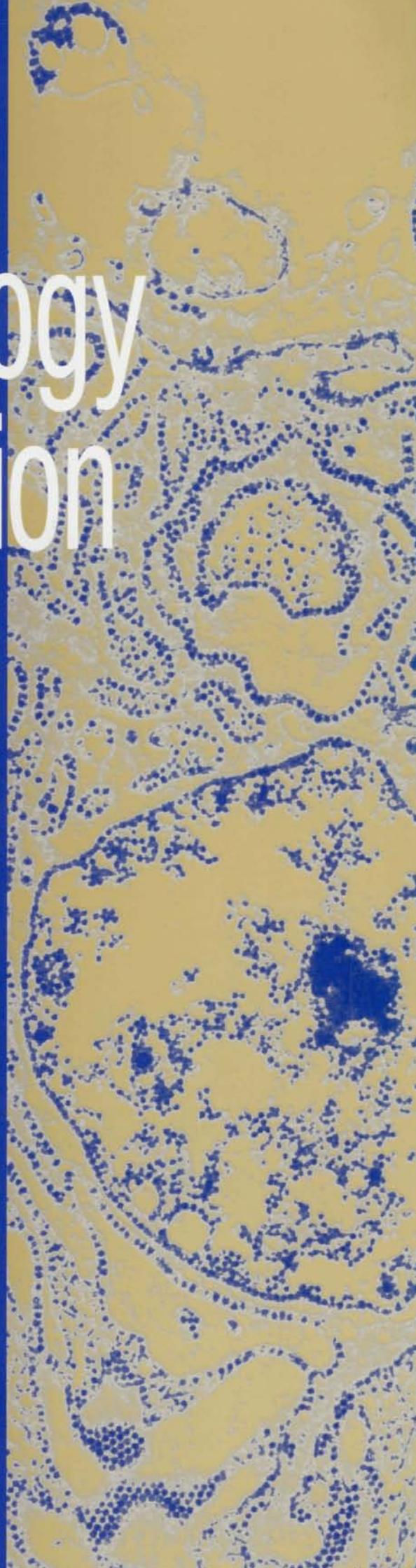


VOLUME 117 NUMBER 3 DECEMBER 1996

Epidemiology & Infection



Epidemiology and Infection

SENIOR EDITOR

Professor B. Drasar
*London School of Hygiene and Tropical Medicine, Keppel Street,
London WC1E 7HT, UK*

EDITORS

Dr D. Baxby
Department of Medical Microbiology, Royal Liverpool Hospital, UK

Dr K. A. V. Cartwright
Public Health Laboratory, Gloucester Royal Hospital, UK

Dr M. H. Hinton
*Division of Veterinary Public Health and Food Safety,
University of Bristol, UK*

Dr D. L. Morse
Division of Epidemiology, State of New York Department of Health, USA

Professor S. Palmer
University of Wales College of Medicine, Cardiff, UK

Dr D. J. Platt
Department of Bacteriology, Glasgow Royal Infirmary, UK

Dr H. Watanabe
Department of Bacteriology, National Institute of Health, Japan

Dr. P. J. Wilkinson
Pirbright Laboratory Institute for Animal Health, UK

MANAGING EDITOR

Professor P. Morgan-Capner
Royal Preston Hospital, UK

EDITORIAL BOARD

R. M. Anderson, *University of Oxford, UK*
R. D. Barry, *Royal Newcastle Hospital, NSW, Australia*

EDITORIAL POLICY

Epidemiology and Infection publishes reports of research and original findings in subjects related to infectious diseases. Particular emphasis is given to the epidemiology, prevention and control of such diseases, but the field covered is broad and includes microbiological, virological, immunological, clinical and social aspects of infectious diseases of man and animals.

SUBSCRIPTIONS

Epidemiology and Infection (ISSN 0950-2688) is published six times a year in February, April, June, August, October and December. Three parts form a volume. The subscription price (excluding VAT) of Volumes 116 and 117 (1996) (which includes postage) is £190 net (US\$352 in the USA, Canada and Mexico). Single parts are £35 (US\$64 in the USA, Canada and Mexico) plus postage. Back volumes are also available.

Orders, which must be accompanied by payment, may be sent to a bookseller, subscription agent or direct to the publisher: Cambridge University Press, The Edinburgh Building, Shaftesbury Road, Cambridge CB2 2RU, UK; or in the USA, Canada and Mexico: Cambridge University Press, 40 West 20th Street, New York, NY 10011-4211, USA. EU subscribers (outside the UK) who are not registered for VAT should add VAT at their country's rate. VAT registered subscribers should provide their VAT registration number. Japanese prices for institutions (including ASP delivery) are available from Kinokuniya Company Ltd, PO Box 55, Chitose, Tokyo 156, Japan.

Copies of the journal for subscribers in the USA, Canada and Mexico are sent by air to New York to arrive with minimum delay. Periodicals postage paid at New York, NY, and at additional mailing offices.

Cover Polyoma virus in brain cells of an AIDS patient. (Photograph courtesy of the London School of Hygiene and Tropical Medicine.) Reproduced with permission of Blackwell Science.

P. S. Brachman, *Emory University School of Medicine, GA, USA*

M. Chernesky, *McMaster University, Canada*

J. C. de Jong, *Bilthoven, The Netherlands*

M. Degre, *Rikohospitalet, Oslo, Norway*

L. A. Devriese, *University of Ghent, Belgium*

R. G. Finch, *City Hospital, Nottingham, UK*

E. A. C. Follett, *Regional Virus Laboratory, Glasgow, UK*

R. J. Gilbert, *Central Public Health Laboratory, London, UK*

D. J. Hampson, *Murdoch University, Australia*

S. A. Howell, *Guy's and St Thomas's Medical and Dental School,
London, UK*

T. J. Humphrey, *Public Health Laboratory, Exeter, UK*

A. P. Kendal, *WHO Regional Office for Europe, Copenhagen, Denmark*

J. B. Kurtz, *John Radcliffe Hospital, Oxford, UK*

D. H. Lloyd, *Royal Veterinary College, Hatfield, UK*

S. Logan, *Institute of Child Health, London, UK*

T. J. Marrie, *Victoria General Hospital, Nova Scotia, Canada*

C. Martin-Bourgon, *Instituto de Salud Carlos III, Madrid, Spain*

O. Meurman, *University of Turku, Finland*

E. Miller, *PHLS Communicable Diseases Surveillance Centre, London,
UK*

P. P. Mortimer, *Virus Reference Laboratory, London, UK*

R. Swanepoel, *University of the Witwatersrand, South Africa*

E. J. Threlfall, *Central Public Health Laboratory Service,
London, UK*

H. E. Tillet, *Communicable Diseases Surveillance Centre,
London, UK*

J. P. Vandembroucke, *Utrecht, The Netherlands*

M. J. Woodward, *Central Veterinary Laboratory, Addlestone, UK*

POSTMASTER: send address changes in the USA, Canada and Mexico to: *Epidemiology and Infection*, Cambridge University Press, 110 Midland Avenue, Port Chester, New York, NY 10573-4930. Claims for missing issues should be made immediately on receipt of the subsequent issue.

COPYING

This journal is registered with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, USA. Organizations in the USA who are also registered with C.C.C. may therefore copy material (beyond the limits permitted by sections 107 and 108 of U.S. Copyright law) subject to payment to C.C.C. of the per-copy fee of \$11.00. This consent does not extend to multiple copying for promotional or commercial purposes. Code 0266-4674/96 \$11.00+0.10.

ISI Tear Sheet Service, 3501 Market Street, Philadelphia, PA 19104, USA, is authorized to supply single copies of separate articles for private use only.

Organizations authorized by the Copyright Licensing Agency may also copy material subject to the usual conditions.

For all other use, permission should be sought from Cambridge or the American Branch of Cambridge University Press.

Information on *Epidemiology and Infection* and all other Cambridge journals can be accessed via <http://www.cup.cam.ac.uk/> and in North America via <http://www.cup.org/>.

Printed in the United Kingdom by the University Press, Cambridge

© Cambridge University Press 1996