

THE  
JOURNAL  
OF  
SYMBOLIC LOGIC

EDITED BY

ALONZO CHURCH  
S. C. KLEENE

ALICE A. LAZEROWITZ

ARTHUR N. PRIOR  
JULIA ROBINSON

*Managing Editor:* ALFONS BORGERS

*Consulting Editors:*

W. ACKERMANN  
ALAN ROSS ANDERSON  
C. A. BAYLIS  
JONATHAN F. BENNETT  
PAUL BERNAYS  
MARTIN DAVIS  
ANDRZEJ EHRENFUCHT  
ROBERT FEYS  
FREDERIC B. FITCH  
G. HASENJAEGER

CARL G. HEMPEL  
LEON HENKIN  
HANS HERMES  
JOHN G. KEMENY  
E. J. LEMMON  
RICHARD MONTAGUE  
ANDRZEJ MOSTOWSKI  
GERT H. MÜLLER  
STEVEN OREY

RÓZSA PÉTER  
ABRAHAM ROBINSON  
GENE F. ROSE  
BARKLEY ROSSER  
H. ARNOLD SCHMIDT  
KURT SCHÜTTE  
THORALF SKOLEM  
CLIFFORD SPECTOR  
J. F. THOMSON  
A. R. TURQUETTE

VOLUME 24      NUMBER 4  
DECEMBER 1959

PUBLISHED QUARTERLY BY THE ASSOCIATION FOR SYMBOLIC LOGIC, INC.  
WITH SUPPORT FROM UNESCO THROUGH ICSU AND FROM INSTITUTIONAL  
MEMBERS

---

*Copyright 1961 by the Association for Symbolic Logic, Inc.*  
*Reproduction by photostat, photo-print, microfilm, or like process by permission only*

## TABLE OF CONTENTS

On the axiom of extensionality, Part II. By R. O. GANDY . . . . .	287
A simple treatment of truth functions. By ALAN ROSS ANDERSON and NUEL D. BELNAP, JR. . . . .	301
On the construction of Venn diagrams. By TRENCHARD MORE, JR. . . . .	303
Axioms for the "Gergonne"-relations. By IVO THOMAS and DON ORTH . . . . .	305
Horn sentences in identity theory. By K. I. APPEL . . . . .	306
Enumeration of recursive sets. By YOSHINDO SUZUKI . . . . .	311
Twenty-fourth annual meeting of the Association for Symbolic Logic. By ALAN ROSS ANDERSON . . . . .	312
Abstracts of papers . . . . .	312
Notice of a decision of the Executive Committee . . . . .	326
Notice of a meeting of the Association for Symbolic Logic . . . . .	326
Notice of a symposium on recursive functions . . . . .	326
List of officers and members of the Association for Symbolic Logic . . . . .	327
Index of reviews . . . . .	345

---

THE JOURNAL OF SYMBOLIC LOGIC is the official organ of the Association for Symbolic Logic, Inc., published quarterly, in the months of March, June, September, and December. The Journal is published for the Association by *N.V. Erven P. Noordhoff, Publishers, Groningen, The Netherlands*. The subscription price is six dollars and fifty cents annually, for current subscriptions. New subscriptions must begin with the first number of the current volume, as determined by the date of receipt of the subscription. Completed volumes are sold at eight dollars. Members of the Association of three years standing may purchase back volumes of the Journal at reduced rates for their personal use (except volume 1). THE JOURNAL OF SYMBOLIC LOGIC publishes the official notices of the Division of Logic, Methodology and Philosophy of Science of the International Union of History and Philosophy of Science.

Applications for membership in the Association, subscriptions to the JOURNAL, changes of address, and all business correspondence should be addressed to: **The Association for Symbolic Logic, 190 Hope Street, Providence 6, Rhode Island.**

Articles for publication in the JOURNAL should be sent to *S. C. Kleene, North Hall, University of Wisconsin, Madison 6, Wisconsin* or to *Alice A. Lazerowitz, 31 Langworthy Road, Northampton, Massachusetts* (between January 15 and August 15, 1960 substitute *Alan Ross Anderson, Department of Philosophy, Yale University, New Haven, Connecticut*) or to *Arthur N. Prior, University of Manchester, Manchester, England* or to *Julia Robinson, 243 Lake Drive, Berkeley 8, California.*

All manuscripts should be typewritten with wide margin and wide spacing between the lines, and the author should keep a complete copy; footnotes should be numbered consecutively and should also be typed with wide margin and wide spacing (preferably on a separate sheet). If an article is of more than thirty-two (printed) pages in length, the editors reserve the right to divide it between two or more, not necessarily consecutive, numbers. Authors receive fifty reprints of each article, with covers, and additional reprints may be purchased if desired.

Attention is called to the fact that the JOURNAL invites submission of (1) original technical papers in the field of symbolic logic, (2) expository papers in this field, (3) philosophical papers which bear upon this field or make use of its methods, and (4) studies in the history of logic in which modern technical developments are taken into account.

Authors and publishers are requested to send, for review, copies of books and reprints of articles in journals to *Alonzo Church, Fine Hall, Princeton University, Princeton, New Jersey.*