute in Polytechnic Institute of Brooklyn, did not experience anti- Semitism and never felt that he was discriminated against because he was Jewish, according to his son Hans Mark.⁸⁷ Mark was happy getting the academic offer in Polytechnic Institute of Brooklyn in 1940, a position that enabled him to come to the United States. But at the same time, he did not have much of a choice. Herman Mark answers the question if he had other offers in an interview: "In 1939 I visited several conferences here in the United States, ACS meetings and such, and gave lectures. Of course, it eventually became known that I would be interested in leaving Hawkesbury. One opportunity was from Dr. Emil Ott who was the research director of Hercules Powder, also a cellulose company. He was on the board of Rutgers University. ... Ott talked with the president of Rutgers and said, "Look here, there is a fellow who wants first to come the United States and second to go back into the academic world. Why don't you have a look at him?" I went to New Brunswick and gave a lecture there; it was a very nice place. I don't know today whether it would have been better to go to Rutgers, but I didn't. There was another opportunity at the University of Chicago on one of the various visits. I also visited Chicago, giving three lectures there. There was a very well-known organic chemist who knew of my work from Professor Schlenk. He said, "Well, if you really want to come to the United States, maybe we can

⁸⁶ Rosa Kubin, "From St. Poelten to America," An Autobiography, Rosa Kubin Collection, Leo Baeck Institute Archives, New York.

⁸⁷ Hans Mark, letter to the Author, December 16, 2003.

do something here at the University of Chicago." But these two things were just more or less tentative."⁸⁸



Figure 2. Herman F. Mark

Herman Mark's main scientific achievement in the United States was to push the science of polymers from the periphery to the mainstream of American science. Despite conservatism in the American scientific community in both the academy and in industry, he succeeded in importing a new field, shaping it into one of the dominant new directions in the American academy and industry. Beside the fact that he established the first graduate school for polymers in the United States (as mentioned earlier), he organized conferences on polymers, established the first American journal for polymers and initiated and sponsored the founding of similar institutions that would constitute a network of polymer research centers cooperating closely with each other all over the world. As a result of his activities, the American universities started to initiate the teaching of polymer chemistry in 1956 (16 years after Mark's arrival in the U.S) and to

⁸⁸ Herman Mark, interview by James J.Bohning and Jeffrey L. Sturchio at Polytechnic University, Brooklyn, New York, February 3, March 17, and June 20, 1986, 47-48.

endorse polymer research on a fully organized scale. On his lifetime of contributions to the development of polymer science, Herman Mark received the National Medal of Science in 1980, from President Jimmy Carter.

For additional testimony about anti- Semitism at that time, we can find some in the American chemical industry. Arthur Beiser, a lesser-known scientist than scientists like James Franck, had a Ph.D in organic chemistry. He worked from 1929 until 1933 as an assistant at the First Chemical Institute in Berlin of the Berlin University and then was thrown out, finding alternative work in the German chemical industry in a Jewish owned firm. After fleeing to Cuba in January 1939, where he stayed ten months he came with his wife to the United States on December 1939. Beiser tried to find a job in the American chemical industry and contacted several companies, but all answers were negative. Beiser explains the reason: "All negative. I had a recommendation to a research director, to the Agfa in Bingham. I had a frank talk with him. He said the trouble with you is in one way you are a German and in the other way you are a Jew."⁸⁹ For a year, until 1941, he was unemployed, while his wife worked in a household taking care of small children.

An interesting phenomenon happened with the prestigious and famous chemists, who sometimes were Nobel Prize laureates. Surprisingly, in a lot of the cases the attitude toward them was hostile, disrespectful and unwelcoming. This group of scientists includes James Franck, Otto Meyerhof (these were Nobel Prize laureates already when they arrived), Carl Neuberg, Otto Stern and others. Although, one must remember that these are scientists who originally were given preference by the American immigration laws, and private foundations and refugee committee treated them as the favorites in

⁸⁹ Arthur Beiser, interview by Michael Tietz, June 13, 1972, tape 5, transcript, Oral History Collection of the Research Foundation for Jewish Immigration, New York, 5.

rescue efforts, the reality in American universities was different. As Max Bergmann describes in a letter in 1943: "As a rule, every scientist from abroad, even if he is famous the world over and he is a Nobel Laureate, has to start here on a small scale, that is, with a small salary and one or two collaborators, and it depends upon his achievements in his new position whether he makes progress".⁹⁰

To illustrate, Otto Stern, a prestigious physicist and physical chemist, was received in a hostile environment at Carnegie Tech in Pittsburgh, where there was no support from the faculty. Otto Stern was Distinguish professor of physical chemistry in the University of Hamburg and the Director of the Institute for Physical Chemistry there from 1923 until 1933. He is especially known for his development of the molecular beam method for which he received the Nobel Prize award in Physics in 1943. The molecular beam method is a scientific technique to research the properties of any stream or ray of molecules moving in the same general direction, usually in a vacuum.



Figure 3. Otto Stern

It is interesting to note that at the beginning in 1933, the President of Carnegie Tech (today Carnegie – Mellon University) made a trip to Germany to try to find some

⁹⁰ Max Bergmann to Felix Haurowitz, July 8 1943, Max Bergmann Papers, American Philosophical Society, Philadelphia.

good scientists who might be induced to come to Carnegie. This was the way Otto Stern and his co-worker Immanuel Estermann were brought to Carnegie. At the same time, the president made this whole arrangement on his own without consulting his subordinates. After a year, the president became ill and was ill for several years until finally he resigned. Absent the president, there was no support for the research of Stern from the dean and from the department after the first year, especially in terms of funds and there were harsh local politics. Moreover, the head of the department was very unsympathetic. Additionally, there was no research going on in the Physics Department. There were no Ph.D. programs running in Carnegie, just a Masters degree. Thus, during the first year Stern and Estermann worked by themselves, with one machinist. On the other hand, another factor that had contributed to Stern's difficulties of adjustment in Carnegie was the fact that he had acted as "a prima Donna" and was not diplomatic toward the other faculty and dean.⁹¹ This atmosphere in Carnegie was also a major factor in preventing Stern from continuing his scientific achievements. The momentum of the atom beam research that Stern conducted in Hamburg laboratory was never regained. Stern did not have the energy anymore or the emotional stamina to struggle in Pittsburgh.⁹²

Another example of the difficulties of established and older chemists is the case of Carl Neuberg. Neuberg, a prominent biochemist, is considered one of the fathers of biochemistry due to his scientific achievements and the fact that he also coined the term biochemistry. He was professor of chemistry at the University of Berlin and was the director of the Kaiser Wilhelm Institute for Biochemistry until 1937 when the Nazis in

⁹¹ Immanuel Estermann, interview by John L. Heilbron, 13 December, 1962, transcript, tape 40a, American Institute of Physics, Center for History of Physics, Maryland, 19-22.

⁹² Immanuel Estermann, interview by John L. Heilbron, 13 December, 1962, transcript, tape 40a, American Institute of Physics, Center for History of Physics, Maryland, 20-21.

Germany drove him out of his posts. In 1939, he left Germany. In 1941 at the age of 64 he arrived at New York University. In a letter to Karl Thomas he describes his situation in New York University: "The people were horrified that I wanted to work, they wanted me to take walks".⁹³ For a year he was paid by a grant of \$100 per month, then it stopped and he had to make a living as a consultant for industry and looked constantly for grants that would support his salary and research. First, Neuberg was consultant at Merck, later at Interchemical. That ceased in the fall of 1949 and he had a grant for a year until 1950. The laboratory at N.Y.U. was an artificially lighted room with no fume and outlet that was only sufficient for 1.5 people. As Neuberg describes it: "The cleaning woman in Dahlem would have rejected being in this room even if it had been only for an hour".⁹⁴ He kept it anyway for lack of a better one until at the beginning of 1949 when he had passed the age limit by 6.5 years and he had to retire. It is interesting that there were other professors in N.Y.U who passed the retirement age, but they were not pressured to leave as Carl Neuberg was. Afterward in 1949, he found a position in the Polymer Research Institute in Polytechnic Institute of Brooklyn, where he conducted his studies on the polymeric nucleic acids and had a salary as a visiting professor twice what it was at NYU.⁹⁵ Even here, though, he had difficulties to raise the funds for his research.⁹⁶

Neuberg's struggles as an émigré chemist and the inadequate conditions described above, in which he was trying to do research, resulted in his being unable to conduct productive research, as he did in the past. But at the same time, Neuberg will be

⁹³ Carl Neuberg to Karl Thomas, December 21, 1949, Carl Neuberg Papers, American Philosophical Society, Philadelphia.

⁹⁴ Carl Neuberg to Karl Thomas, December 21, 1949.

⁹⁵ Carl Neuberg to Israel Strauss, April 5,1949, Carl Neuberg Papers, American Philosophical Society, Philadelphia.

⁹⁶ Carl Neuberg to Karl Thomas, December 21, 1949.

remembered mainly for his scientific achievements in his career prior to his immigration to the U.S. The rise of modern dynamic biochemistry after the turn of the century is closely associated with his name. The range of his contributions to a great variety of problems is stupendous; he stimulated many pertinent developments by his dynamism, enthusiasm, encyclopedic knowledge, and ingenuity. He was widely referred to as one of the "big three" in biochemistry at the Kaiser Wilhelm Institutes in Berlin-Dahlem (the two others were Warburg and Meyerhof). His contributions to the process of alcoholic fermentation (from 1911 onward) will he remembered as one of his most magnificent achievements. His discovery of the enzyme carboxylase was one of the important milestones in the elucidation of alcoholic fermentation, one of the problems that lad preoccupied scientists in the nineteenth century. Neuberg's discovery showed that the zymase of Buchner was actually not a single enzyme, as Buchner had assumed, but a complex system of several enzymes. The demonstration of this important step led Neuberg to propose his ingenious schemes of fermentation.

This was a turning point in the history of enzyme chemistry, since for the first time alcoholic fermentation was envisaged as a process formed by a series of successive enzymic steps. The schemes had a deep impact on the thinking of enzyme chemists; they made apparent the necessity of considering that a variety of steps involved. They created the pattern of inquiry into the mechanism of metabolic pathways, thereby making a brilliant contribution that played a key role in the further study of the chemistry of cell reactions. There are, however, many other important contributions by which Neuberg initiated and stimulated various developments in biochemistry. Moreover, he was a passionate and inspiring teacher and as the director of a very large institute he attracted a large number of pupils from all over the world, including the United States, and created one of the largest schools of biochemistry of that period. Many scientists who were trained in his institute became leaders in their native countries.⁹⁷

Moreover, Neuberg helped establish the journal *Biochemische Zeitschrift* in 1906 and edited 278 volumes over the next thirty years. The nomenclature in the field of biochemistry bears similar traces of Neuberg's ingenuity, including the terms phosphorylation, dismutation, desmolysis, and co- enzyme. Thus, Carl Neuberg holds a foremost place in the early period of dynamic biochemistry.

When one analyzes the process of job search (in the U.S.) among the refugee chemists, there is a common pattern. In many cases, including Nobel Prize laureates, established (older) and also young chemists, they all used their own informal networks of connections to amplify more formal networks, which quite often worked less effectively to find them good positions. These networks consisted of linkages with other European Jewish refugee chemists. These refugee chemists used their own networks in order to find positions because in many cases the organizations and private committees that were created to help the refugee scholars from the Nazi regime did not support them adequately. To illustrate, one of the main organizations, the Emergency Committee in Aid of Displaced Scholars, mainly helped and supported refugee scholars in the Humanities and Social Sciences, thus partially neglecting the Natural Sciences. For example, 192 fellowships were given to scholars in the Humanities and Social Sciences combined, in contrast to 85 fellowships that were given to scholars in Natural Sciences

⁹⁷ David Nachmansohn, German- Jewish Pioneers in Science 1900-1933: Highlights in Atomic Physics, Chemistry and Biochemistry (New York: Springer- Verlag, 1979), 311-312.

and Medical Sciences combined. Amazingly, the chemists got one of the smallest number of fellowships - only 7 (!). The physicists were awarded 16 fellowships.⁹⁸ Thus, it is no wonder, that in order to succeed, the refugee chemists utilized their own mechanisms for finding positions.

The theory that explains appropriately the basis for the occupational adjustment of the refugee chemists in the United States is the "network approach". The phenomenon of network is very well known in the sociological literature in immigration studies. A social network consists of a finite set or sets of actors and the relation or relations defined among them.⁹⁹ A network is a set of individual or collective actors- ranging from individuals, families, firms and nation- states- and the relations that link them. Network patterns of ties comprise social, economic, political networks of interaction, as well as collective groups- kinship groups or communities- and private or public associations. Network is a concept or strategy to study how resources, goods and ideas flow through particular configurations of social and symbolic ties.¹⁰⁰

Generally, the network of migrants can function as a promoter of migration, sponsoring or accompanying the mover, and the network among migrants as an ongoing support at the destination.¹⁰¹ Connections with earlier migrants provide potential migrants with many resources that they use to diminish the risks and costs of migration: information about procedures (technical as well as legal), financial support, job prospects, administrative assistance, physical attendance and emotional solidarity. Beside

⁹⁸ Stephen Duggan and Betty Drury, The Rescue of Science and Learning- the Story of the Emergency Committee In Aid of Displaced Foreign Scholars (New York: The Macmillan Company, 1948), 193.

⁹⁹ Stanley Wasserman and Katherine Faust, Social Network Analysis: Methods and Applications (New York: Cambridge University Press, 1994), 20.

¹⁰⁰ Steve Gold, "Migrant Networks: Summary and Critique of Relational Approaches to International Migration," forthcoming in Mary Romero and Eric Mrgolis, *Blackwell Companion for Sociology*.

¹⁰¹ Leslie Page Moch, "Networks among Bretons? The Evidence for Paris, 1875-1925," Continuity and Change 18 no.3 (2003): 433.
facilitation, the impact of social networks on migration flows is also one of channeling, since immigrants naturally serve as bridgeheads for fellow immigrants in both the geographical as well as the professional (occupational) areas in which they settle. Previous studies show the extent to which networks allow migrants to gain access to jobs in the recipient country. The forms and characteristics of these networks may depend on their composition- friends, relatives, kin, acquaintances, professional colleagues, etc.- but the result is similar: most positions are acquired via connections.¹⁰²

Charles Tilly in his discussion of networks, puts it simply that networks migrate. Eventually these movers transplant major segments of *existing networks* from the old country to the new country with some modification of the networks' structures.¹⁰³ When the immigrant is relocated from one country to another, he has to reconstruct his interpersonal connections. He will rebuild in a new community a network of personal affiliations. Frequently he will accomplish this task using certain institutional set-up. Many immigrants have developed an organization of formal structure (it could be also informal network or no formal organization) and it could be of various sorts: religious, educational, political, recreational, national and professional. Some have organized welfare and mutual aid societies.¹⁰⁴ These associations serve to strengthen the consciousness of a group's culture of origin and reproduce aspects of the traditional institutional order in a new form.¹⁰⁵

¹⁰² Jean- Baptiste Meyer, "Network Approaches versus Brain Drain: Lessons from the Diaspora," International Migration 39 no.5 (2001): 93-94.

¹⁰³ Charles Tilly, "Transplanted Networks," in *Immigration Reconsidered- History, Sociology, and Politics* (New York: Oxford University Press, 1990), 84-85.

¹⁰⁴ Raymond Breton, "Institutional Completeness of Ethnic Communities and the Personal Relations of Immigrants," in *Ethnic Communities- Formation and Transformation*, Vol.3, American Immigration & Ethnicity- A 20 Volume Series of Distinguished Essays (New York: Garland, 1991), 194.

¹⁰⁵ Saskia Sassen- Koob, "Formal and Informal Associations: Dominicans and Colombians in New York," International Migration Review 13 no.2 (1979): 315.

The evidence about the refugee chemists' networks can be demonstrated in the following examples. Arthur Beiser for a year did not find a job until in 1941 he heard through his friend, a German Jew, that there was a vacancy in a cosmetic firm; he then got the job. The company was small with 30-40 workers and Beiser adds: "This was an American company, but Jewish. The owner was Jewish."¹⁰⁶ Leo Sternbach. another example for an industrial chemist in the U.S, was the one who invented the medicine valium. First, when he was still working in Eidgenossiche Technische Hochschule, in Zurich with Prof. L. Ruzicka (who received the Nobel Prize), he was encouraged by Dr. Moses W. Goldberg (another Jewish foreigner in Switzerland) who said: "Look, the times are difficult. It will be very hard for Switzerland to house so many foreigners and it will be better for you if you are in industry." Sternbach continues: "At that time, Furter was already with Hoffmann- La Roche. He had called up Goldberg and told him that they needed some chemists there. Ruzicka proposed me."¹⁰⁷ The chemical company Roche was alone among the four major Swiss chemical companies to resist pressure by the Nazis to "Aryanize" the work force of its German units before the war. In Switzerland, by retaining its Jewish and foreign employees, Roche protected them from being deported. Some of those people risked being sent to Germany or occupied Poland as forced laborers, according to a 2001 study commissioned by the Swiss government to examine the nation's wartime past. Roche was more sensitive to the dangers facing employees because its chairman at the time was married to a Jewish woman.. Soon after Dr. Sternbach joined the company, it transferred him and other Jewish chemists to its new

¹⁰⁶ Arthur Beiser, interview by Michael Tietz, June 13, 1972, 7.

¹⁰⁷ Leo H. Sternbach, interview by Tonja Koeppel, 12 March 1986, transcript, The Beckman Center for the History of Chemistry, Oral History Program, The Chemical Heritage Foundation, 19.

research facility in Nutley, N.J., where he worked until his retirement in 1973, and where he still maintains a spacious office. "Roche saved my life,"¹⁰⁸ he says.

Sternbach's first big discovery in New Jersey was a new way to make biotin, a B complex vitamin. To test the mixture, Dr. Sternbach says, he walked into a confined space in the lab and stirred the chemicals by hand in an enamel kettle. He had to be careful: one of the chemicals involved, phosgene, becomes a poisonous gas at room temperature. His valium breakthrough came after he followed a hunch about compounds he had tested years earlier in Poland as dyes. He wondered if they might have some effect on humans; he knew that certain anesthetics, such as novocaine, had similar molecular structures. He tested that hypothesis, but after hitting a dead end, his boss told him to move on to other projects in 1955. Dr. Sternbach pursued his research anyway. "I always did what I wanted to do," he says. Two years later in 1957, when clearing space in their cluttered lab, Dr. Sternbach's colleague, Earl Reeder, found two bottles containing the contents of old experiments with the compounds. Dr. Sternbach tinkered with the molecular structure, adding a chain of chemicals to a molecule. He sent off the new version for pharmacological testing at Roche. The compounds seemed to tranquilize mice, cats and even monkeys, with the unusual effect that the animals remained alert. Intrigued, Dr. Sternbach tried the experimental drugs on himself, a practice unheard of today. Roche says it did not condone the practice but was aware some scientists tested drugs on themselves. One industry executive, recalling the practice, refers to such researchers as "two-legged rats." Dr. Sternbach's experiments led to the creation of

¹⁰⁸ Julia Flynn, "Father and Son: In Two Generations, Drug Research Sees a Big Shift---Valium's Inventor, Now 95, Relied on his Instincts; Markets, Machines Today---Ban on 'Two- Legged Rats'," *The Wall Street Journal*, February 11, 2004.

benzodiazepines, a new class of drugs—with Librium hitting the market in 1960 and Valium in 1963. Widely dispensed for calming anxiety and nerves, Valium also became a cultural icon- it was the "Mother's Little Helper" of the 1966 Rolling Stones song. Roche declines to provide full sales data but says that in 1973, its peak year, Valium produced \$230 million in U.S sales, or about \$1 billion in current dollars when adjusted for inflation.¹⁰⁹

Konrad Bloch, a prominent biochemist who received the Nobel Prize in 1964, arrived in the United States in a fascinating way. In 1934, the brutal Nazification of Germany prevented Bloch from continuing his studies at the Munich Technische Hochschule (he was a graduate student there). Hans Fischer (his professor there) came to his rescue by recommending his appointment at the Schweizerisches Hoehensforschungs Institute in Davos, Switzerland. In Davos, Bloch studied the lipids of the tubercle bacillus. In 1936, however, he was refused permission to continue to reside in Switzerland. Desperate, he applied to Prof. R.J. Anderson at Yale, with whom he had some correspondence concerning his research. Prof. Anderson got him two letters: he got him a letter from the dean of the Medical School of Yale University and one he wrote himself. The letter from the dean informed him that he had been appointed assistant in Biological Chemistry. The second letter from Anderson, informed Bloch that there was no money for his salary and research (he got unsalaried position!). Bloch showed only the first letter of the Dean to the United States consul in Frankfurt and received a life- saving

¹⁰⁹ Ibid.

visa to immigrate to the United States.¹¹⁰ It is important to mention that if Bloch would have shown the second letter, the visa would have been denied to him.

Hans Fisher (Konrad's professor in Munich) sent Konrad to Max Bergmann (another German Jewish refugee biochemist), who received a position at the Rockefeller Institute of Medicine. Max Bergmann advised Bloch to meet with Hans Clarke, at Columbia University, whom he knew personally. Max Bergmann wrote a recommendation about Bloch to Hans Clarke, in order that he would be accepted to Clark's Biochemistry department, even though Bloch was not his student.¹¹¹ Additionally, Marx Bergmann arranged a fellowship for Bloch for his studies as PhD student, by approaching his friend Leo Wallerstein-a wealthy German Jew, who immigrated to the US before the Nazis rise to power¹¹² and was the head of the Wallerstein Laboratories on Staten Island, New York, consultants to the brewing industry. His foundation assisted refugee scholars, beginning as well as more established scholars.¹¹³ It is significant to note that in this period American donors to the American universities were sometimes reluctant to donate money for scholarships and fellowships to foreign students, and demanded that their donations would be given mainly to American students.¹¹⁴ Konrad Bloch did his post- doctoral studies in Columbia University in the laboratory of Rudolf Schoenheimer, a prominent biochemist, who was also a German Jewish refugee from the Nazi regime. Although, Bloch went to Schoenheimer laboratory because he was one of the best in the field at that time, it

¹¹⁰ Eugene P. Kennedy, "Hitler's Gift and the Era of Biosynthesis," *The Journal of Biological Chemistry* 276 no. 46 (2001): 42627.

¹¹¹ Max Bergmann to H. T. Clarke, December 31, 1936, Max Bergmann Papers, American Philosophical Society, Philadelphia.

¹¹² Lore Bloch, interview by Yael Epstein, December 1, 2004, Lexington Boston.

¹¹³.Konrad Bloch, "Summing Up," Ann. Rev. Biochem. 56 (1987): 7.

¹¹⁴ See the folder of correspondence from the Records of the Committee to Aid German Student Refugees, Harvard University Archives, Pusey Library.

probably helped their communication, personal relationship and understanding the fact that they had similar personal backgrounds. The first interview for assistant professorship that Bloch was invited to was in Salt Lake City in the biochemistry department. During the discussion following his seminar, he curtly responded to a comment from the audience, not realizing that the very youthful questioner was someone very high up in the administration. Bloch never learned whether his interview went well, but he suspected it did not. Breaking his return journey in Chicago, he visited Earl Evans, the recently appointed chairman of the biochemistry department of the University of Chicago, who was recruiting actively. As graduate students at Columbia Earl and Konrad had worked at adjacent benches and had become good friends, sharing tastes in literature and music. Without any preliminaries Earl asked Bloch whether he was interested in joining his department as an assistant professor. Bloch accepted the offer: "To join Evan's department was especially attractive because an isotope laboratory with a mass spectrometer that functioned more than half of the time had already been set up by Herbert Anker, Bloch's first graduate student at Columbia."¹¹⁵

Konrad Bloch represents a story of full adjustment. He came to the U.S at the age of 23 and most his scientific achievements he accomplished in the United States. After receiving his Ph.D. degree under the direction of Clarke, Bloch was invited by Schoenheimer to join his group and to begin the study of the biosynthesis of cholesterol, a problem that had long been of interest to Schoenheimer. The great importance of cholesterol in the development of arterial disease was already clear by the 1930s, but little was known about the synthesis in the body of this complex molecule. After Schoenheimer's death, Bloch independently continued this line of work in the

¹¹⁵ Konrad Bloch, "Summing Up," Ann. Rev. Biochem. 56 (1987): 12.

Department of Biochemistry of the University of Chicago. In a path- breaking series of investigations begun in Chicago and continued after he had moved to Harvard in 1954, Bloch was able to identify important landmarks in the series of more than thirty reactions by which the complex structure of cholesterol is built up from simple precursors. For his work on the biosynthesis of cholesterol, and related studies on the biosynthesis of fatty acids, Bloch received a Nobel Prize in 1965, shared with Feodor Lynen.¹¹⁶

Until this point, the case studies of young and unknown chemists in the time of arrival to the United States were discussed in regard to their informal networks and placements. But at the same time, it is surprising to learn that Jewish refugee chemists who had already won the Nobel Prize years before the time of immigration to the U.S. had to use their networks of connections in order to receive positions in an American university, while their Nobel Prize did not make a difference in facilitating an easy path to work. To exemplify, James Franck who won the Nobel Prize in 1925 got his first position in the U.S in John Hopkins University in Baltimore, where R.W. Wood, an old friend who knew Franck from Berlin (where Franck was the head of the Physical Chemistry section in the Kaiser Wilhelm Institute in the years 1917-1921), was located. Additionally, when he moved to the University of Chicago, the move was facilitated by T.R. Hogness, who had been a visitor to Gottingen where Franck was Professor of Physics and director of the second Physics Institute. Moreover, in the University of Chicago Franck's research was financially underwritten by the Jewish philanthropist Samuel Fels.¹¹⁷

¹¹⁶ Eugene P. Kennedy, "Konrad Bloch," Biographical Memoirs- Proceedings of the American Philosophical Society 147 no. 1 (2003): 70-71.

¹¹⁷ Alan D. Beyerchen, "Emigration from Country and Discipline: The Journey of a German Physicist into American Photosynthesis Research," in *Forced Migration and Scientific Change- Émigré German*

Another example of a Noble Prize laureate, who needed the help of his personal connections, is Otto Meyerhof -a prominent German Jewish biochemist who had won the Nobel prize in 1923. The story of the difficult road to the United States started around 1936 when Meyerhof realized that his position as a professor and director of the department of physiology at the Kaiser Wilhelm Institute for Medical Research in Heidelberg was untenable and that he would have to leave sooner or later. Thus, he and his wife Hedwig visited the United States, hoping to find a position there. The only offer he got was most unsatisfactory: a small laboratory in a commercial enterprise with a salary of \$5,000 per annum. David Nachmansohn, another German Jewish refugee biochemist, knew Otto Meyerhof from his days in Meyerhof's laboratory in the Kaiser Wilhelm Institute of Biology in Berlin-Dahlem¹¹⁸ (when Meyerhof was the director there from 1924-1930). Nachamsohn, who worked at that time at the Faculte des Sciences in Paris, spent several weeks in the United States about the same time as the Meyerhofs, and met them quite frequently. Meyerhof was depressed. After discussing the situation with Meyerhof, Nachmansohn, knowing the great respect and admiration the French had for Meyerhof, asked him whether he would be interested in Nachmansohn's investigating the possibility of a suitable place in Paris. Meyerhof's response was enthusiastic. He had always been a great admirer of French civilization, its art and poetry, its science, its great cultural achievements. A special code was agreed upon for correspondence in view of possible censorship. Although the Nazis wanted to dismiss all Jews, they were beginning to prevent them from going abroad.

Speaking Scientists and Scholars after 1933 (Washington, D.C.: Cambridge University Press, 1996), 76, 82.

¹¹⁸ Obituaries: D. Nachmansohn, C.A Kaiser, Columbia University Record, November 11 1983, Leo Baeck Institute Archives, New York.

On Nachmansohn's return to Paris he immediately approached Rent Wurmser, Henri Laugier, and Jean Perrin. All three promised their enthusiastic and strong support. The French acknowledged Meyerhof's brilliance as a scientist, but they were also attracted by his extraordinary background in the humanities. His personality had made a great impression on them during a visit to Paris in 1934, when he gave two lectures there. During the dinner parties and receptions on that occasion French colleagues gave strong expression to their admiration. Rene Wurmser was at that time the head of a subdivision of the *Institut de Biologie Physico-Chimique*. As a brilliant biochemist and physicochemist he was well familiar with Meyerhof's work and delighted with the prospect of having him in his division. He arranged for Meyerhof most satisfactory working facilities and a position as *directeur de recherches*, equivalent to a research professorship. All the negotiations were carried out by Nachmansohn with the aid of the code agreed upon in New York. The problem was now to get him and the family out of Germany.



Figure 4. Otto Meyerhof

With the help of some friends Meyerhof got permission in September 1938 to go to Switzerland for a few weeks with his wife and his youngest son Walter for reasons of health. His daughter Bettina had already left for Paris and went in November to the United States, where she had been accepted by Swarthmore College near Philadelphia. His eldest son Geoffrey was already living in England. The Meyerhofs never returned to Heidelberg. Of course, since they were leaving the country on the pretext of taking a few weeks of vacation, they were unable to take anything with them except the bare necessities.¹¹⁹

The reception in Paris was extremely warm. Meyerhof soon formed many friendships with his French colleagues. The Rue Pierre Curie, with several institutes and many famous scientists, was a great intellectual center and Meyerhof greatly enjoyed the atmosphere. For David Nachmansohn, the admired teacher in this period became a personal friend, a friendship getting closer with the years and lasting until Meyerhof's death. The happy time in Paris, which the Meyerhofs loved and to which they became genuinely attached, was unfortunately destined to be short. Just one year later the war broke out. For a few months it was thought to be a "phony" war. But in May 1940 the Nazis invaded France and when they threatened Paris, the Meyerhofs fled to southern France with their son Walter. Although the Meyerhofs were most cordially received everywhere and greatly helped by their colleagues, it was obvious that they had to escape as soon as possible. Nachmansohn had in the meantime accepted an invitation from Yale University, where he had arrived a few days before the outbreak of the war. He contacted a few friends. It was A. V. Hill, Meyerhof's longtime scientific colleague (who received

¹¹⁹ A few years ago, Heidelberg honored its great citizen by naming a street after him: Otto Meyerhof Strasse.

with him the Nobel Prize) and personal friend, who made his escape possible. He contacted A. N. Richards of the University of Pennsylvania, at that time the president of the National Academy of Sciences. Richards managed to create a professorship for Meyerhof at the University of Pennsylvania in the Department of Physiological Chemistry directed by Wright Wilson. But before coming to the United States, the Meverhofs passed through a painful and difficult period. With the help of Varian M. Fry of the Emergency Rescue Committee, a predecessor of the International Rescue Committee, they finally escaped on foot over the Pyrenees to Spain, taken by Frye's border guide, Lisa Fittko, a very exhausting effort. They reached the United States via Lisbon in October 1940.¹²⁰

The height of Meyerhof's scientific achievements occurred when Meyerhof approached the problem of the conversions of chemical energy in the living cell. He chose muscle as the experimental material. This choice was prompted by the recognition that muscle offered an excellent opportunity to correlate chemical transformations with the production of both heat and mechanical work. When he started these investigations, the formation of lactic acid, demonstrated by Fletcher and Hopkins in 1906, was about all that was known of the chemical reactions associated with muscular contraction. The source of this compound, the way in which its formation provides energy, and the manner in which the energy is utilized were completely obscure. A. V. Hill's measurements of heat production by isolated frog muscle during activity and subsequent recovery had demonstrated, not only that the heat evolved was proportional to the work performed, but also that about half the total heat was actually evolved during recovery. Meyerhof demonstrated that muscle glycogen is the precursor of the lactic acid formed in the absence of oxygen. He further showed that, in

¹²⁰ David Nachmansohn, German- Jewish Pioneers in Science 1900-1933: Highlights in Atomic Physics, Chemistry and Biochemistry (New York: Springer- Verlag, 1979), 283-285.

the presence of oxygen, some of the lactic acid formed during the anaerobic contraction was oxidized, but that not all the lactic acid underwent this fate. About one fifth to one fourth of it was oxidized to carbon dioxide and water, and the energy of this oxidation was used to reconvert the remaining four fifths or three fourths to glycogen. His observations actually proved Pasteur's assumption that less carbohydrate is consumed in the presence of oxygen than in its absence. The depression of glycolysis by respiration has since been referred to as the Pasteur-Meyerhof effect. Meyerhof's brilliant analysis of the glycogen- lactic acid cycle and its relation to respiration explained the course of the heat production and for the first time, established the cyclic character of energy transformations in the living cell. For this accomplishment Meyerhof received the Nobel Prize in physiology and medicine in 1923 (when he was only thirty- nine years old), together with his colleague and friend A.V Hill.

When Meyerhof arrived in the U.S he was provided with a small laboratory in the University of Pennsylvania. But he continued to work actively and productively, as shown by the number and importance of his publications during the American period. More than 50 papers appeared, bringing the total of his publications to about 400.¹²¹ During this later part of Meyerhof's life, though nothing emerged that was as sensational as his earlier work, he did much significant work. He found a new enzyme breaking down ATP and succeeded in tidying up several points in the glycolytic scheme. He also took up the problem of transfer of phosphate groups by acid and alkaline phosphatases.¹²² This amazing productivity is all the more remarkable if one considers that Meyerhof's health was undermined by a severe heart attack in 1944 at Woods Hole, where he spent most of his summers Through the devoted care of his wife

¹²¹ David Nachmansohn, Severo Ochoa and Fritz A. Lipmann, "Otto Meyerhof," in *Biographical Memoirs*, National Academy of Sciences, Vol. XXXIV, (New York: Columbia University Press, 1960), 155-156, 160.

¹²² Rudolph Peters, "Otto Meyerhof," in *Obituary Notices of Fellows of the Royal Society*, Vol. 9 (London: The Royal Society, 1954), 184.

he was able to surmount his difficulties and to continue his activities with undiminished energy, until a second heart attack led to his death, which came suddenly in the midst of creative work and the preparation of various projects for the future.¹²³

The phenomenon of Max Bergmann is extremely fascinating. He was a "one man" unofficial employment agency for the Jewish refugee chemists. The Jewish refugee chemists from all ranks (established and young) sent him letters with their Curriculum Vitae asking to find for them a job or if he knew about a position. He corresponded with persons who were in dangerous situation like Karl Klanfer who was sending letters to him while imprisoned in an Internment Camp in Ottawa, Canada. Bergmann constantly looked for positions for the refugee chemists in the American academy and industry and sent letters to his refugee scientists friends like Albert Einstein, Fajans Kasimir, and many others recommending persons for different fellowships or positions. Bergmann was active or cooperated with several organizations that aided the Jewish refugee scholars, and they sent him the documents of many refugee chemists in order to ask for his help for finding them positions or recommendations on their behalf. Bergmann cooperated with several organizations such as The Emergency Committee in Aid of Displaced Foreign Scholars, The Emergency Society for German Scholars in Exile or in its German name Notgemeinschaft deutscher Wissenschaftler im Ausland (the two organizations were discussed earlier), and was especially active in the organization Selfhelp of Émigrés from

¹²³ David Nachmansohn, Severo Ochoa and Fritz A. Lipmann, "Otto Meyerhof," 160.

Central Europe and contributed funds to this organization.¹²⁴ Interestingly, his wife Martha Bergmann also worked in this organization and was co-founder.¹²⁵

Selfhelp was founded in 1936 by émigrés from Germany, but it was supported by a group of Quakers and also received support from some outstanding personalities connected with the New School for Social Research, or as it was then called by most people the "University in Exile". It was founded by people who knew what it was all about and, therefore, helper and client understood each other. They had in common not only language but also the mutual past and the joint struggle to create a better tomorrow. At all times. Selfhelp was infused with the spirit and intellectual influence of former teachers like Gertrud Baumer, Alice Salomon and Bertha Pappenheim. They inspired the deeply felt tradition of noblesse oblige. This explains how Selfhelp came into being with very little money (charging only fifty cents for membership, for example) and on a volunteer basis. Volunteerism was the lifeblood of the early Selfhelp, and it was the women who carried the main burden. The women worked as case workers trying to persuade the client that he had to adjust, and explained to him the meaning of the new country. One of the many functions of the organization was serving as an employment agency.¹²⁶

Max Bergmann was the only biochemist of the older generation, that is of those who had an influential position in Germany before they were forced to leave, who managed to found a biochemical school in the United States. Bergmann, formerly

¹²⁴ Max Bergmann to William Rosenwald, June 5, 1942, Max Bergmann Papers, American Philosophical Society, Philadelphia.

 ¹²⁵ Joan C. Lessing, Guide to the Oral History Collection of the Research Foundation for Jewish Immigration, Jewish Immigrants of the Nazi Period in the USA (New York: K.G Saur, 1982), 11.
¹²⁶ Gabriele Schiff, "Listen sensitively and act spontaneously- but skillfully": Selfhelp- An Eyewitness Report," in Between Sorrow and Strength- Women Refugees of the Nazi Period (Washington, D.C: Cambridge University Press, 1995), 185-188.

director of the KWI (Kaiser Wilhelm Institute) for leather research in Dresden and professor at the city's Technical University, left Germany in summer 1933 and received a position at the Rockefeller Institute of Medicine. His co-worker Leonidas Zervas, who had developed with Bergmann the carbobenzoxy method of peptide synthesis in 1932, followed Bergmann to New York. At the Rockefeller Institute, Bergmann founded an influential school of protein chemistry, himself continuing research in the tradition of Emil Fischer. On the one hand he worked on analytical methods to determine the aminoacid composition of peptides, and on the other he conducted studies into proteindegrading enzymes and peptide synthesis. In cooperation with his co-worker William H. Stein, Bergmann developed the first reliable method of determining the amino acid composition of proteins ("solubility product method"). The breakthrough in the methodology of separation and analysis was achieved after Bergmann's death (in 1944) by Moore and Stein, who received the Nobel Prize in 1972. They succeeded in using chromatography for the separation of amino acids.¹²⁷

The evidence for the transplanted professional network that the refugee chemists recreated in the United States was the fact that they established in 1941 *the American Society of European Chemists and Pharmacists*. The Society's chief purpose was to establish and foster close professional and personal relations between scientists graduated from European universities who were residing in the United States. Another aim of the Society was to maintain relations with colleagues abroad and to work for international cooperation in the field of science, with particular emphasis on chemistry and physics. Beside publishing a Bulletin containing brief reviews of lectures presented before the

¹²⁷ Ute Deichmann, "The Expulsion of Jewish Chemists and Biochemists from Academia in Nazi Germany," *Perspectives on Science* 7.1 (1999): 29.

Society and news of special interest to the members, the main activity consisted in arranging for monthly meetings during the academic year at which outstanding scientists delivered lectures to the members and friends. Among those who were members were Carl Neuberg, Otto Loewi, Otto Meyerhof, Herman Mark, Kurt G. Stern, Alfred Reis and many other refugee chemists. A medal had been created in honor of Professor Carl Neuberg who had been its first recipient. The Neuberg Medal was awarded each year to a distinguished member among the refugee chemists, who had not only contributed materially to the knowledge of chemistry but who had also made contributions to the development of the American Society of European Chemists and Pharmacists and the creation of good will in international scientific relations.¹²⁸

There were several places in the United States, which were more receptive toward the refugee Jewish chemists. This is in contrast to other academic institutions or chemical companies, such as Harvard University, which was the only Ivy League American university among 31 leading American universities, which had not made room on its teaching staff for scholars who lost their places through Nazi persecution.¹²⁹

Especially receptive places were Brooklyn Polytechnic Institute, Columbia University, Mount Sinai Hospital in New York and the chemical company Hoffmann La-Roche. In Brooklyn Polytechnic Institute, the following refugee chemists were working: Herman Mark (hired in 1940), Kurt G. Stern (hired in 1944), Carl Neuberg (hired in 1949) and Robert Simha (who worked there from 1941 to 1942). The cause of openmindedness at the Polytechnic Institute of Brooklyn for the hiring of refugee chemists was the general policy of expansion of the Polytechnic lead by its President Dr. Harry S.

¹²⁸ Herman F. Mark to James Franck, 12 January 1948, James Franck Papers, Box 1: folder 1, Special Collections Research Center, The University of Chicago Library, Chicago.

¹²⁹ "German Scholars Get Places Here," New York Times, January 28, 1934.

Rogers. From 1934, within the next ten year period, nine new degree programs were added, including bachelor's programs in science, metallurgical and aeronautical engineering, master's programs in physics and aeronautical engineering, and doctoral curricula in chemistry (including Polymer chemistry), chemical engineering and aeronautical engineering. To reinforce and advance the teaching program, and to attract leading scholars with high caliber students, the administration first sought to develop the research program. Thus, Polytechnic hired people such as Dr. Herman Mark who developed the teaching and research in Polymer chemistry in the institute and established the Polymer Research Institute¹³⁰, in which Carl Neuberg, Kurt G. Stern and Robert Simha received positions afterward.

In Columbia University the vision of one man- Hans T. Clarke, created a welcoming atmosphere for European Jewish refugee biochemists from the Nazi regime. Hans T. Clarke was chairman of the department of biochemistry at Columbia's Medical School, the College of Physicians and Surgeons. He was half German (his mother was German) and from 1911 to 1913 he was a guest researcher at Emil Fischer's laboratory in Berlin.¹³¹ Under Clarke's leadership his department became preeminent in organic biochemistry, reflecting his own background. This emphasis was unique at that time, especially in medical schools, due to the fact that until the 1930's, nutrition and physiology had been the predominant fields of biochemistry in the United States.¹³²

¹³⁰ George Bugliarello, Towards the Technological University- The Story of Polytechnic Institute of New York (New York: Princeton University Press, 1975), 24-27.

¹³¹ Hans T. Clarke, "Impressions of an Organic Chemist in Biochemistry," Annual Review of Biochemistry 27 (1958): 2.

¹³² Konrad Bloch, "The origins of intermediary metabolism at Columbia College of Physicians and Surgeons (P&S)," *The FASEB Journal* 10 (1996): 802.

biochemistry among the American universities: "Among the benefits that accrued to Columbia University from the racial policy adopted under the Third Reich, was the arrival in our laboratory of various European trained biochemists, notably Erwin Chargaff, Zacharias Dische, Karl Meyer, Rudolf Scheonheimer, Heinrich Waelsch and Erwin Brand, David Nachamnsohn, PhD refugee student Konrad Bloch and many others".¹³³ At the same time, Erwin Chargaff writes in his autobiography about Hans T. Clarke: "Like many well- to- do people, Clarke was frugal and had little appreciation of the importance of money for those who had none. The salaries which he negotiated for his faculty members- one of the foremost functions of a department head in an American university- were largely below the average and mostly insufficient; he had no understanding of the material difficulties that beset some of his younger colleagues, and he did little to keep those who were pushed or pulled away."¹³⁴ It is important to understand, that while Clarke's department hired several refugee chemists, the economic conditions offered to the refugee biochemists were generally poor.

To illustrate, Erwin Chargaff who in the years 1930- 1934 was assistant in charge of chemistry for the Department of Bacteriology and Public Health at the University of Berlin, immigrated to the U.S in 1934 and found a position in Clarke's department. Chargaff had been promised the title of assistant professor of biochemistry: "which in view of my having been on the way to a *Privatdozentur* in Berlin and of my advanced age, thirty years, was the least to be expected. But when I moved in with my spatula and my notebook, Clarke hemmed and hawed and disclosed to me that they had decided to

¹³³ Hans T. Clarke, "Impressions of an Organic Chemist in Biochemistry," 4-5.

¹³⁴ Erwin Chargaff, *Heraclitean Fire- Sketches from a Life before Nature* (New York: The Rockefeller University Press, 1978), 68.

start me at a lower rank, that of research associate."¹³⁵ Chargaff is best known for showing during 1949-1952 that the molar ratio of particular bases of DNA (adenine and thymine, on the one hand, and guanine and cytosine, on the other), is close to one, a result that was decisive for the subsequent elucidation of the double helix structure of DNA by James Watson and Francis Crick.¹³⁶ Interestingly, Chargaff claims in his autobiography that almost all the recognition his work received has come from Europe. However, a major exception occurred at the very end of his scientific career; the National Medal of Science was given to him in 1975.¹³⁷

In Mount Sinai Hospital in New York several refugee chemists worked for different periods of time. Historically, on January 15, 1852, nine men representing various Hebrew charitable organizations came together to establish the Jews' Hospital in New York to offer free medical care to indigent Hebrews in the City who were not able to provide for themselves during their illnesses.¹³⁸ In 1934 Erwin Chargaff got his visa to the United States through Harry Sobotka, who was in charge of the biochemistry department there. Chargaff spent few months in his laboratory. Sobotka was a student of Willstatter and Kuhn in Germany and was sympathetic to the hiring of refugee Jewish chemists. Sobotka also hired Edith Rubin in 1940, a woman refugee chemist from the Nazi regime who worked there as a laboratory assistant.¹³⁹ Additionally, from approximately 1939 to 1940 Konrad Bloch worked in a cancer research project in Mount

¹³⁵ Erwin Chargaff, Heraclitean Fire-Sketches from a Life before Nature, 71.

¹³⁶ Ute Deichmann, "The Expulsion of Jewish Chemists and Biochemists from Academia in Nazi Germany," 30.

¹³⁷ Erwin Chargaff, Heraclitean Fire- Sketches from a Life before Nature, 8.

¹³⁸ Arthur H. Aufses, Jr. and Barbara J. Niss, *This House of Noble Deeds- The Mount Sinai Hospital*, 1852-2002 (New York: New York University Press, 2002), 1.

¹³⁹ Edith Rubin, "Coming to the United States"- memoirs, Edith Rubin Collection, Leo Baeck Institute Archives, New York.

Sinai Hospital and got twice the salary that he got in his former position in Columbia University.¹⁴⁰

Another interesting pattern that we can observe from the occupational adjustment of the refugee chemists is that a high percentage of the refugee chemists (42 per cent of the refugee chemists in the researched sample were trained biochemists), who found positions in the American academy, were chemists who specialized mostly in under developed fields of study in chemistry in the United States, such as biochemistry. Moreover, polymers science did not exist as a field in American universities. Thus, it was an opportunity to polymer refugee chemists to enter the American academy with no resentment and competition from American scientists. In order to explain the pattern of scientific or academic adjustment of the refugee chemists, the immigrant niche approach fits this reality best.

The dominant paradigm of immigrant employment views immigrants as tending to cluster in a limited number of occupations or industries that comprise a niche. The scholarly consensus concludes that professionals "tend to enter at the bottom of their respective occupational ladders and to progress from there according to individual merit". Nonetheless, growing evidence points in a different direction, suggesting that professionals, like less skilled immigrants, also cluster in particular niches, establishing concentrations that grow through informal mechanisms and which differentiate newcomers from their native counterparts. Engineering is a case in point. Among engineers, where the foreign- born share rose from 9.4 to 17.5 percent between 1972 and 1982, an emergent pattern of niche-creating could be detected, with immigrant engineers

¹⁴⁰ Konrad Bloch, "Summing Up," 8-9.

over concentrated in education and in private industry, in research and development functions.¹⁴¹

Herbert A. Strauss stresses that European Jewish refugee professors in order to adjust successfully in the American academy, had to find academic or scientific **niches** that were commensurate with their talents and energy.¹⁴² To illustrate, Herman Mark emphasizes in his autobiography "It was a lucky coincidence that I was able to transfer from Germany to the United States a science and technology that was interesting and valuable for my new employer. ... my new and special field (polymers) of experience".¹⁴³ Moreover, biochemistry also became *a niche* for emigrés, among them the most talented biochemists of this century. It is an example of a whole discipline that was changed dramatically by the coming of the refugees.¹⁴⁴

This fits into the general atmosphere at the time. Formal agencies that dealt with the refugees actually had some hope that this might or would occur. In a memo, "Suggestions for Development of the Emergency Committee (The Emergency Committee for Displaced Scholars) Field Program 1941-42," it notes the listing of eight items under "In General Strengthen these Incentives in Colleges": 1) Desire to help able scholars who are in need. ... 3) Desire to import unusual intellectual or social influences

 ¹⁴¹ Roger Waldinger, "The Making of an Immigrant Niche," *International Migration Review* 28 no.1 (Spring 1994): 3-5.
¹⁴² Herbert A. Strauss, "The immigration and Acculturation of the German Jew in the United States of

¹⁴² Herbert A. Strauss, "The immigration and Acculturation of the German Jew in the United States of America," *Leo Baeck Institute Year Book* XVI (1971): 82.

 ¹⁴³ Herman F. Mark, From Small Organic Molecules to Large: A Century of Progress, Profiles, Pathways, and Dreams- Autobiographies of Eminent Chemists (Washington D.C: American Chemical Society, 1993), 94.

¹⁴⁴ Ute Deichmann, "The Expulsion of Jewish Chemists and Biochemists from Academia in Nazi Germany," *Perspectives on Science* 7.1 (1999): 28.

to the campus. 4) Desire to supplement or develop offerings in certain departments or to start *new departments*.¹⁴⁵

It is significant to emphasize that historically in the American academy, apart from a few appointments to teach Jewish or Semitic studies, the Jews aspiring to academic work tended toward subjects that were new (and I define new fields of research as academic niches), and that included biochemistry and polymers, which were new fields of research.¹⁴⁶ Thus, it is no wonder that the relatively successful adjustment of Jewish chemists, was in these specific fields. Moreover, I found statistics regarding religious faculty and their various fields for the year 1971, and interestingly the percent of Jewish faculty in the field of Biochemistry was 20.6¹⁴⁷ (one has to bear in mind, that Jews in United States are approximately 1.5 per cent of the American population).

One theory implicates employer discrimination as a factor in niche development. Discriminating employers stereotype immigrants and either favor or exclude them, because of perceived group characteristics, for certain jobs. In many cases, these employer preferences may result from wanting employees of the same ethnicity as customers, thereby catering to the potential prejudices of the consumer. Also, some employers may perceive that immigrants or ethnic minorities are willing to work for lower wages. Unfortunately, in many cases, undocumented workers often are hired precisely because they are vulnerable for deportation and therefore are easy to exploit.¹⁴⁸

¹⁴⁵ Gabriele Simon Edgcomb, From Swastika to Jim Crow: Refugee Scholars at Black Colleges (Florida: Krieger Publishing Company, 1993), 30-31.

¹⁴⁶ Lewis S. Feuer, "Stages in the Social History of Jewish Professors in American Colleges and Universities," *American Jewish History* LXXI, no. 4 (1982): 433-435.

¹⁴⁷ Seymour Martin Lipset and Everett Carll Ladd, Jr., "Jewish Academics in the United States: Their Achievements, Culture and Politics", *American Jewish Year Book* 72 (1971): 95.

¹⁴⁸ Margaret Hudson, "Modeling The Probability of Niche Employment: Exploring Workforce Segmentation in Metropolitan Atlanta," *Urban Geography* 23 no.6 (2002): 534-535.

This theory helps to explain that the Jewish refugee chemists received positions in secondary academic status disciplines at that period like polymer science, lower salaries and sometimes they got a position in the lower status academic institutes (several of them). Thus, in terms of scientific careers they were in inferior positions. To illustrate, because Herman Mark was in a low status field he could not publish scientific papers, thus he created a new Journal for Polymers Science: "We had some difficulty in having certain polymer papers published in the *Journal of the American Chemical Society*. I visited A.A. Noyes to get his advice on the creation of a polymer Journal. Noyes was encouraging, although he did not want the ACS (American Chemical Society) to be involved. Then, in 1945, I persuaded M. Dekker and E. Proskauer (both European refugees) to have Interscience Publishers launch *Polymer Bulletin*, containing mostly work carried out at Poly".¹⁴⁹ One can assume that when someone has difficulties to publish, he would have difficulties to receive grants to finance his research and to establish his status as a scientist.

To conclude, I have showed that the refugee chemists encountered some initial difficulties of adjustment, and this is in contrast with the general assumption in the literature on the refugee scholars that the natural scientists fared well overall and better than scholars in other disciplines. At the same time, the case studies and life stories illustrate the different ways the refugee chemists used to overcome these difficulties. Informal networks among them, niche clustering and the development of new scientific pursuits and areas served them well.

Additionally, it is interesting to detect a connection between the age, the adjustment process and the scientific achievements in the United States. The older and established chemists had in many cases, a problem to get used to the new country and had much more demands than the young ones, who gradually but surely advanced in the ladder of their career. As it was

¹⁴⁹ Herman F. Mark, From Small Organic Molecules to Large: A Century of Progress, 127.

demonstrated, the refugee chemists who came with their scientific height behind them in Germany, there was limited power left to prove themselves in the new country. This was compounded by the relatively poor conditions they received in the U.S and by their advanced ages. As Chargaff summarizes this eloquently: "It would be a great mistake to believe that they (the refugee scientists) were received with open arms in those days. It was not too difficult for the young ones, with little offended pride to swallow; but the more distinguished, the more famous a man was, the greater was the reluctance to welcome him. These poor luminaries had a hard time. Their manners were imperial, their accents ridiculous; their cant was entirely different from the one practiced in the country to which they had come."¹⁵⁰

It is important to emphasize that the young chemists made their scientific discoveries in the United States (like Konrad Bloch who got the Nobel Prize for the United States), while the known European refugee chemists who came with the discoveries they made in Germany, received the recognition on behalf of the German or European science. Thus, when one asks who contributed more scientifically to American science, the older and established chemists or the young and unknown, we can answer that according to this study, the younger and unknown chemists (in time of arrival to the U.S) contributed relatively more. In the next chapter, I will discuss the issue of Jewish identity in America of the refugee chemists.

¹⁵⁰ Erwin Chargaff, Heraclitean Fire-Sketches from a Life before Nature, 76.

Chapter Fourth

The Jewish Identity of the Refugee Chemists: The Illusion of <u>Assimilation</u>

In order to assess the Jewish identity of the refugee chemists, we have to consider the definition of ethnic identity in general. Ethnicity is belonging and being perceived by others as belonging to an ethnic group. It is a form of identification and loyalty as well as a self-identity and an identifying by others. It may also change in varied ways, expanding, contracting, shifting in content and in emotional salience. According to Werner Sollors, ethnic identity is not a fixed thing but a process and it requires constant detective work from researchers to find it, not a settling on a fixed encyclopedia of supposed cultural essentials.¹⁵¹

To explore the transformation and dynamics of the Jewish identity of the refugee chemists from the Nazi regime who came to the United States, it is necessary to comment, on the historical context in which the Jewish people in Western Europe (and especially in Germany) lived and which formed the backdrop to any consideration of their Jewish identity. Until the end of the 18th century, Jews in the German as well as other European states (including the states in the Austro-Hungarian Empire) lived mainly in ghettoes. Due to external restrictions, and also to constraints set up by the Jewish communities themselves, religion, economic activities and nationality to a large extent constituted then a coherent unity. This cohesion started to break at the end of the 18th century, and the collapse accelerated during the Enlightenment as well as during the French revolution and occupation by France of some of the western German states. These

¹⁵¹ Werner Sollors, ed., *The Invention of Ethnicity* (New York: Oxford University Press, 1989), xiii, xv.

were particularly important factors for the opening of the ghettoes and gradual emancipation, or the invitation of Jews to equal citizenship in the European states.¹⁵²

The period of emancipation 1780-1871 and afterward led to substantial change in German Jewish identity. One can detect two main stages in the transformation of the German Jewish community. In the first stage, from 1815 to 1870, cultural, religious, economic and social changes affected the Jews of Germany, slowly at first, and then ever more rapidly. By 1870 the German Jews were noticeably more acculturated and wealthier and less likely to observe the norms of traditional religious practice, but urbanites were still in the minority. In the second stage, from 1870 to 1910, the pace of urbanization became so overwhelming that rural and town-based Jewish life began to fade. Many culturally or economically innovative Jews who had been kept in the small towns by legal restrictions and other factors now left for the cities, leaving behind the economically and culturally conservative Jews. The rural Jews became a small minority, and urban Jews became representative of Jews in general.¹⁵³

German Jewish identity rested heavily on borrowing from the majority culture: its ideal, the formation of the individual, Bildung, came from the German bourgeoisie of education. That bourgeoisie served as the Jews' reference group within society, providing a model for emulation and a target for Jewish integration. Looking at German society from the outside, the Jews saw the bourgeoisie's culture as the culture of the majority society.¹⁵⁴ The spirit of German Jewry was centered in the concept of *Bildung*, a post-

¹⁵² Ute Deichmann, "The Expulsion of Jewish Chemists and Biochemists from Academia in Nazi Germany," Perspectives on Science 7.1 (1999): 3.

¹⁵³ Steven M. Lowenstein, The Mechanics of Change- Essays in the Social History of German Jewry (Atlanta: Scholars Press, 1992), 134. ¹⁵⁴ David Sorkin, The Transformation of German Jewry, 1780-1840 (New York: Oxford University Press,

^{1987), 5.}

emancipation notion that included character formation, moral education, the primacy of culture and a belief in the potential of humanity. *Bildung* was an important, perhaps *the* most important, secular concept which fueled the extraordinary transformation of German Jewry between the years 1780 to 1840, as it struggled for social and political emancipation. For German Jewry, the aim and the mission of *Bildung* was to create a new German Jew, one who would be accepted by his Christian neighbors. This would be achieved by a process of reeducation- the acquisition of civility through improved manners and morals. But German Jewry also had a second aim. It would use its notion of *Bildung* to secure a common ground with non-Jewish Germany. Above all, it would desire to create an environment where the universal would be more important than the narrowly patriotic, where German history- which the Jew could not fully share with the German- would be less important than art, culture, or the humanistic ideal.¹⁵⁵

By accepting the Enlightenment, a large sector of those who were until then mainly observant Jews, raised in the Talmudic tradition, left this tradition behind, and many of their Jewish offspring became scientists and secular scholars.¹⁵⁶ To illustrate, Walter Benjamin's friend Kurt Hiller claimed that his parents were freethinkers. They had neither circumcised nor confirmed him. They would not even dream of having him baptized. "Theirs was a model point of view based on reason: Let the boy decide for himself when he's grown up. And that's exactly what I did when I chose to remain without a faith and cast my lot with the agnostics." The writer Emil Ludwig (born Cohn) remembered that his parents practiced neither Judaism nor Christianity but rather the cult

¹⁵⁵ Abraham J. Peck, *Introduction* in The German- Jewish Legacy in America, 1938-1988: From Bildung to the Bill of Rights, Ed. Abraham J. Peck (Detriot: Wayne State University Press, 1989), 5.

¹⁵⁶ Ute Deichmann, "The Expulsion of Jewish Chemists and Biochemists from Academia in Nazi Germany," *Perspectives on Science* 7.1 (1999): 5.

of *Bildung*. For the Cohns, the "practical" substitute for religion was moral education, while the "mystical" substitute was the worship of music. Secularization was on the rise among adherents of all faiths. Religious observance declined among Protestants as well as among Jews.

Indifference to religion together with the hope of social improvement produced waves of conversion, with most conversions by Jews to Protestantism. The rate of baptisms among Jewish men jumped from 8.4 percent in 1901 to 21 percent in 1918. Converts came mostly from secularized families; as in previous waves of conversions, those who took the step were nominal Jews before and nominal Christians after. At the same time, the majority of assimilated Jews refused baptism not so much out of any remaining religious sentiment as out of reluctance to face accusations of cowardice or treachery. The medievalist Harry Bresslau complained to his mentor, the great historian Leopold von Ranke, that religion was blocking his appointment as a professor. Ranke asked, "Why don't you convert? After all, you too are a 'historical' Christian. Bresslau refused to confirm his status as a historical Christian, whatever that meant. In the end he obtained a professorship anyway. Richard Willstatter, an organic chemist, was similarly stymied; he, too, refused. He eventually won a Nobel Prize. By contrast, Fritz Haber, another future Nobel laureate, became a Christian and forced his young bride to do likewise, only to wait another twelve years before achieving the rank of full professor.

Additionally, intermarriage became increasingly common among Jews in Germany, increasing from 8.4 percent in 1901 to 29.86 in 1915. Felix Theilhaber, a Zionist doctor in Munich, hysterically warned in 1911 that intermarriage and sinking birthrates- the result of modern women's uppityness, he lamented- would bring about the

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complete disappearance of German Jewry by 1950. According to Theilhaber, marriage among Jews had in the past been a "national religious" institution, designed to "serve the preservation of the family and the nation"; now, however, it was increasingly "based purely on erotic attraction," as among Gentiles. Theilhaber decried the recent decline of what he called "racial consciousness" among Jews.¹⁵⁷

After running away from the Nazi persecution and arriving to the United States, during the late thirties and the war years, the German Jewish refugees faced the psychological dilemma of having been- in fact, of being –German. The unfolding story of Nazi policies in occupied Europe, and the news of the Holocaust, produced a lasting wound of sorrow that made it difficult for the sensitive person who himself was a Jew to maintain his identity as a German Jew. In the U.S, the synagogues and temples established by German Jews provided two important comforts: the German-Jewish heritage of Moses Mendelssohn, Martin Buber, Franz Rosenzweig and Leo Baeck or the German literary and artistic heritage provided a "home away from home" which was often embraced with an intensity that revealed the underlying insecurity. For some immigrants, such outstanding figures of German culture as Thomas Mann and a host of lesser men gave assurance that there still existed a German culture of humanism and liberality. For many others, however, the solution lay in stressing their Jewish identification, a rediscovery of Jewish existence as an ethnic group with which they were tied, a concern with then Palestine, where almost every refugee had friends or relatives and a sense of loss. The leadership of the immigrant community turned to favoring Zionist policies like the broader American-Jewish group. Zionism and Palestine belonged

¹⁵⁷ Amos Elon, The pity of it all- A History of Jews in Germany, 1743-1933 (New York: Metropolitan Books, 2002), 228-231, 225.

to the great philanthropic and political preoccupations of American Jews, and German Jews soon took part in it.

In some ways, the Jewish immigrants from Germany followed the precedent of Christian- German immigration waves before him: they too, tended to lose their cultural identity through Americanization while maintaining social and religious ties within their group, even after "Americanization" became an accomplished fact. The Hitler refugee, in addition, was driven to speedy acculturation by the attitude taken by his environment towards his German origin: immersed in the sea of revulsion and impotent rage over the unfolding story of war crimes committed by Germans he was under strong pressure to place the largest possible distance between himself and a Germany that, at the time, appeared like an obedient, monolithic war machine supported by all or nearly all segments and groups of the German population, and in the anguish of the war period, appeared to blacken what was once good and beloved in German culture and humanity. The average German refugee strove to yield to the pressures that demanded that he divest himself of the cultural insignia of his Germanism and become "an American". That he remained "German" nevertheless, in customs, mannerisms, accent and basic values (the degree of acculturation depending on psychological and educational factors) also defined the extent to which he was able to move in American, especially American-Jewish society, where the sympathy and compassion his fate aroused were occasionally tempered by his new friends'- or his children's- silent awareness of how much he had remained "a German". As a result- except for such contrary groups as opportunists and idealists, the very old and the very young, left -wing intellectuals, a few German nationalists,

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academicians or writers- the average Jewish immigrant from Germany, it appears, emerged from the war with a thoroughly broken relationship to his German past.

Since 1945 the situation has changed in a number of ways. The Federal Republic of Germany has eased the burden of the Nazi heritage, at least in its material aspects. Some of its representatives proved sensitive towards the mentality of the Nazi victim and on professional and social levels, new links have been forged. For some émigrés the material rewards offered proved irresistible. The policy of goodwill and support for Israel that was followed in Bohn, and the well- noticed German concern with the Israeli- Arab War of 1967, have been as important as has been the generally changing image of a new democratic Germany that lasted longer than Weimar, and appears to have weathered, so far, its radical Right and its (anti-Zionist) new Left. Still, reactions to Germany range from the return of confidence to indifference, or an abiding rejection and alienation, often among the most sensitive. Much of this depends on the age of the immigrant and his psychological and ideological make -up.¹⁵⁸

From this background of complex Jewish identities in Western Europe and in the American scene, the refugee European (and in many cases German) Jewish chemists evolved. The Jewish identities of the refugee chemists should be examined here in comparison with the general narrative of the Central European Jewish identities. Moreover, their Jewish identities are to be examined in the American context and one of the questions that must be addressed is if the rise of the Nazi regime and their subsequent immigration to the United States in the context of the broader Nazi destruction of European Jewry had an impact on their Jewish identity, attachments, and commitments.

¹⁵⁸ Herbert A. Strauss, "The Immigration and Acculturation of the German Jew in the United States of America," *Leo Baeck Institute Year Book* XVI (1971): 90- 92.

One theme that is explored here is the Jewish education, family background and upbringing in Europe of the Jewish refugee chemists. The Jewish education and upbringing would have a later impact in the lives of the refugee chemists and in shaping of their Jewish identity. James Franck, the Nobel laureate and prominent physical chemist had secular education, which for him meant embracing things modern more than it meant turning his back on his Jewish cultural heritage.¹⁵⁹ At the same time, Franck emphasized in his reflections that his upbringing had a Jewish influence: "It's an old tradition, it's an honor for the Jewish family to have somebody who does something of abstract interpreting- the Talmud and such things. My father had not studied. He became a banker and was well to- do. But when he was young there was no money in the family so that he could study, and so he wanted that his boys should study. And when I was a bad pupil in school, my father was alarmed about it. It never occurred to him that there would be a possibility that if I get bad marks, that also there could be in principle some error by the teacher. The teacher is a learned man and he is right and the child is wrong in that case. ... What I mean is, it is an old tradition in early childhood which surely has an influence."¹⁶⁰

Another example of the Jewish ideals of education of underdog's achievements is in the experience of Rosa Kubin, a woman refugee research chemist. It is interesting to note that as a girl, she went to a gymnasium, which was a boy's school, and no girls were permitted to study there until Rosa's father got the permission for her to attend. First, she began as an outside student to take regular exams and then as a regular student. Anti-

¹⁵⁹ Alan D. Beyerchen, "Emigration from Country and Discipline: The Journey of a German Physicist into American Photosynthesis Research," in *Forced Migration and Scientific Change- Émigré German* Speaking Scientists and Scholars after 1933 (Washington D.C.: Cambridge University Press, 1996), 72

Speaking Scientists and Scholars after 1933 (Washington, D.C.: Cambridge University Press, 1996), 72. ¹⁶⁰ James Franck and Hertha Sponer, interview by T.S. Kuhn and Maria Meyer, third session, July 11 1962, Archive for the History of Quantum Physics, American Institute of Physics, Maryland, 18.

Semitism was a prevalent phenomena and was accepted as something which had to be dealt with. Rosa illustrates: "When I entered the Gymnasium I was ten years old. My father told me what efforts he made to get me there. He told me that he thought that I would have the capacity of studying, but that he is not going to push me or anything. It's up to me. He gives me the opportunity and I do the job. And then he added, 'If your grades are not really going to be top grades I am going to take you out. If you ever come and tell me that there is anti-Semitism in school and that this is the reason why you couldn't get the grades which you wanted, I will slap you in the face on both sides. Of course there is anti-Semitism.' Her father continued: 'You work twice as hard. And that's all there is to it. You will not be a loser, but a winner, because you will learn more than the others. So, nobody will be able to keep you down, even if you are Jewish.'¹⁶¹

From looking at different family backgrounds of the Jewish chemists, it can be detected that the family backgrounds were not always coherent. Mostly, there were those chemists who lived in an assimilated secular family (in most cases in contrast to assimilated converted family). But, there were few chemists who grew up in more religious Jewish families. As a common ground, we can conclude that in most of the families that the Jewish chemists grew up in, there was some kind of Jewish heritage maintained even if they aspired to become assimilated.

One connection that can be found is that the chemists who became in pre-Nazi Europe prestigious professors in the European or German academy, tended to come from assimilated families at least in their external façade. While the chemists who grew up in more traditional Jewish families, were not professors in pre- Nazi European academy (and if they worked in the German academy they tended to work in marginal jobs as

¹⁶¹ Rosa Kubin, interview by Michael Tietz, June, 1971, 19-20.

assistants), but tended to work more in the European chemical industry (where they needed less the approval for their manners).

James Franck, who was prestigious professor in the German academy as professor and director of the physics institute in University of Gottingen and head of the department of physical chemistry in Kaiser- Wilhelm Institute in Berlin- Dahlem, described his Jewish family in his interview, late in his life: "The point is just that, my grandparents were very orthodox Jews. My parents were not orthodox Jews, but there was no doubt in us that we belonged and that we were of Jewish descent and that we wanted to remain Jews."¹⁶² The Jewish upbringing and family background of Herman Mark, who was a professor of chemistry in the University of Vienna from 1932 to 1938 and polymer chemist, is a little different story. Most of Mark's father friends were Jewish. For several years Mark's father was a classmate and colleague of Sigmund Freud and he stayed at the Freud's house when Herman Mark was a child. A few of Mark's father friends were Zionists (Otto Weich and Wilhelm Korwin)¹⁶³ and another famous guest in their house was Theodore Herzl¹⁶⁴ (the founder of the Zionist Congresses). Mark's father was brought up a practicing Jew but his mother was a Lutheran whose family came from Denmark. It is significant to comment here that according to the Jewish laws, one's Jewishness is defined by his mother origins and if the mother is not considered Jewish, he is not Jewish. But in this analysis, someone who is partly Jewish according to the Nazi laws, was not singled out. Mark was proud of his father and also of the Jewish heritage in their family.

¹⁶² James Franck and Hertha Sponer, interview by T.S. Kuhn and Maria Meyer, third session, 17.

¹⁶³ Herman Mark, From Small Organic Molecules to Large, 9.

¹⁶⁴ Herbert Morawetz, "Herman Mark: Life and Accomplishments,", Macromol. Symp. 98 (1995): 1174.

Otto Meyerhof, who was professor and director of the physiology department at the Kaiser-Wilhelm Institute for Medical research (and held other prestigious positions at Kaiser Wilhelm Institutes and in German academy), biochemist and a Nobel Prize laureate is another case study. He came from an assimilated upper middle class German-Jewish family, who was also interconnected through marriages with the family of Carl Neuberg and Hans Krebs (another German- Jewish chemist who immigrated to England). The cultural atmosphere that Otto Meyerhof grew in strongly encouraged learning and interest in literature, music and art and this atmosphere was typical for the higher middleclass Jewish families of the nineteenth century. He grew up in the German- Jewish *Bildung* culture. Like many other upper- middle class Jews of his generation, he had a rather limited knowledge and interest in his Jewish heritage.

On the other hand, until this point, mainly the Jewish upbringing of prestigious professors of chemistry already in Germany and their Jewish identity were discussed. The Jewish background of Arthur Beiser and Rosa Kubin represent the Jewish identity of less famous (and not professors in pre- Nazi Europe) and less prestigious refugee chemists. Arthur Beiser was born in Cologne in 1901, and when he was a small boy, his parents went to Metz Lothringen (in France). In Metz there were approximately 5000 Jews (from approximately 60,000) and the Jewish community had a synagogue. He went to school there until 1918 and acquired Jewish education; he learned Hebrew and Jewish History. That was part of the *Oberrealschule* (school) in Metz. Outside of the school system, he additionally took extra Hebrew lessons in the Sunday school that was in the temple. As a child he belonged to an Orthodox temple in Metz. Beiser answers the question if he attended the services regularly: "As long as I was in the religious school. Since my

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mother was very friendly with the Rabbi, I had to go. Let's put it that way. She went all the time. On Friday evenings and on Saturdays.¹⁶⁵ When Beiser tries to answer the question in his oral interview if he and his family considered themselves to be assimilated Germans, he hesitates and at the beginning says no and, on second thought, he says that he felt like a German Jew (in contrast to Jewish- German). In 1919, Beiser and his family moved to Berlin in Germany. There he and his parents were affiliated with a liberal temple. Beiser claims that in Berlin he became less observant or conscious of being Jewish after World War I.

Rosa Kubin was born in 1906 at St. Polten, Austria with a Jewish community of about forty families from a small town of 40,000 people. She is one of the few women in the Jewish refugee chemists' sample. Rosa claims that as a girl, she had a very profound Jewish education. While she was in the Gymnasium she had to get up three times a week at six o'clock to have private Jewish instruction by a rabbi from seven in the morning to eight o'clock. At this period of her life (until she went to study chemistry in the university of Vienna) she and her family were extremely religious. They had a kosher home and went to the synagogue. Additionally, all through the Gymnasium she did not write on Saturdays. She and her family were associated with a traditional Jewish congregation (although it was the only one in the area). Her father was in charge of the Chevra Kadisha and her mother was one of the members of the board of the *Frauonwohltatigkeitsverein* – the equivalent of the Jewish organization Hadassah. Kubin

¹⁶⁵ Arthur Beiser, interview by Michael Tietz, June 13, 1972, tape 5, transcript, Oral History Collection of the Research Foundation for Jewish Immigration, New York, 14.
adds: "I must say most of my Jewish activities was, while I was from six to, let's say sixteen, very, very active in Zionism in every respect, with the youth group".¹⁶⁶



Figure 5. Konrad E. Bloch

Konrad Bloch's case study is an example for a Jewish chemist, who arrived to the U.S as a graduate student and was not established in the German academy when he was forced to immigrate. In Germany Konrad grew up in a non-religious Jewish family. Konrad's parents had mainly Christian friends, but they had Jewish family, thus they had Bar Mitzva. Lore elucidates more about his family: "It is significant that they did not deny important Jewish events. Even though that they did not fast or celebrate other Jewish holidays. I am sure they did not go to the temple very much. They pleaded both ways; they were German first, but they were not anti- Jewish, it just did not mean that much to them. The fact that Konrad had Bar Mitzva was partly because his family was friendly with the Jewish rabbi of the town, but also with the non- Jewish Meyer of the town."¹⁶⁷ Bloch describes in his interview his Bar Mitzva in 1925: "The Bar Mitzva is a

¹⁶⁶ Rosa Kubin, interview by Michael Tietz, June, 1971, tapes 205 and 210, transcript, Oral History Collection of the Research Foundation for Jewish Immigration, New York, 5.

¹⁶⁷ Lore Bloch, interview by Yael Epstein, December 1, 2004, Lexington, Boston.

major event, even for families not very religious. But in a small town like Neisse, with a very small Jewish community, there would have been much unhappiness in the congregation, had I disregarded the ceremony. At that time, I was said to be the best Hebrew scholar in that town. I had private lessons from the rabbi." His uncle said "You know, Bar Mitzva is a great event. For a present of mine, pick anything you like, within reason, you want to have. Perhaps you would like a canoe or something quite different, a musical instrument such as cello. You make the decision." After several days of reflection, Konrad's mother said, "Konrad wants the cello." Konrad was absolutely furious. As it turned out, this decision was a conspiracy of his parents with the music teacher. The music teacher, who was also the conductor of the high school orchestra, needed a second cellist. Konrad defines this in these terms "Your parents are always right."¹⁶⁸ Due to the fact that Konrad learn to play the cello, it helped him to be accepted to Hans T. Clarke's department of Biochemistry at Columbia University, when he came to the U.S. Hans T, Clarke played both the viola and the clarinet, and when he interviewed candidates for the department he asked if the person played a musical instrument.

The subject of conversion in Europe among the Jewish refugee chemists requires special attention. It appears that most of the chemists in my sample, while being mostly secular, did not agree to convert for the purpose of career advancement. The case of James Franck would illustrate that. When Franck's father warned him: "You will never be a professor. You know how the conditions are," Franck still did not convert. "Under the emperor, as long as they could avoid electing a Jewish professor, they avoided it. But

¹⁶⁸ Konrad E. Bloch, interview by James J. Bohning, 22 March, 1993, transcript, The Beckman Center for the History of Chemistry, Oral History Program, The Chemical Heritage Foundation, 5.

if a man was baptized, then it was all right". James Franck began his academic career long before World War I (in 1906 he already received his Doctorate). At the same time, he mentions that in the Weimar Republic this situation changed.¹⁶⁹ Another conflict he faced with German official anti- Semitism with his persistence of staying Jewish, took place when James Franck was to become an officer for his courage in battle during World War I: "Later, one of the officers in the army, when he heard that I would become an officer asked if I would not do him the favor to get baptized. And I smiled and asked whether he believed that I would be a better officer if against my own conviction I would be baptized to do him a favor. And he couldn't help to say he doesn't think so, but anyway it would show that I do belong to them. I said that I feel that I belong here, whether I am an officer or not. I have not asked for it. If they want to make me an officer, it is all right with me".¹⁷⁰ Additional example is of Carl Neuberg, the prominent biochemist who had high position in the German academy. He was the director of the Kaiser Wilhelm Institute for biochemistry and this fact did not interfere him to disapprove baptism for purely opportunistic reasons, such as for promoting one's career. This was for him incompatible with the dignity of man. Neuberg was full of scorn and contempt for Jews who tried to hide their origin.¹⁷¹

At the same time, this was not true in all cases. Herman Mark, who was half Jewish and was married to a Catholic woman, decided with his wife that their two sons would go to a Lutheran church.¹⁷² Additionally, Otto Meyerhof (although, he himself was never baptized) and his wife decided to baptize their three children as Lutherans in Germany.

¹⁶⁹ James Franck and Hertha Sponer, interview by T.S. Kuhn and Maria Meyer, third session, 16. ¹⁷⁰ Ibid, 17.

¹⁷¹ David Nachmansohn, German- Jewish Pioneers in Science 1900-1933: Highlights in Atomic Physics, Chemistry and Biochemistry (New York: Springer- Verlag, 1979), 326.

¹⁷² Hans Mark, letter to the Author, December 16, 2003.

The reason for that was that they though that it would help their children growing up in Germany if they would adapt to the German culture.¹⁷³

The general resistance to convert among the Jewish chemists continued in the United States. The experience of Konrad Bloch, who received the Nobel Prize in 1964, will illustrate this. Leo Wallerstein, the German Jew (he came to the U.S before Hitler time) who gave Konrad the fellowship to study in Columbia University in the U.S. suggested to Konrad Bloch to join the Christian Unitarian Church in the U.S. But, Konrad would not do it. Lore Bloch describes why he did not do it: "Because Konrad felt Jewish period and, he did not want to be anything else."¹⁷⁴ For Konrad it was never an option of converting to Christianity. Moreover, another way of "conversion" could be hiding the Jewish origins and this can take the form of changing one's last name. Leo Wallerstein, suggested to Konrad Bloch to change his last name Bloch to an American name in order that it will be easier for him to find academic position in the U.S. But, Konrad did not change his name out of a principle. Lore explains: "We never were Jews who followed any ritual. But, we were just Jewish. Konrad's parents were not religious and my parents were not religious. But we were Jewish and there was no question about it. He did not know what would be his future or future job. But still he did not change his name. It is amazing though, that he had enough stamina not to change his name, without knowing what his future would be, or what kind of a job he will ever get. He did not choose the easy way."¹⁷⁵

¹⁷³ Walter Meyerhof, Interview by Yael Epstein, March 1, 2005.

¹⁷⁴ Lore Bloch, interview by Yael Epstein, December 1, 2004, Lexington, Boston.

¹⁷⁵ Ibid.

The Jewish chemists in many cases were living in the illusion of assimilation. But at the same time, many of them were married to Jewish women or Jewish partners. From the sample of 35 chemists, 13 had Jewish spouses (while 1 chemist had no spouse). Thus, at least 38 percent were married to Jewish spouses, while in many cases it is not mentioned the descent of the spouse. In many cases the Jewish chemists got married before the Nazis' rise to power. But, if there were young chemists, who thought that they were totally assimilated and they could marry non- Jews, Hitler gave them a wake up call. To illustrate, Konrad Bloch married a German Jewish women refugee from the Nazi regime, which her name is Lore Bloch, in 1941. The story of their meeting in Germany reveals one side of the transformations that occurred after Hitler's rise to power. In 1934 when Hitler proclaimed that Jews could not have places to live bigger than they personally needed. The mother of Lore Bloch had to rent out rooms or to leave her apartment. Lore's Bloch mother rented a room to Konrad Bloch because he was staying with a family in the University, and he was not allowed to stay with that family. Thus, he applied for a room in Lore's mother apartment and that is how they met. Konrad Bloch used to say "Hitler brought us together" (Lore and Konrad).¹⁷⁶ It is important to note that before Hitler's advent to power, both Lore and Konrad had non- Jewish boyfriends and girlfriends. Lore Bloch explains that when Hitler came around the option of marring non-Jews was gone. "At that point we felt too Jewish consciously that we were Jewish that we did not want to marry someone else who was non Jewish."¹⁷⁷

It is interesting that this pattern of marriage with Jewish partners continued in some cases with the children of the Jewish chemists and even with the grandchildren in

 ¹⁷⁶ Lore Bloch, interview by Yael Epstein, December 1, 2004, Lexington, Boston.
 ¹⁷⁷ Ibid.

the United States. To exemplify, due to the fact that the wife of Otto Meyerhof was Jewish, Walter - their son, knew his future wife through his mother's friend from Germany, who was also Jewish and had a daughter, whom he would later marry in 1947 in the United States.¹⁷⁸ Additionally, Konrad Bloch's son (Peter) is married to an American Jewish woman, originally from a traditional Jewish family and he married in a Jewish wedding ceremony (under the Hupa). His daughter Suzan is also aware that she is Jewish and celebrate Yom Kipur and Passover with her Jewish friends. Also the brother of Konrad Bloch (Hans Bloch) is married to a Jewish woman from a traditional Jewish family. Thus, the parents of Konrad celebrated all the Jewish holidays with them (with Hans Bloch and his wife) in New York. Lore Bloch summarizes it: "Konrad Bloch was a Jew by Heritage. His grandparents were Jewish, his parents were Jewish. His Children were born Jewish and his grandchildren were born Jewish."¹⁷⁹ To add to that, recently the granddaughter of Konrad Bloch married a Jewish man who was raised in a traditional family.¹⁸⁰ On the question if Konrad Bloch cared that his son married a Jewish woman, Lore Bloch answers that they were very happy that he married a Jewish wife, although if he had married a non- Jewish wife they would have accepted her just the same. "But, (Lore emphasizes) we feel it easier if you marry from the same religion. It is easier, because the less conflicts and differences there are, the better it is."¹⁸¹

In convergence with that, the pattern of social connections that the Jewish chemists acquired in Europe and in the United States should be examined here. It appears that there was tendency among the Jewish chemists to have as friends in Germany mostly

¹⁷⁸ Walter Meyerhof, Interview by Yael Epstein, March 1, 2005.

¹⁷⁹ Lore Bloch, interview by Yael Epstein, December 1, 2004, Lexington, Boston.

¹⁸⁰ Lore Bloch, Interview by Yael Epstein, May 11, 2005.

¹⁸¹ Lore Bloch, Interview by Yael Epstein, May 11, 2005.

persons who shared a Jewish descent. This tendency continued in the United States. To illustrate, according to Walter Meyerhof (the son of Otto Meyerhof), many of Otto Meyerhof friends in Germany and in the United States were Jewish.¹⁸² Thus, it is interesting to note that although Otto Meyerhof did not have a strong Jewish identity, he moved in intimate circles within a Jewish-descent society. Additionally, after arriving to the United States, most of the acquaintances of Arthur Beiser the research chemist, were German Jewish refugees in the beginning and all through his life in the U.S. As he stresses: "We are living in the refugee community. No doubt about that. Because all our friends are there."¹⁸³ Moreover, in chapter 3 the organization the American Society of European Chemists and Pharmacists is discussed. It is clear that the nature of this organization was a social one in addition to being professional organization. All these examples for the social milieu of the refugee chemists are consistent with the general tendency among the Austrian and German refugees from the Nazi regime to have friendships mainly with other refugees. In 42.3 per cent of the cases the refugees reported their friends to be mainly native Americans, in 42 per cent to be mainly recent immigrants and in 12.5 per cent to be about equally divided between the two.¹⁸⁴

A general pattern that can be detected from the sample of the 35 refugee chemists is that at least 8 (22.8 percent) of them were active or participated in Palestinian/ later Israeli scientific Institutes. This phenomenon started and continued especially after the Nazis' rise to power. This could be considered as a unique dimension in the Jewish identity of the refugee chemists, linking their commitment to science and their sense of

¹⁸² Walter Meyerhof, Interview by Yael Epstein, March 1, 2005.

¹⁸³ Arthur Beiser, interview by Michael Tietz, June 13, 1972, 28.

¹⁸⁴ Maurice R. Davie, *Refugees in America- Report of the Committee for the Study of Recent Immigration from Europe* (New York: Harper & Brothers Publishers, 1947), 160.

ethnic attachment and responsibility. One example is of James Franck. James Franck was prominent in his activism and his participation and support of the different scientific institutions in Palestine/ Israel after his arrival in the U.S. Franck was active in the planning committee of the Weizmann Institute in Palestine and later Israel.¹⁸⁵ He was involved in technical matters and planning of the labs at Weizmann. Moreover, he especially supported and recognized the importance of the establishment of scientific institutes in Palestine and the future Israel for its development. He declared proudly: "I would like to say that as a person I have not only professional interest in that institute of Technology in Haifa, but as a Jew I have a special interest."¹⁸⁶ In an address named "Relationship between Pure and Applied Science" to the Chicago Chapter of the American Society of the Hebrew Institute of Technology (the Technion) and its guests in February, 1947, Franck stressed these issues: "Everyone agrees that it is necessary to train engineers and other applied scientists in countries which want to build up or maintain a high level of industrial and agricultural production. It is evident that this necessity is an absolute "must" in the special case of Palestine where most of the admirable technological and agricultural achievements already accomplished have been based on skills and professional knowledge acquired by the Jewish immigrants previous to their immigration to Palestine."

Additionally, he articulated his scientific vision for the planning of a scientific institute in the future Jewish state by claiming that the training of the applied scientists should include a thorough knowledge of the basic sciences, not only in the fields directly

¹⁸⁵ Herman F. Mark, From Small Organic Molecules to Large: A Century of Progress, Profiles, Pathways, and Dreams- Autobiographies of Eminent Chemists (Washington D.C: American Chemical Society, 1993), 106.

¹⁸⁶ James Franck, "Technion, Israel Institute of Technology," Box 9: folder 5, 1, James Franck Papers, Special Collections Research Center, The University of Chicago Library, Chicago.

connected with applications, but also in those fields where the results appear to be entirely academic. He exemplifies this concept in regard to Palestine: "Let us take another example which may be of peculiar importance to a country such as Palestine where great stretches of desert exist in which irrigation to promote plant growth would be difficult", and he explains that it is not necessary that solar energy, on which all life on our planet depends, would be wasted in regions where sufficient irrigation is impossible. He contends that among the attempts already made to utilize solar energy in the deserts, the most hopeful seems to be the use of sunlight for photochemical purposes, and he continues: "If such progress is made, it will be based on purely academic research in spectroscopy and photochemistry- research of the type in which, for example, Professor Samuel in Haifa (whom, by the way, I am proud to remember as my former pupil), and Professor Farkas of the University of Jerusalem are engaged."¹⁸⁷ We witness here that James Franck utilized his own scientific experience in photosynthesis research and applied his knowledge to the problem of using to the fullest the resources of Palestine, specifically how to use the desert to provide energy or electricity.

Moreover, Franck was active in fund-raising for the Hebrew University and for Hadassah in Palestine. He proclaimed in his speech: "The plan of the Hebrew University and Hadassah to build in Palestine a medical school of the first rank is one on which even in these times of social and political unrest and bewilderment everyone can agree and should lend support to his best ability." He continues and emphasizes that a great number of medical men of the highest rank in their profession are now present in Palestine and urges to give them the necessary facilities and students to work with. He declares: "The

¹⁸⁷ James Franck, "Relationship between Pure and Applied Science," February 1947, Box 17; folder 3, 1-3, James Franck Papers.

success doubtless will be a permanent one since the Jewish race (sic) has produced physicians of high quality in all phases of its long and strong history." In addition he adds a personal note: "As a Jew who immigrated to the United States in his later years, I regret I cannot add more than a token contribution to the funds which are needed for the medical school in Palestine but I will be proud if (I) express my strong conviction that here is a noble cause which deserves support by all Jews, Zionists and non-Zionists alike".¹⁸⁸

In October 3, 1954 Franck received the Technion's honorary degree (together with Einstein) of Doctor of Science in Technology, in Princeton, New Jersey, with more than 150 distinguished guests (including Niels Bohr and I. I Rabi)¹⁸⁹. In his letter of gratitude to this honor Franck wrote: "I admire to the utmost the courage, wisdom and strength which permitted my fellow Jews to build and support these excellent institutions of higher learning at a time in which they have so much to do to create, to keep alive and make strong their new State."¹⁹⁰

An additional example of this phenomenon is the case of Herman Mark. Although, according to his son Hans Mark, Herman Mark was not "Jewish" in a religious sense, the aspect of helping to create and mold the scientific institutes in Israel (the Jewish state) was very much a strong component of his Jewish identity. Herman Mark was, of course, appalled by what happened to the Jews in Europe under the Nazis. He became interested in the Weizmann Institute through his friend Meyer Weisgal, who was first the fund raiser for the institute and later its president. Mark also knew Chaim Weizmann (a founder of Israel and the first president of the State of Israel) professionally and had with

¹⁸⁸ James Franck, "The Hebrew University," Box 3; folder 11, James Franck Papers.

¹⁸⁹ "Einstein and Franck Honored," Israel Institute of Technology Monthly, October, 1954.

¹⁹⁰ James Franck to General Y. Dori, May 4, 1953, Box 9; folder 5, James Franck Papers.

Weizmann many informal chats and conferences during World War II and after. Mark was anxious to do what he could to help the Weizmann Institute get started and the facilities at the Brooklyn Polytechnic were used to procure and test the first equipment for the Weizmann institute that would then be shipped to Israel, when the tests were completed. In his autobiography Mark dedicates a chapter to the Weizmann Institute. He describes in details his involvement: "Weizmann asked me to serve as head of this planning committee (the planning committee of Weizmann Institute). He said: You worked for 6 years at various institutes in Berlin- Dahlem and for 6 years as Research Manager of the largest German chemical corporation; for 5 years you were director of the First Chemical Institute of the University of Vienna, and later you were responsible for the research and development of the Canadian International Paper Company. All of this should give you enough experience and sufficient patience to bring our planning to a successful end." I accepted the appointment on the understanding that I would be privileged throughout to enjoy close cooperation with Ernest Bergmann (who Mark knew since 1921, because they both worked in the University of Berlin under Wilhelm Schlenk). In fact, our cordial association in matters having to do with the Weizmann Institute (and with Israeli Science and technology in general after the state of Israel was proclaimed in 1948) started then and continued until Bergmann's death in 1975."¹⁹¹ Additional evidence that Mark was very active in the Weizmann Institute is that in 1947 he traveled to Rehovot (then in Palestine) and got in touch with the architect there and laid out the actual plans for the institute.¹⁹²

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¹⁹¹ Herman Mark, From Small Organic Molecules to Large, 103-105.

¹⁹² Herman Mark, interview by James J.Bohning and Jeffrey L. Sturchio at Polytechnic University, Brooklyn, New York, February 3, March 17, and June 20, 1986, transcript, The Beckman Center for the History of Chemistry, Oral History Program, The Chemical Heritage Foundation, 62.

In the issue of the attitude towards Zionism and the establishment of the State of Israel, there were mixed feelings among the refugee chemists. To illustrate, Herman Mark was definitely not a Zionist. Hans Mark asked his father once what he thought about Zionism. Herman Mark told him that for many years he had thought it was a bad idea. The existence of a "Jewish homeland" would threaten the assimilation of Jews into the general European community and would encourage anti -Semitism. He was a great believer in the separation of church and state and he thought that Zionism violated that general principle. In 1945, when two million European Jews had no other place to go he felt that he had to help get Israel started. Mark did this even though he thought that in the end, it would bring nothing but trouble, both to the world's Jewish community and to the people who lived in the Middle East.¹⁹³

Interestingly, for Herman Mark's 85th birthday, there were seven major celebrations throughout the world and two of them were in Israel.¹⁹⁴ Moreover, Mark received Honorary Degrees from Israel Institute of Technology and the Weizmann Institute of Science in Israel, and he received several Israeli awards; the Harvey Prize from the Israeli Technion and the Wolf Prize and the Jabotinsky Centennial Medal.

On the question, if Konrad Bloch considered immigrating to Palestine or later Israel when he ran away from the Nazi regime, Lore's answer is negative. She explains that this was due to his upbringing. He was raised us a nationalistic German. He was first German, afterward a Jew. He believed in human mixing no matter what or where, but not in a Jewish state or a Protestant or Catholic state.

¹⁹³ Hans Mark letter to the Author, December 16, 2003.

¹⁹⁴ Jeffrey I. Seeman, "Editor's Note," in From Small Organic Molecules to Large, xxiii.

On the other hand, there were refugee chemists who did consider immigrating to Palestine and even accomplished that. The story of Carl Neuberg illustrates that. After in 1934 he was forced to resign as director of his institute.¹⁹⁵ he left Germany and came to Israel in 1939. He was professor of chemistry of cancer research at the University of Jerusalem for 8 months. Simultaneously, he was advisor in the Weizmann Institute in Rehovot, Palestine.¹⁹⁶ Although he loved the country, he felt that he was not young enough (he was in his sixties) to start a career in a country that needed young and vigorous pioneers for the use of extremely limited facilities and funds available at that time (but as it was written previously the scientific conditions in the U.S were not sufficient for him either). Moreover, since his two daughters, Dr. Irene S. Forrest, a biochemist, and Mrs. Marianne Lederer, a health physicist, had settled in the United States, he decided to join them and arrived in New York in 1940.¹⁹⁷ Another reason. why he left Palestine according to Ute Deichmann is that Neuberg was warned by colleagues in the German army that Palestine would be soon occupied by the German army.¹⁹⁸ Another sign for Neuberg's support in the establishment of the State of Israel is that he was a member in the organization "American League For a Free Palestine, Inc".¹⁹⁹ Additionally, two of Neuberg's pupils went to Israel and achieved prominence. The late Ernst Simon was with Weizmann in the Daniel Sieff Institute

¹⁹⁵ David Nachmansohn, German- Jewish Pioneers in Science 1900-1933: Highlights in Atomic Physics, Chemistry and Biochemistry (New York: Springer- Verlag, 1979), 313.

¹⁹⁶ Carl Neuberg to Karl Thomas, December 21, 1949, Carl Neuberg Papers, American Philosophical Society, Philadelphia.

¹⁹⁷ David Nachmansohn, German- Jewish Pioneers in Science 1900-1933: Highlights in Atomic Physics, Chemistry and Biochemistry, 313.

¹⁹⁸ Ute Deichmann, "The Expulsion of Jewish Chemists and Biochemists from Academia in Nazi Germany," 44.

¹⁹⁹ Alex Wilf to Carl Neuberg, June 21, 1944, Carl Neuberg Papers, American Philosophical Society, Philadelphia.

in Rehovot from the beginning; Jesaiah Leibowitz joined the Hebrew University in Jerusalem.²⁰⁰

Moreover, it is interesting to note that refugee chemists, who were raised in relatively traditional and religious families rather than assimilated or secular families, tended to express their Zionistic views more vigorously. To illustrate, Arthur Beiser's identification with Israel is very strong. Beiser answer to this question; If you had a conflict, which of course should not come about, what are your identification feelings between the U.S and Israel? "I think it should be Israel." And the interviewer continues; Even though you are an American citizen you identify more strongly with Israel? Beiser: "I think so. It should be." Beiser explains the reason: "Because I think in the future the only hope for Jews is to live in Israel."²⁰¹ Rosa Kubin also defines herself as a Zionist: "I still am a Zionist, I mean, I am a Jew. I can't separate those two things."²⁰² Adding to that, a rare case but still relevant is the case of Immanuel Estermann. He was professor of physical chemistry in Carnegie- Mellon University from 1933 until 1964 when he retired and immigrated to Israel. From 1964 to 1973 he was member in the faculty of the Technion in Haifa, Israel and visiting professor in 1971 at the Hebrew university in Jerusalem. He died in 1973 in Haifa.²⁰³

The general inclination among the refugee chemists was not to participate in religious rituals in the United States. This tendency started in Germany or in Europe and did not change much after immigration to the U.S.A. That is, the flight from religious

²⁰⁰ David Nachmansohn, German- Jewish Pioneers in Science 1900-1933: Highlights in Atomic Physics, Chemistry and Biochemistry, 326.

²⁰¹ Arthur Beiser, interview by Michael Tietz, June 13, 1972, 27.

²⁰² Rosa Kubin, interview by Michael Tietz, June, 1971, 5.

²⁰³ Herbert A. Strauss and others, eds., "Estermann Immanuel," International Biographical Dictionary of Central European Émigrés 1933-1945. Vol. II (New York: K. G. Saur Verlag, 1983), 272.

orthodoxy or even affiliation was continuous with the past. From looking at the statistics of the refugee chemists' sample, only 4 of 35 were members at a synagogue in the United States (11.4 percent). At the same time, in many cases this information is not indicated. The refugee chemists who did not grow in religious families that kept Jewish holidays or ceremonies in Germany, in most cases did not practice religious rituals or went to synagogues in the U.S. To illustrate, Walter Meyerhof tells that his father Otto Meyerhof never went to a synagogue neither in Germany nor in the United States. Their family did not celebrate Jewish holidays in Germany and in the U.S.²⁰⁴

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On the other hand, the refugee chemists who had in their upbringing religious education and went to a traditional temple in Europe did practice religious life in the United States. Arthur Beiser, who had religious education in France as a child before his parents and he moved to Berlin, elucidates on his religious life that he and his wife were active in the temple Habonim in New York, Jackson Heights. Interestingly, Beiser argues that his family has much more contacts in the U.S with the rabbi and with the temple than they ever had in Berlin.²⁰⁵ Also Rosa Kubin, who comes from a religious family, joined a temple in Waltham, Boston. Rosa Kubin joined Hadassah and contributed a little bit of work. She depicts that in the first period in the U.S, the temple in Waltham had a spiritual head, Rabbi Kra, who created a community feeling. In this time she used to go regularly to the Friday evening services. Since he left several young rabbis came and left and the temple lost its attraction. Because of that Rosa found out that she is not anymore as

²⁰⁴ Walter Meyerhof, Interview by Yael Epstein, March 1, 2005.

²⁰⁵ Arthur Beiser, interview by Michael Tietz, June 13, 1972, tape 5, transcript, Oral History Collection of the Research Foundation for Jewish Immigration, New York, 17.

religious; that just being in the synagogue does not satisfy her. That is why she is involved a great deal in reading or thinking about Jewish affairs.²⁰⁶

There is no question that as the general population of the European Jewish refugees and especially the German Jews, the refugee chemists felt more conscious about their Jewishness after Hitler's rise to power and the Holocaust. To illustrate, even Otto Meyerhof (as was illustrated here) who was not conscious about his Jewishness before Hitler's rise to power, after the Holocaust became highly conscious about being a Jew.²⁰⁷ At the same time, in comparison with the average German Jewish refugee in regard to the attitude toward Germany after the Nazi persecution of the Jews, World War II and the Holocaust it seems that a more complex picture is reflected among the refugee chemists. This point is important to discuss as an aspect of the Jewish identity of the refugee chemists, due to the fact that before Hitler the Jewish identity of German Jews in general was portrayed as German first and afterward Jewish. While the average German Jewish refugee felt revulsion toward Germany and Germans, it appears that many of the refugee chemists, who flourished in their career and became prestigious professors in Germany before Hitler's advent to power, did not ban Germany or Germans due to Nazi actions. They remembered the good old Germany, where they rose scientifically. To illustrate, Herman Mark had visited Germany and had many contacts with German scientists. The reason for that, as he said to his son, was that he did not believe in collective guilt. Hans Mark (his son) describes this further: "it was very important to him whether a person was decent. He did not expect people to be heroes even though he greatly honored people such as Max Von Laue, who took great risks in opposing the Nazi regime. He said that

²⁰⁶ Rosa Kubin, interview by Michael Tietz, June, 1971, 28, 30.

²⁰⁷ Walter Meyerhof, Interview by Yael Epstein, March 1, 2005.

heroism is too high a standard for determining with whom to associate but that decency is not. He told me that he excluded members of the Nazi or the Communist parties from people that he considered decent. He felt that people who believed in such ideologies had no respect for human life and therefore could not meet his standard of decency."²⁰⁸

Another interesting example is of James Franck, who in 1945 was one of the organizers of a petition stressing against general revenge in Germany and the German people, who were not Nazi criminals. Franck wrote to Einstein: "The feeling of revenge is, of course, strong in Jewish circles; it would be ununderstandable if it were not so, but still if that goes on the Nazis will have won in their battle for the demoralization of the whole world. I know we can do very little to prevent it, but what little we can do we should do."²⁰⁹ Moreover, Franck asked Einstein to sign this petition first in order that his signature would prevent attacks from fellow Jews "because, do not forget, you are a kind of Jewish national saint."²¹⁰

An extreme and rare case is of Walter Maximilian Fuchs, who was in Germany the head of the Kaiser Wilhelm Institute for Coal Research. In 1949 he returned to Germany (from the United States) to be reappointed as associate professor in T.H. Aachen.²¹¹

On the other hand, the refugee chemists who were not established as professors in the German academy felt differently, more like the other German Jewish refugees. Konrad Bloch, who came in the age of 23 to the United States as a graduate student in chemistry is an interesting example. Lore Bloch depicts that as a result of the Nazi

²⁰⁸ Hans Mark, letter to the Author, December 16, 2003.

²⁰⁹ James Franck to Albert Einstein, December 3, 1945, Box 2, folder 7, James Franck Papers.

²¹⁰ Ibid.

²¹¹ Herbert A. Strauss and others, eds., "Fuchs, Walter Maximilian," *International Biographical Dictionary* of Central European Émigrés 1933-1945. Vol. II (New York: K. G. Saur Verlag, 1983), 349.

actions and persecution, when they immigrated to the United States, they deliberately decided not to speak a word of German anymore (just English). Additionally, she tells: "Konrad did not ever want to go there (to Germany) again. Even though he had some German friends, he refused to go to Germany many times, and only twice he went there when he was forced to."²¹² Konrad did not want to be considered German anymore, but American. He wanted to become first American then a Jew, as oppose to a patriotic German Jew as he once described himself in Germany. Lore Bloch emphasizes that after Hitler he felt betrayed by the German nation and spirit.

Also Arthur Beiser, who was an assistant in Berlin University and worked in the German chemical industry prior to immigration to the U.S, felt strong feelings against Germany and Germans in general. On the question if he has any emotional ties with Germany, he answers: "No, not at all. I am very suspicious about Germany." The interviewer continues: For what reason? Beiser: "I don't know. Because you know what they did to us. That's the reason why. I never will lose that. Even if I had a lot of contacts with them.²¹³ In regard to the younger generation of Germans, he also doesn't like them. Besier's feelings are understandable, especially due to the fact that his parents were murdered in the concentration camp Theresienstadt.

To summarize, although the general narrative of the Jewish identity of European Jewish refugee immigrants holds the notion of total indifference toward their Jewish background and assumes especially in regard to Jewish scientists their total assimilation and secularization, we witness here from the case studies of the Jewish refugee chemists a different and more complex perspective. Most of the case studies here illustrate that the

²¹² Lore Bloch, Interview by Yael Epstein, May 11, 2005.
²¹³ Arthur Beiser, interview by Michael Tietz, June 13, 1972, 26.

refugee chemists did not forget their Jewish heritage. Even in some cases, it is hard to prove that they were totally assimilated as the literature tries to argue, only due to the fact that most of their social milieu consisted of European Jews (mainly German), both in Germany and in the U.S. Although in most cases they were not religious Jews, their Jewish identity took many forms. One form was the resistance to convert in Germany or in the U.S. Another form was the support of the State of Israel and its scientific institutions. Additional form was to maintain Jewish heritage by marrying Jewish partners. From all of these examples, we can conclude that the Jewish identities of the refugee Jewish chemists reflect the complexity and diversity of the general subject of Jewish identity.

Chapter Five

Conclusions

The story of the European Jewish refugee chemists from the Nazi regime in the United States exemplifies that to be a refugee or an immigrant is always difficult, no matter what one's profession is. The claim that due to the internationalism of science, the prospects of finding positions for chemists in the United States would be easier was disproved. One reason for the wrong impression about the 'internationalism of science' could be derived from the very distinctive story of the refugee physicists. The story of the physicists is not typical for immigrants, because the success they achieved was in extraordinary circumstances (the creation of the nuclear bomb) and cannot reflects on other refugee scientists.

Moreover, it was surprising to discover that even prestigious chemists who were famous and established or received the Nobel Prize before immigrating to the U.S, had difficulties in adjustment and sometimes they experienced more hostility than young refugee chemists.

In encountering difficulties of finding positions in the United States, the refugee chemists created their own mechanisms in order to overcome this problem. They used informal networks wisely and eventually found positions in the American universities or in the chemical industry. This finding introduces new dimension into the research on the adjustment process of the intellectual migration from the Nazi regime. Because most of the focus in the literature so far was on the role of the formal agencies, such as the *Emergency Committee In Aid of Displaced Foreign Scholars* in assisting the refugee scholars in their adjustment in the U.S., this aspect of adjustment has been missed.

Additionally, in order to be hired without resistance from American colleagues, the refugee chemists created their own niches of scientific fields. In these niches they had no competition from American chemists and they were able to flourish scientifically.

In regard to the scientific achievements of the European refugee chemists, it was illustrated in this study that they too contributed very much to American science and not just the physicists. They introduced new fields of chemistry to the American academy such as the field of polymers. They strengthened underdeveloped fields of chemistry, such as the field of biochemistry. They brought new attitude to the American scientific community, which was the interdisciplinary approach in exploring scientific subjects, as in the case of James Franck. Frequently, the refugee chemists combined the fields of physics, biochemistry and chemistry in their scientific approach.

The chapter on the Jewish identity of the refugee chemists lays a preliminary groundwork for understanding the complexity of Jewish identity among the refugee scientists. By doing that, may be this discussion will open the scholarly debate in regard to the Jewish identity of other refugee intellectuals from the Nazi regime. Moreover, by comparing the refugee chemists to the general population of the German or European Jewish refugees, we can conclude that their Jewish identity is not and was not any less authentic. They experienced transformation in regard to their identification with their Jewish heritage like the other refugee German Jews after Hitler's rise to power. If there was a doubt that due to their profession as chemists, they tend to be more indifferent toward their Jewish identity it is refuted in this study. On the contrary, the fact that they possessed special scientific skills gave them a purpose of using that outlook and skills in order to help continuing the great scientific heritage of the Jewish people in a Jewish state- in the state of Israel.

Every serious research brings new questions for exploration. As I found out the situation of the Jewish chemists who worked in the European chemical industry is unknown so far. Generally, in the literature there is no distinction between the academic chemists and the industrial chemists. From the testimonies gathered, there is evidence that conditions in the German chemical industry were different than in the German academy. Arthur Beiser's testimony²¹⁴ argued that the situation of the German chemical industry was pretty good in Germany 1933-1938 because Hitler boosted the German economy. Thus, further investigation should be done on the German chemical industry and the fate of its Jewish workers. Apparently, these people were not initially driven out and remained unaffected by Nazi policies until the Aryanization campaign in the late 1930s.

Additionally, another research that could be done is on the Jewish refugee chemists women from the Nazi regime. It would be interesting to explore if the women chemists faced different problems due to gender differences in their adjustment process in the United States. There is some indication that women faced higher challenges in adjustment and suffered greater downward mobility in professional positions. For example, Rosa Kubin who had a doctorate in chemistry was unable to find permanent position in American colleges and had no choice, but to move to the high schools system in order to receive tenure and eventually a pension. Additional example is of Ellen Taxer, who graduated with a doctorate in chemistry and a degree in pharmacy in the University

²¹⁴ Arthur Beiser, interview by Michael Tietz, June 13, 1972, tape 5, transcript, Oral History Collection of the Research Foundation for Jewish Immigration, New York, 3.

of Vienna in 1934. Interestingly, she was not able to work as a pharmacist in the United States after immigrating and changed her profession to professor of the German language.²¹⁵ Moreover, it will be intriguing to examine what was their position in comparison to the general attitude toward women in the chemistry profession in the American academy and chemical industry.

This study contributes to the understanding of the intellectual migration from the Nazi regime by telling the personal story of the refugee chemists. Several different theoretical methods were used for this analysis. In general, historians of science portray the lives of scientists through their scientific achievements, without a discussion of their lives as human beings. In contrast, this study tried to illuminate the lives of the refugees scholars not just from the viewpoint of their scientific achievements, but also tried to portray their lives and difficulties in the most realistic way. The description of their adjustment process in the U.S. and their Jewish identity is a major component of that contribution.

Moreover, this study by exploring the Jewish identity of the refugee chemists suggests a new approach in the research of the intellectual refugee migration from the Nazi regime. Beyond filling a gap, this study rethinks the whole research of the refugee migration from the Nazi regime and its intellectual implications.

²¹⁵ Ellen Taxer, interview by Michael Schwarzscild, June 13, 1971, tape 212, transcript, Oral History Collection of the Research Foundation for Jewish Immigration, New York.

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