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### Book Review: School for Genius - The Story of the ETH, The Swiss Federal Institute of Technology, from 1855 to the Present

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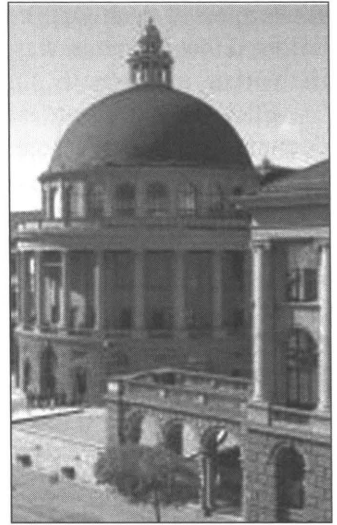
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Thomas Moore, *School for Genius – The Story of the ETH, The Swiss Federal Institute of Technology, from 1855 to the Present*. New York: Front Street Press, Rockville Centre, 2005. xii + 274 pp., 51 photographs and illustrations. ISBN 0-9725572-2-9. \$23.95.

In various rank listings of the world's universities most of the top places are occupied by institutions in the English speaking world. The Swiss Federal Institute of Technology in Zurich is one of the few breaking into these prestigious positions. (The sister institute in Lausanne is much younger and smaller, hence did not yet have time enough to grow to fame.) However, in many people's view, ETH in Zurich is not as well known in the United States as it should deserve. Because we live in an era when many American universities are expanding their international programs, it was fortunate that some people, among them ETH alumni, interested in furthering cultural relations between Switzerland and the United States,



took the initiative for a publication about this famous school. This endeavor may be considered somewhat as a belated birthday gift for its 150th anniversary. A former U.S. ambassador to Switzerland, Faith Whittlesey, who is now president of the American Swiss Foundation, was particularly instrumental in launching this project and in finding in Thomas Moore a well qualified writer to produce this book. She also contributed a foreword, which shows her great insight into Switzerland and love for this country.

The book's title reflects the fact that 21 Nobel Prize winners were or are in various ways connected with the ETH. Some have been alumni, as Wilhelm Röntgen, the discoverer of x-rays, others were on the faculty, as Albert Einstein, who also was an alumnus, and others received their prize later, after they had left, as the chemist Peter Debye. In addition, among the geniuses are many engineering alumni or faculty members, e.g. the two bridge builders Othmar Ammann, who designed in New York the George Washington Bridge and the Verrazano-Narrows Bridge, and Christian Menn, the architect of the Zapkin Bridge spanning the Charles River in Boston.

Thomas Moore does not claim to be a historian, but he certainly is a gifted writer. Hence, a considerable part of his work is based on secondary sources, which are listed in an appendix. In addition, the author interviewed many faculty, students and administrators of ETH. The first chapters present a survey of Swiss history and the development of its political system, that in 1848 resulted in the political structure of today's Switzerland. The intellectual and economical interaction of Switzerland with its neighbors, and especially the industrial revolution, made the establishment of a technical school a priority. Obviously, there was competition among the cantons where the school should be built. The object was to create immediately a first-class institution similar to German technical universities with faculty collected from all over Europe. Several were Germans living in exile due to the political unrest in Germany, among them the eminent architect Gottfried Semper, who also designed the school's main building and the astronomical observatory that still are in use.

The Federal Polytechnic School (later changed to the present name) started in 1855 with teachings in architecture, engineering, sciences, agriculture, forestry and humanities. Pharmacy at the beginning was incorporated in the school for technical chemistry, whereas mathematics and science were primarily taught to train teachers in these fields. In later years, the Swiss army called for a military academy which was attached to the ETH. When it opened its doors, the administration had assembled a faculty of 32 professors and a number of auxiliary lecturers. During the first decades the students were treated somewhat as if they were still in secondary school.

The author describes the growth of the school, the changes in its structure and its influence and interaction with the rapidly growing Swiss industry. The whole country needed highways, railways, bridges and tunnels, machines and electricity. Quite a bit of space is devoted to the achievements of faculty and alumni in science and engineering.

After World War II the school expanded rapidly, so that the quarters in the midst of the city had become too crowded. Therefore, land for a new campus was acquired on the Höggerberg on the outskirts of Zurich. Most of the sciences, as well as building science and architecture, are now located there.

Of special interest for many readers is an extensive account of the ETH, as it is today and will be in the future. We also learn a bit about student life and that the student body comprises over 12,000 undergraduate and graduate students; nearly one third are female, and about one fifth are from foreign countries. The tuition for Swiss and also for foreign students is only about a thousand dollars per year. The last part of the book gives an outlook about the future developments. The project of a "science city" is particularly

notable, with dormitories, apartments for students, faculty, staff and visitors, as well as shops, a hotel and restaurants.

It is in the nature of such a book, which was written to make this technological university known to a wider American public, that a bit of hagiography was infused here and there, or that not so favorable instances were omitted. For example, Einstein got appointed as professor only through considerable pressure from outside, against the strong opposition by the president and some of the faculty! Neither is mentioned that he did stay only for three semesters, before he left for Berlin. The book also devotes nearly three pages to the famous psychologist Carl Gustav Jung, although in fact his ties with ETH were quite loose. He only lectured one or two hours per week without drawing a salary from the ETH, although it gave him the title of professor.

It also would have been helpful, if a few people at ETH had read carefully the manuscript to eliminate some errors. For example, Paul Scherrer was not a theoretical, but an experimental physicist. Also, because the ETH received the right to award doctoral degrees only in 1908, Röntgen, although he had done all his studies at ETH, had to submit his dissertation in 1869 at the university of Zurich to obtain his Ph.D., not as stated at ETH. Such slight errors and distortions should not weigh heavily against the considerable value of this most informative book, which contains many interesting photographs. Anybody who wants to learn about this superb technological university, should read this well written work. Students who may contemplate to study at ETH will find the discussion about possible problems and benefits very useful. The readers will not only get some insight about this school, but also about relevant aspects of Swiss political and industrial life and history. Because the American Swiss Foundation felt that this book should find a place in many university libraries, it has donated to them a great number of copies.

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