

# Courant

Constance Reid

# Courant



SPRINGER SCIENCE+BUSINESS MEDIA, LLC

© 1996 Springer Science+Business Media New York

Originally published by Springer-Verlag New York, Inc. in 1996

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher.

Library of Congress Cataloging-in-Publication Data

Reid, Constance.  
[Courant in Göttingen and New York]  
Courant/Constance Reid.  
p. cm.

Includes bibliographical references and index.

ISBN 978-0-387-94670-2 ISBN 978-0-387-21626-3 (eBook)

DOI 10.1007/978-0-387-21626-3

1. Courant, Richard, 1888-1972. 2. Mathematicians—United States—  
Biography. I. Title.

QA29.C68R44 1996

510'.92—dc20

[B]

96-33749

Manufactured in the United States of America.

Printed on acid-free paper.

9 8 7 6 5 4 3 2 1

ISBN 978-0-387-94670-2 SPIN 10524569

*Korf erfindet eine Uhr,  
die mit zwei Paar Zeigern kreist,  
und damit nach vorn nicht nur,  
sondern auch nach rückwärts weist.*

*Korf a kind of clock invents  
where two pairs of hands go round:  
one the current hour presents,  
one is always backward bound.*

*From Christian Morgenstern's Galgenlieder,  
translated by Max Knight,  
University of California Press, Berkeley, 1963.*

---

## FOREWORD: THE EVOLUTION OF A TITLE

---

The story of how I came to write *Courant* is told in the first few pages of this book, but the reader may be interested to know why its original and cumbersome title, *Courant in Göttingen and New York: The Story of an Improbable Mathematician*, has become simply *Courant*.

Richard Courant (1888–1972) led a life that ranged far beyond his role as mathematician, teacher, and a unique kind of administrator. What interested me, however, was a limited aspect of his life. This was the story of a young German who as a student at the University of Göttingen fell under the spell of David Hilbert, one of the great mathematicians of this century, and the scientifically electric milieu that surrounded him—and who ultimately, against odds that would have deterred almost anyone else, built up what is now New York University's Courant Institute of Mathematical Sciences, the leading center of applied mathematics in the United States.

This story and the complex, contradictory personality of the man who was its unlikely protagonist gripped me. I wanted my title to define the limits of my book: *Courant in Göttingen and New York*. But then, as the book was going to press, that seemed too staid a title to sell; and K.O. Friedrichs, who had initially involved me in writing about Courant, suggested as a subtitle *The Story of an Improbable Mathematician*. I liked that very much; for Richard Courant was, if one ignores his indisputable mathematical gifts, a highly improbable kind of person to become a mathematician.

Over the years, however, I and my readers and even my publishers (in the double volume (*Hilbert–Courant*) have tended to drop both the geographical limitations in the title and the (hopefully) catchy subtitle. For to mathematicians, here and abroad, the name Courant—like the name Hilbert, although in a very different way—is a kind of mathematical concept as much as it is the surname of a mathematician. So in this edition, under the Copernicus imprint of Springer-Verlag, the title is, as probably it should have been all along, simply *Courant*.

San Francisco, California  
November 30, 1995

Constance Reid

Göttingen  
and  
New York  
AN ALBUM

I would like to express my appreciation to Natascha Brunswick and Nina Courant, who both furnished a number of pictures, and to each of the following for individual pictures: the Archiv für Kunst und Geschichte, Prof. Garrett Birkhoff, Elizabeth Schoenberg Brody, Nellie Friedrichs, Prof. Konrad Jacobs, Prof. Fritz John, Michael Lewy, *Life Magazine* (for the copyrighted photograph of Warren Weaver), Elisabeth Franck Lisco, the M.I.T. Historical Collections (for the picture of Norbert Weiner and Max Born), Prof. Jürgen Moser, Prof. George Pólya, Margaret Pryce-Born, Brigitte Rellich, Rockefeller University, Prof. Peter Swinnerton-Dyer and the Trinity College Library, Caroline Underwood and the School of Mathematics at the Institute for Advanced Study, Warren Weaver, F. Joachim Weyl, and Eva Toeplitz Wohl.



*Top: Felix Klein / Bottom: Alfred Haar, Franz Hilbert, Minkowski, . . . , the Hilberts, Ernst Hellinger*

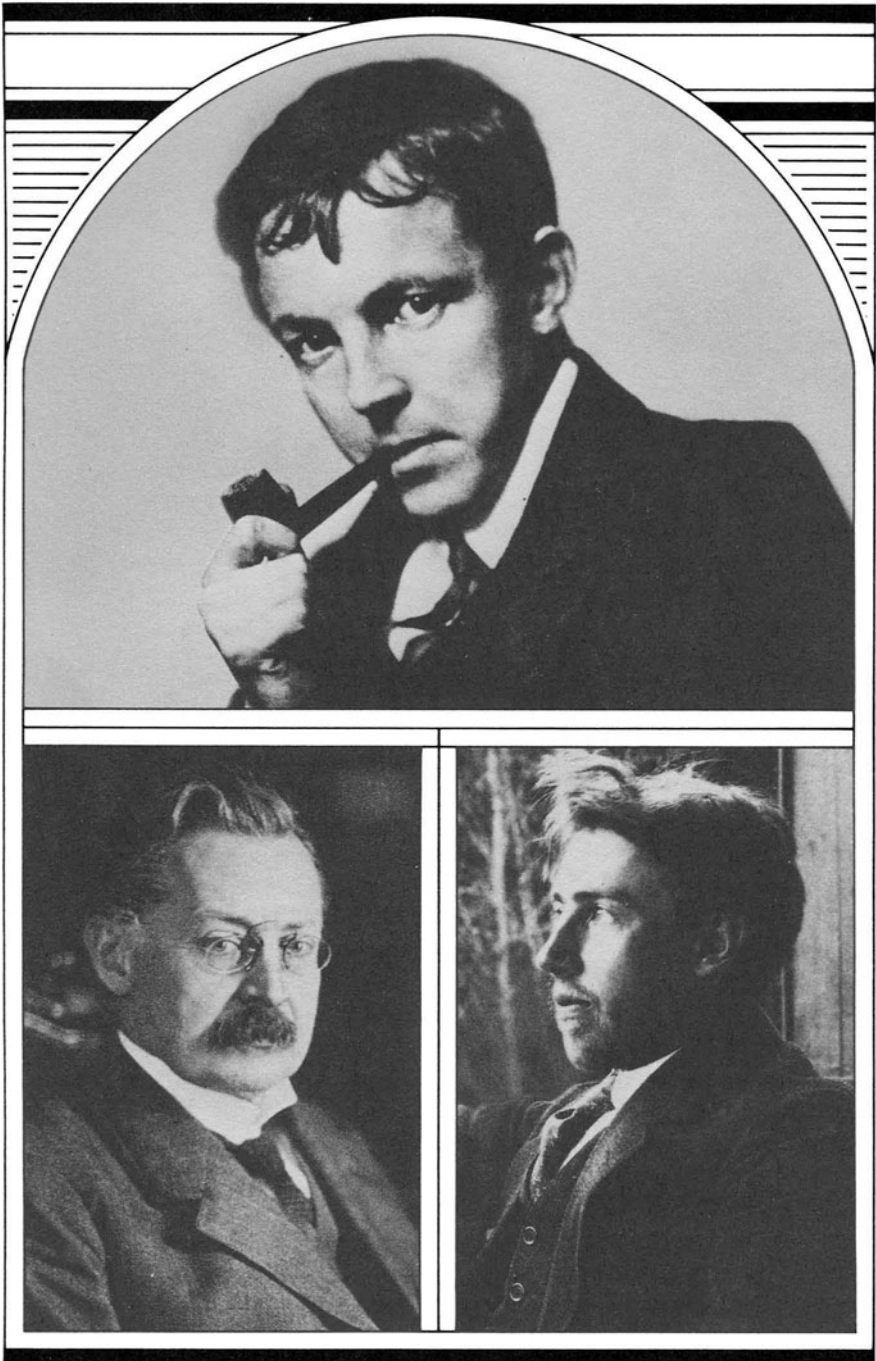




*Top: Courant as a student / Bottom left: Hermann Weyl / Bottom right: Nina Runge, later Courant*



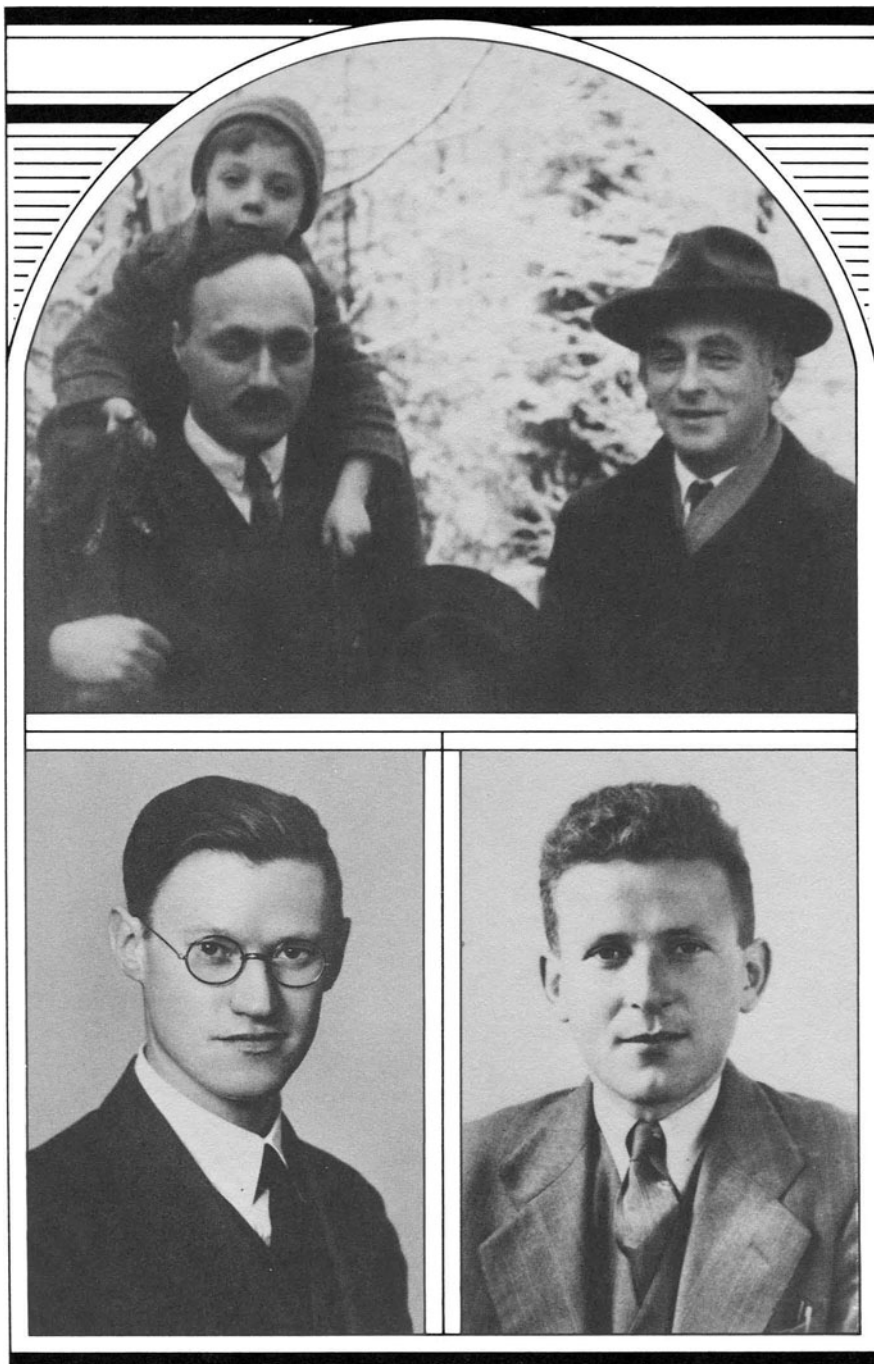
*Top: Edmund Landau and daughter Dolli / Bottom: Otto Toeplitz*



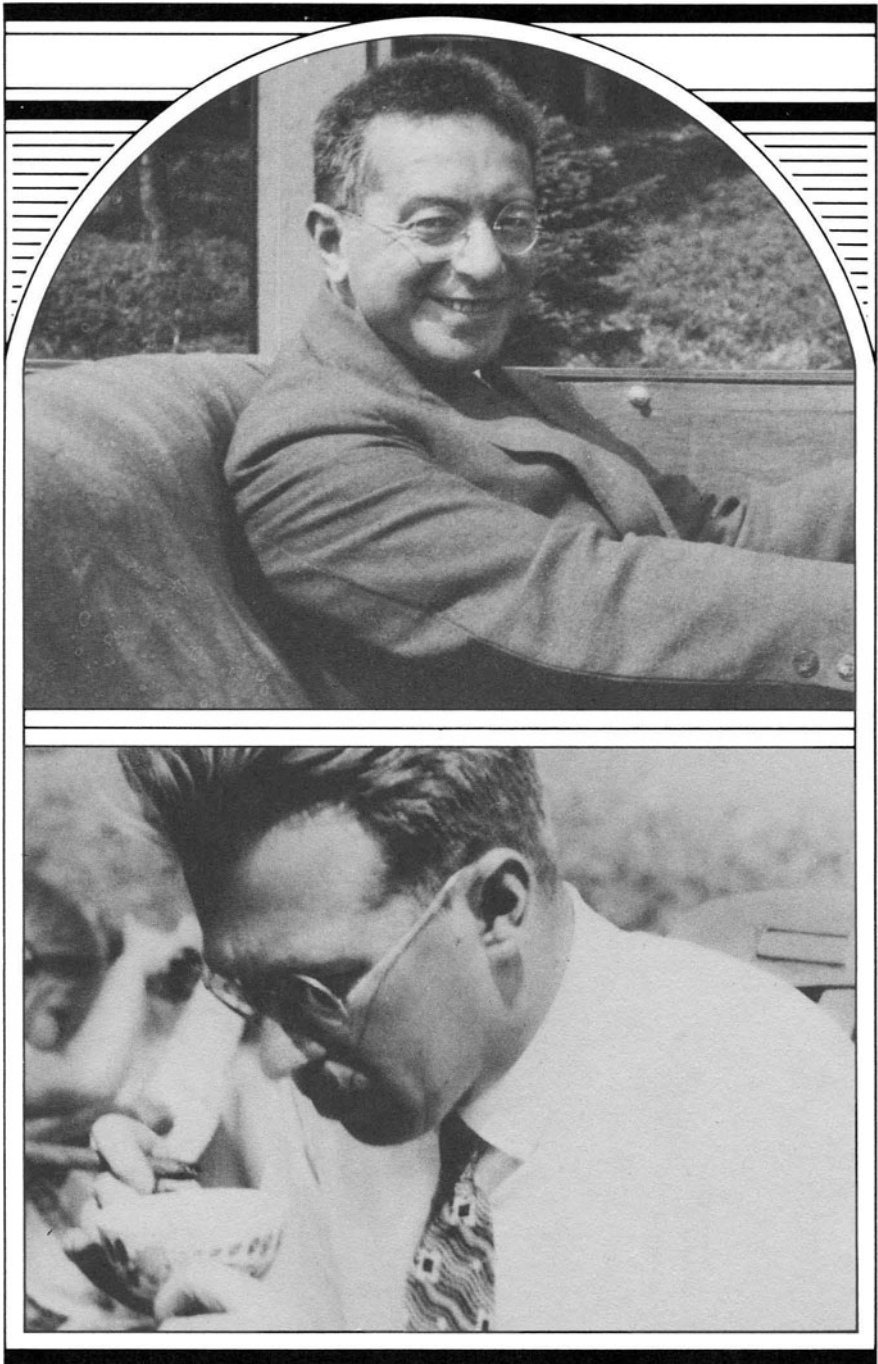
*Top: G. H. Hardy / Bottom left: Carl T. Runge / Bottom right: Harald Bohr*



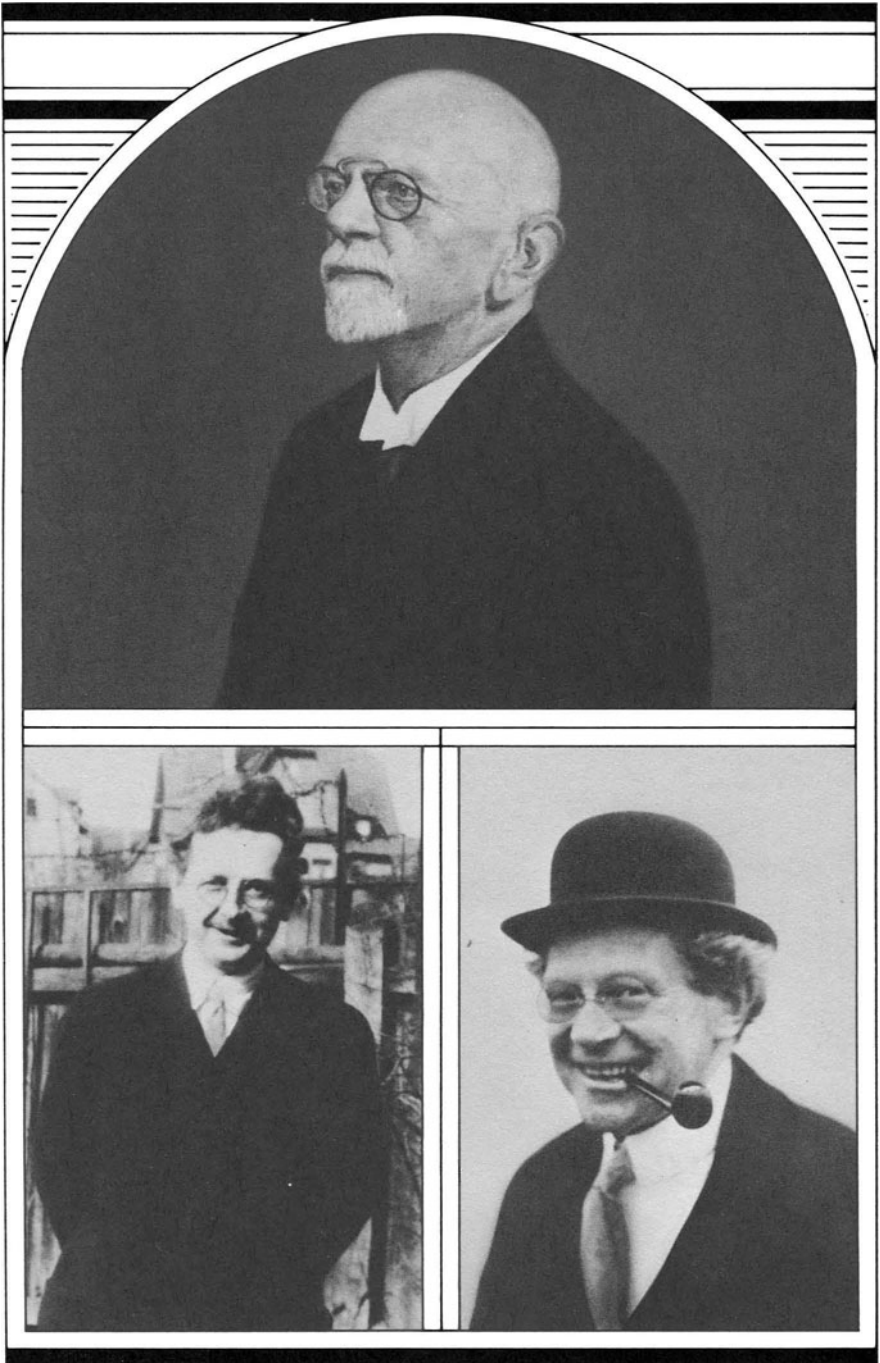
Courant in the trenches, 1915



*Top: James Franck (with Gustav Born) and Max Born / Bottom left: K. O. Friedrichs / Bottom right: Hans Lewy*



*Top: Courant in his first car, 1929 / Bottom: Otto Neugebauer*



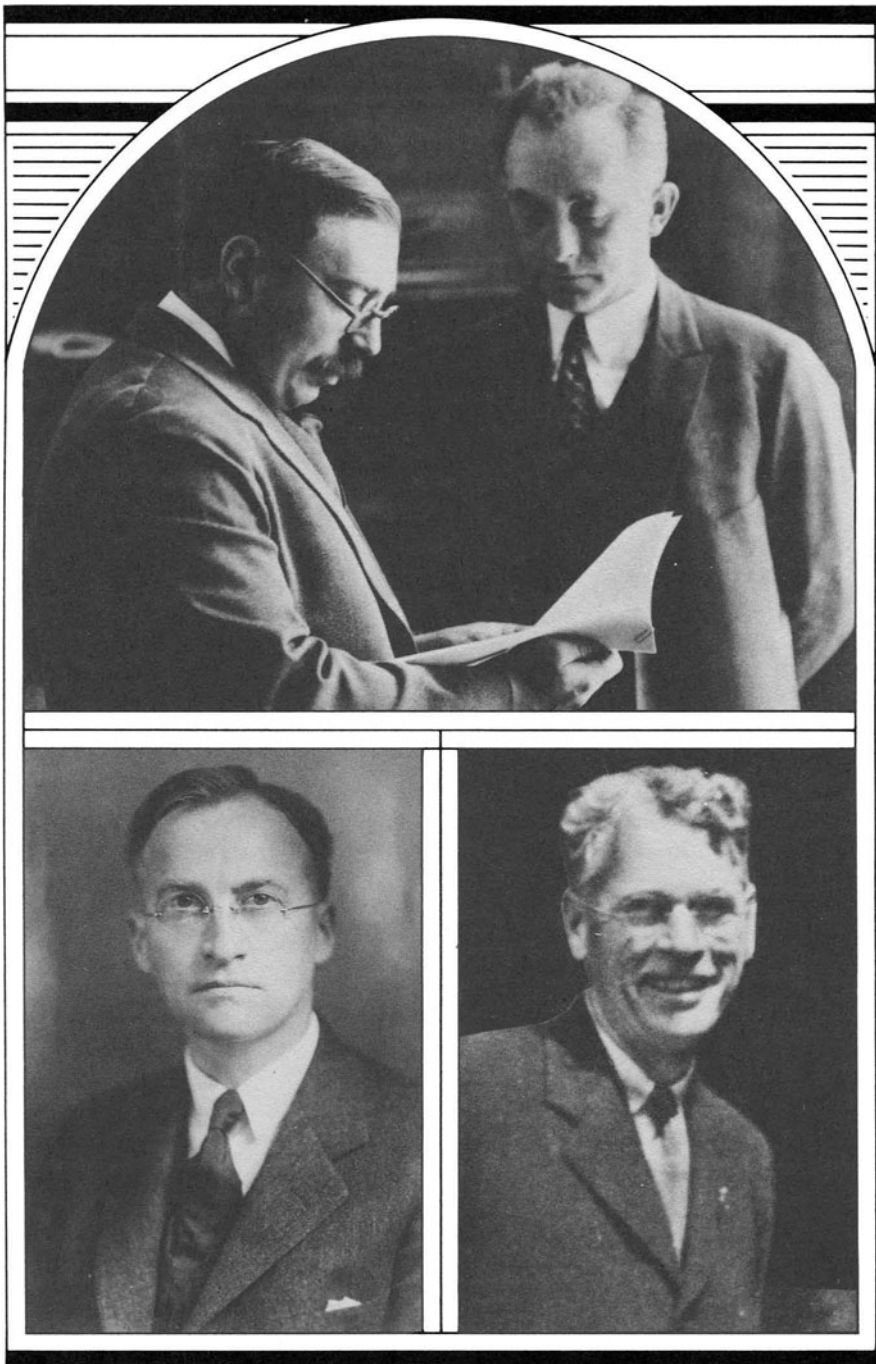
*Top: David Hilbert from painted portrait / Bottom left: Weyl / Bottom right: Gustav Herglotz*





**Emmy Noether**





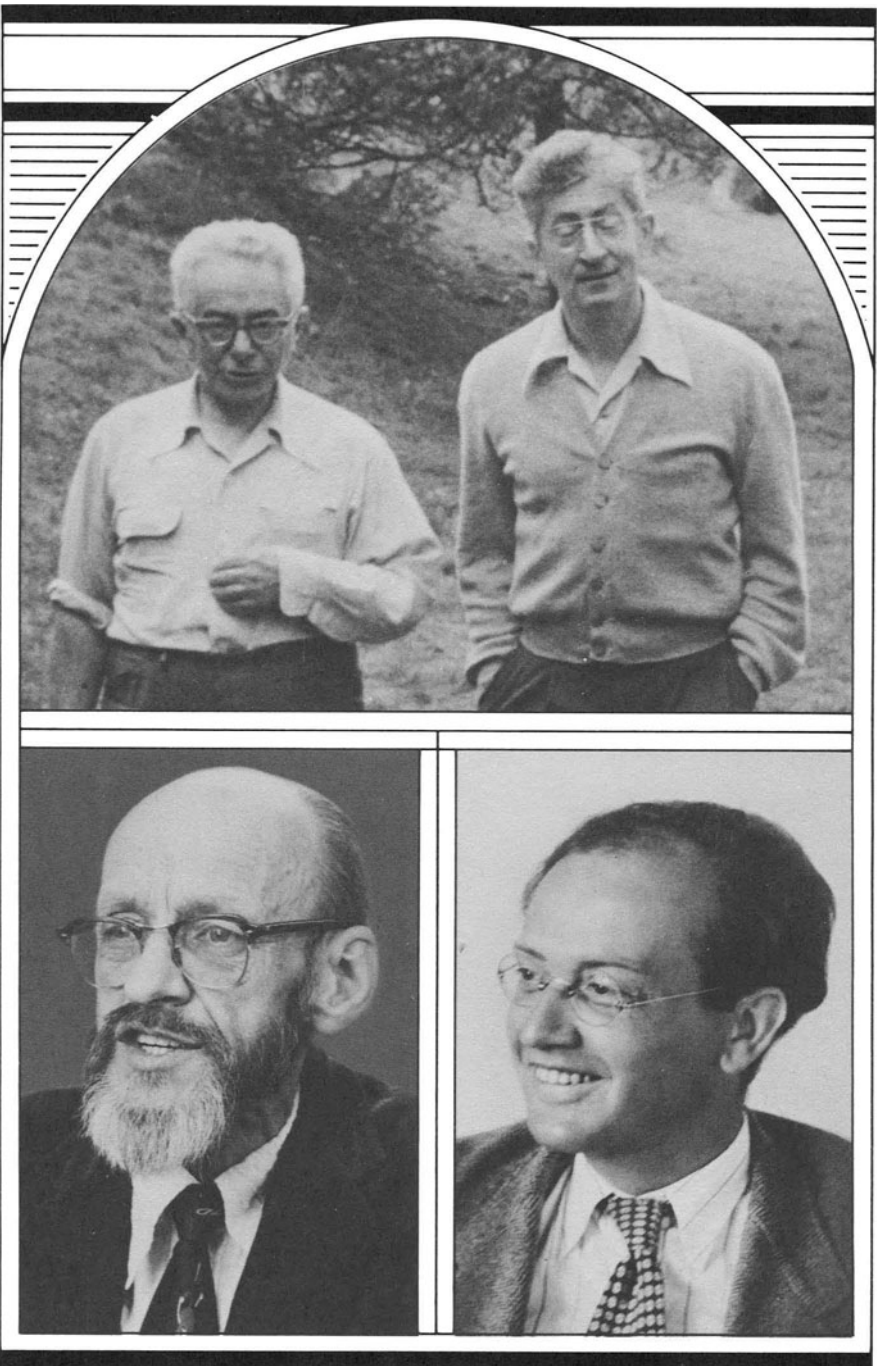
*Top: Norbert Wiener with Born / Bottom left: George D. Birkhoff / Bottom right: Oswald Veblen*



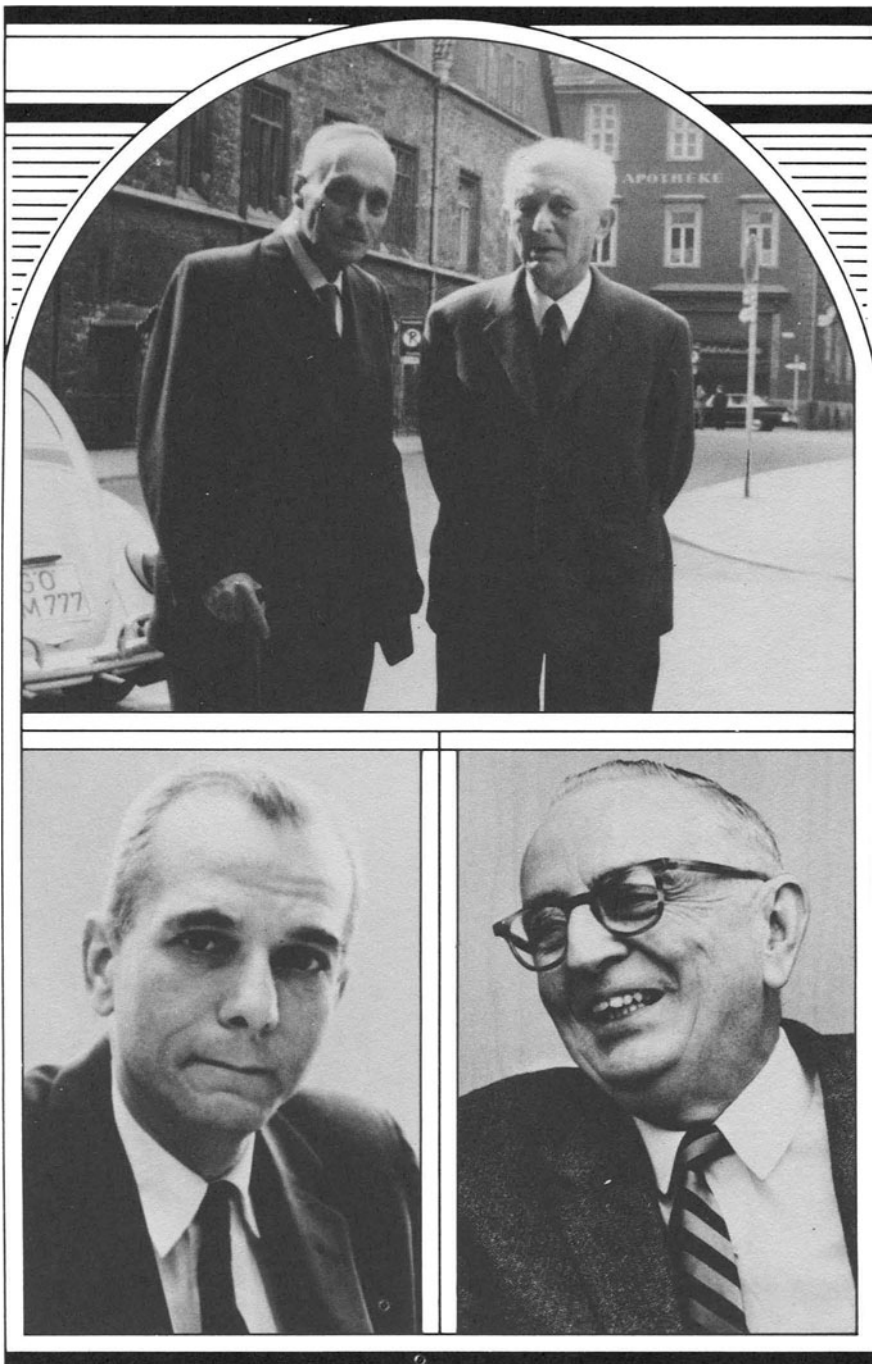
*Top: Courant, Landau, and Weyl / Bottom left: Carl Ludwig Siegel / Bottom right: Emil Artin*



Abraham Flexner



*Top: Courant and J. J. Stoker / Bottom left: Donald Flanders / Bottom right: Franz Rellich*



*Top: Franck and Born back in Göttingen / Bottom left: Fritz John / Bottom right: Warren Weaver*



*Top: Groundbreaking for Warren Weaver Hall / Bottom: Friedrichs and Courant*



**Courant in front of the Courant Institute of Mathematical Sciences, 1965**

# Courant