

Selected Topics  
in History of Science

*Doing Science Internationally  
in the early 20<sup>th</sup> century*

Lecture 3

21 March 2024

# Doing Science Internationally in the early 20th century



# ***Science communication***

- Polished pieces of thought
  - books and articles
  - periodicals
- How do we know what scientists thought?
  - manuscripts (even fragments)
  - letters (if preserved)
- How do we know who talked to whom?
  - mentioning them in letters, reports and other ephemerals
  - word of mouth

# ***Science done internationally?***

- What does it mean?
  - Letter Exchange
  - Translations
  - Universities as meeting places
  - Studying abroad
- Obstacles to meeting in person:
  - Distance
  - Borders
  - ...

# ***1893: Columbian exhibition***

- Meeting of mathematicians: associated
- Organised by Felix Klein
- Two other participants from Europe:
  - Eduard Study
  - Norbert Herz
- Compare: Antonín Dvořák (1892-1895)
  - Journey nine days (train, ship, train)
  - for a stay months, not days, long

# ***American mathematics: offspring of German and British mathematics?***

James Joseph Sylvester  
(1814-1897)



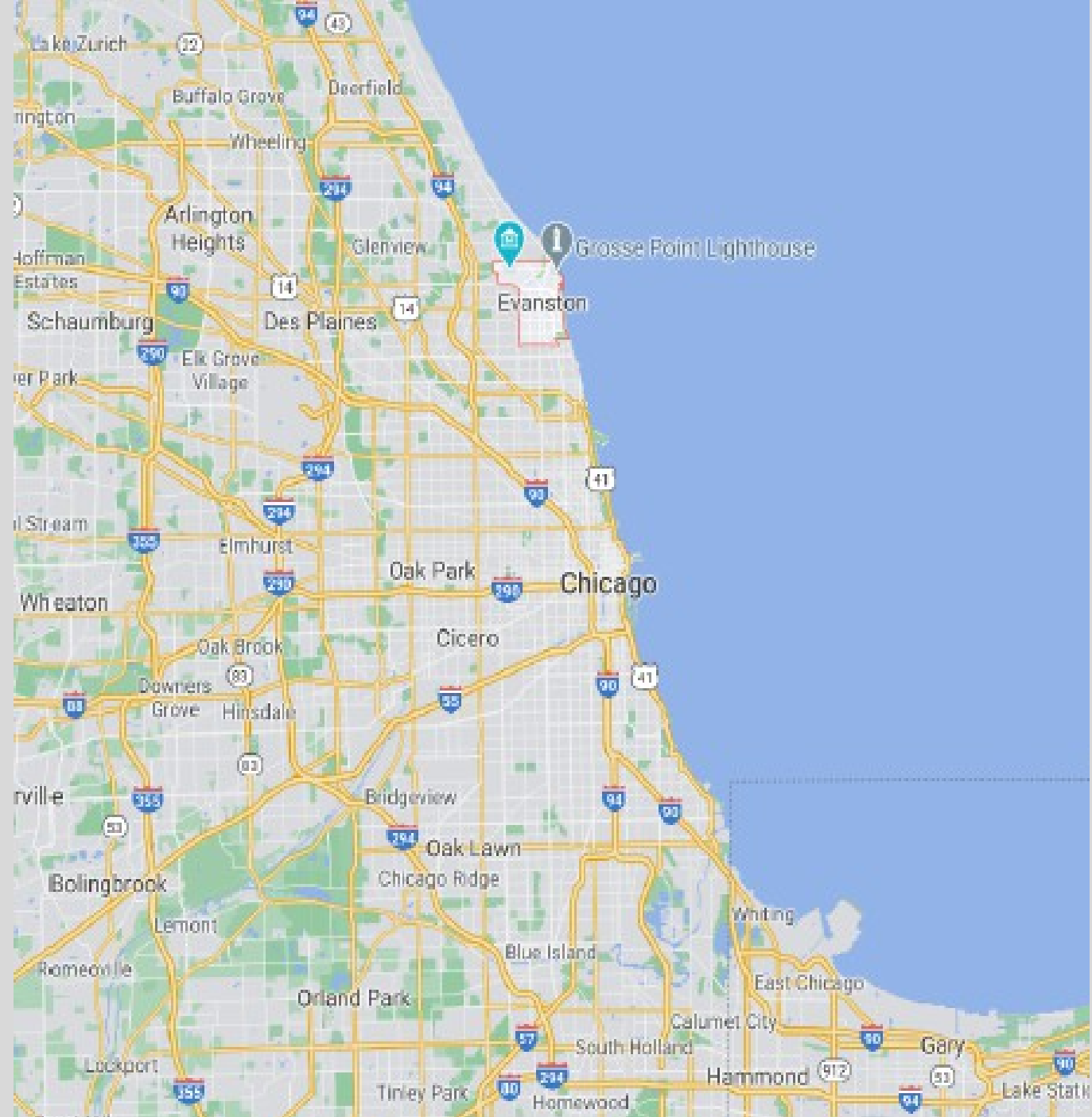
Felix Klein  
(1849-1925)



# ***Evanston, IL***

## ***1893***

- Lectures by Felix Klein
- for American mathematicians
- from 28 August
- to 9 September



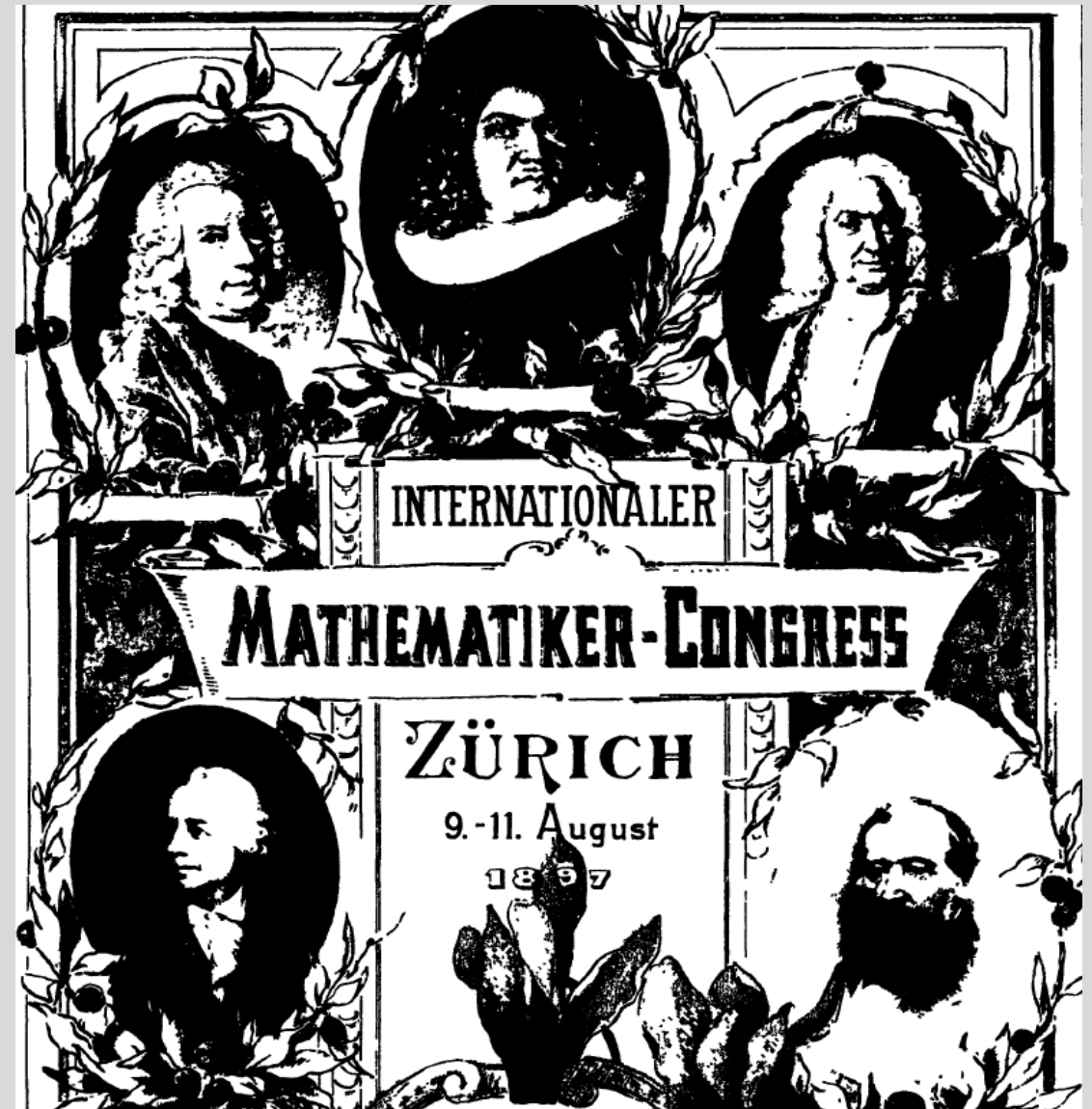
# ***International Congress of Mathematicians: Before the Great War***

- Zurich, Switzerland (1897)
- Paris, France (1900)
- Heidelberg, Germany (1904)
- Rome, Italy (1908)
- Cambridge, UK (1912)



# ***Zurich*** ***1897***

- Daniel Bernoulli (1700-1782)
- Jacob Bernoulli (1654-1705)
- Johann Bernoulli (1667-1748)
  
- Leonhard Euler (1707-1783)
- Jakob Steiner (1796-1863)



# Paris 1900

- Start of a new century
- David Hilbert (1862-1943)
  
- French mathematicians:
- Charles Hermite (1822-1901)
- Friend with M. Lerch (1860-1922)
  
- Henri Poincaré (1854-1912)

COMPTE RENDU  
DU  
DEUXIÈME CONGRÈS INTERNATIONAL  
**DES MATHÉMATIENS**

TENU A PARIS DU 6 AU 12 AOUT 1900.

PROCÈS-VERBAUX ET COMMUNICATIONS

PUBLIÉS PAR

**E. DUPORCQ,**

Ingénieur des Télégraphes, Secrétaire général du Congrès.



PARIS,

GAUTHIER-VILLARS, IMPRIMEUR-LIBRAIRE

DU BUREAU DES LONGITUDES, DE L'ÉCOLE POLYTECHNIQUE,  
Quai des Grands-Augustins, 55.

1902

# ***Heidelberg*** **1904**

- Remembering:
- Carl Gustav Jacobi
- (1804-1851)
  
- Affiliations:
- Towns, not countries

VERHANDLUNGEN  
DES DRITTEN INTERNATIONALEN  
**MATHEMATIKER-KONGRESSES**

IN HEIDELBERG VOM 8. BIS 13. AUGUST 1904.

HERAUSGEGEBEN VON DEM SCHRIFTFÜHRER DES KONGRESSES

**DR. A. KRAZER**

PROFESSOR AN DER TECHNISCHEN HOCHSCHULE KARLSRUHE I. B.

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MIT EINER ANSICHT VON HEIDELBERG IN HELIOGRAVÜRE.



# **Rome**

# **1908**

- Guido Castelnuovo (1865-1952)
- Representatives of math. societies and institutions:
- Academis of science
- Mathematical societies
- Smithsonian Institution
- Ministries
- Government representation



# ***Cambridge*** ***1912***

- Local organising committee
- International programme committee
- Introducers of sections
- (nowadays: chairs)

PROCEEDINGS  
OF THE FIFTH INTERNATIONAL CONGRESS  
OF  
MATHEMATICIANS  
(Cambridge, 22—28 August 1912)

EDITED BY THE GENERAL SECRETARIES OF THE CONGRESS

E. W. HOBSON

SADLEIRIAN PROFESSOR OF PURE MATHEMATICS IN THE UNIVERSITY OF CAMBRIDGE

AND

A. E. H. LOVE

SEDLEIAN PROFESSOR OF NATURAL PHILOSOPHY IN THE UNIVERSITY OF OXFORD

# ***Repercussions of the Great War***

- ICSU – international science council
- Abbreviations: in French (diplomatic language, language of post office, ...)
- Founded by the French and Belgians
- Excluded from international scientific communication: Germans

(also: Austrians, Bulgarians --- that is: those who lost)

# ***International Congress of Mathematicians in the Interbellum***

- Strasbourg, France (1920)
- Toronto, Canada (1924)
- Bologna, Italy (1928)
- Zurich, Switzerland (1932)
- Oslo, Norway (1936)

# Strasbourg 1920

- Introducing new international organisations
- Excluding Germans
- IMU: without Felix Klein, David Hilbert, and others
- Resistance (1924)

COMPTES RENDUS  
DU  
CONGRÈS INTERNATIONAL  
DES  
MATHÉMATICIENS

(Strasbourg, 22-30 Septembre 1920)

PUBLIÉS PAR

HENRI VILLAT

Professeur à l'Université de Strasbourg.



TOULOUSE  
IMPRIMERIE ET LIBRAIRIE ÉDOUARD PRIVAT  
Librairie de l'Université  
14, RUE DES ARTS (SQUARE DU MUSÉE)  
1921



# Toronto 1924

- First on the American continent
- Czech participation
- In parallel: conference on applied mathematics in Delft, NL – German scholars also invited

PROCEEDINGS  
OF THE  
INTERNATIONAL  
MATHEMATICAL CONGRESS  
HELD IN  
TORONTO, AUGUST 11-16, 1924

EDITED BY  
J. C. FIELDS  
RESEARCH PROFESSOR OF MATHEMATICS IN THE UNIVERSITY OF TORONTO  
WITH THE COLLABORATION OF AN EDITORIAL COMMITTEE

VOL. I  
REPORT OF THE CONGRESS  
LECTURES  
COMMUNICATIONS TO SECTIONS I AND II

TORONTO:  
THE UNIVERSITY OF TORONTO PRESS  
1928

# ***Bologna*** **1928**

- Germans were (finally!) also allowed to participate
- Diplomacy
- Is this an international congress?
- What about the ones before?
- Were they truly international?

ATTI  
DEL  
CONGRESSO INTERNAZIONALE  
DEI MATEMATICI

BOLOGNA 3-10 SETTEMBRE 1928 (VI)

TOMO I.  
RENDICONTO DEL CONGRESSO  
CONFERENZE



# Zurich 1932

- In parallel:
- Rockefeller foundation grants
- Institute for Advanced Study founded in Princeton
- (Oswald Veblen)

Verhandlungen des Internationalen Mathematiker-Kongresses Zürich 1932

I. Band

## Bericht und Allgemeine Vorträge

Im Auftrage des Komitees für den Internationalen Mathematiker-Kongress Zürich 1932  
herausgegeben von

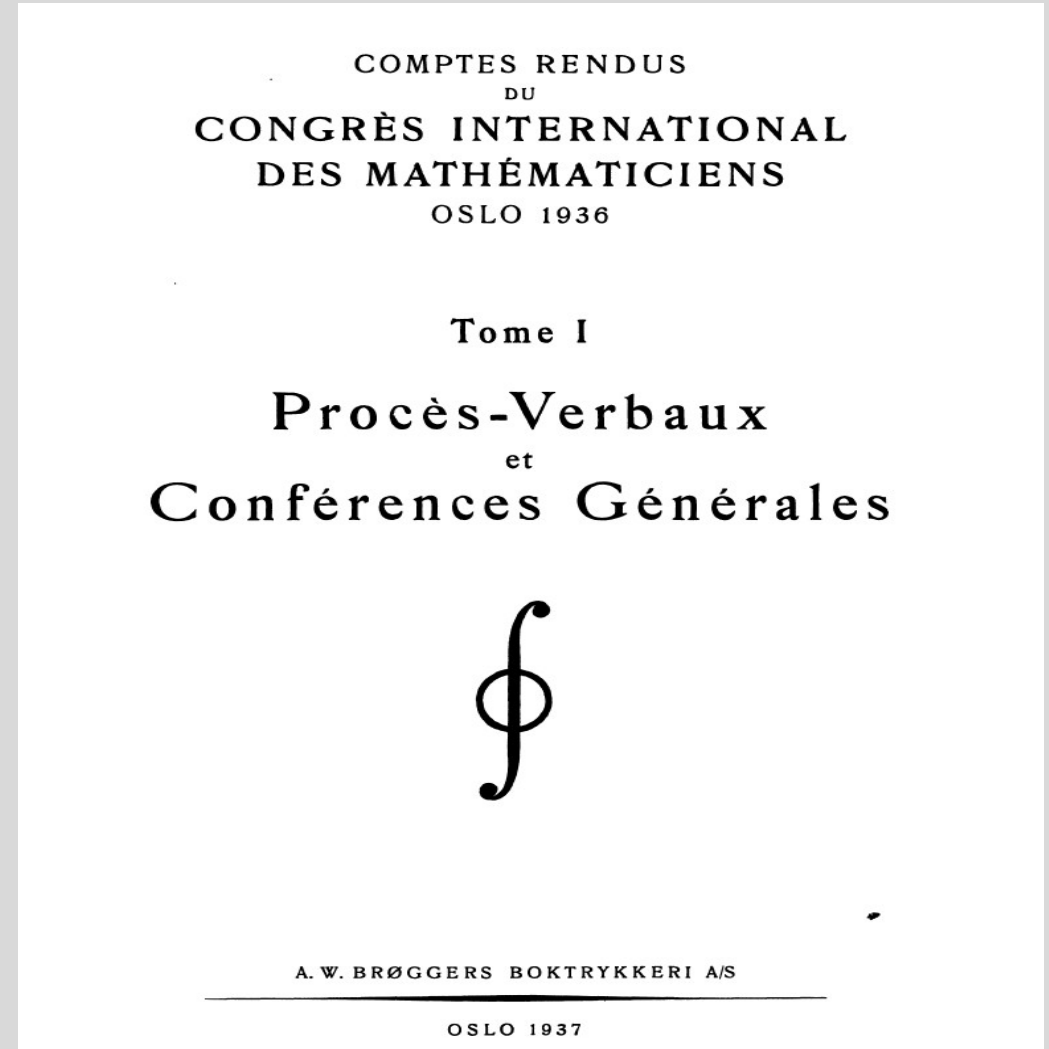
**Dr. Walter Saxer**  
Professor an der Eidg. Techn. Hochschule



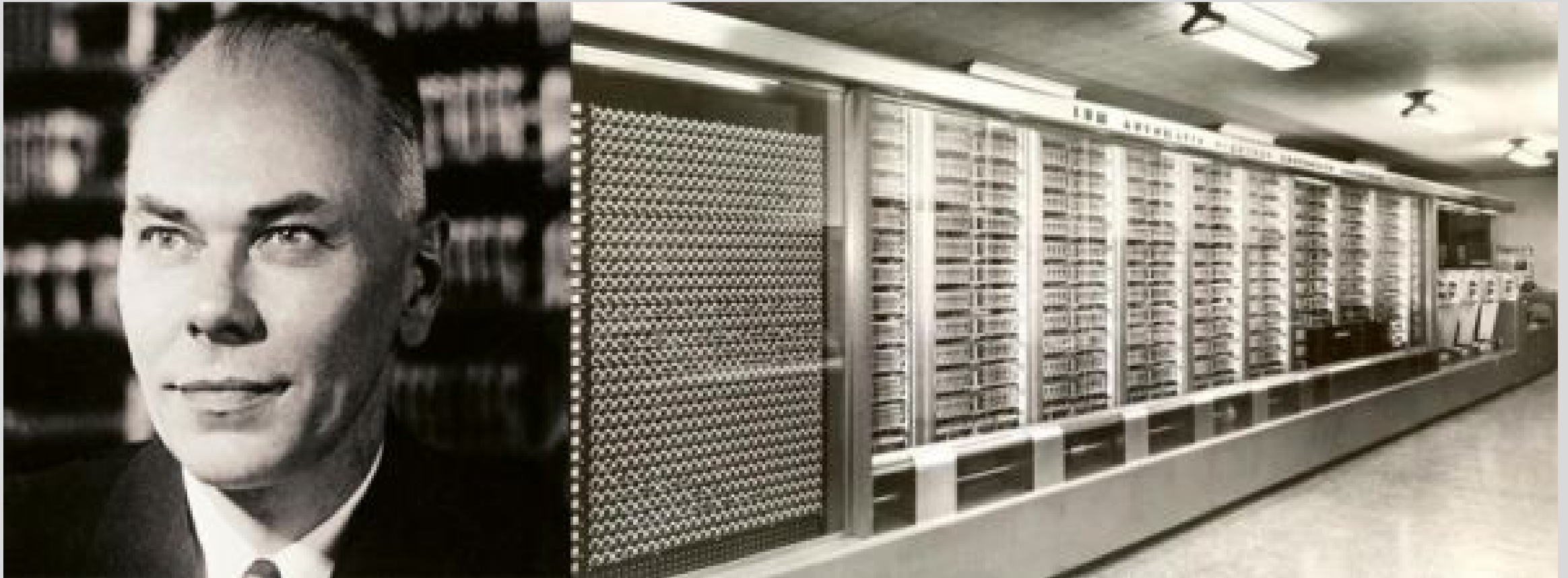
ORELL FÜSSLI VERLAG ZÜRICH UND LEIPZIG

# Oslo 1936

- Commemorating  
Niels Henrik Abel (1802-1829)
- Note the sign
- And the language
- Congresses growing in size



***Evening lecture  
by Howard Aiken at ICM 1950:  
Computing Machines***



# 1st International Congress of Mathematicians after WWII: Cambridge, MA / Harvard (1950)



<http://legacy-www.math.harvard.edu/history/icm1950/index.html>