

OFFICIAL COMMUNICATIONS

Meetings of the Society have been fixed at the following times and places:

NEW YORK CITY, April 14-15, 1933.

Abstracts must be in the Office of the Society, 501 West 116th St., New York City, not later than March 24. Abstracts received by March 6 will appear in the March issue of the BULLETIN. A symposium on algebra is being arranged. The leading speakers will be Professor Oystein Ore, on *Abstract ideal theory and applications*, and Professor J. V. Uspensky, *Applications of number theory to some problem of integration of elementary functions*.

CHICAGO, April 14-15, 1933.

Abstracts must be in the hands of the Associate Secretary, Mark H. Ingraham, University of Wisconsin, Madison, Wisconsin, not later than March 25. Abstracts received by March 6 will appear in the March issue of the BULLETIN. Professor C. C. MacDuffee will deliver a symposium lecture on *Matrices with elements in a principal ideal ring*. There will be a special memorial meeting in honor of Professor E. H. Moore, at which several of his students will speak.

THIRTY-NINTH SUMMER MEETING, CHICAGO, June 19-24, 1933.

This meeting will be in conjunction with the meeting of the American Association for the Advancement of Science at the Century of Progress Exposition, but most of the actual sessions will be at the University of Chicago. Addresses will be delivered by Professors Lipót Fejér of the University of Budapest, Tullio Levi-Civita of the University of Rome, George D. Birkhoff of Harvard University, and Leonard E. Dickson of the University of Chicago. Other addresses and symposia in which American and foreign speakers will participate are being planned. The Mathematical Association of America will meet during the same week. Titles and abstracts of papers to be presented at this meeting should be in the hands of Associate Secretary Mark H. Ingraham, University of Wisconsin, Madison, Wisconsin, not later than May 20. Abstracts received before May 6 will appear in the May issue of this BULLETIN.

R. G. D. RICHARDSON, *Secretary of the Society*.

Articles for insertion in the BULLETIN should be addressed to E. R. HEDRICK, Editor of the BULLETIN, University of California at Los Angeles. Reviews should be sent to W. R. LONGLEY, Yale University, New Haven, Conn. Notes should be sent to H. W. KUHN, Ohio State University, Columbus, Ohio.

Subscriptions to the BULLETIN, orders for back numbers, and inquiries in regard to non-delivery of current numbers should be addressed to the American Mathematical Society, 450-459 Ahnaip St., Menasha, Wis., or 501 West 116th St., New York.

The initiation fees and the annual dues of members of the Society (see this BULLETIN, p. 322, May, 1930; and the List of Officers and Members, September, 1932, p. 66), are payable to the Treasurer of the Society, Professor G. W. Mullins, 501 West 116th St., New York City.

WHOLE NUMBER 402

CONTENTS

	PAGE
The Annual Meeting in Atlantic City and Princeton. By R. G. D. RICHARDSON.....	161
The Mathematical Work of Oliver Dimon Kellogg. By G. D. BIRKHOFF.....	171
Bateman on Mathematical Physics. By J. L. WALSH....	178
Lane on Projective Differential Geometry. By ARNOLD EMCH.....	181
Shorter Notices.....	183
Notes.....	189
Abstracts of Papers.....	195
New Publications.....	211



For Official Communications and Notices, see the inside of the back cover.