







## **In memoriam Richard von Mises<sup>1</sup>**

Annette B. Vogt (Berlin)

### **1. Remembering Richard von Mises**

Today, "In memoriam Richard von Mises" is meant to consider the life and fate of an extraordinary mathematician. He was one of the most interesting mathematicians in the 20th century, one who was able to combine pure and applied mathematics, who was able to solve simple practical problems as well as to create new mathematical topics like his theory of probability. Richard von Mises was an organiser in science too. During his time in Berlin, from 1920 until 1933, he established his Institute for applied mathematics which was for several years one of the centers of applied mathematics in Germany. In 1921 he founded his "Journal for Applied Mathematics and Mechanics" (ZAMM) which still exists. And was one of the founders of the new "Society for Applied Mathematics and Mechanics" (GAMM) in 1922. The society GAMM has been awarding the "Richard-von-Mises-Prize" every year since 1989. He was interested in physics and philosophy as well as in the history of science.

His successful career at the Berlin University and in German speaking academia was abruptly ended by the Nazi regime. Like many Jewish scientists, Richard von Mises was forced to flee Germany, and then Europe, going into exile. From Berlin he went to Istanbul, and from Istanbul to Boston - but he escaped, and fortunately it was possible for him to work and teach in his exile.

Although best known for his mathematical work, he also contributed to the philosophy of science as a positivist, following the tradition of Ernst Mach and the Vienna Circle where as a young man he had participated in the discussions between 1907 and 1909. He remained in contact with the Vienna Circle during the 1920s too, while visiting his mother in Vienna regularly. His textbook about the positivism (*Kleines Lehrbuch des Positivismus*) he wrote during his first exile.<sup>2</sup> A short overview on his views about science and philosophy, about the

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<sup>1</sup> Lecture which was given on June 7, 2007, in Berlin-Adlershof. Thanks to Kelley Wilder (MPIWG) who corrected my English.

<sup>2</sup> See von Mises, Richard. *Kleines Lehrbuch des Positivismus. Einführung in die empiristische Wissenschaftsauffassung*. First, Istanbul 1938; Frankfurt/M., Suhrkamp 1990.

Friedrich - Wilhelms - Universität

Über das  
naturwissenschaftliche Weltbild  
der Gegenwart

Rede

bei der Feier der Erinnerung an den  
Stifter der Berliner Universität  
KÖNIG FRIEDRICH WILHELM III.

am 27. Juli 1930

von

Richard von Mises

Berlin 1930

Preußische Druckerei- und Verlags - Aktiengesellschaft Berlin

LMI

1573

scientific "Weltbild" of the 1920s, can be found in an interesting lecture Richard von Mises gave in Berlin in 1930.<sup>3</sup>

In 1930 he was given the honour of holding the official lecture of the Friedrich-Wilhelms-Universität in memory of the founder of the Berlin University, King Friedrich Wilhelm the III., which took place every year in July on the end of the summer semester. In July in 1930 von Mises spoke to his academic colleagues as well as to the students, and the lecture was printed as a booklet (29 pages) and given to every student. In 1930 both the 160th birthday of the King of Prussia and the 120th anniversary of the young but famous Berlin University were remembered. Therefore, Richard von Mises, as an Austrian citizen, was very proud to have the honour of speaking at these jubilees. First he put forward some nationalistic feelings and worried about the war just lost (WW I) and its victims, and also about the bitter economic situation of Germany. After this statement he concentrated his lecture on a kind of historical overview about the history of science, physics and mathematics especially, in the last 120 years up to 1930. From the lecture in the summer of 1870, given by Emil du Bois-Reymond, to his talk, Richard von Mises drew a lovely picture of the development of physics in the last 60 years, full of surprises and progress and new questions. His positivistic approach constructed the frame of his lecture. He also talked about the differences between the sciences and the humanities which were still united in one Faculty, the Philosophical Faculty, at the Berlin University, i.e. about the "two cultures" as C. P. Snow (1905-1980) would describe them later.<sup>4</sup> The lecture of Richard von Mises was also a memorandum of the belief in scientific progress, like Davis Hilbert's famous words "we have to know, we will know". Along the examples of physics, von Mises drew this picture of continuous progress, from Helmholtz to Schrödinger, from mechanics to quantum mechanics and he gave a short history of the theory of probability, from Laplace to Boltzmann (1930, p.11f and p.16ff). Best known the modern philosophical discussions too, von Mises also drew a picture of the philosophical debates which were related to these revolutionary developments in modern physics. And finally, he gave the students the wise advise that in science as well as in ordinary life one has to do what is necessary, with "Begeisterung" and "Einsicht":

"Mögen Sie, meine lieben Kommilitonen, daran (...) lernen, daß es im Leben wie in der Wissenschaft mit der bloßen Begeisterung für die Sache, der man dient, nicht getan ist, daß man sich auch bemühen muß, die andere Seite kennenzulernen und sich von ihr kein allzu einfaches Bild machen darf. Nur wenn Sie die Ziele, für die Sie sich begeistern und die Wege, auf denen

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<sup>3</sup> See von Mises, Richard. Über das naturwissenschaftliche Weltbild der Gegenwart. Rede an der FWU Berlin, 27.7.1930; booklet, 29 pp.

<sup>4</sup> See von Mises (1930), p.6ff and pp.24-27; see Snow (1959, 1963).





Berlin University (Friedrich-Wilhelms-Universität), 1883

Sie ihnen nachgehen, den Geboten der Einsicht und der Überlegung unterordnen, werden Sie die Hoffnungen erfüllen, die unsere Universität, die die ganze Nation in Sie setzt."<sup>5</sup>

## **2. Richard von Mises at the Berlin University**

At the time Richard von Mises gave this kind of philosophical lecture from the positivistic perspective, he had worked and taught in Berlin for 8 years. He was a well-known mathematician, acknowledged by the scientific community as well as by his Berlin colleagues. He was 47 years old (young), and he had made his long way from Lemberg in the Austro-Hungarian Empire to Vienna, from Vienna to Brünn (Brno), from Brünn to Straßburg, at that time a part of the German Empire. He survived the Great War ( World War I) and he went again from Austria to Germany, first to Dresden, the capital of the Saxonian State, and in 1920 to the capital of the Prussian State - to Berlin.

### **2.1. Richard von Mises - until 1920, when he arrived in Berlin**

When Richard von Mises was appointed in 1920 as a professor of applied mathematics at the Berlin University and as the director of the new established Institute for Applied Mathematics he was only 37 years old.<sup>6</sup> He was an Austrian citizen, and he was a baptized Jew (he converted to catholicism), but it seems that these biographical details played no role when the ministry administration (the former Kultusministerium) and the University chose him for this new position.

Richard Edler von Mises was born in 1883 (April 19) in Lemberg (today Lwiw in Ukraina) in a wealthy Jewish family. His father Arthur worked as an expert for the Austrian State Railways, his mother Adele was a born Landau. His elder brother Ludwig (1881-1973) became a famous economist. Both boys got an excellent education. Richard attended the Akademische Gymnasium in Vienna until 1901, then he studied mathematics, physics and engineering at the Technical College in Vienna. In 1907 he was awarded his doctorate from Vienna (his dissertation was on "the determination of flywheel masses in crank drives"). He was appointed as the assistant of the young mathematician Georg Hamel (1877-1954) who had been the professor of mathematics in Brünn (now Brno) since 1905. Already in 1908 Richard von Mises received his habilitation

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<sup>5</sup> Vom Mises (1930), p.28.

<sup>6</sup> On R. von Mises see Poggendorff and DSB; see Hannelore Bernhardt (1979, 1980, 1984, 2004) and Reinhard Siegmund-Schultze (1998a, 1998b; a biography is in preparation).





*R. v. Mises*

Library of Exact Philosophy 7

Richard von Mises

# Wahrscheinlichkeit Statistik und Wahrheit

Vierte Auflage,  
durchgesehen von Hilda Geiringer

Springer-Verlag Wien New York 1972

(on "Theory of the waterwheels") at the Technical University in Brünn and gave lectures on engineering. Only one year later he was appointed as professor of applied mathematics at the University in Straßburg (now Strasbourg), which until 1918 belonged to the German Empire.

In Straßburg Richard von Mises was already fascinated by airplanes, by the new technology of flying machines, and he trained in Berlin-Adlershof to become a pilot.<sup>7</sup> Therefore he was able to teach about the aircraft design, and he gave the first university course on powered flight in 1913. When WW I broke out Richard von Mises went immediately to Vienna and joined the Austro-Hungarian Army, where he served first as a pilot, and later as an instructor. His constructed "Mises aircraft" was completed in 1916 but never in action. After WWI was lost by the alliance of Austro-Hungarian and German Empires, Richard von Mises had to seek a new academic position, since his former Straßburg University had been returned to France. In 1919 he was appointed the new chair of hydrodynamics and aerodynamics at the Technical College in Dresden. But only few months later he was already in negotiation with the Prussian cultural ministry to get a much better position at the Berlin University.

## **2.2. Richard von Mises at the Berlin University, from 1920 until 1933**

When Richard von Mises arrived in Berlin in 1920 to hold the new chair of applied mathematics and to become the director of the newly established Institute for applied mathematics he met 3 other mathematicians who were professors at the Berlin University:

The specialist on analysis Erhard Schmidt (1876-1959) since 1917, the algebraist Issai Schur (1875-1941) since 1916 außerordentlicher Professor and since 1921 ordentlicher Professor, and soon after Richard von Mises in 1921, the specialist on theory of functions Ludwig Bieberbach (1886-1982).<sup>8</sup> The professors also held their "Mathematical Seminar", each of them his own special one - in the tradition of the famous mathematical seminar which was founded in 1861 by Karl Weierstrass (1815-1897) and Ernst Eduard Kummer (1810-1893).<sup>9</sup>

Thanks to these extraordinary mathematicians the Berlin University became in the 1920s a center of mathematical research again, although its competitor Göttingen was even more attractive, being the "Mecca of mathematicians" from all over the world. In Göttingen, the first chair of applied mathematics had already been created in 1904, thanks to Felix Klein (1849-1925) the chair and an Institute for applied mathematics was established, and Carl D. T. Runge (1856-

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<sup>7</sup> About the training as a pilot see Reinhard Siegmund-Schultze, lecture in Luminy (France), in Jan. 2007.

<sup>8</sup> About the mathematicians at the Berlin University see Biermann (1988) and Begehr (1998).

<sup>9</sup> On the Mathematical Seminar of Weierstrass and Kummer see Vogt (1982).





Hilda Pollaczek-Geiringer (about 1930)



1927) held these positions until his death. Also in 1904, the aerodynamicist Ludwig Prandtl (1875-1953) received an appointment as professor at the Göttingen University, becoming the head of the aerodynamics laboratory (Versuchsanstalt) (until 1936), and from 1925 until 1946 he was also the director of the Kaiser Wilhelm Institute for flow research. When Richard von Mises arrived in Berlin, the competition between Göttingen and Berlin was also made on the field of aerodynamics.

The discussions and conflicts about the question of pure versus applied mathematics were still active when the Berlin Institute for applied mathematics was established in 1920. In the beginning Richard von Mises had trouble especially because of the economic crisis after WW I, and the collapse of the monetary system (inflation) in Germany in 1923. Paradoxically enough, as a double-outsider - as a foreigner (Austrian citizen) and a former Jew (although baptized, the antisemitic segments of the German society never "forgot" this) - Richard von Mises managed all the problems, the economic problems as well as the technical ones.

Richard von Mises was not only qualified as an excellent mathematician who did research on statistics and the theory of probability. He had also enormous experience in solving practical problems, problems of mechanics and fluid dynamics, engineering problems, and last but not least, problems of aerodynamics and the construction of airplanes. He was one of the best who could head the new Institute.

Among his students and disciples only two mathematicians should be mentioned here because they received their habilitation under his direction: in 1927 his assistant Hilda Pollaczek-Geiringer (1893-1973), and in 1932 Stephan (Stefan) Bergmann (Bergman) (1895-1977).<sup>10</sup>

The famous Emmy Noether (1882-1935) and Hilda Pollaczek-Geiringer were the only women mathematicians who received a habilitation at a German University during the Weimar Republic, in 1919 in Göttingen and in 1927 in Berlin respectively.<sup>11</sup> Both were forced to flee in 1933. Hilda Geiringer, an Austrian citizen and Jewish too, was born in Vienna. After 1918 she worked in Berlin. In 1922 she married to the mathematician Felix Pollaczek (1892-1981?) and their daughter Magda (\*1922) was born. Hilda Pollaczek-Geiringer was an outstanding woman, a high qualified mathematician and a mother - the exception among the (12) women Privatdozenten at the Berlin University, when in 1927 she became Privatdozent for applied mathematics.

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<sup>10</sup> On Hilda Pollaczek-Geiringer see Pogendorff; see Richards (1987), Binder (1992, 1995), Siegmund-Schultze (1993, 1998a, 1998b), Vogt (1994, 1998, 2007).

<sup>11</sup> On Emmy Noether see Dick (1970, 1981), G. E. Noether (1987), Tollmien (1990).

# Terror and Exile



Persecution and Expulsion  
of Mathematicians from Berlin  
between 1933 and 1945

An Exhibition  
on the Occasion of the  
International Congress of Mathematicians 1998

Deutsche Mathematiker-Vereinigung

The next women mathematicians to receive their habilitations in Berlin were:  
in 1983 at the Humboldt University  
in 1987 at the Technical University and  
in 1995 at the Free University.

This "lack" is not only a "consequence" of the difficulties for women mathematicians in the world of mathematics, this "lack" is one of the result of the so-called "Third Reich" and the influence which continued to hold after its capitulation in 1945 on the development in the two German countries.<sup>12</sup>

Hilda Pollaczek-Geiringer became the closest collaborator of Richard von Mises, working on different mathematical problems, teaching and holding a special seminar on aerodynamics for students. She also was the advisor of several doctoral students.

### **2.3. The end of the Berlin period**

Richard von Mises only worked in Berlin only for 12 years. When he arrived in 1920 he thought it would be the last station in his path to a remarkable academic career. For the first time in his life he rented an apartment<sup>13</sup>, he created new forms of the organisation of applied mathematics - his Institute and his journal ZAMM (in 1921), and the society GAMM (in 1922). He worked successfully and he was acknowledged. But in January 1933 the world changed, the Nazis forced him - and many others - to leave, the University and the country, and the memory of their "Aryan" colleagues.

Between 1933 and 1938 in total 22 mathematicians, 3 women and 19 men, were forced by the Nazis to leave the Technical College in Berlin-Charlottenburg and the Berlin University (the Friedrich-Wilhelms-Universität).<sup>14</sup>

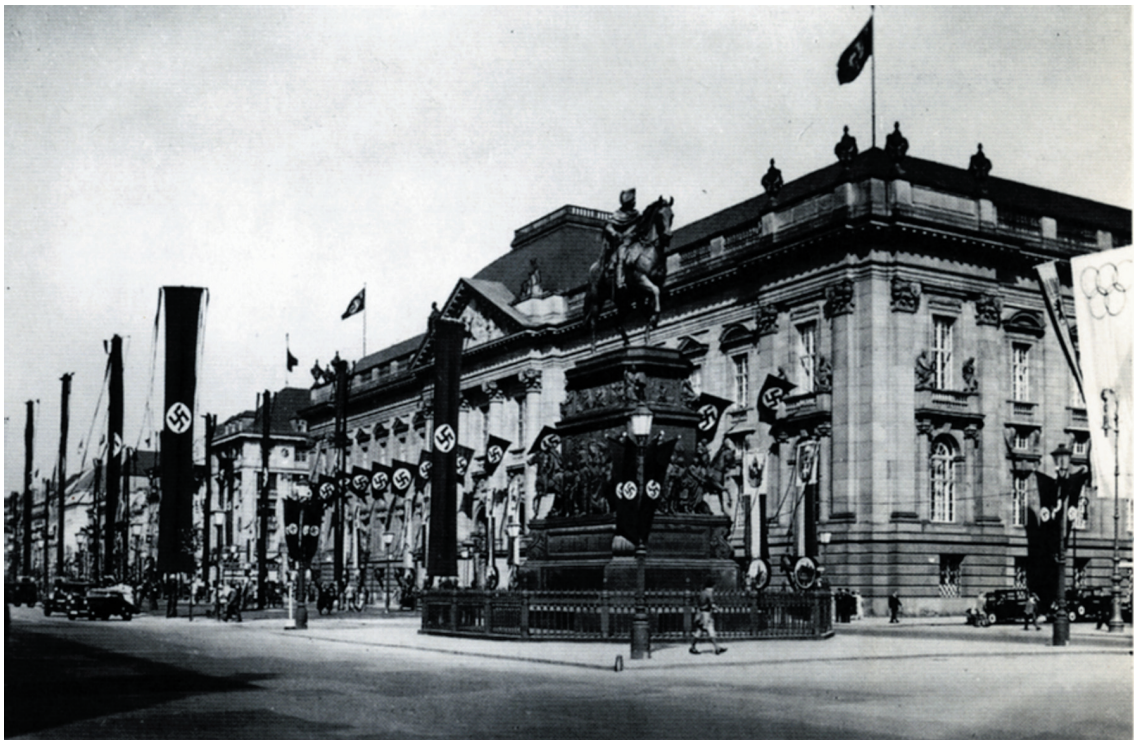
The procedure of displacing certain people from schools, Technical Colleges, Universities and Kaiser Wilhelm Institutes was part of the Nazi policy against all liberal and democratic people, left wing persons, especially communists and social democrats, and last but not least against the Jews. The antisemitism of the Nazis was a racist one with elements of old stereotypes combined with modern methods of discrimination, exclusion, administration and bureaucracy.<sup>15</sup> When

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<sup>12</sup> About the women scientists in Germany, the women mathematicians especially, in the first half of the 20th century see Vogt (2007).

<sup>13</sup> See Archive HUB: personal file 220 R. v. Mises, vol.3, list 11 (letter, 15.10.1926).

<sup>14</sup> See Pinl (1969-1974), Pinl/Furtmüller (1973), catalogue (1998), Siegmund-Schultze (1998a, 1998b), Berlin exhibition (March 2007).



State Library (Preußische Staatsbibliothek) Unter den Linden, 1936



the first campaigns and small pogroms in Germany were organised by the Nazis in 1933, on April 1st for example against Jewish shop owners, physicians and advocates, only a few people predicted the awful future.<sup>16</sup> It was unthinkable, what would later be named Shoah.

In the first years of their regime the Nazis exercised a double strategy. They introduced so-called laws that forced all people they assumed to be enemies and/or Jews into redundancy. The Nazis invented a racist definition of a "Non-Aryan" which ignored the status of religion, especially the history of baptized Jews. Combined with laws, which became stricter and stronger from year to year, the Nazis organised local pogroms and published pamphlets and articles directed against Jews, especially in their propagandist newspaper "Stürmer". The combination of established laws for discrimination and published antisemitism was meant to "encourage" the Jews in Germany to leave the country, which had been their home for centuries, to "sell" (for next to nothing) their shops or houses, their law offices or scientific libraries to the "Aryans", to forget their roots, relatives and friends, and to commit to a completely uncertain future. Looking back from 1945 onwards, this uncertain future would be in part a fortunate one, but only for the surviving victims.

### **The judicial procedures**

On April 1 in 1933 a "law" was introduced which allowed the exclusion of all Jews from any advocate and lawyer positions. On April 7, 1933 the so-called "Gesetz zur Wiederherstellung des Berufsbeamtentums" (law for the restoration of the civil services) was introduced. This "law" was the basis from which all political enemies and all Jews could be removed from all positions in the institutions of the public service system, i.e. from schools and colleges, from Technical Universities and from Universities. This included the Institutes of the Kaiser Wilhelm Society too. This "law" applied not only to "civil servants" as the name implied, but concerned all Jews, from the full professor to the assistant, including secretaries and technicians who never belonged to the staff of civil servants.

The "law" of April 7, 1933, was modified several times and contained some exceptions. One of these exceptions was, for example, that a "Non-Aryan" scientist (by Nazi terminology) could

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<sup>15</sup> See Hannah Arendt (1955/1995); since her book on totalitarianism an enormous literature was published on the topic which can't be mentioned here.

<sup>16</sup> The Jewish writers Joseph Roth and Kurt Tucholsky predicted some elements of this „future“ for the German and European Jews and demanded an alliance against the Nazi regime as early as 1933; see for example Roth (2003).



Issai Schur

stay on in his position if he had been a member of the armed forces during WW I. Therefore, the youngest scientists were fired first, likewise women scientists for whom the exception related to WW I was of course unrealisable. In the end, however, all these exceptions were cancelled by the so-called "Nuremberg law" in Autumn 1935.

The "definition" of an "Aryan" and a "Non-Aryan" was established in 1933 by the Nazis. To prosecute their "law" in all institutions of public service they forced employers to complete questionnaires ("Fragebogen") and to indicate here the "race" (not the religion) of all 4 grandparents. In the public service institutions a person was "dismissed" if he or she had one "non-aryan" grandmother or grandfather.

The so-called "Nuremberg law" cancelled civil rights for all German Jews and made them second class citizens (Staatsbürger instead of Reichsbürger). This "law" was the basis on which all Jews from Institutions of the public service who were still employed thanks to protests and/or special exceptions (like Issai Schur<sup>17</sup>) were removed. From 1935 onwards so-called mixed marriages ("Mischehen") were also forbidden, and the pressure became greater to demand that "aryan" partners divorce their "non-aryan" partners.<sup>18</sup> "Aryan" professors lost their professorships when they did not agree to a divorce their "non-aryan" wives.

Richard von Mises was not officially displaced because he himself asked to terminate his appointment - before the Nazis could "dismiss" him.<sup>19</sup> He would be allowed to teach until September 1935 (after the so-called Nuremberg law), because of his participation in WW I. He belonged to the large group of mathematicians who had to flee from Germany into exile.

### **3. In Exile**

Beginning in April 1933 the displaced German scholars tried to emigrate, to continue their scientific work in new countries under completely different social, working and cultural conditions. Very early, in April 1933, the "Academic Assistant Council" (AAC) was established in London to help emigrants from Germany. In 1936 it became the "Society for the Protection of Science and Learning" (SPSL).<sup>20</sup> In New York in 1933 the "Emergency Committee in Aid of Displaced German Scholars" was founded.<sup>21</sup> Thanks to these organisations, and to the

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<sup>17</sup> On Issai Schur see Ledermann (2003), Vogt (1999).

<sup>18</sup> On "Mischehen" see Marion Kaplan (2001).

<sup>19</sup> See Archive HUB: personal file 220 R. v. Mises, and Phil. Fak. Nr. 1478.



Teil I

STRICTLY CONFIDENTIAL.

# LIST OF DISPLACED GERMAN SCHOLARS.

LONDON  
AUTUMN, 1936.



Rockefeller Foundation as well, the German and later the European refugees received support, mostly in the form of grants and fellowships. The older and more famous a refugee was, the more complicated it was to help him or her into a similar position. Exceptions like Albert Einstein hide the difficulties and the hard life most displaced scientists experienced in exile. Beginning with WW II many of the refugees had better chances and received better positions. This propagated the post-war myth of "success stories", the myth that German displaced scientists were "Hitler's gift".<sup>22</sup> Whereas the Nobel Prize winner Albert Einstein quickly received a high position at the Institute for Advanced Studies in Princeton (USA), his colleague and friend James Franck, a Nobel Prize winner too, worked 4-5 years in exile in the USA, existing only on grants before he was given a professorship at the University of Chicago, and the Nobel Prize winner Otto Meyerhof never received a position equal to his directorship in Heidelberg.

### **3.1. The Academic Assistance Council**

In 1936 the AAC published his first "List of Displaced German Scholars". In this list were in total 1624 scholars who were "dismissed" from their institutions in Germany by the summer of 1936. Among these 60 mathematicians were named (pp.51-54). This "List" is one of the basic documents for the research on exile.<sup>23</sup>

These 60 mathematicians fled to 15 different countries (14 of 60 to the USA, 8 to Great Britain). Simple entries in the "List" about the positions which were held by the refugees characterised the enormous difficulties of these mathematicians in finding an academic position in these countries. The AAC differentiated between "permanent position" (which meant a position for 1-2 years), "temporarily position" and "unplaced". 16 of the 60 mathematicians held a "temporarily position", 21 a "permanent position", and 23 mathematicians were "unplaced", for example Robert Remak from the Berlin University.

Pinl and Furtmüller (1973) investigated the fate of 127 displaced mathematicians. They fled to 16 different countries. 13 of them had to flee several times, from the USSR (Stefan Bergmann), from France (Emil Julius Gumbel), from Turkey Hilda Pollaczek-Geiringer and Richard von

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<sup>20</sup> On the history of the AAC resp. the SPSL see Beveridge (1959) and Hirschfeld (1988). The Academic Assistant Council published in 1936 the "List of Displaced German Scholars"; see Strauss (1987) and Strauss/Röder (1980-1983).

<sup>21</sup> About the organisations which helped German refugees see Erichsen, Regine. Fluchthilfe. In: Krohn (1998), Spalte 62-81.

<sup>22</sup> See Medawar/Pyke (2001), who overestimated the "success stories" and underestimated the exile as a deep break in life and scientific career of most of the emigrants.

<sup>23</sup> See Strauss/Röder (1980-1983).

## Mathematics

**LÜNEBURG, Dr. Rudolf**, Assistant; b. 03., single. (English, French, Dutch.) 1931/33: Assistant Mathematisches Institut, Göttingen University; since 1934: Utrecht University. SPEC.: *Pure Maths.; Calculation of Probability; Differential Equations.* Temp.

**MAHLER, Dr. Kurt**, Assistant; b. 03., single. (English, French, Italian, Russian, Dutch.) 1927/28: Assistant Göttingen University; 1928/33: Researcher Göttingen and Frankfurt Universities; 1933/34: Honorary Research Fellow Manchester University; 1934/36: Researcher and Lecturer Groningen University. SPEC.: *Pure and Applied Maths.; Theory of Numbers; Theory of Functions; Diophantine Approximations.* Unpl.

**MISES, Richard Edler von**, o. Professor; b. 83., single. (English, French, Turkish.) 1919/20: o. Prof. Frankfurt University; 1920/33: o. Prof. Berlin University and Director Institut für Angewandte Mathematik; since 1934: o. Prof. Istanbul University and Director Institute of Mathematics. SPEC.: *Pure and Applied Maths.; Theory of Probability; Aeronautics.* Perm.

**MOHRMANN, Dr. Hans**, o. Professor; b. 81., single. (English, French, Italian.) 1919/27: o. Prof. Basle University; 1927/31: o. Prof. Technische Hochschule, Darmstadt; 1931/34: o. Prof. Giessen University. SPEC.: *Geometry.* Unpl.

**NEMENYI, Dr. Paul**, see ENGINEERING.

**NEUGEBAUER, Dr. Otto**, a.o. Professor; b. 99. Till 1933: Privatdozent, later a.o. Prof. Göttingen University; since 1934: Copenhagen University. SPEC.: *History of Mathematics.* Perm.

**NEUMANN, Dr. Bernhard Herrmann**, Researcher; b. 09., single. (English, French.) 1931/33: Researcher Berlin University; 1933/35: Researcher Cambridge University. SPEC.: *Pure Maths.; Abstract Algebra; Group Theory, esp. Discontinuous Groups.* Unpl.

**NOETHER, Dr. Fritz**, o. Professor; b. 84., 1912/22: Privatdozent, later a.o. Prof. Technische Hochschule, Karlsruhe; 1922/33: o. Prof. Breslau University and Technische Hochschule; since 1934: State University, Tomsk. SPEC.: *Applied Maths.; Mechanics; Theoretical Physics.* Perm.

**PIRANI, Dr. Marcello**, see PHYSICS.

**POLLACZEK-GEIRINGER, Dr. Hilda**, Privatdozent; b. 95., married, 1 child. (English, French.) 1921/33: Assistant Institut für Angewandte Mathematik, Berlin University; 1927/33: Privatdozent Berlin University; 1933/34: Prof. Brussels University; since 1934: Dozent Istanbul

University. SPEC.: *Applied Maths.; Theory of Probability; Theoretical Mechanics; Practical Analysis; Statics; Geometry.* Temp.

**PRAGER, Dr. Willy**, o. Professor; b. 03., married, 1 child. (English, French, Turkish.) Till 1933: Privatdozent Göttingen University; 1933: o. Prof. Technische Hochschule, Karlsruhe; since 1934: o. Prof. Istanbul University. SPEC.: *Applied Maths.; Mechanics; Oscillation and Plasticity; Statics.* Perm.

**RADEMACHER, Dr. Hans A.**, o. Professor; b. 92., married, 2 children. (English, French.) 1919/22: Privatdozent Berlin University; 1922/25: a.o. Prof. Hamburg University; 1925/34: o. Prof. Breslau University; since 1935: Prof. Pennsylvania University, Philadelphia. SPEC.: *Pure Maths.; Theory of Numbers, esp. Algebraic; Theory of Functions; Mathematical Genetics.* Perm.

**RADO, Dr. Richard**, Researcher; b. 06., married. (English, French.) 1931/33: Researcher Berlin University; 1933/36: Researcher Cambridge University; since 1936: Assistant Lecturer Sheffield University. SPEC.: *Pure Maths.; Theory of Numbers; Analysis; Algebra; Combinations.* Temp.

**REMAK, Dr. Robert**, Privatdozent; b. 88., married. (English, French.) 1929/33: Privatdozent Berlin University. SPEC.: *Pure Maths. Group Theory; Geometry of Numbers.* Unpl.

**ROGOSINSKI, Dr. Werner**, a.o. Professor; b. 94., married, 1 child. (English, French.) 1923/36: Privatdozent, later a.o. Prof. Königsberg University. SPEC.: *Pure Maths.; Analysis; Theory of Functions; Fourier Series.* Unpl.

**ROSENTHAL, Dr. Arthur**, o. Professor; b. 87., single. (English, French.) 1912/30: Privatdozent, later a.o. Prof. Munich University; 1930/35: o. Prof. Heidelberg University. SPEC.: *Pure and Applied Maths.; Theory of Real and Complex Functions; Set Theory; Geometry.* Unpl.

**ROTHER, Dr. Erich**, Privatdozent; b. 95., married, 1 child. (English, French.) 1927/34: Assistant Technische Hochschule, Breslau; 1928/34: Privatdozent Breslau University. SPEC.: *Pure Maths. Analysis, esp. Differential and Integral Equations; Mathematical Physics.* Unpl.

**SADOWSKY, Dr. Michael A.**, Privatdozent; b. 02., married. (English, French, Russian.) 1927/31: Assistant, later Privatdozent Technische Hochschule, Berlin; 1931/34: Assistant Prof. Minnesota University, Minneapolis; since 1936: U.S.S.R. SPEC.: *Applied Maths.; Mechanics; Elasticity; Strength of Materials; Approximate Methods.* Perm.

List of Mathematicians (1 of 4 pp.), in: List of  
Displaced German Scholars, 1936

Mises.

### **3.2. From Berlin to Istanbul, from Istanbul to Boston**

Richard von Mises and many other German scientists went to Istanbul because of the special circumstances of the reforms under the Turkish president Kemal Atatürk (1881-1938). The Turkish government invited German scholars to the University of Istanbul, giving them professorships, and to hospitals appointing them directors of departments.<sup>24</sup> These invitations were made, accidentally at the exact moment the Nazis forced German-Jewish scientists and physicians to leave. Therefore, the "Notgemeinschaft im Exil", an organisation of emigres to help emigres, helped to "transfer" the displaced scientists to Turkey. This organisation coordinated the appointments and the travel.

Thanks to the policy of the Turkish government Richard von Mises went to Turkey where he was given the newly created chair of pure and applied mathematics at the University of Istanbul. In 1934 Hilda Pollaczek-Geiringer followed him from Brussels and also received a professorship. Here in Istanbul they became close partners. After the death of Kemal Atatürk in November 1938 the situation became worse and uncertain. Because of the new partnership between Turkey and Nazi Germany the emigres worried about their situation and their fate. Who could emigree again fly further, to another country.

In 1939 Hilda Pollaczek-Geiringer, her daughter and Richard von Mises reached the USA, they had escaped. Like many other refugees in 1939, not only from Germany but from occupied European countries too, they had to look for academic positions and to build a new life under completely different circumstances. The largest group of mathematicians who became emigres fled to the USA. Hilda Pollaczek-Geiringer and Richard von Mises had to start their scientific career a third time.

The working and living conditions in the USA were very different from those in Europe, and they were very different for men and women in the academia. For the first time, the situation was much more difficult for Hilda Pollaczek-Geiringer, the woman mathematician. In the American

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<sup>24</sup> On the exile in Turkey see Schwartz (1995).





Hilda Pollaczek-Geiringer-von Mises (after 1945)

University system there were no places for women scientists, not as professors. They could only teach at Women's Colleges, like Emmy Noether had done in Bryn Mawr, and like Hilda Pollaczek-Geiringer would do.

In 1943 Hilda Pollaczek-Geiringer married to Richard von Mises, their "wild marriage" was not acceptable for the Boston society. As a married woman she had more difficulties getting an academic position. Because of WW II both were involved in an enormous development of all fields of mathematics, and from 1942 until 1945 Hilda Pollaczek-Geiringer was involved in an Army training program to teach mathematics.

Again, both had to learn a new language, they had to learn to teach in English, in Turkey they had learned Turkish, in the first years they could teach in French.<sup>25</sup> They had to assimilate to the American academic lifestyle which was (and is) different from the German/European one.

Whereas Hilda Pollaczek-Geiringer was in Berlin as well as in Istanbul, acknowledged as a mathematician of her own, in the USA she became more and more the "classical" women's role - the wife and the secretary, later the widow - of the famous Richard von Mises. Max von Laue, her former colleague at the Philosophical Faculty of the Berlin University, wrote about his visit in the USA in 1948 in a letter to his friend Lise Meitner, another former colleague of Hilda Pollaczek-Geiringer and a comrade in exile, that he met many emigres, and he mentioned Hilda Pollaczek-Geiringer as the former secretary of Richard von Mises.<sup>26</sup> Only in recent times Hilda Pollaczek-Geiringer is acknowledged again as a woman mathematician and an extraordinary woman scientist who belonged to the first group of women Privatdozenten at German Universities in the legendary 1920s.

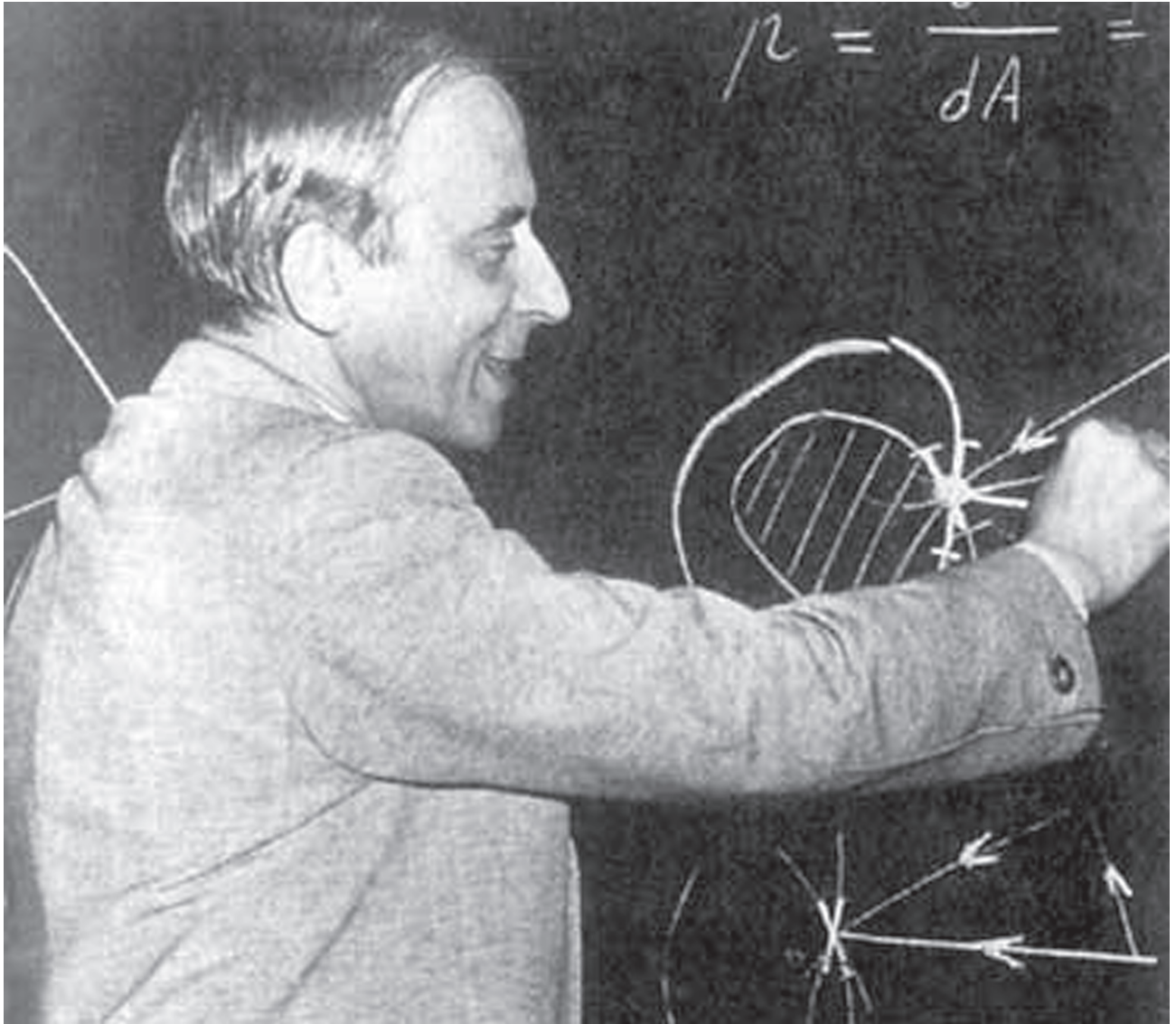
### **3.3. After WW II**

When Nazi Germany lost WW II which destroyed most of Europe, including the European part of the USSR, and had signed the capitulation on May 8, 1945, most of the emigres looked back to their former country. They had as different feelings as they had before 1933. The few leftwings among them (like the mathematician Emil Julius Gumbel) were interested in the development of a new Germany, a better one and a democratic one. And they were eager to help, but they were not called on. Other mathematicians wanted to have no contact after all that happened, especially because of the Shoah.

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<sup>25</sup> See Binder (1992, 1995), letters of Hilda P.-G.

<sup>26</sup> Max von Laue to Lise Meitner, 27.8.1948, in: Lemmerich (1998), S.523 (S.520-523). Von Laue wrote that he met "übrigens" in Cambridge "v. Mises und Frau (seine frühere Sekretärin)."



Hilda Pollaczek-Geiringer and Richard von Mises had ambivalent feelings toward Austria and Berlin. They were interested in news and in contacts but they did not want to visit the old continent. Richard von Mises lived only 8 years after the end of WW II. Between 1947 and 1953, when he died, a new war was going on, the cold war began in 1947. In the USA the McCarthy regime terrified the people, among them scientists like Robert Oppenheimer and his brother, former participants in the Antifascist League. Therefore, it was difficult to diagnose the future development in Germany, to have contacts to former colleagues in both parts of the divided Germany.

In 1948 Max Dehn (1878-1952), a mathematician and an emigree who lived first in Norway and after 1940 in the USA, wrote a letter to the German Mathematical Society in which he explained openly:

"Aber der Deutschen Mathematiker Vereinigung kann ich nicht wieder beitreten. Ich habe das Vertrauen verloren, daß eine solche Vereinigung in Zukunft gegebenen Falles anders handeln wird als 1935. Ich fürchte, daß sie einer unrechten, von außen kommenden Maßnahme nicht widerstehen würde. Die D.M.V. hat keine so ungeheuer wichtigen Werte zu betreuen. Daß sie sich 1935 nicht aufgelöst hat, und nicht einmal eine große Reihe von Mathematikern austrat, bewirkt bei mir diese ablehnende Haltung. Ich habe keine Angst, daß die neue D.M.V. wieder Juden rauswerfen wird, aber vielleicht werden es demnächst sogenannte Kommunisten, Anarchisten oder 'Farbige' sein.

Der Kontakt mit Deutschland, speziell auch mit deutschen Mathematikern liegt mir sehr am Herzen.

Mit den besten Grüßen ... verbleibe ich

Ihr sehr ergebener

Max Dehn"<sup>27</sup>

Some years after the capitulation of the Nazi regime in May 1945, the Universities were opened again, the Kaiser Wilhelm Society became the Max Planck Society (1948). Regrettably, there was no recall of the former colleagues. During the 1950s some of the displaced scientists had

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<sup>27</sup> Max Dehn to E. Kamke resp. to the DMV, 13.8.1948, in: Max Dehn Papers, box 2, No.55, Archives of American Mathematics Austin, The University of Texas at Austin; quot. by Siegmund-Schultze (1998b), p.318.



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HARVARD UNIVERSITY  
DIVISION OF ENGINEERING SCIENCES

R. v. Mises  
Gordon McKay Professor of Aerodynamics  
and Applied Mathematics

Pierce Hall  
Cambridge 38, Massachusetts  
15. September 1950

Herrn Professor J. Stroux  
Praesident der Deutschen Akademie der Wissenschaften  
Berlin.

Sehr geehrter Herr Kollege :

Ihr freundliches Schreiben vom 9. Juli ist, da es unvollständig adressiert war, mit sehr grosser Verspätung in meine Hände gelangt. Ich danke Ihnen für Ihre Mitteilung und fühle mich durch die Wahl zum auswärtigen Mitglied der Akademie über Verdienst geehrt. Sehr gerne würde ich die Wahl in Erinnerung an meine Berliner Lehrtätigkeit annehmen und damit das Band, das mich lange Zeit mit dem deutschen wissenschaftlichen Leben verknüpft hat, wieder anknüpfen.

Leider sind die gegenwärtigen Verhältnisse in Deutschland sowohl wie in diesem Lande derart, dass die Annahme einer solchen Ehrung als eine politische Kundgebung von meiner Seite ausgelegt werden kann. Ich bin mir bewusst, dass eine solche Interpretation unberechtigt ist, aber sie ist tatsächlich in mehreren Zeitungen und vonseiten amerikanischer Behörden geäussert worden. Ich habe es mir Zeit meines Lebens zur Regel gemacht, mich von jeder politischen Tätigkeit fernzuhalten und keiner Vereinigung anzugehören, die irgendwie mit politischen Ideologien befasst ist.

So leid es mir tut, sehe ich mich daher gezwungen, die ehrenvolle Wahl abzu-



contacts to Germany (to the Federal Republic of Germany strictly speaking) only through lawyers and the bureaucracy of the Max Planck Society and the West-German Universities because of the so-called compensation (in German called "Wiedergutmachung"). Mostly it was a nightmare full of suffering - for the displaced scientists, not for their "Aryan" colleagues.<sup>28</sup>

Beginning in the 1950s some new scientific contacts were established and some scientists met one another at colloquia and symposia in different countries. But for a long time in their former Institutions they were "forgotten".

While the Berlin University, the former Friedrich-Wilhelms-Universität and now the Humboldt-Universität, where Richard von Mises was a professor, made not a single contact to him, the Berlin Academy tried to elect him as Corresponding Member.

The Berlin Academy of Science, the former Royal Prussian Academy, then Prussian Academy and now German Academy of Science was one of the oldest and famous Academies in Germany. Opened again in 1946, and located in East Berlin, the members of the Academy elected in June 1950 about 12 scientists as new Corresponding Members. They elected among them the mathematicians Pavel S. Aleksandrov (1896-1982) and Ivan M. Vinogradov (1891-1983) from the USSR and John von Neumann (1903-1957) and Richard von Mises (1883-1953), former colleagues in Berlin, from the USA.<sup>29</sup> The president of the Academy, the philologist and professor at the Berlin University Johannes Stroux (1886-1954), wrote a letter on July 9, 1950, to Richard von Mises, informing him about the election. Richard von Mises got this letter only some time later, and in his answer on September 15, 1950, he wrote that he couldn't become a member of the Berlin Academy in East Berlin because of the political circumstances - in the USA. He openly wrote:

"Leider sind die gegenwärtigen Verhältnisse in Deutschland sowohl wie in diesem Lande derart, dass die Annahme einer solchen Ehrung als eine politische Kundgebung von meiner Seite ausgelegt werden kann. Ich bin mir bewusst, dass eine solche Interpretation unberechtigt ist, aber sie ist tatsächlich in mehreren Zeitungen und vonseiten amerikanischer Behörden geäußert worden. ...

Ich bitte Sie, den Mitgliedern der Akademie zur Kenntnis zu bringen, dass meine Hochschätzung für die Akademie unvermindert ist und dass ich nur unter dem Zwang der äusseren Umstände auf die Annahme einer Wahl verzichte, die ich in jeder Hinsicht als eine Auszeichnung

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<sup>28</sup> See Schüring (2006), Vogt (2002).

<sup>29</sup> See Archive BBAW: Bestand AKL, Personalia Nr.679.



HARVARD UNIVERSITY  
DIVISION OF ENGINEERING SCIENCES

lehnen. Ich tue es mit grossem Bedauern und in dem vollen Bewusstsein, dass dies einen grossen Verlust für mich bedeutet. Ich bitte Sie, den Mitgliedern der Akademie zur Kenntnis zu bringen, dass meine Hochschätzung für die Akademie unvermindert ist und dass ich nur unter dem Zwang der äusseren Umstände auf die Annahme einer Wahl verzichte, die ich in jeder Hinsicht als eine Auszeichnung empfinde.

In vorzüglicher Hochachtung

Ihr sehr ergebener

R.v. Min



empfinde."<sup>30</sup>

The suggestion to elect Richard von Mises was written by Georg Hamel (1877-1954), Richard von Mises' professor in Brünn, who 1919 had held a professorship at the Technical College in Berlin-Charlottenburg, and he was elected a full member of the Berlin Academy in 1938. The suggestion (Wahlvorschlag) was signed by Erhard Schmidt (1876-1959), von Mises' colleague at the Berlin University and full member of the Academy since 1918, the mathematician Helmut Hasse (1898-1979), member of the Academy and professor in Hamburg, the astronomer Hans Kienle (1895-1975), member of the Academy and professor in Heidelberg, and the geophysicist Hans Ertel (1904-1971), later vice-president of the Berlin Academy.<sup>31</sup>

Georg Hamel and his colleagues wrote more or less nothing about the reasons why Richard von Mises, whom they wanted to elect as a member, was living in Boston, USA and not in Berlin or Vienna. The complete absence of any political explanation, the "great silence" on the past 12-15 years was very typical for the Germans at that time, both in East and West. It was critically commented on by many emigrees who visited parts of Germany in that time, for example, Hannah Arendt, Lise Meitner and Richard Courant. The Germans, the former "Aryans", behaved with a kind of collective silence. And in their letters to their former colleagues, the "Non-Aryans" who had to escape, they wrote likewise as if there had been no 12 years of the Nazi regime, as if it had never existed, as if it was only a short period when one had no contact, and nothing happened inbetween. This is also noticeable in the suggestion written by Georg Hamel:

"Herr von Mises ist einer der ganz wenigen Angewandten Mathematiker von Weltruf. Er verdankt diesen seinen überaus zahlreichen Arbeiten in einem weitgespannten Bereich der klassischen Mechanik, der Wahrscheinlichkeitsrechnung und anderer Gebiete der Angewandten Mathematik, der groszen (sic) Schärfe und Genauigkeit seiner Ausführungen sowie der dauernden Bedeutung einiger seiner Ergebnisse.

...

Seine Stellung wurde auch dadurch anerkannt, dass er seit ihrer Gründung die führende Zeitschrift für Angewandte Mathematik und Mechanik herausgegeben und zu hoher Blüte bringen konnte, bis er infolge der politischen Ereignisse die Redaktion abgeben musste.

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<sup>30</sup> Richard von Mises to Johannes Stroux, Boston, 15.9.1950, in: Archive BBAW: Bestand AKL, Personalia Nr.679.

<sup>31</sup> See Wahlvorschlag, Georg Hamel, Landshut (Bayern), 11.5.1950, in: Archive BBAW: Bestand AKL, Personalia Nr.679.



Das Gutachten würde einseitig sein, wenn es nicht noch der Leistungen auf dem Gebiet der Wahrscheinlichkeitsrechnung gedenken würde, in der von Mises mit einem wesentlich neuen Gedanken hervortrat. Weitere Leistungen aus der praktischen Mathematik schlossen sich an."<sup>32</sup>

Thanks to his former assistant and later colleague and wife Hilda Pollaczek-Geiringer, the books written by Richard von Mises were printed in English translations too, and they went through several editions. His papers are in the Archive of the Harvard University.

From Lemberg to Boston, from the town where he was born to the town with one of the most famous Universities, Harvard University, - this was the unusually successful path of an extraordinary mathematician as well as the "normal" path of a member of the Jewish people who survived the horrible first half of the 20th century. In Berlin, Richard von Mises worked 12 years, he worked another 20 years in exile. From the perspective of his successful life in Boston it could seem like one of the very rare "success stories" of German speaking emigres. Only further detailed research can tell us the truth behind the "success story", how sorry he was to leave Berlin, how often he worried, how difficult it was to escape. We don't know how difficult it was to learn several new languages, to live under different working conditions, to learn a new lifestyle. And he had to manage all these problems twice, in Turkey and in the USA.

Bringing his name back to Berlin with this newly established series of von-Mises-Lectures also means reading his books again, including the little booklet with his lecture of July 1930.

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<sup>32</sup> Georg Hamel, 11.5.1950, in: Ebenda.

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