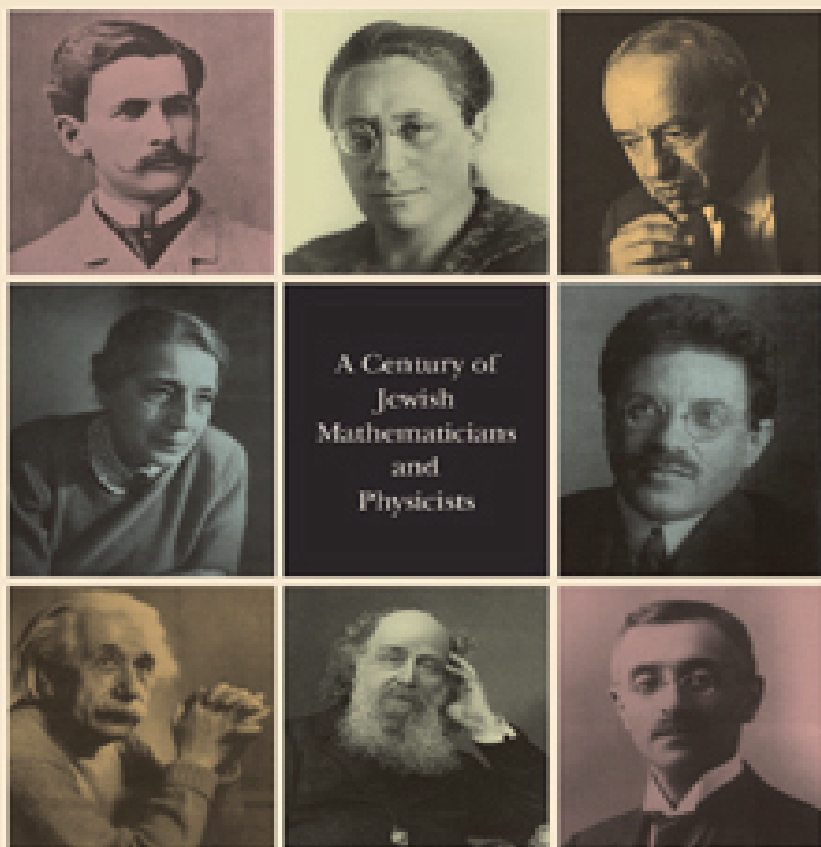


Driven to Innovate



Ioan James

Preface

There is extraordinary overrepresentation of Jews, relative to their numbers, in the top ranks of the arts and sciences, in the professions of law and medicine, and in many other activities. It is far greater than would be expected from the proportion of Jews in the general population, which is estimated to be about two-tenths of 1 per cent. Take physics, for example. Everyone knows about Albert Einstein, but there were so many others. Nobel Prizes, a convenient measure of excellence, have been awarded annually since 1901. In the first half of the twentieth century 14 per cent of the prize-winners in physics were Jewish, in the second half it was 32 per cent, and since then it has continued to rise. The first American Nobel laureate, in any field, was the Jewish physicist Albert Michelson. There have never been Nobel Prizes for mathematics, but the list of outstanding Jewish mathematicians is equally impressive.

Most of these Jewish mathematicians and physicists were victims of anti-Semitism in some form. They were confronted with prejudice, against which they had to struggle, especially when they were trying to get started. Some left their country of origin to start again in another country. A few left voluntarily, in search of better prospects, but many had to flee from pogroms in the territories controlled by the tsars or from persecution in countries where the Nazis enforced their racial policies. Most of those who stayed behind were murdered in the Holocaust.

Jews are reluctant to talk about Jewish accomplishment. This book was written by one who has neither the advantages nor the disadvantages of being Jewish, as a non-technical tribute to the contribution to mathematics and physics made by Jewish men and women. I have profiled a constellation of twenty Jewish mathematicians and fifteen Jewish physicists, from a wide range of countries, who were born in the century beginning in 1801. I write about them as human beings, trying to understand the difficulties

they encountered and how they surmounted them. Although they were chosen because of the variety of their life-stories, they were all in the forefront of research in their respective fields.

There may be no simple answer to the old question of why Jewish people have been so successful, particularly in the closely related fields of mathematics and physics, but various theories have been advanced in the literature. The individual profiles throw some light on the matter. Of course there were also outstanding Jewish scientists in other disciplines, such as astronomy, biology, and chemistry; some of the newer sciences, such as psychology, were pioneered by Jews. Of the people profiled here I have had the privilege of knowing, or at least meeting, ten of them, as well as many of the outstanding Jewish mathematicians and physicists of today. Among the many people, Jewish and otherwise, who have helped me in various ways I would particularly like to thank Simon Altmann, Judith Goodstein, David Hollinger, John Tyrer, and Beruriah Wiegand.