

# Occupational and Environmental Medicine



Adopted as the Journal of the Faculty of Occupational Medicine of the Royal College of Physicians of London

Editor: Anne Cockcroft (United Kingdom)

Technical Editor: Judith Haynes

Editorial Assistant: Rachel Harvey

Editorial Board:

T C Aw (United Kingdom)

F J H Van Dijk (Holland)

J S Evans (United States)

R M Harrison (United Kingdom)

J Jeyaratnam (Singapore)

F Kauffmann (France)

R L Maynard (United Kingdom)

R McNamee (United Kingdom)

J Myers (South Africa)

B Nemery (Belgium)

T Okubo (Japan)

L Rosenstock (United States)

M Sim (Australia)

M Singal (United States)

D C Snashall (United Kingdom)

O Svane (Denmark)

G Thériault (Canada)

K M Venables (United Kingdom)

Editor, *British Medical Journal*

**NOTICE TO CONTRIBUTORS** *Occupational and Environmental Medicine* is intended for the publication of original contributions relevant to occupational and environmental medicine, including toxicological studies of chemicals of industrial, agricultural, and environmental importance, and epidemiological studies. As well as full papers, short papers dealing with brief or preliminary observations relevant to occupational and environmental medicine will also be considered. Case reports should cover substantial new ground to merit publication. Other articles, including review or position papers, will be considered but should not be submitted without first approaching the Editor to discuss their suitability for the *Journal*. Letters to the Editor are always welcome. The website address for the *Journal* is:— <http://www.bmj.com/bmj/>

**INSTRUCTIONS TO AUTHORS** Three copies of all submissions should be sent to: The Editor, *Occupational and Environmental Medicine*, BMJ Publishing Group, BMA House, Tavistock Square, London WC1H 9JR, UK. All authors should sign the covering letter as evidence of consent to publication. Papers reporting results of studies on human subjects must be accompanied by a statement that the subjects gave written, informed consent and by evidence of approval from the appropriate ethics committee. These papers should conform to the principles outlined in the Declaration of Helsinki (*BMJ* 1964;ii:177).

If requested, authors shall produce the data on which the manuscript is based, for examination by the Editor.

**Authors are asked to submit with their manuscript the names and addresses of three people who they consider would be suitable independent reviewers. They will not necessarily be approached to review the paper.**

Papers are considered on the understanding that they are submitted solely to this *Journal* and do not duplicate material already published elsewhere. In cases of doubt, where part of the material has been published elsewhere, the published material should be included with the submitted manuscript to allow the Editor to assess the degree of duplication. The Editor cannot enter into correspondence about papers rejected as being unsuitable for publication, and the Editor's decision in these matters is final.

**Papers should include a structured abstract of not more than 300 words, under headings of Objectives, Methods, Results, and Conclusions. Please include up to three keywords or key terms to assist with indexing.**

Papers should follow the requirements of the International Committee of Medical Journal Editors (*BMJ* 1991;302:338-41). Papers and references must be typewritten in double spacing on one side of the paper only, with wide margins. SI units should be used.

Short reports (including case reports) should be not more than 1500 words including a brief abstract. They should comprise sections of Introduction, Methods, Results, and Discussion with not more than one table or figure and up to 10 references. The format of case reports should be Introduction, Case report, and Discussion.

**Illustrations** Photographs and photomicrographs on glossy paper should be submitted unmounted. Charts and graphs should be carefully drawn in black ink on firm white paper. Legends to figures should be typed on a separate sheet of paper.

**References** References will not be checked by the editorial office; responsibility for the accuracy and completeness of references lies with the authors. Number references consecutively in the order in which they are first mentioned in the text. Identify references in texts, tables, and legends by Arabic numerals. References cited only in tables or in legends to figures should be numbered in accordance with a sequence estab-

lished by the first identification in the text of a particular table or illustration. Include only references essential to the argument being developed in the paper or to the discussion of results, or to describe methods which are being used when the original description is too long for inclusion. Information from manuscripts not yet in press or personal communications should be cited in the text, not as formal references.

Use the Vancouver style, as in this issue for instance, for a standard journal article: authors (list all authors when seven or fewer, when eight or more, list only six and add *et al*), title, abbreviated title of journal as given in *Index Medicus* (if not in *Index Medicus* give in full), year of publication, volume number, and first and last page numbers.

**Proofs** Contributors will receive one proof. Only minor corrections can be made at this stage; corrections other than printer's errors may be charged to the author.

**Reprints** Reprints will be charged for. The number of reprints required should be stated on the form provided with the proofs.

**Copyright** © 1996 *Occupational and Environmental Medicine*. This publication is copyright under the Berne Convention and the International Copyright Convention. All rights reserved. Apart from any relaxations permitted under national copyright laws, no part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means without the prior permission of the copyright owners. Permission is not, however, required to copy abstracts of papers or of articles on condition that a full reference to the source is shown. Multiple copying of the contents of the publication without permission is always illegal.

**NOTICE TO ADVERTISERS** Applications for advertisement space and for rates should be addressed to the Advertisement Manager, *Occupational and Environmental Medicine*, BMJ Publishing Group, BMA House, Tavistock Square, London WC1H 9JR.

**NOTICE TO SUBSCRIBERS** *Occupational and Environmental Medicine* is published monthly. The annual subscription rate (for 1996) is £146 (US \$229). Orders should be sent to the Subscription Manager, *Occupational and Environmental Medicine*, BMJ Publishing Group, BMA House, Tavistock Square, London WC1H 9JR. Orders may also be placed with any leading subscription agent or bookseller. (For the convenience of readers in the USA subscription orders with or without payment may also be sent to *British Medical Journal*, PO Box 408, Franklin, MA 02038, USA. All inquiries, however, must be addressed to the publisher in London). All inquiries regarding air mail rates and single copies already published should be addressed to the publisher in London.

Subscribers may pay for their subscriptions by Access, Visa, or American Express by quoting on their order the credit or charge card preferred together with the appropriate personal account number and the expiry date of the card.

Periodicals postage paid Rahway NJ. Postmaster: send address changes to: *Occupational and Environmental Medicine*, c/o Mercury Airfreight International Ltd Inc, 2323 Randolph Avenue, Avenel, NJ 07001, USA.

**FACULTY OF OCCUPATIONAL MEDICINE** The Faculty of Occupational Medicine of the Royal College of Physicians of London is a registered charity founded to promote, for the public benefit, the advancement of knowledge in the field of occupational medicine. The Faculty has offices at 6 St Andrew's Place, Regent's Park, London NW1 4LB.

ISSN 1351-0711.

pure 2,4-D esters.<sup>13</sup> On the other hand, lymphocyte mitogen responsiveness was increased in adult mice after subacute exposure.<sup>11 12</sup>

Our findings are based on a longitudinal approach where immunological variables of the subjects under study before exposure were used as reference. Further studies with unexposed comparison groups are needed to confirm our preliminary data and clarify whether these types of immunological changes may have health implications, contributing specifically to cancer aetiology.

We thank Professor Olav Axelson for providing a thorough revision of the manuscript and useful criticisms.

- 1 Hardell L, Eriksson M, Lenner P, Lundgren E. Malignant lymphoma and exposure to chemicals, especially organic solvents, chlorophenols and phenoxy acids: a case-control study. *Br J Cancer* 1981;43:169-76.
- 2 Hoar SK, Blair A, Holmes FF, Boysen CD, Robel RJ, Hoover R, et al. Agricultural herbicides and risk of lymphoma and soft tissue sarcoma. *JAMA* 1986;256:1141-6.
- 3 Woods JS, Polissar L, Severson RK, Heuser LS, Kulander BG. Soft tissue sarcoma. And non-Hodgkin's lymphoma in relation to phenoxyherbicide and chlorinated phenol exposure in western Washington. *J Natl Cancer Inst* 1987;78:899-910.
- 4 Hardell L, Eriksson M. The association between soft-tissue sarcomas and exposure to phenoxyacetic acids: a new case-referent study. *Cancer* 1988;62:652-6.
- 5 Wigle DT, Semenciw RM, Wilkins K, Riedel D, Ritter L, Morrison HI, et al. Mortality of Canadian farm operators: non-Hodgkin's lymphoma mortality and agricultural practices in Saskatchewan. *J Natl Cancer Inst* 1990;82:575-82.
- 6 Zahm SH, Weisenburger DD, Rabbitt PA, Saal CR, Vaught JB, Cantor PK, et al. A case-control study of non-Hodgkin's lymphoma and the herbicide 2,4 dichlorophenoxyacetic acid (2,4-D) in eastern Nebraska. *Epidemiology* 1990;1:349-56.
- 7 Kelly SJ, Guidotti TL. Phenoxyacetic acid herbicides and chlorophenols and the etiology of lymphoma and soft tissue neoplasms. *Public Health Rev* 1989-90;17:1-37.
- 8 Kinlen LJ. Immunosuppression and cancer. In: Vanio H, Magee PN, McGregor DB, McMichael AJ, eds. *Mechanisms of carcinogenesis in risk identification*. Lyon: International Agency for Research on Cancer, 1992: 237-53.
- 9 Vineis P, D'Amore P, and the Working Group on the Epidemiology of Hematolymphopoietic Malignancies in Italy. The role of occupational exposure and immunodeficiency in B-cell malignancies. *Epidemiology* 1992;3: 266-70.
- 10 Blair A, Zahm SH, Pearce NE, Heineman EF, Fraumeni JF. Clues to cancer aetiology from studies of farmers. *Scand J Work Environ Health* 1992;18:209-15.
- 11 Blakley BR, Schiefer BH. The effect of topically applied n-butylester of 2,4-dichlorophenoxyacetic acid on the immune response in mice. *J Appl Toxicol* 1986;6:291-5.
- 12 Blakley BR. The effects of oral exposure to the N-butylester of 2,4-dichlorophenoxyacetic acid on immune response in mice. *Int J Immunopharmacol* 1986;8:93-9.
- 13 Blakley BR, Blakley PM. The effect of prenatal exposure to the n-butylester of 2,4-dichlorophenoxyacetic acid (2,4-D) on the immune response in mice. *Teratology* 1986; 33:15-20.
- 14 Blakley BR, Gagnon JM. The effect of a commercial 2,4-D formulation on chemical- and viral-induced tumor production in mice. *J Appl Toxicol* 1992;12:245-9.
- 15 Adams SL, Horvat ST, Irwin AE, Junkin RW, Koreman NM, Blakley BR. The effects of Tordon 202C exposure on urethane-induced lung adenoma formation in female CD-mice. *Vet Hum Toxicol* 1991;33:209-11.
- 16 Seaman WE, Gindhart TD, Blackman MA, Dalal B, Talal N, Werb Z. Suppression of natural killing in vitro by monocytes and polymorphonuclear leukocytes. *J Clin Invest* 1982;69:876-8.
- 17 Herberman RB, Bartam S, Haskill JS, Nunn M, Holden HT, West WH. Fc receptors on mouse effectors cells mediating natural cytotoxicity against tumor cells. *J Immunol* 1977;119:322-6.
- 18 Thomas PT, Busse WW, Kerkvliet NI, Luster MI, Munson AE, Murray M, et al. Immunologic effects. In: Baker SR, Wilkinson CF, eds. *The effects of pesticides on human health. Advances in Modern Environmental Toxicology vol XVIII*. Princeton, NJ: Princeton Sci Publ, 1990:261-95.
- 19 Newcombe DS. Immune surveillance, organophosphorus exposure, and lymphomagenesis. *Lancet* 1992;339:539-41.
- 20 Sadat-Sowti B, Debre P, Idziorek T, Guillon J-M, Hodida F, Okzenhendler E, et al. A Lectin-binding soluble released by CD8<sup>+</sup> CD57<sup>+</sup> lymphocytes from AIDS patients inhibits T cell cytotoxicity. *Eur J Immunol* 1990; 21:737-41.
- 21 Trichieri G. Biology of natural killer cells. *Adv Immunol* 1989;47:187-376.

## Rejected manuscripts

From February 1994, authors whose submitted articles are rejected will be advised of the decision and one copy of the article, together with any reviewers' comments, will

be returned to them. The *Journal* will destroy remaining copies of the article but correspondence and reviewers' comments will be kept.

- Exposure to terpenes: effects on pulmonary function. *Int Arch Occup Environ Health* 1983;51:191-8.
- 5 Johard U, Eklund A, Dahlqvist M, Ahlander A, Alexandersson R, Ekholm U, *et al.* Signs of alveolar inflammation in non-smoking Swedish wood trimmers. *Br J Ind Med* 1992;49:428-34.
  - 6 Dahlqvist M, Johard U, Alexandersson R, Bergström B, Ekholm U, Eklund A, *et al.* Lung function and precipitating antibodies in low exposed wood trimmers in Sweden. *Am J Ind Med* 1992;21:549-59.
  - 7 Malmberg P, Rask-Andersen A, Larsson KÅ, Stjernberg N, Sundblad B-M, Eriksson K. Increased bronchial responsiveness in workers sawing Scots pine. *Am J Respir Crit Care Med* 1996;153:948-52.
  - 8 Chan Yeung M, Vedal S, Kus J, MacLean M, Enarson D, Tse KS. Symptoms, pulmonary function and bronchial hyperreactivity in western red cedar asthma compared to office workers. *Am Rev Respir Dis* 1984;130:1038-41.
  - 9 Gäfvert E. Allergenic components in modified and unmodified rosin. *Acta Derm Venereol Suppl (Stoch)* 1994;184:1-36.
  - 10 Karlberg A, Bohlinder K, Boman A, Hacksell U, Hermansson J, Jacobsson S, Nilsson LG. Identification of 15-hydroperoxyabietic acid as a contact allergen in Portuguese colophony. *J Pharm Pharmacol* 1988;40:42-7.
  - 11 Pirilä V. Eczema due to oil of turpentine. *Therapeutische Umschau/Revue Thérapeutique* 1970;27:509-14.
  - 12 Eriksson K, Levin J-O. Identification of cis- and trans-verbenaol in human urine after occupational exposure to terpenes. *Int Arch Occup Environ Health* 1990;62:379-83.
  - 13 Bascom R, Pipkorn U, Lichtenstein L, Naclerio R. The influx of inflammatory cells into nasal washings during the late response to antigen challenge. *Am Rev Respir Dis* 1988;138:406-12.
  - 14 Pipkorn U, Karlsson G, Enerbäck L. A brush method to harvest cells from the nasal mucosa for microscopic and biochemical analysis. *J Immunol Methods* 1988;112:37-42.
  - 15 Hedenström H, Malmberg P, Fridriksson HV. Reference values for lung function tests in men: regression equations with smoking variables. *Uppsala J Med Sci* 1986;91:299-310.
  - 16 Malmberg P, Larsson K, Thunberg S. Increased lung deposition and biological effect of methacholine by use of a drying device for bronchial provocation tests. *Eur Respir J* 1991;4:890-8.
  - 17 Zhiping W, Malmberg P, Larsson K, Palmberg HL. Inhalation of swine dust induces cytokine release into upper and lower airway [abstract]. *Eur Respir J* 1995;8 (suppl 19):351s.
  - 18 Zhiping W, Malmberg P, Larsson P, Larsson B-M, Larsson K. Time course of interleukin-6 and tumor necrosis factor- $\alpha$  increase in serum following inhalation of swine dust. *Am J Respir Crit Med* 1996;153:147-52.
  - 19 Bruun H, Gåslund S. Partition chromatographic studies of the rosin acid compositions of oleorosins from north-European pine and spruce, Finnish tall oil rosin and catalytically modified tall oil rosins. *Acta Acad Abo. Mathematica et Physica XXII* 1960;1:11-9.
  - 20 Johard U, Larsson K, Löf A, Eklund A. Controlled short-time terpene exposure induces an increase of the macrophages and the mast cells in bronchoalveolar lavage fluid. *Am J Ind Med* 1993;23:793-9.
  - 21 Johard U, Eklund A, Hed J, Lundahl J. Terpenes enhance metabolic activity and alter expression of adhesion molecules (Mac-1 and L-Selectin) on human granulocytes. *Inflammation* 1992;17:499-509.
  - 22 Falk A, Hagberg MT, Löf AE, Wigaeus Hjelm EM, Zhiping W. Uptake, distribution and elimination of  $\alpha$ -pinene in man after exposure by inhalation. *Scand J Work Environ Health* 1990;16:372-8.
  - 23 Falk A, Löf A, Hagberg M, Wigaeus-Hjelm E, Wang Z. Human exposure to 3-carene by inhalation: toxicokinetics, effects on pulmonary function and occurrence of irritative and CNS-symptoms. *Toxicol Appl Pharmacol* 1991;110:198-205.
  - 24 Dahlqvist M, Alexandersson R, Ulfvarson U. Pulmonary function changes in sawmill workers—a prospective study of occupational exposure to sawfumes. *Occup Hyg* 1994;1:17-26.

## Correspondence and editorials

*Occupational and Environmental Medicine* welcomes correspondence relating to any of the material appearing in the journal. Results from preliminary or small scale studies may also be published in the correspondence column if this seems appropriate. Letters should be not more than 500 words in length and contain a minimum of references. Tables and figures should be kept to an absolute

minimum. Letters are accepted on the understanding that they may be subject to editorial revision and shortening.

The journal also publishes editorials which are normally specially commissioned. The Editor welcomes suggestions regarding suitable topics; those wishing to submit an editorial, however, should do so only after discussion with the Editor.

quently developed severe chloracne and lost time from work due to illness, both of which were documented in the medical records. In 1960, he was treated for appendicitis. Currently, he shows no active acne-like lesions or evidence of scarring and he has never smoked cigarettes or been diagnosed with cancer.

Our overall findings are consistent with an increase in cancer risks induced by TCDD in people with past TCDD exposures sufficient to produce other signs of toxicity. A positive dose-response gradient was evident among cigarette smokers, but not among non-smokers. Unfortunately, with such a small cohort, the risk estimates are not very stable and we are unable to assess whether TCDD might be exerting an influence independent of other cancer risk factors.

The strengths of this study include the exposure assessment, the nearly 40 year follow up period, an extensive clinical data base supporting our health outcome assessment, and the availability of cigarette smoking histories for most people. Limitations stem from the small size of the study population, the possibility of unknown confounding exposures, and the potential for biases in reporting illness and detecting diagnoses that is linked to the considerable medical attention received by cohort members over the years.

We thank Professor Harvey Checkoway, Seattle, Washington, USA, for his comments and suggestions regarding our draft manuscript.

- 1 World Health Organisation Task Group on Chlorinated Dibenzo-p-dioxins and Dibenzofurans. *Polychlorinated dibenzo-para-dioxins and dibenzofurans*. Geneva: WHO, 1989:39-60. (Environmental Health Criteria 88.)
- 2 Birnbaum LS. The mechanism of dioxin toxicity: relationship to risk assessment. *Environ Health Perspect* 1994; 102:157-67.
- 3 Huff J. 2,3,7,8-TCDD: a potent and complete carcinogen in experimental animals. *Chemosphere* 1992;25:173-6.
- 4 Beebe LE, Anver MR, Riggs CW, Fornwald LW, Anderson LM. Promotion of N-nitrosodimethylamine-initiated mouse lung tumors following single or multiple low dose exposure to 2,3,7,8-tetrachlorodibenzo-p-dioxin. *Carcinogenesis* 1995;16:1345-9.
- 5 Fingerhut MA, Halperin WE, Marlow DA, Piacitelli LA, Honchar PA, Sweeney MH, et al. Cancer mortality in workers exposed to 2,3,7,8-tetrachlorodibenzo-p-dioxin. *N Engl J Med* 1991;324:212-8.
- 6 Manz A, Berger J, Dwyer JH, Flesch-Janys D, Nagel S, Waltsgott H. Cancer mortality among workers in chemical plant contaminated with dioxin. *Lancet* 1991;338: 959-64.
- 7 Zober A, Messerer P, Huber P. Thirty-four-year mortality follow-up of BASF employees exposed to 2,3,7,8-TCDD after the 1953 accident. *Int Arch Occup Environ Health* 1990;62:139-57.
- 8 Goldmann P. Schwerste akute Chlorakne durch Trichlorphenol-Zersetzungsprodukte. *Arbeitsmedizin Sozialmedizin Arbeitshygiene* 1972;7:12-8.
- 9 Schulz KH. Klinische und experimentelle Untersuchungen zur Toxikologie der Chlorakne. *Archiv für Klinische und Experimentelle Dermatologie* 1957;206:589-96.
- 10 Kimmig J, Schulz KH. Chlorierte aromatische zyklische Aether als Ursache der sogenannten Chlorakne. *Naturwissenschaften* 1957;44:337-8.
- 11 Ott MG, Messerer P, Zober A. Assessment of past occupational exposure to 2,3,7,8-tetrachlorodibenzo-p-dioxin using blood lipid analyses. *Int Arch Occup Environ Health* 1993;65:1-8.
- 12 Zober A, Ott MG, Fleig J, Heidemann A. Cytogenetic studies in lymphocytes of workers exposed to 2,3,7,8-TCDD. *Int Arch Occup Environ Health* 1993;65:157-61.
- 13 Zober A, Ott MG, Messerer P. Morbidity follow-up study of BASF employees exposed to 2,3,7,8-TCDD after a 1953 chemical reactor accident. *Occup Environ Med* 1994;51: 479-86.
- 14 Ott MG, Zober A, Germann C. Laboratory results for selected target organs in 138 individuals occupationally exposed to TCDD. *Chemosphere* 1994;29:2423-37.
- 15 Patterson DG, Fingerhut MA, Roberts DW, Needham LL, Sweeney MH, Marlow DA, et al. Levels of polychlorinated dibenzo-p-dioxins and dibenzofurans in workers exposed to 2,3,7,8-tetrachlorodibenzo-p-dioxin. *Am J Ind Med* 1989;16:135-46.
- 16 Wolfe WH, Michalek JE, Miner JC, Pirkle JL, Caudill SP, Patterson DG, Needham LL. Determinants of TCDD half-life in veterans of Operation Ranch Hand. *J Toxicol Environ Health* 1994;41:481-8.
- 17 Geyer H, Scheunert I, Rapp K, Kettrup A, Korte F, Greim H, Rozman K. Correlation between acute toxicity of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) and total body fat content in mammals. *Toxicology* 1990;95: 97-107.
- 18 Zober A, Pöpke O. Concentrations of PCDDs and PCDFs in human tissue 36 years after accidental dioxin exposure. *Chemosphere* 1993;27:413-8.
- 19 Hill ID. Computing man years at risk. *Br J Prev Soc Med* 1972;26:132-4.
- 20 Monson RR. Analysis of relative survival and proportional mortality. *Comp Biomed Res* 1974;7:325-32.
- 21 Lee IM, Manson JE, Hennekens H, Paffenbarger RS. Body weight and mortality. A 27-year follow-up of middle-aged men. *JAMA* 1993;270:2823-8.
- 22 Colby TV, Koss MN, Travis, WD. Tumors of the lower respiratory tract. In: *Atlas of tumor pathology, third series fascicle 13*. Washington, DC: Armed Forces Institute of Pathology, 1995:91-105. (ISSN 0160-6344.)
- 23 Mably TA, Theobald HM, Ingall GB, Peterson RE. Hypergastrinemia is associated with decreased gastric acid secretion in 2,3,7,8-tetrachlorodibenzo-p-dioxin-treated rats. *Toxicol Appl Pharmacol* 1990;106:518-28.

## Occupational and Environmental Medicine and the electronic age

OEM has an Email address which is 100632.3615@compuserve.com. We welcome contact by Email, including letters to the editor. Some of our reviewers already send us their reports by Email, helping to speed up the peer review process.

We are moving towards electronic publishing and for some months now we have been asking authors to send us their revised papers on disk as well as a hard copy. I am delighted to report that nearly all our authors are managing to comply with this

request; far more than for other specialist journals in the BMJ Publishing group. Oddly enough, the few authors who have not sent us a disk version of their revised papers have been almost exclusively from the United Kingdom. I would be interested in suggestions for why this might be. Perhaps United Kingdom based authors read our correspondence and instructions less assiduously? Watch for revised Instructions to Authors.

The Editor

Table continued

100-199			≥ 200			Total		
deaths	SMR†	(95% CI)	deaths	SMR†	(95% CI)	deaths	SMR†	(95% CI)
7	2.14	(0.86-4.41)	6	2.00	(0.73-4.35)	31	1.34	(0.91-1.91)
2	1.11	(0.13-4.03)	1	0.59	(0.01-3.30)	12	1.15	(0.59-2.01)
1	1.66	(0.04-9.26)	0	0	(0-8.44)	5	1.99	(0.65-4.64)
1	6.03	(0.15-33.6)	3	8.31	(1.71-24.3)	4	4.40	(1.20-11.3)
11	1.89	(0.94-3.37)	10	1.82	(0.87-3.35)	52	1.41	(1.05-1.85)
1.81		(0.83-3.94)	1.83		(0.79-4.25)	—		—
1.80		(0.82-3.92)	1.79		(0.77-4.18)	—		—

ties will also be incorporated in the update. This should provide a more precise characterisation of the independent and joint effects of exposures to crystalline silica and asbestos on mortality from lung cancer among these workers in the diatomite industry.

This research was supported by a grant from the United States National Institute for Occupational Safety and Health (R01 OH03126). The reconstruction of asbestos exposure, by Dr Gibbs and Mr Christensen, was supported by a contract from the International Diatomite Producers Association, San

Francisco, CA. We are grateful to Ms Jennifer Rene for preparation of the manuscript.

- 1 Checkoway H, Heyer NJ, Demers PA, Breslow NE. Mortality among workers in the diatomaceous earth industry. *Br J Ind Med* 1993;50:586-97.
- 2 Gibbs GW, Christensen DR. *The asbestos exposure of workers in the Manville diatomaceous earth plant, Final report to the International Diatomite Producers Association*. Lompoc, California: International Diatomite Producers Association, 1994.
- 3 Dement JM, Brown DP, Okun A. Follow-up study of chrysotile asbestos textile workers: cohort mortality and case-control analyses. *Am J Ind Med* 1994;26:431-47.
- 4 Breslow NE, Day NE. *Statistical methods in cancer research. Vol. II. The analysis of cohort studies*. Lyon: International Agency for Research on Cancer, 1987.

## Vancouver style

All manuscripts submitted to *Occup Environ Med* should conform to the uniform requirements for manuscripts submitted to biomedical journals (known as the Vancouver style.)

*Occup Environ Med*, together with many other international biomedical journals, has agreed to accept articles prepared in accordance with the Vancouver style. The style (described in full in the *BMJ*, 24 February 1979, p 532) is intended to standardise requirements for authors.

References should be numbered consecutively in the order in which they are first mentioned in the text by Arabic numerals above the line on each occasion the reference is cited (Manson<sup>1</sup> confirmed other reports<sup>2-5</sup> . . .). In future references to papers submitted to *Occup Environ Med*

should include: the names of all authors if there are seven or less or, if there are more, the first six followed by *et al*; the title of journal articles or book chapters; the titles of journals abbreviated according to the style of *Index Medicus*; and the first and final page numbers of the article or chapter. Titles not in *Index Medicus* should be given in full.

Examples of common forms of references are:

- 1 International Steering Committee of Medical Editors, Uniform requirements for manuscripts submitted to biomedical journals. *Br Med J* 1979;1:532-5.
- 2 Soter NA, Wasserman SI, Austen KF. Cold urticaria: release into the circulation of histamine and eosinophil chemotactic factor of anaphylaxis during cold challenge. *N Engl J Med* 1976;294:687-90.
- 3 Weinstein L, Swartz MN. Pathogenic properties of invading micro-organisms. In: Sodeman WA Jr, Sodeman WA, eds. *Pathologic physiology, mechanisms of disease*. Philadelphia: W B Saunders, 1974:457-72.

## BOOK REVIEWS

Book review editor: R L Maynard

If you wish to order, or require further information regarding the titles reviewed here, please write or telephone the BMJ Bookshop, PO Box 295, London WX1H 9TE. Tel: 0171 383 6244. Fax: 0171 383 6662. Books are supplied post free in the UK and for British Forces Posted Overseas addresses. Overseas customers should add 15% for postage and packing. Payment can be made by cheque in sterling drawn on a UK bank, or by credit card (MasterCard, VISA, or American Express) stating card number, expiry date, and your full name. (The price and availability are occasionally subject to revision by the Publishers.)

**Practical Approach to Occupational and Environmental Medicine, 2nd ed.** Edited by ROBERT J MCCUNNEY. (Pp 600; price £35.) 1994. Edinburgh: Churchill Livingstone (Pearson Professional). ISBN 0-316-555347.

In the United Kingdom, as in the United States, most medical practitioners in the field of occupational health are trained in other specialties. The Faculty of Occupational Medicine has long anguished over how best to bring these non-specialists into the academic fold, first trying short introductory courses and more recently replacing these with slightly longer study periods for a diploma, a move which unforeseeably caused a sharp fall in demand in this group for its flagship associate examination. The introductory courses were a great success, revealing to hundreds and possibly thousands of general practitioners with part time posts in industry the importance of regularly visiting the shop floor, the value of preventive medicine, and the pitfalls which can arise over ethical and confidentiality issues in the workplace. The courses and the textbooks they spawned focused on a modest number of facts and issues, probably in the hope that a few of these would stick and provide a firmer foundation than any attempt at comprehensiveness.

Not so in the United States, if this book is anything to go by. This second edition of a text which flowers from the American College of Occupational and Environmental Medicine has the deceptive dimensions of a large pocket, but is more at home on the reference shelf from where, I prophesy, it will be frequently consulted. The number of important works on occupational health has gradually multiplied on both sides of the Atlantic in recent times to fill a specialist's library; I am personally glad to include this book in mine. Of special interest in this edition is an entirely new section on environmental medicine, with chapters on clinical environmental medicine, hazardous waste, environmental incidents and emergencies, environmental audit, and risk assessment.

The rest of the 50 chapters cover all the main topics in occupational medicine, including less familiar ones on economics and computers in occupational medicine. The indexing is comprehensive and the references are useful and up to date; the inevitable North American perspective is, none the less, like all the text, easy and instructive to read. Thus I was interested to learn that there are fewer than 1000 practising physicians who were board certified in occupational medicine, a figure not very different from the number with the associate-ship, membership, or fellowship of the Faculty. And the section on environmental medicine will inevitably invite comparisons with current practice in this area in the United Kingdom at a time when the Faculty is planning to incorporate environmental medicine in its name.

The aims of the editor of this compendium have been amply fulfilled, including incorporating the whole range of occupational and environmental medicine between its covers in a form which will appeal especially to trainees and non-specialists.

PETER J BAXTER

**Occupational Health and Safety—Terms, Definitions and Abbreviations.** By CONFER RG, CONFER TR. (Pp 213; price £50.) 1994. Boca Raton: Lewis and CRC. ISBN 1-56670-077-9.

This is a dictionary of terms for "personnel involved in the broad scope of activities that are carried out in the field of occupational health and safety". The authors are experienced practical industrial hygienists from the United States. Starting with terms like "AAIH" (American Academy of Industrial Hygiene) and "abrasive cleaning" and finishing with "zinc protoporphyrin" and "zoonoses", this is a potentially useful dictionary of health and safety practice. It is aimed at practitioners rather than research workers, so some terms that are currently used in research exposure assessment are not included. Examples are "job exposure matrix", "retrospective exposure assessment", and "exposure group". However, it does cover a wide range of terms—such as relating to industrial work, occupational hygiene, United States regulatory practice, and occupational health.

Any dictionary like this will contain errors and the authors have encouraged comments. It is a measure of the somewhat parochial geographical scope that the eager potential commentator is told that "our address can be found in a listing of the AIHA membership". If dictionaries like this are to be useful, the authors must encourage a dialogue with their readership and widen it to professions other than industrial hygiene and countries other than the United States.

This would be a useful addition to a standard reference textbook on occupational health. If it is regularly revised, it could become very useful indeed.

K M VENABLES

## NOTICES

**International Conference on Land Management. 6–8 January 1997. London.**

This conference is to be held at the Royal Institution of Chartered Surveyors, Parliament Square, in London, the theme of the conference is Land Management with four subthemes: approaches to land management; land reform; environmental issues; geographic and land information systems.

Further details from: Dr Richard K Bullard, School of Surveying, University of East London, Longbridge Road, Dagenham, Essex, RM8 2AS, UK. Tel: +44 (0181) 590 7722. Fax: +44 (0181) 849 3618. E-mail: Bullard@UEL.AC.UK

**Plant Safety in the Chemical Industry. 9–11 June 1997. Frankfurt/Main, Germany**

The International Section of the ISSA for the Prevention of Occupational Risks in the Chemical Industry will be hosting the 17th International Symposium atACHEMA 1997. The aim of this symposium is to show how the safety of both employees and the environment can be optimised in the chemical industry by implementing innovative process solutions and by ensuring the proper planning, development; and operation of chemical plant.

An international exchange of experiences will provide a forum for showing how safety management systems can be optimally adapted to the potential risks posed by processes and plant. It will also serve as a vehicle for participants to present concrete technical and organisational solutions which will help ensure safe and reliable plant operation in compliance with the legal requirements.

The general topic of "Plant Safety in the Chemical Industry" has been specially chosen because of its broad appeal to both plant and occupational safety experts and to specialists from the fields of planning, operation, and management.

All lectures and discussions will be interpreted simultaneously into English, French, and German.

Further information and registration of papers from: Secretariat of the ISSA Chemistry Section, c/o BG Chemie, Kurfürsten-Anlage 62, D-69115 Heidelberg, Germany, Phone: ++ 49-6221-523 498. Fax: ++ 49-6221-523 420.

**International Conference on Human Health Effects of Mercury Exposure. 22–26 June, 1997. Tórshavn, Faroe Islands**

Symposia will include environmental exposure, occupational exposure, exposure to amalgams, toxic mechanisms, and biomarkers.

Abstract deadline: 3 February, 1997.

Further information: Faroe Travel/mercury, Staravegur 7, Box 1199, FR-110 Tórshavn, Faroe Islands. Fax: + 298 19200. e-mail: mercury@isleipnir.fo