Epidemiology Infection

VOLUME 116, 1996

SENIOR EDITOR

Professor B. Drasar

EDITORS

Dr D. Baxby Professor S. Palmer
Dr K. A. V. Cartwright Dr D. J. Platt
Dr M. H. Hinton Dr D. L. Morse

J. B. Kurtz

MANAGING EDITOR

Professor P. Morgan-Capner

EDITORIAL BOARD

R. M. Anderson

R. D. Barry D. H. Lloyd P. S. Brachman S. Logan M. Chernesky T. J. Marrie J. C. de Jong C. Martin-Bourgon M. Degré O. Meurman L. A. Devriese E. Miller R. G. Finch P. P. Mortimer E. A. C. Follett R. Swanepoel E. J. Threlfall R. J. Gilbert D. J. Hampson H. E. Tillett

S. A. Howell J. P. Vandenbroucke T. J. Humphrey P. J. Wilkinson A. P. Kendal M. J. Woodward



Published by the Press Syndicate of the University of Cambridge The Pitt Building, Trumpington Street, Cambridge CB2 1RP 40 West 20th Street, New York 10011-4211, USA 10 Stamford Road, Oakleigh, Melbourne 3166, Australia

© Cambridge University Press 1996

Printed in Great Britain by the Cambridge University Press, Cambridge

CONTENTS

No. 1 (February 1996)

Prevalence of the eaeA gene in verotoxigenic Escherichia coli strains from dairy cattle in Southwest	
Ontario	
Sandhu, K. S., Clarke, R. C., McFadden, K., Brouwer, A., Louie, M., Wilson, J., Lior, H. and	
Gyles, C. L.	1
An outbreak of cholera from food served on an international aircraft	
Eberhart-Phillips, J., Besser, R. E., Tormey, M. P., Feiken, D., Araneta, M. R., Wells, J., Kilman, L.,	
Rutherford, G. W., Griffin, P. M., Baron, R. and Mascola, L.	9
Characteristics of gonococci isolated from men with urethritis in Dubai	
Al-Hattawi, K. and Ison, C. A.	15
Differing antibody responses to Haemophilus influenzae type b after meningitis or epiglottitis	
Johnson, P. D. R., Hanlon, M., Isaacs, D. and Gilbert, G. L.	21
Association between clinical presentation, biogroups and virulence attributes of Yersinia entero-	
colitica strains in human diarrhoeal disease	
Burnens, A. P., Frey, A. and Nicolet, J.	27
Micromorphometrical analysis of rodent related (SPF) and unrelated (human) gut microbial flora	
in germfree mice by digital image processing	
Veenendaal, D., de Boer, J., Meijer, B. C., Van der Waaij, D. and Wilkinson, M. H. F.	35
Genetic characterization of Mycobacterium avium isolates recovered from humans and animals in	-
Australia	
Feizabadi, M. M., Robertson, I. D., Cousins, D. V., Dawson, D., Chew, W., Gilbert, G. L. and	
Hampson, D. J.	41
Impact of influenza and respiratory syncytial virus on mortality in England and Wales from	
January 1975 to December 1990	
Nicholson, K. G.	51
Measles immunity and response to revaccination among secondary school children in Cumbria	51
Calvert, N., Cutts, F., Irving, R., Brown, D., Marsh, J. and Miller, E.	65
The transmission dynamics of hepatitis B in the UK: a mathematical model for	0.5
evaluating costs and effectiveness of immunization programmes	
Williams, J. R., Nokes, D. J., Medley, G. F. and Anderson, R. M.	71
Relative abundance of enterovirus serotypes in sewage differs from that in patients:	/ 1
clinical and epidemiological implications	
Hovi, T., Stenvik, M. and Rosenlew, M.	Ω1
Hovi, I., Stellvik, W. and Roselliew, W.	91
Book Reviews	99
	"
Sustaining Primary Health Care Malaria (Pallière): Clinical Infrationa Diverses	
Malaria (Ballière's Clinical Infectious Diseases)	
Infectious Diseases in an Age of Change	
Notes for Contributors	
The solution of the solution o	
No. 2 (April 1996)	
Usefulness of the DNA-fingerprinting pattern and the multilocus enzyme electrophoresis profile in	
he assessment of outbreaks of meningococcal disease	
Weis, N. and Lind, I.	102
	103
Epidemics of serogroup A Neisseria meningitidis of subgroup III in Africa, 1989–94	
Guibourdenche, M., Høiby, E. A., Riou, J-Y., Varaine, F., Joguet, C. and Caugant, D. A	115
Epidemic cholera in Guatemala, 1993: transmission of a newly introduced epidemic strain by	
treet vendors	
Koo, D., Aragon, A., Moscoso, V., Gudiel, M., Bietti, L., Carrillo, N., Chojoj, J., Gordillo, B., Cano, F.,	
Cameron, D. N., Wells, J. G., Bean, N. H. and Tauxe, R. V.	121

Usefulness of ribotyping in a molecular epidemiology study of shigellosis	
Mendoza, M. C., Martín, M. C. and González-Hevia, M. A.	127
Specific detection of Salmonella enterica serotype Enteritidis using the polymerase chain reaction	
Lampel, K. A., Keasler, S. P. and Hanes, D. E.	137
Presence of Salmonella spp. and Campylobacter spp. in shellfish	
Wilson, I. G. and Moore, J. E.	147
A hospital outbreak of salmonella food poisoning due to inadequate deep-fat frying	
Evans, M. R., Hutchings, P. G., Ribeiro, C. D. and Westmoreland, D.	155
Consecutive salmonella outbreaks traced to the same bakery	
Evans, M. R., Tromans, J. P., Dexter, E. L. S., Ribeiro, C. D. and Gardner, D.	161
Resistotyping of campylobacters: fulfilling a need	1.00
Riberio, C. D., Thomas, M. T., Kembrey, D., Magee, J. T. and North, Z.	169
Carriage of multiple ribotypes of non-encapsulated <i>Haemophilus influenzae</i> in Aboriginal infants	
with otitis media	177
Smith-Vaughan, H. C., Leach, A. J., Shelby-James, T. M., Kemp, K., Kemp, D. J. and Mathews, J. D. Legionellosis linked with a hotel car park – how many were infected?	1//
Bell, J. C., Jorm, L. R., Williamson, M., Shaw, N. H., Kazandjian, D. L. J., Chiew, R. and	
Capon, A. G.	185
Acute poststreptococcal glomerulo-nephritis in general practice: the contribution of infection to	102
its onset and course	
Higgins, P. M.	193
An epidemiological investigation of Norwalk virus infection in South Africa	•,,,
Taylor, M. B., Parker, S., Grabow, W. O. K. and Cubitt, W. D.	203
Pigs experimentally infected with Serpulina hyodysenteriae can be protected from	
developing swine dysentery by feeding them a highly digestible diet	
Siba, P. M., Pethick, D. W. and Hampson, D. J.	207
Parasite prevalence in free-ranging farm cats, Felis silvestris catus	
Yamaguchi, N., Macdonald, D. W., Passanisi, W. C., Harbour, D. A. and Hopper, C. D.	217
The concurrent prevalence of chloramphenicol-sensitive and multidrug-resistant Salmonella typhi	
in Vellore, S. India	
Jesudason, M. V., John, R. and John, T. J.	225
Book Reviews	229
	227
The Coming Plague	
Biological Control: Benefits and Risks	
No. 3 (June 1996)	
Editorial: The Jenner Bicentenary; still uses for smallpox vaccine	
Baxby, D.	231
Special articles:	
The development and use of a vaccinia-rabies recombinant oral vaccine for the control of	
wildlife rabies; a link between Jenner and Pasteur	
Pastoret, PP. and Brochier, B.	235
Non-replicating expression vectors: applications in vaccine development and gene therapy	
Limbach, K. J. and Paoletti, E.	241
Foodborne outbreaks caused by salmonella in Italy, 1991–4	
Scuderi, G., Fantasia, M., Filetici, E. and Anastasio, M. P.	257
Virulence and genotype stability of Salmonella enterica serovar Berta during a	
natural outbreak	
Olsen, J. E., Skov, M. N., Brown, D. J., Christensen, J. P. and Bisgaard, M.	267
Changing epidemiology of cholera due to Vibrio cholerae O1 and O139 Bengal in Dhaka,	
Bangladesh	
Faruque, A. S. G., Fuchs, G. J. and Albert, M. J.	275

Epidemiology of infection due to Escherichia coli O157: a 3-year prospective study	
MacDonald, I. A. R., Gould, I. M. and Curnow, J.	79
Estimating the economic benefits of avoiding food-borne risk: is 'willingness to pay'	
feasible?	
Donaldson, C., Mapp, T., Ryan, M. and Curtin, K.	85
Phage typing and drug resistance of Shigella sonnei isolated in England and Wales	
Bentley, C. A., Frost, J. A. and Rowe, B.	95
A mixed outbreak of cryptosporidium and campylobacter infection associated with a private	
water supply	
Duke, L. A., Breathnach, A. S., Jenkins, D. R., Harkis, B. A. and Codd, A. W.	03
Burkholderia cepacia respiratory tract acquisition: epidemiology and molecular characterization	
of a large nosocomial outbreak	
Pegues, C. F., Pegues, D. A., Ford, D. S., Hibberd, P. L., Carson, L. A., Raine, C. M. and	
	09
Nasal carriage of enterotoxin-producing Staphylococcus aureus among restaurant	
workers in Kuwait City	
	19
Do intestinal parasites interfere with the seroepidemiologic surveillance of Schistosoma mansoni	
infection?	
Alarcón de Noya, B., Colmenares, C., Losada, S., Fermin, Z., Masroua, G., Ruiz, L.,	
	23
A school outbreak of parvovirus B19 infection investigated using salivary antibody assays	
	31
Outbreaks of Norwalk-like virus-associated gastroenteritis traced to shellfish: co-	
existence of two genotypes in one specimen	
	39
Risk factors for recent toxoplasma infection in pregnant women in Naples	
	47
Investigation of tick-borne viruses as pathogens of humans in South Africa and evidence of Dugbe	
virus infection in a patient with prolonged thrombocytopenia	
•	53
Failure of vaccination to prevent outbreaks of foot-and-mouth disease	
<u>.</u>	63
An abattoir-based study of the prevalence of subclinical Johne's disease in adult cattle in south	
west England	
-	73
Gernikaya, B., Egan, R., Harbour, B. W. and Horgan, R. E.	
Book Reviews 38	81
Fifty years of antimicrobials: Past perspectives and future trends HIV and dementia	
Erratum	
A cluster of cases of streptococcal necrotising fasciitis in Gloucestershire	
Cartwright, K., Logan, M., McNulty, C., Harrison, S., George, R., Efstratiou,	
	83
	85

Medical CD-ROM

Healthworks

FOR FURTHER INFORMATION ABOUT HEALTHWORKS MEDICAL INFORMATION SERVICES & PRODUCTS LOOK AT OUR INTERNET SITE AT: http://www.healthworks.co.uk

ONE STOP MAIL ORDER SERVICE

CD-ROM has quickly become a major vehicle for the transfer of medical knowledge with new titles being published every week. Healthworks can now provide you with a one-stop mail order service for medical CD-ROMs and other electronic publications.

Our CD-ROM catalogue covers such subject areas as:

AIDS, Allergies, Anatomy, Anaesthesia, Dermatology, Gastroenterology, Genetics, Haematology, Health & Safety, Imaging, Immunology, Infectious Diseases, Nephrology, Neurology, Nursing, Obstetrics, Oncology, Opthalmology, Pathology, Pharmacology, Paediatrics, Radiology, Rheumatology, Surgery and many more.

For your **free** copy of the Healthworks CD-ROM catalogue for both IBM PC compatibles and Apple Macintosh computers contact us now on:

Tel: 0113 243 9899 Fax: 0113 247782 E-mail: sales@d-access.demon.co.uk

CAMBRIDGE

Viruses and Cancer

Edited by A. C. MINSON, J. C. NEIL and M. A. MCCRAE

'for those interested in the relation of viruses to cancer, this volume provides a useful introduction to the field.'

British Journal of Cancer

'clear and readable...with thorough referencing upto and including 1994. The volume is therefore ideal for anyone wanting to gain an expert overview of the field.'

British Toxicology Society Newsletter

£55.00 net HB 0 521 45472 7 324 pp. 1994 Society of General Microbiology Symposia 51

Population Genetics of Bacteria

Edited by S. BAUMBERG, J. P. W. YOUNG, E. M. H. WELLINGTON and J. R. SAUNDERS

A summary of the current knowledge of the genetic organisation of bacterial populations. Similarities and differences, within the population genetics of higher organisms, are emphasised, and the impact of bacterial studies on current evolutionary theories highlighted.

'provides an overview of the advances in microbial population biology over the last 11 years or so ... useful for workers in the field ... a valuable introduction for the vast majority of evolutionary biologists not working with microorganisms.'

Julian Adams, Science

£55.00 net HB 0 521 48052 3 362 pp. 1995 Society for General Microbiology Symposia 52

Epidemiological Studies

A Practical Guide

ALAN J. SILMAN

A practical guide to the design, conduct, analysis and interpretation of epidemiological studies. Many illustrative examples and helpful practical hints make this an essential handbook for hospital clinicians, general practitioners and public health physicians and as an introduction for those entering epidemiology as a speciality.

£40.00 net HB 0 521 43371 1 192 pp. 1996

£14.95 net PB 0 521 43979 5

Ecology of Infectious Diseases in Natural Populations

Edited by B. GRENFELL and A. DOBSON

The first major synthesis of the theory and empirical knowledge about the ecology and epidemiology of infectious diseases in natural, unmanaged, animal and plant populations. £35.00 net HB 0 521 46502 8 532 pp. 1995

Publications of the Newton Institute 7

Cambridge books are available from good bookshops, alternatively phone UK + 44 (0)1223 325970 to order direct using your credit card, or fax UK + 44 (0)1223 325959. For further information, please email Giulia Williams on science@cup.cam.ac.uk or browse our Worldwide Web server http://www.cup.cam.ac.uk



The Edinburgh Building, Cambridge CB2 2RU

Exploring New Frontiers in the Life Sciences

Protein Science

Published for the Protein Society, Protein Science is dedicated to the exploration of all scientific aspects of protein molecules, the 'building blocks of life'. Appearing monthly this innovative journal presents research by leading scientists, encompassing many research settings and methodologies, and cutting across restrictive disciplinary lines. The wide scope of Protein Science includes the structure, function and biochemical significance of proteins, their role in molecular and cell biology, genetics and evolution, as well as their regulation and mechanism of action.

Electronic Protein Science

As a leading innovator in scientific publishing technologies, Protein Science, now publishing Volume 5, is continually enhancing its electronic dimension. For 1996, it will have on-line text and graphics, providing faster publication and greater access to original proteins research.

Members of The Protein Society have access to the 1996 electronic edition without additional charge.

Features

- Full length original research papers & shorter contributions
- On the Record concise reports of recent developments
- Recollective series significant discoveries & how they influenced the subsequent course of scientific pursuits are recalled
- Rapid publications
- Lists of forthcoming papers
- Corporate members news
- Calendars of meetings

Subscription Information

Volume 5, 1996 monthly with 12 diskettes: £415/\$705; £125/\$195 for individuals. Subscription price includes airmail/airspeeded delivery. All members of The Protein Society will receive **Protein Science** as part of their membership.

For information via the Internet contact: httpp://www.prosci.uci.edu
For further information or a free sample copy, write to: Journals Marketing Department, Cambridge University Press, The Edinburgh Building, *FREEPOST, Cambridge, CBI 2BR, UK Td: +44 (0)1223 325806
Fax: +44 (0)1223 315052
Email: journals_marketing@cup.cam.ac.uk

In USA, Canada & Mexico write to: Cambridge University Press, 40 West 20th Street, New York, NY 10011, USA



Continued from back cover

Risk factors for recent toxoplasma infection in pregnant women in Naples Buffolano, W., Gilbert, R. E., Holland, F. J., Fratta, D., Palumbo, F. and Ades, A. E.	347
Investigation of tick-borne viruses as pathogens of humans in South Africa and evidence of Dugbe virus infection in a patient with prolonged thrombocytopenia Burt, F. J., Spencer, D. C., Leman, P. A., Patterson, B. and Swanepoel, R.	353
Failure of vaccination to prevent outbreaks of foot-and-mouth disease Woolhouse, M. E. J., Haydon, D. T., Pearson, A. and Kitching, R. P.	363
An abattoir-based study of the prevalence of subclinical Johne's disease in adult cattle in south west England Çetinkaya, B., Egan, K., Harbour, D. A. and Morgan, K. L.	373
Book Reviews Fifty years of antimicrobials: Past perspectives and future trends HIV and dementia	38
Erratum	
A cluster of cases of streptococcal necrotising fasciltis in Gloucestershire Cartwright, K., Logan, M., McNulty, C., Harrison, S., George, R., Efstratiou, A., McEvoy, M. and Begg, N.	383
Indexes	388

VOLUME 116 NUMBER 3 JUNE 1996

Epidemiology Infection



CONTENTS

Editorial: The Jenner Bicentenary; still uses for smallpox vaccine Baxby, D.	231
Special articles:	
The development and use of a vaccinia-rabies recombinant oral vaccine for the control of wildlife rabies; a link between Jenner and Pasteur Pastoret, PP. and Brochier, B.	235
Non-replicating expression vectors: applications in vaccine development and gene therapy Limbach, K. J. and Paoletti, E.	241
Foodborne outbreaks caused by salmonella in Italy, 1991–4 Scuderi, G., Fantasia, M., Filetici, E. and Anastasio, M. P.	257
Virulence and genotype stability of Salmonella enterica serovar Berta during a natural outbreak Olsen, J. E., Skov, M. N., Brown, D. J., Christensen, J. P. and Bisgaard, M.	007
	267
Changing epidemiology of cholera due to <i>Vibrio cholerae</i> O1 and O139 Bengal in Dhaka, Bangladesh	
Faruque, A. S. G., Fuchs, G. J. and Albert, M. J.	275
Epidemiology of infection due to <i>Escherichia coli</i> O157: a 3-year prospective study MacDonald, I. A. R., Gould, I. M. and Curnow, J.	279
Estimating the economic benefits of avoiding food-borne risk: is 'willingness to pay' feasible? Donaldson, C., Mapp, T., Ryan, M. and Curtin, K.	285
Phage typing and drug resistance of <i>Shigella sonnei</i> isolated in England and Wales Bentley, C. A., Frost, J. A. and Rowe, B.	295
A mixed outbreak of cryptosporidium and campylobacter infection associated with a private water supply Duke, L. A., Breathnach, A. S., Jenkins, D. R., Harkis, B. A. and Codd, A. W.	303
Burkholderia cepacia respiratory tract acquisition: epidemiology and molecular characterization of a large nosocomial outbreak Pegues, C. F., Pegues, D. A., Ford, D. S., Hibberd, P. L., Carson, L. A., Raine, C. M. and Hooper, D. C.	309
Nasal carriage of enterotoxin-producing Staphylococcus aureus among restaurant workers in Kuwait City	
Al Bustan, M. A., Udo, E. E. and Chugh, T. D.	319
Do intestinal parasites interfere with the seroepidemiologic surveillance of <i>Schistosoma mansoni</i> infection? Alarcón de Noya, B., Colmenares, C., Losada, S., Fermin, Z., Masroua, G., Ruiz, L., Soto, L. and Noya, O.	323
A school outbreak of parvovirus B19 infection investigated using salivary antibody assays Rice, P. S. and Cohen, B. J.	221
	331
Outbreaks of Norwalk-like virus-associated gastroenteritis traced to shellfish: coexistence of two genotypes in one specimen	

Continued on inside back cover

339





1 Published online by Cambridge University Pres

Sugieda, M., Nakajima, K. and Nakajima, S.