

**BULLETIN**  
OF THE  
**AMERICAN MATHEMATICAL SOCIETY**

EDITED BY

**RUDOLPH ERNEST LANGER**  
**DEANE MONTGOMERY**

**SAUNDERS MacLANE**  
**ELLIS B. STOFFER**

WITH THE ASSISTANCE OF

**E. G. BEGLE**  
**IRVING KAPLANSKY**  
**LEO ZIPPIN**

**R. H. BRUCK**  
**E. R. LORCH**

**R. H. CAMERON**  
**J. C. OXTOBY**  
**OTTO SZÁSZ**

**VOLUME 52**  
**JANUARY TO DECEMBER, 1946**

**PUBLISHED BY THE SOCIETY**  
**MENASHA, WIS., AND NEW YORK**

**The Gallegos Press**  
**George Banta Publishing Company**  
**Menasha, Wisconsin**

**BULLETIN**  
OF THE  
**AMERICAN MATHEMATICAL SOCIETY**

EDITED BY

RUDOLPH ERNEST LANGER  
DEANE MONTGOMERY

SAUNDERS MACLANE  
ELLIS B. STUFFER

WITH THE ASSISTANCE OF

E. G. BEGLE  
IRVING KAPLANSKY  
LEO ZIPPIN

R. H. BRUCK  
E. R. LORCH

R. H. CAMERON  
J. C. OXTOBY  
OTTO SZÁSZ

VOLUME 52, NUMBER 1  
JANUARY, 1946

PUBLISHED BY THE SOCIETY  
MENASHA, WIS., AND NEW YORK

## AMERICAN MATHEMATICAL SOCIETY

**Mail Address:** Low Memorial Library, 531 West 116th Street, New York 27, N.Y.,  
for the Secretary, Treasurer, Librarian, and Office Manager.

**Office:** Room 305, Low Memorial Library, 531 West 116th Street, New York 27, N. Y.

**President:** Professor T. H. Hildebrandt, University of Michigan, Ann Arbor,  
Mich.

**Secretary:** Professor J. R. Kline, University of Pennsylvania, Philadelphia 4, Pa.

**Associate Secretaries:** Professor W. L. Ayres, Purdue University, Lafayette,  
Ind.; Professor R. H. Bruck, University of Wisconsin, Madison 6, Wis.;  
Professor T. R. Hollcroft, Wells College, Aurora, N. Y.; Professor A. C.  
Schaeffer, Stanford University, Stanford University, Calif.

**Treasurer:** Professor B. P. Gill, College of the City of New York, New York 31,  
N. Y.

**Librarian:** Professor Arnold Dresden, Swarthmore College, Swarthmore, Pa.

**Office Manager:** Miss Evelyn M. Hull, Low Memorial Library, 531 West 116th  
Street, New York 27, N. Y.

**Managing Editor of the Bulletin:** Professor Saunders MacLane, 474 Widener,  
Harvard University, Cambridge 38, Mass.

**Managing Editor of the Transactions:** Professor A. A. Albert, University of  
Chicago, Chicago 37, Ill.

**Editors of Mathematical Reviews:** Professor Otto Neugebauer, Brown Univer-  
sity, Providence 12, R. I.; Professor M. H. Stone, Harvard University,  
Cambridge 38, Mass.; and Professor Oswald Veblen, Institute for Advanced  
Study, Princeton, N. J.

**Chairman, Colloquium Editorial Committee:** Professor G. T. Whyburn, Uni-  
versity of Virginia, Charlottesville, Va.

**Mathematical Surveys Editorial Committee:** Professor Nelson Dunford, Yale  
University, New Haven, Conn.; Professor A. W. Tucker, Princeton Uni-  
versity, Princeton, N. J.; Professor J. L. Walsh, Harvard University,  
Cambridge 38, Mass.

**Editors of American Journal of Mathematics:** Professor Richard Brauer, Uni-  
versity of Toronto, Toronto, Ont., Canada; Professor L. M. Graves, Univer-  
sity of Chicago, Chicago 37, Ill.; Professor F. D. Murnaghan, Johns Hopkins  
University, Baltimore 18, Md.; Professor Hassler Whitney, Harvard Uni-  
versity, Cambridge 38, Mass.; and Professor Aurel Wintner, Johns Hopkins  
University, Baltimore 18, Md.

THE BULLETIN OF THE AMERICAN MATHEMATICAL SOCIETY is published monthly.  
Price per annual volume, \$9.00. Subscriptions, orders for back numbers, and inquiries  
in regard to nondelivery of current numbers should be addressed to the American  
Mathematical Society, 450 Ahnaip Street, Menasha, Wis., or Low Memorial Library,  
531 West 116th Street, New York 27, N. Y.

---

Entered as second class matter April 24, 1926, at the post office at Menasha, Wis., under the act  
of August 24, 1912. Acceptance for mailing at the special rate of postage provided for in the act of  
February 28, 1925, embodied in paragraph 4, section 333, P. L. and R., authorized May 9, 1935.