

# THE AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE

(ISSN 0002-9637)

*Editor, McWILSON WARREN*

3088 Briarcliff Road, Suite A11 Atlanta, Georgia 30329  
Telephone (404) 636-3621 FAX: (404) 633-5737

*Managing Editor, ALLISON KITFIELD*

*Copy/Assistant Editor, THOMAS GRYZCAN*

*Senior Associate Editor, MARK L. EBERHARD*

*Associate Editor, IRA K. SCHWARTZ*

*Statistical Editor, ALLEN W. HIGHTOWER*

## *Editorial Board*

RONALD ANTHONY  
DONALD S. BURKE  
WILLIAM E. COLLINS  
DANIEL H. CONNOR  
DONALD HEYNEMAN  
JAMES M. HUGHES  
DAVID P. JACOBUS

KARL JOHNSON  
JAY S. KEYSTONE  
PHYLLIS E. KOZARSKY  
STEVEN R. MESHNICK  
THOMAS B. NUTMAN  
KIM LEE SIM

WILLIAM A. SODEMAN, JR.  
METTE STRAND  
DIANE WALLACE TAYLOR  
ROBERT B. TESH  
BRYCE C. WALTON  
THOMAS YUILL

*The American Journal of Tropical Medicine and Hygiene* is a peer-reviewed journal published monthly by the American Society of Tropical Medicine and Hygiene and consists of two complete, sequentially numbered volumes each calendar year. The Notice to Contributors may be found in the first issue of both volumes.

*Correspondence concerning business matters, subscriptions, and memberships* should be addressed to The American Society of Tropical Medicine and Hygiene, 60 Revere Drive, Suite 500, Northbrook, Illinois 60062; telephone (847) 480-9592, FAX (847) 480-9282.

*Manuscripts of articles for publication and books for review* should be sent to the Editor.

*The subscription price* for the pair of volumes is \$300.00 per year in the USA, Canada, and Mexico, and \$385.00 elsewhere. The price of single copies, when available, is \$25.00 in the USA and \$32.00 elsewhere. Periodicals postage is paid at Northbrook, IL with an additional office at Lawrence, KS.

*New subscriptions and renewals* are entered to begin with the January issue of the current year. *Both should be secured as early in the year as possible*, as the publisher cannot guarantee to supply back issues.

*Change of address. POSTMASTER:* Send address changes to the American Society of Tropical Medicine and Hygiene, 60 Revere Drive, Suite 500, Northbrook, Illinois 60062. Members of the Society should notify the Northbrook office of any change in address. All other subscribers should notify the publisher 60 days in advance. Copies of the *Journal* that are undeliverable because of an incorrect address will be destroyed. Duplicates of such copies may be obtained (if available) from the publisher at the regular price of single issues.

## American Society of Tropical Medicine and Hygiene

<i>President</i>	<i>Councilors</i>	<i>Term Expires</i>
DONALD S. BURKE	EDDIE W. CUPP	1996
<i>President-Elect</i>	MARY E. WILSON	1996
RICHARD L. GUERRANT	DIANE McMAHON-PRATT	1997
<i>Immediate Past President</i>	BRUCE CHRISTENSEN	1997
CAROLE A. LONG	JOHN C. BEIER	1998
<i>Scientific Program Chairman</i>	DUANE J. GUBLER	1998
WILLIAM A. PETRI	BARBARA L. DOUGHTY	1999
<i>Secretary-Treasurer</i>	JOSE M. RIBEIRO	1999
PETER F. WELLER		
Infectious Disease, DA-617		
Beth Israel Hospital		
330 Brookline Avenue		
Boston, MA 02215-5491		
<i>Editor, Tropical Medicine and Hygiene News</i>		
KARL A. WESTERN		

Printed by Allen Press, Inc.; 1041 New Hampshire Street; Lawrence, KS 66044

Statements and opinions expressed in publications of the American Society of Tropical Medicine and Hygiene or in presentations given during its regular meetings are those of the author(s) and do not necessarily reflect the official position of the American Society of Tropical Medicine and Hygiene, the Editors, or the organizations with which the authors are affiliated. The Editor(s), publisher, and Society disclaim any responsibility or liability for such material and do not guarantee, warrant, or endorse any product or service mentioned, nor do they guarantee any claim made by the manufacturer of such product or service. Official positions of the Society are established only by its Council.

Copyright © 1996, by The American Society of Tropical Medicine and Hygiene  
Made in USA

Ⓢ This paper meets the requirements of ANSI/NISO Z39.48-1992 (Permanence of Paper).