THE AMERICAN PHYTOPATHOLOGICAL SOCIETY

Founded 1908

Incorporated 1915

The APS Council

Officers:

President, RALPH J. GREEN JR., Purdue University, Lafayette, Indiana President-Elect, JAMES TAMMEN, The Pennsylvania State University, University Park Immediate Past-President, H. L. BARNETT, West Virginia University, Morgantown Vice-President, ROBERT AYCOCK, North Carolina State University, Raleigh Secretary, RICHARD E. FORD, University of Illinois, Urbana Treasurer, LAURENCE H. PURDY, University of Florida, Gainesville Editor-in-Chief, A. R. WEINHOLD, University of California, Berkeley

Councilors:

JOHN F. SCHAFER, Washington State University, Pullman (At Large)
DURWARD BATEMAN, Cornell University, Ithaca, New York (At Large)
HOUSTON B. COUCH, Virginia Polytechnic Institute, Blacksburg (Potomac)
BENJAMIN H. WAITE, AID/University of Florida, San Salvador (Caribbean)
J. A. BROWNING, Iowa State University, Ames (North Central)
CARL W. BOOTHROYD, Cornell University, Ithaca, New York (Northeastern)
R. B. HINE, University of Arizona, Tucson (Pacific)
CLINTON H. GRAVES JR., Mississippi State University, State College (Southern)

Staff:

R. J. TARLETON, Executive Vice-President; The American Phytopathological Society, 3340 Pilot Knob Road, St. Paul, Minnesota 55121.

DIVISIONS OF THE SOCIETY

Caribbean: Pres. RODRIGO GAMEZ, Facultad de Agronomia, Universidad de Costa Rica; Vice-Pres. EDMUND M. JONES, Central Exp. Sta., Centeno Via Arima, Trinidad, W. I.; Secy.-Treas. GUILLERMO E. GALVEZE, Ciat, Apartado Aereo 6713, Cali, Colombia.

Northeastern: Pres. R. C. STAPLES, Boyce Thompson Inst., Yonkers, N. Y.; Vice-Pres. R. J. CAMPANA, University of Maine, Orono; Secy.-Treas. R. L. MILLAR, Cornell University, Ithaca, N. Y.

North Central: Pres. O. J. DICKERSON, Kansas State University, Manhattan; Vice-Pres. JOHN TUITE, Purdue University, West Lafayette, Indiana; Secy.-Treas. L. E. WILLIAMS, Ohio Agricultural Research & Development Center, Wooster.

Pacific: Pres. W. H. ENGLISH, University of California, Davis; Vice-Pres. L. J. ASHWORTH, University of California, Berkeley; Secy.-Treas. D. E. MATHRE, Montana State University, Bozeman.

Potomac: Pres. H. L. KEIL, Plant Industry Station, Beltsville, Maryland; Vice-Pres. E. S. ELLIOT, West Virginia University, Morgantown; Secy.-Treas. T. H. BARKSDALE, Plant Industry Station, Beltsville, Maryland.

Southern: Pres. ROBERT T. GUDAUSKAS, Auburn University, Auburn, Alabama; Vice-Pres. LOWELL T. BLACK, Louisiana State University, Baton Rouge; Sec'y.-Treas. ROBERT W. TOLER, Texas A&M University, College Station, Texas.

EDITORIAL AND BUSINESS STAFF

TECHNICAL EDITOR, Robert J. Minteer; BUSINESS MANAGER and ADVERTISING DIRECTOR, R. J. Tarleton; The American Phytopathological Society, 3340 Pilot Knob Road, St. Paul, Minn. 55121.

Subscriptions: Communications should be addressed to The American Phytopathological Society, 3340 Pilot Knob Road, St. Paul, Minn. 55121. Subscription price: \$50 per year domestic, foreign postage \$3.00/yr. extra (including Canada and Mexico). Single current numbers (within 60 days of publication): \$5. (Price of back volumes and separate numbers on request.) Ten-Year Index (Vol. 31-40, 1941-1950): paper cover, \$3.50. Ten-Year Index (Vol. 41-50, 1951-1960): paper cover \$5.00. Claims for copies lost in domestic mails must be received within 90 days from the date of issue, otherwise the replacement charge will be \$5. Deliveries overseas are not guaranteed; foreign mailings are made at the subscriber's risk. Advertisement: Rates may be secured from the Advertising Director. No endorsement of any statement of claims made in advertisements is assumed by this Journal or by The American Phytopathological Society. Membership in The American Phytopathological Society and special publication rates for members will be supplied by the Secretary or the Business Manager.

Published monthly at The American Phytopathological Society 3340 Pilot Knob Road, St. Paul, Minn. 55121

Second class postage paid at St. Paul, Minn. Subscription, \$50.00 per year

Phytopathology

EDITORIAL BOARD

- A. R. WEINHOLD, Editor-in-Chief, Department of Plant Pathology, University of California, Berkeley 94720
- B. W. KENNEDY, Senior Editor, University of Minnesota, St. Paul 55101
- T. KOSUGE, Senior Editor, University of California, Davis 95616
- J. L. LOCKWOOD, Senior Editor, Michigan State University, East Lansing 48823

ASSOCIATE EDITORS

- P. ALBERSHEIM, University of Colorado, Boulder
- L. J. ASHWORTH, JR., University of California, Parlier
- C. W. AVERRE, North Carolina State University, Raleigh
- J. A. BROWNING, Iowa State University, Ames
- W. R. BUSHNELL, USDA, University of Minnesota, St. Paul
- E. E. BUTLER, University of California, Davis
- M. E. CORDEN, Oregon State University, Corvallis
- R. E. DAVIS, USDA, Beltsville, Md.
- P. R. DAY, Connecticut Agricultural Experiment Station, New Haven
- G. DE ZOETEN, University of Wisconsin, Madison
- B. DOUPNIK, JR., University of Nebraska Coop. Extension Service, Clay Center
- J. E. DUFFUS, USDA, Salinas, California
- E. ECHANDI, North Carolina State University, Raleigh
- W. H. ENGLISH, University of California, Davis
- J. W. GERDEMANN, University of Illinois, Urbana
- R. R. GRANADOS, Boyce Thompson Institute, Yonkers, N.Y.
- R. I. HAMILTON, Canada Agriculture, Vancouver
- D. R. HOUSTON, 151 Sanford St., Hamden, Conn.
- C. W. KUHN, University of Georgia, Athens

- M. L. LACY, Michigan State University, East Lansing
- C. LEBEN, Ohio Agric. R&D Center, Wooster
- E. S. LUTTRELL, University of Georgia, Athens
- D. P. MAXWELL, University of Wisconsin, Madison
- P. R. MILLER, University of California, Riverside
- Z. A. PATRICK, University of Toronto, Ontario
- R. A. REINERT, North Carolina State University, Raleigh
- R. D. RIGGS, University of Arkansas, Fayetteville
- A. P. ROELFS, University of Minnesota, St. Paul
- R. P. SCHEFFER, Michigan State University, East Lansing
- R. A. SCHMIDT, University of Florida, Gainesville
- J. F. SHEPARD, Montana State University, Bozeman
- A. F. SHERF, Cornell University, Ithaca, N.Y.
- M. R. SIEGEL, University of Kentucky, Lexington
- E. K. SOBERS, University of Georgia, Coastal Plain Station, Tifton
- D. H. SPALDING, USDA, Miami, Fla.
- R. STACE-SMITH, Canada Agriculture, Vancouver
- R. E. STALL, University of Florida, Gainesville
- P. H. TSAO, University of California, Riverside
- J. L. VAN ETTEN, University of Nebraska, Lincoln
- B. M. ZUCKERMAN, University of Massachusetts, East Wareham

GENERAL PUBLICATION POLICIES

At least one author must be a member of The American Phytopathological Society, except that any subscribing institution outside the United States or Canada may have published, by a staff member, one paper (in English) per volume. A letter of transmittal, signed by an official of the foreign institution, should accompany such manuscripts.

Submission of manuscripts: Submit all new manuscripts to The American Phytopathological Society, Editorial Office, 3340 Pilot Knob Road, St. Paul, Minn. 55121. Do not submit new manuscripts to the Editor-in-Chief. Submission implies nonsubmission elsewhere and (if accepted) no publication elsewhere in the same form without consent.

Content: Contributions should fall into the following categories: 1) Original research on some aspect of plant pathology. Subject matter is not a criterion for judging the merit of an article for publication in PHYTOPATHOLOGY. It is, however, the authors' duty to establish relevancy to the science of plant pathology. 2) Review papers developing a new concept, hypothesis, theory, or other integration of plant pathology. 3) Phytopathological Notes: These are accounts of techniques, original research, or phytopathological history of general importance, but sufficiently brief as not to exceed two published pages. 4) Letters to the Editor: These may explain, amplify, or otherwise comment upon research published in the journal or elsewhere. Letters to the editor are reviewed in the same manner as regular contributions, and the Editorial Board reserves the right to reject, or to publish, letters of rebuttal when appropriate.

Page charge: A charge of \$35 per published page will apply to all manuscripts submitted by authors, except

obituaries and those submitted in response to invitation by the Society.

Separates: No free copies supplied. Reprints will be available at a nominal cost; quotation will be sent with proof. For style details, follow: Author's Guide for Manuscript Preparation, Phytopathology 64:1-4, 1974, and CBE Style Manual (third edition, 1972), available from Amer. Inst. Biol. Sci., Washington, D.C. Authors are urged to have one or more colleagues read the manuscript *critically* prior to submission.

Use of material in Phytopathology: Phytopathology is not copyrighted, but those who wish to borrow illustrations or data appearing in Phytopathology for use in other publications should obtain the permission of the author of the paper, and provide a line crediting Phytopathology as the source of the material.