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PHOTOGRAPHY

Emmy Noether made important contributions in abstract algebra, mathematical physics, topology and number theory in the prewar years.
(Photos: Courtesy of Beit Hatfutsot)

A great addition to German life

'Transcending Tradition' tells a story that begins with the virtual exclusion of Jewish mathematicians from German universities until the early 19th century, their gradually growing academic presence at the turn of the 20th century and their prominence in mathematics throughout the first three decades of the 20th century

• By CARL HOFFMAN

'I don't know whether or not mathematicians can be said to be happy people, but I do know that German Jewish mathematicians did not have happy lives."

That was the verdict of Prof. Dan Amir of Tel Aviv University's School of Mathematics at the recent opening of "Transcending Tradition: Jewish Mathematicians in German-Speaking Academic Culture" at Beit Hatfutsot, the newly relaunched Museum of the Jewish People in Ramat Aviv. This fascinating exhibition documents the up-and-down 100-year roller-coaster ride experienced by Jewish mathematicians in German-speaking countries during the years between the legal and political emancipation of the Jews in the 19th century and their persecution in Nazi Germany.

"Transcending Tradition" tells a story that begins with the virtual exclusion of Jewish mathematicians from German universities until the early 19th century, their gradually growing academic presence at the turn of the 20th century and their prominence in mathematics throughout the first three decades of the 20th century until their harassment and dismissal during the "Aryanization" of the universities in the 1930s.

The exhibition portrays in vivid detail the crucial role

Jewish mathematicians played in all areas of mathematics during the German Empire of the Kaisers from 1871 to 1918 and the subsequent Weimar Republic and highlights their persecution, emigration, flight or death after the Nazi seizure of power in 1933.

Setting the tone of the exhibition's opening ceremonies, German State Secretary Cornelia Quennet-Thielen remarked, "Until 1933, Germany was one of the world's leaders in the field of mathematics, along with France and the ascending USA. This rise would have been unthinkable without Jewish mathematicians and mathematicians of Jewish origin. They helped to shape mathematics in Germany and across the world. In 1933 Jewish mathematicians held one-third of all professorships in the field of mathematics at German universities. That same year, it was made impossible for them to work. Many of them were expelled, dispossessed and murdered. Jewish life was systemically destroyed. We are

left shaken whenever we think of the break with civilization that was the Shoah. I bow my head in shame and humility before the victims and before those who risked their lives to help them. It is an enduring responsibility for us and our children to remember."

"TRANSCENDING TRADITION" comes to Israel and Beit Hatfutsot after years of development and exhibition in Germany. It began in 1998 when the International Congress of Mathematicians held its first meeting in Germany since 1904. At that time the German Mathematical Society pledged to the congress that it would confront its past – particularly the summary expulsion of its Jewish members in the 1930s – and stage an exhibition commemorating some of the mathematicians who were persecuted during the "darkest period in German history."

Says Prof. Christian Bär, the society's current president,

For a long time we have researched and staged events about the Holocaust, and I think it's time to remember the achievements of Jews in Germany before that time

— Prof. Moritz Epple, director, 'Transcending Tradition'

Rebecka Mendelssohn was married to mathematician Gustav Dirichlet. Their homes in Berlin and Göttingen were meeting places for scientists and artists.

The first unbaptized, unconverted Jew to become a German university professor was mathematician Moritz Abraham Stern in 1859.

"I'm ashamed that the German Mathematical Society had not faced its role during the Nazi period. It took the society nearly 50 years after the end of World War II to explore its involvement in the discrimination against Jewish mathematicians in Nazi Germany. This exhibition is the fruit of a process that took nearly 50 years."

The first version of the exhibition was opened for the annual conferences of the German Mathematical Society in autumn 2006 in Bonn and in spring 2007 in Berlin.

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With the financial support of Deutsche Telekom Foundation and in cooperation with the Jewish Museum in Frankfurt, a redesigned traveling exhibition has been on display throughout Germany since May 2008. The current international exhibition, in English, was produced with the support of the German Ministry of Science, the Ministry for Education and Research and the Foreign Office. Not surprisingly, Israel was intended to be the first country outside of Germany to host the exhibition.

The show begins with the historical background of Jewish mathematicians in German-speaking lands. We are shown how Jewish mathematicians were active in the Middle Ages, studying the calendar and translating mathematical works from Arabic into Hebrew and Latin. These Jewish mathematicians worked only within their own communities, often isolated and in secret, regarded with suspicion by the larger Christian world around them.

We then see how some Jewish scientists were already trying to break out of the ghetto and into the broader academic world in the 18th century. We see German universities begin to accept a handful of Jewish students at the start of the 19th century, and discover that between 1810 and 1848 only 18 Jewish scientists were able to teach at a university after receiving their academic teaching qualifications. Seven of these Jews later became professors, including four who underwent baptism in order to obtain their professorships. The first unbaptized, unconverted Jew to become a German university professor was mathematician Moritz Abraham Stern in 1859.

The exhibition continues by showing us how, despite the elimination of legal hurdles in the mid-19th century, Jewish "emancipation" continued to be more de jure than de facto, as Jewish students and professors were met with unabated anti-Semitism by their non-Jewish fellow student peers and faculty colleagues. Still, these Jewish mathematicians were determined to "transcend tradition." They

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Mathematician Otto Blumenthal died in Theresienstadt.

Jewish mathematician Felix Hausdorff.

were determined to transcend the tradition of being members of a downtrodden and excluded minority group, determined to transcend the tradition of their own ethnic and religious "apartness" and most of all determined to break the fetters of traditional mathematical thinking and lay the foundations of modern mathematics.

We then wander through a gallery of people and places, exploring the lives and activities of Jewish mathematicians whose careers flourished during the later years of the imperial period and through the halcyon days of the Weimar Republic. We learn about their struggles and admire their achievements and contributions. We witness the emergence of world-class centers of mathematics – notably Berlin, Göttingen, Frankfurt and Bonn – and see how their rise was brought about either largely or exclusively through the work of Jewish mathematicians.

Göttingen, for example, achieved its international renown as the "Mecca of mathematics" largely through the influences of David Hilbert and Felix Klein, aided by a large number of significant Jewish mathematicians and physicists. Many of Hilbert's 73 doctoral students were Jewish, including Otto Blumenthal, Max Dehn, Felix Bernstein, Ernst Hellinger, Alfréd Haar, Richard Courant, Hugo Steinhaus and Jacob Grommer. Also at Göttingen during the prewar years was the world-famous Emmy Noether, who made important contributions in abstract algebra, mathematical physics, topology and number theory. She was one of the first to point out the possibilities of using modern algebra in topology. Göttingen's preeminence in the world of mathematics came to an abrupt, brutal end when its predominantly Jewish faculty of researchers and teachers was expelled in 1933.

What became of these Jewish mathematicians after the Nazis seized power? Fortunately, many were able to emigrate – to the United States, to the United Kingdom and to Palestine, as well as more far-flung destinations. A few were able to continue their former careers. Courant, for example, went to the US soon after being dismissed from Göttingen in 1933. He soon found himself entrusted with the task of organizing the mathematics department at New York University's Graduate School of Arts and Science. Courant's math department grew to institute proportions and became one of the world's leading centers for applied mathematics and mathematical analysis. In 1964 it was renamed the Courant Institute for Mathematical Sciences.

Other Jewish mathematicians did not fare as well. Unable to cope with the shock of being uprooted from everything familiar to them or to adapt to their new circumstances, some succumbed to depression and early deaths. Many were unable to find employment in the countries to which they were forced to flee. Neither the Hebrew University of Jerusalem nor the Technion in Haifa had the resources to absorb all of the expelled

German Jewish mathematicians who emigrated to Mandate Palestine. Yet even these mathematicians were more fortunate than Otto Blumenthal, who died in Theresienstadt; Paul Epstein, Felix Hausdorff, and Friederich Hartogs, all of whom committed suicide; and Robert Remak, who was murdered in Auschwitz.

Through documents, photographs and other media, the exhibition provides poignant witness to the professional and personal destruction of many of these German Jewish mathematicians. We are able to see, for example, how Hartogs was informed of his expulsion from the German Mathematical Society in a short letter from its president, saying simply, "Dear Professor, You can no longer be a member of the German Mathematical Society. I therefore advise you to declare your resignation from our association. Otherwise we shall announce the termination of your membership at the next opportunity. Our sincerest respect, The President." Professor Hartogs scribbled, "!Resignation! I hereby announce my resignation. HARTOGS" at the bottom and sent the letter back. He committed suicide in 1943.

PROF. MORITZ Epple is the director of the "Transcending Tradition" exhibition and one of its senior researchers. He says, "Personally, I feel that Germans still have a lot to work out and remember, especially to recall all of the fantastic German Jewish culture that was destroyed by the Nazis. So, for a long time we have researched and staged events about the Holocaust, and I think it's now time to remember the achievements of Jews in Germany before that time. Also to appreciate what has been lost by the intervention of the Nazis. In

fact, we dedicate this exhibition to all of the Jewish mathematicians who were not able to flee Germany in time after 1933."

When asked whether Germans today are growing tired of hearing about the Holocaust. Prof. Epple replies simply, "I'm not. I simply can't get tired of it," he continues. "It's a part of our life, our families. For me, it's still one of the strongest forces shaping our present in Germany today.

"Just to make an example for you, one of the questions that we historians of science are asking today and also historians of German society are asking is what exactly was the effect of Germans moving into the professional positions of all those who were driven out by the Nazis? And what impact did this group then have on postwar Germany when their careers continued? If you ask, for instance, about the mathematics professors in the year 1960, how many of these professors came into their first professorship during the Nazi period, as a result of the persecution and expulsion of Jewish professors? Then you will see that our recent past is so strongly shaped by the aftereffects of the Holocaust. And by the things that led to the Holocaust. I simply can't say that this is history. It's the present."

"Transcending Tradition: Jewish Mathematicians in German-Speaking Academic Culture" is showing at Beit Hatfutsot, the Museum of the Jewish People, until December 14; at the Technion's P.K. Hoenich Center for Art, Science and Technology in Haifa from December 19 to January 10; and at the National Library of Israel in Jerusalem from February 12 to March 2.
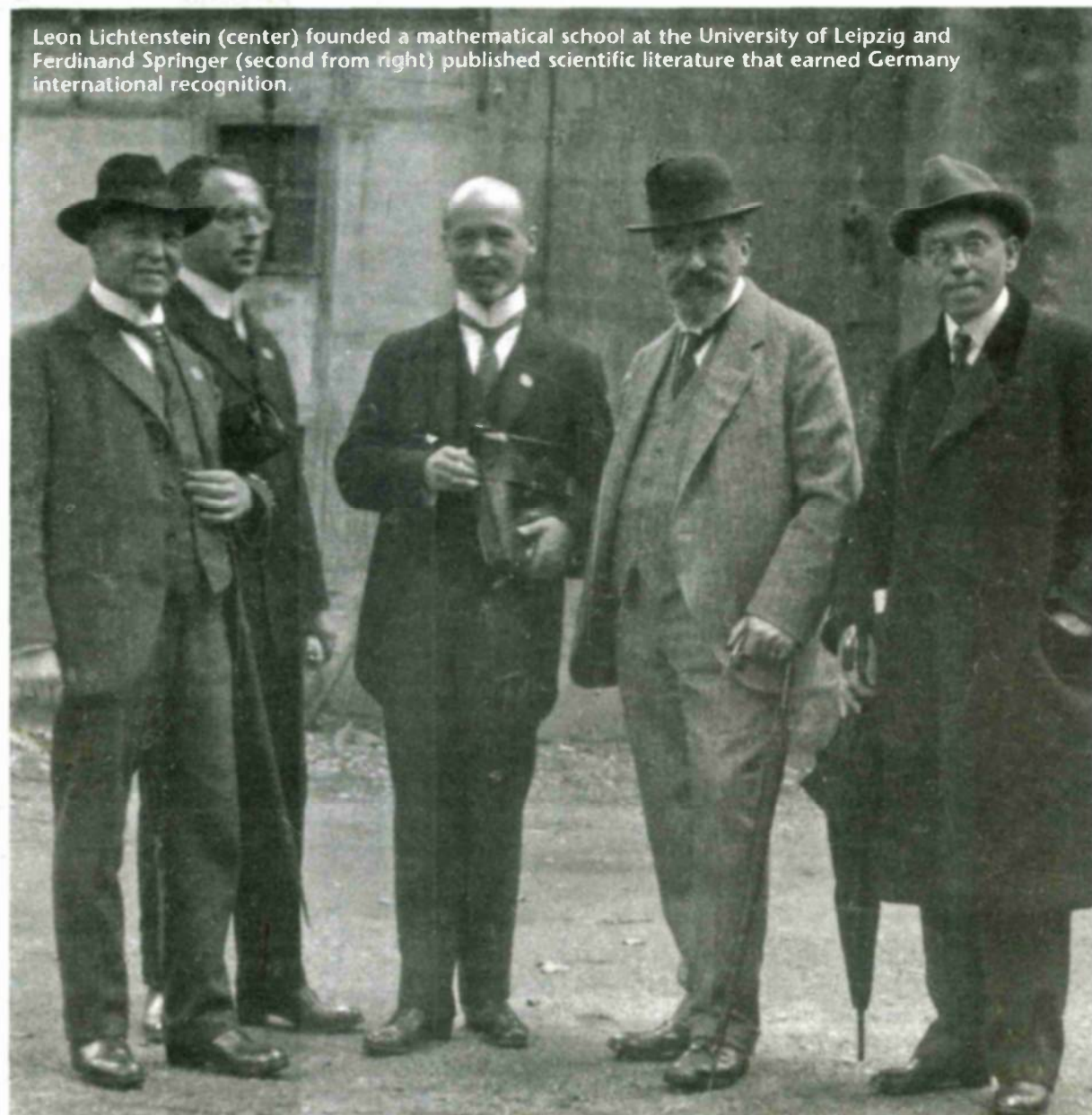
Leon Lichtenstein (center) founded a mathematical school at the University of Leipzig and Ferdinand Springer (second from right) published scientific literature that earned Germany international recognition.