

# Phytopathology

An International Journal, Official Organ of The American Phytopathological Society

## EDITORIAL BOARD

ROBERT AYCOCK, Editor-in-Chief, Department of Plant Pathology, North Carolina State University, Raleigh 27607  
PAUL E. NELSON, Assistant Editor, Department of Plant Pathology, The Pennsylvania State University, University Park 16802

A. R. WEINHOLD, Assistant Editor, University of California, Berkeley 94720

C. H. BECKMAN, University of Rhode Island, Kingston

R. H. CONVERSE, Oregon State University, Corvallis

M. K. CORBETT, University of Maryland, College Park

E. B. COWLING, North Carolina State University, Raleigh

O. J. DICKERSON, Kansas State University, Manhattan

L. R. FAULKNER, Washington State University, Prosser

W. W. HARE, Mississippi State University, State College

R. B. HINE, University of Arizona, Tucson

J. A. HOFFMANN, Washington State University, Pullman

B. W. KENNEDY, University of Minnesota, St. Paul

D. M. KLINE, North Carolina State University, Raleigh

J. L. LOCKWOOD, Michigan State University, East Lansing

H. H. LUKE, University of Florida, Gainesville

R. L. MILLAR, Cornell University, Ithaca, N.Y.

R. G. OWENS, Environmental Health Sciences Center, Triangle Park, N. C.

A. E. RICH, University of New Hampshire, Durham

C. W. ROANE, Virginia Polytechnic Institute, Blacksburg

M. N. SCHROTH, University of California, Berkeley

H. A. SCOTT, University of Arkansas, Fayetteville

C. G. SHAW, Washington State University, Pullman

J. T. SLYKHUIS, Cell Biology Research Institute, Ottawa, Ontario

R. C. STAPLES, Boyce Thompson Institute, Yonkers, N. Y.

D. C. TORGESON, Boyce Thompson Institute, Yonkers, N. Y.

E. J. TRIONE, Oregon State University, Corvallis

## EDITORIAL AND BUSINESS STAFF

PRODUCTION EDITOR, Margaret Keefe, BUSINESS MANAGER, R. J. Tarleton, and ADVERTISING DIRECTOR, Merrill J. Busch, The American Phytopathological Society, 1821 University Avenue, St. Paul, Minn. 55104.

**Subscriptions:** Communications should be addressed to The American Phytopathological Society, 1821 University Avenue, St. Paul, Minn. 55104. **Subscription price:** \$40 per year domestic, foreign postage \$2.00/yr. extra (including Canada and Mexico). **Single current numbers** (within 60 days of publication): \$4. (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 \$4. Deliveries overseas are not guaranteed; foreign mailings are made at the subscriber's risk. **Advertisements:** 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:** Information concerning membership in The American Phytopathological Society and special publication rates for members will be supplied by the Secretary or the Business Manager.

## INFORMATION FOR AUTHORS

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, 1821 University Avenue, St. Paul, Minn. 55104. *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.

**Subject matter** should fall in the following categories:

- 1) Original research on some phase of plant disease.
- 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 (1-4 typed pages) to need no summary. The editors will endeavor to publish notes as soon as possible after acceptance.

**Manuscripts** should be in English; however, abstracts to papers will be permitted in English *and* one other language (French, Portuguese, or Spanish). Two copies should be submitted, typed on 8.5 × 11-inch line-numbered paper and double-spaced throughout, including tables, legends, and citations. Ample margins should be left on each side. Author's position, acknowledgments, acceptance date, etc., should follow author's name, and will not appear as a footnote. Papers other than Notes may be organized conveniently under: Abstract, Review of Literature (if needed), Materials and Methods, Results, Discussion, and Literature Cited sections. Further subdivisions of the Results section may be desirable. Avoid footnotes. The page number and author's name should appear in the upper right-hand corner of each manuscript page. The author's institutional address should appear beneath his name.

**Tables** should be numbered consecutively, each typed on a separate page. Tables must have descriptive headings, and should be understandable without reference to the text. Lower case superscript letters are to be used for footnotes to tables. Pages containing tables should follow Literature Cited, and should be numbered accordingly. No charge is made for tables unless these exceed 30% of the text length.

**Figures** (graphs, line drawings, and photographs) should add clearly to an understanding of the paper. The size and arrangement of figures should correspond to Journal page or column proportions. Combine illustrations in composite cuts when possible, and number each unit to correspond with the text figure reference, using consecutive Arabic numerals. Label each illustration in pencil in the righthand corner with the figure number and author's name. Legends for figures should be typed together on a separate numbered page following the tables. The allowance for half-tones and line cuts for each article is 1.5 pages, or the equivalent in cost in smaller cuts. Two  $\frac{1}{4}$ -page cuts, for example, cost nearly as much as one full-page cut. The author will be charged for the excess of this allowance. Color prints must be paid for entirely by the author, and authors may make enquiry through the Editorial office, 1821 University Ave., St. Paul, Minn. 55104.

**Page Charge:** A charge of \$40 per published page will apply to all regular manuscripts submitted by authors. This charge will not, however, apply to manuscripts submitted in response to invitation by the Society. In the event the author cannot pay the page charge, publication of manuscripts will be considered only upon submission of a letter to that effect from the administrative officer of the author to the St. Paul office.

**Separates:** No free copies supplied. Reprints will be available at a nominal cost; quotation will be sent with proof.

**For style details, follow:** Style Manual for Biological Journals (Second Edition). Amer. Inst. Biol. Sci., Washington, D.C., 117 p. Authors are urged to have one or more colleagues read a manuscript critically before submitting it for publication.

## THE AMERICAN PHYTOPATHOLOGICAL SOCIETY

Founded 1908

Incorporated 1915

### The APS Council

#### Officers:

President, DON E. ELLIS, North Carolina State University, Raleigh  
President-Elect, THOR KOMMEDAHL, University of Minnesota, St. Paul  
Immediate Past-President, A. W. DIMOCK, Cornell University, Ithaca, New York  
Vice-President, J. P. FULTON, University of Arkansas, Fayetteville  
Secretary, R. J. GREEN, JR., Purdue University, Lafayette, Indiana  
Treasurer, M. F. KERNKAMP, University of Minnesota, St. Paul  
Editor-in-Chief, ROBERT AYCOCK, North Carolina State University, Raleigh

#### Councilors:

M. C. SHURTLEFF, University of Illinois, Urbana (At Large)  
GEORGE HEPTING, U.S. Forest Service, Asheville, North Carolina (At Large)  
L. I. MILLER, Virginia Polytechnic Institute, Blacksburg (Potomac)  
J. A. B. NOLLA, Puerto Rico University, Mayaguez, Puerto Rico (Caribbean)  
JAMES TAMMEN, The Pennsylvania State University, University Park (Northeastern)  
R. E. FORD, Iowa State University, Ames (North Central)  
RICHARD STACE-SMITH, Canada Department of Agriculture, Vancouver, B.C. (Pacific)  
T. T. HEBERT, North Carolina State University, Raleigh (Southern)

#### Assistant-Treasurer:

L. H. PURDY, University of Florida, Gainesville

#### Staff:

R. J. TARLETON, Executive Vice-President; M. J. BUSCH, Director of Publications; The American Phytopathological Society, 1821 University Avenue, St. Paul, Minn. 55104

### DIVISIONS OF THE SOCIETY

**Caribbean:** Pres. GUILLERMO GÁLVEZ, CIAT, Apartado Aéreo 58-13, Bogotá, Colombia; Vice-Pres. ARMANDO ALAS-LÓPEZ, Dirección General de Inv. Agronómicas, Santa Tecla, El Salvador; Secy.-Treas. G. OCAÑA, University of Panama.

**Northeastern:** Pres. S. H. DAVIS, JR., Rutgers University, New Brunswick, N.J.; Vice-Pres. R. C. McCRUM, University of Maine, Orono; Secy.-Treas. R. A. ROHDE, University of Massachusetts, Amherst.

**North Central:** Pres. R. D. WILCOXSON, University of Minnesota, St. Paul; Vice-Pres. J. L. LOCKWOOD, Michigan State University, East Lansing; Secy.-Treas. B. W. KENNEDY, University of Minnesota, St. Paul.

**Pacific:** Pres. IVAN W. BUDDENHAGEN, University of Hawaii, Honolulu; Vice-Pres. R. G. GROGAN, University of California, Davis; Secy.-Treas. W. HARLEY ENGLISH, University of California, Davis.

**Potomac:** Pres. C. J. DELP, E. I. DuPont & Co., Wilmington, Del.; Vice-Pres. C. A. THOMAS, Plant Industry Station, Beltsville, Md.; Secy.-Treas. H. L. KEIL, Plant Industry Station, Beltsville, Maryland.

**Southern:** Pres. D. A. SLACK, University of Arkansas, Fayetteville; Vice-Pres. CLINTON H. GRAVES, Mississippi State University, State College; Secy.-Treas. ROBERT S. HALLIWELL, Texas A&M University; College Station.