

THE
JOURNAL
OF
SYMBOLIC LOGIC

EDITED BY

ALONZO CHURCH S. C. KLEENE ALICE A. LAZEROWITZ

Managing Editor: ALFONS BORGERS

Consulting Editors:

W. ACKERMANN

FREDERIC B. FITCH

RÓZSA PÉTER

C. A. BAYLIS

CARL G. HEMPEL

BARKLEY ROSSER

PAUL BERNAYS

LEON HENKIN

THORALF SKOLEM

G. D. W. BERRY

JOHN G. KEMENY

A. R. TURQUETTE

MARTIN DAVIS

J. C. C. MCKINSEY

H. E. VAUGHAN

ROBERT FEYS

ANDRZEJ MOSTOWSKI

VOLUME 18 NUMBER 2

JUNE 1953

PUBLISHED QUARTERLY BY THE ASSOCIATION FOR SYMBOLIC LOGIC, INC.

WITH THE AID OF SUBVENTIONS FROM

EDWARD C. HEGELER TRUST FUND

HARVARD UNIVERSITY

SMITH COLLEGE

RUTGERS UNIVERSITY

UNIVERSITY OF MICHIGAN

Copyright 1953 by the Association for Symbolic Logic, Inc.

Reproduction by photostat, photo-print, microfilm, or like process by permission only

TABLE OF CONTENTS

An extended procedure in quantificational logic. By ROBERT STANLEY	97
On propositions neither necessary nor impossible. By A. N. PRIOR	105
Systems of modal logic which are not unreasonable in the sense of Halldén. By J. C. C. MCKINSEY	109
Paradox of the class of all grounded classes By SHEN YUTING	114
Arithmetic with creative definitions by induction. By JOHN MYHILL	115
On ω -inconsistency and a so-called axiom of infinity. By W. V. QUINE	119
Investigation of the equivalence of the axiom of choice and Zorn's lemma from the viewpoint of the hierarchy of types. By J. RICHARD BÜCHI	125
Some formal relative consistency proofs. By ROBERT MCNAUGHTON	136
Inner models for set theory - Part III. By J. C. SHEPHERDSON	145
Reviews	168
Problems in symbolic logic	186
Institutional contributing subscribers to the JOURNAL	186
Fifteenth meeting of the association for symbolic logic. By ATWELL R. TURQUETTE	187
Abstracts of papers	187
Elections	192
Notice of a meeting of the association for symbolic logic	192

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 five dollars 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 six 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).

Applications for membership in the Association, subscriptions to the JOURNAL, changes of address, and all business correspondence should be addressed to:

Joshua Barlaz, Secretary-Treasurer, Rutgers University, New Brunswick, New Jersey

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*. 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*.