

Table 2 Pleural fibrosis face on and radiologically detectable parenchymal abnormalities (profusion of small opacities)

	Total no	Profusion score of small opacities					
		0/0	0/1	1/0	1/1	1/2	2/1 and higher
Absence of pleural fibrosis face on	2929	2047	440		421		21
Circumscribed pleural fibrosis face on	325	178	58		83		6
Diffuse pleural fibrosis face on	70	33	12		22		3

fibrosis—that is, the likelihood of a positive parenchymal score is higher in those with pleural fibrosis.

The use of high resolution computer tomography (HRCT) will definitely contribute to clarification of these problems. It is of interest that HRCT generally detects more extensive pleural fibrosis than seen on the standard chest x ray film; it also detects interstitial pulmonary fibrosis in some cases in which no definite parenchymal abnormalities can be identified on the standard chest radiograph.

Asbestos: a chronology of its origins and health effects

Sir,—I read Murray's recent article (1990;47:361–5) concerning the health effects of asbestos with interest. I agree that rational public health policy in this area must be based on the best available scientific evidence. None the less, I strongly disagree with Murray's assessment of the use of asbestos in developing countries and his interpretation of the historical evidence concerning scientific knowledge of the carcinogenic potential of asbestos fibres.

Murray states that during the second world war period of asbestos use in shipbuilding "there was no knowledge of lung cancer or mesothelioma and work practices were poor as they were in many industries. It is improper for the apostles of hindsight to suggest that sufficient evidence existed about asbestos as to have been able to anticipate its effects." As a consultant on the landmark asbestos property damage case *Corporation of Mercer University v National Gypsum Co*, I had an opportunity to review internal asbestos industry documents concerning industry research on the health effects of asbestos. As outlined in Brodeur's book *Outrageous misconduct: The asbestos industry on trial*, it is

clear that the asbestos industry actively suppressed the release of industry sponsored research showing that inhalation of asbestos fibres constituted a serious health risk. In the light of information obtained through legal discovery proceedings in hundreds of asbestos lawsuits it is undeniable that leaders of the asbestos industry conspired to misinform both the public and the scientific community about the dangers of asbestos. Unfortunately, thousands of innocent people paid with their lives for this misguided policy.

I must also disagree with Murray's enthusiasm for the use of asbestos pipes in developing countries. Third World countries often become "dumping grounds" for toxic materials produced in industrialised nations. With markets for asbestos closed in many western countries, the asbestos industry must cultivate markets elsewhere. What better place than in nations that often lack adequate environmental and occupational regulations? Asbestos water pipes are often manufactured on site. Without proper regulation of such activities, we may, in several decades, witness the same dramatic increase in asbestos related deaths in the Third World as in the United States.

Such short sighted policies are akin to the production of tobacco and development of cigarette industries in Third World countries. Such countries now account for about 60% of world tobacco production with vigorous cigarette industries now established in China, Brazil, and Malawi. Agencies such as the World Bank have actively encouraged and supported the creation of cigarette industries in the third world (often with low interest loans) since it is an extremely profitable commodity and provides quick cash for economic development. Just as with asbestos, without considering the long term effects of such policies, the ultimate

cost in terms of human mortality and morbidity cannot be appreciated.

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Authors' reply:

I have read Huncharek's comments on my paper with tolerance and understanding. He is entitled to his views as I am to mine, but, like many people, he is also an apostle of hindsight. I made the point that, during the war, when the ultimate priority was winning it, there was no knowledge of lung cancer or mesothelioma attributable to asbestos. If he has evidence that such knowledge existed, let him publish it.

I carry no torches for the asbestos industry. When I visited the United States asbestos industry in 1954 I was not pleased with what I saw and it was not as good as in the United Kingdom. I was told that there was no epidemiological evidence of lung cancer because necropsies were uncommon and in some states, illegal. Much has been made of the suppression of the Saranac Lake data, but it was not as reprehensible as is made out by Castleman and others. In any case, what was the United States government doing? They attended the ILO meetings of experts during the 1930s where asbestos was discussed, even though they were not members of the ILO at that time.

I do not know how many developing countries Huncharek has visited and if he has seen, as I have, the manufacture of asbestos cement materials, including pipes. I have recently seen two model asbestos cement factories, one in Thailand and the other in Nigeria. In the latter case, no diseases attributable to asbestos have arisen in twenty years. Maybe the ones who would have contracted the diseases died of gut infections when they were children!

I was fascinated by the description of the manufacture of asbestos cement pipes on site. Sheets and pipes need sophisticated modern equipment, some undoubtedly more modern than others; you can't make them in "bush" factories. Bricks you can, but not pipes.

As well as his hindsight, he also indulges in prophecy. Not being the seventh son of a seventh son I cannot compete, but I can tell him that the hysteria in the United States about the removal of asbestos will result in more

cases in that unhappy country than in all the developing countries put together. Conversely, with inadequate water supplies, there will be a lot more deaths from intestinal infection.

Finally, I do not want to be preached to about tobacco. I never said that tobacco was any good or put it in the same category as asbestos. What I did say, and will say again, is that the provision of cheap asbestos cement pipes for water supplies and sewage disposal would make a greater contribution to the health of these countries than misguided do goodery.

NOTICES

World Conference on Human Health and Chemical Accidents, Utrecht, 10-13 June 1991

In line with the recommendations of the World Conference on Chemical Accidents held in Rome, 7-10 July 1987, and the European Conference on Environment and Health held in Frankfurt, 7-8 December 1989, it was decided that it would be appropriate to organise a conference on chemical accidents, which will focus on the role of health professionals and other health authorities in preparation for, response to, and prevention of chemical accidents. This conference will be jointly organised by WHO Regional Office for Europe, OECD, UNEP, and IPCS.

For further details please contact: World Conference on Human Health and Chemical Accidents Secretariat, CEP Consultants Ltd, 26-28 Albany Street, Edinburgh EH1 3QH.

Eighth International Conference on Occupational Lung Diseases, Prague, Czechoslovakia, 14-17 September 1992

The International Labour Office intends to convene an International Conference on Occupational Lung Diseases in Prague, Czechoslovakia, from 14 to 17 September 1992, in cooperation with the Federal Ministry of Labour and Social Affairs of the

Czech and Slovak Federal Republic and the Czechoslovak Medical Society JE Purkyne. International Pneumoconioses Conferences have been held in Johannesburg (1930), Geneva (1938), Sydney (1950), Bucharest (1971), Caracas (1978), Bochum (1983) and Pittsburgh (1988). At the 7th Conference in Pittsburgh, which was attended by more than 1,000 participants, it was observed that occupational lung diseases other than pneumoconioses present an increasing burden on the health of workers in many activities. The ILO has therefore modified the title of the next Conference so as to cover the broad spectrum of work-related respiratory diseases. This 8th Conference on occupational lung diseases will provide a forum for the exchange of scientific and technical information on the health effects of air pollutants at the workplace on the respiratory system of exposed workers and on the prevention and control of occupational lung diseases. The major themes will be sources of air pollution and respiratory disorders at the workplace; risk evaluation by environmental monitoring and assessment of the exposure of workers; surveillance of the health of the workers; aetiopathogenesis, differential diagnosis and treatment of occupational respiratory diseases; and preventive and control measures at the workplace.

For further details please contact: 8th International Conference on Occupational Lung Diseases, Secretariat, c/o Czechoslovak Medical Society, PO Box 88, Sokolska 31, 12026 Prague 2, Czechoslovakia.

University of California Department of Medicine Postgraduate Programmes. Occupational and Environmental Medicine Sessions I and III, San Francisco, 28th January-8 February 1991 (Session I); 11-15 February 1991 (Session III).

Sponsored by Division of Occupational and Environmental Medicine, Department of Medicine, University of California.

Eighty hours category AMA and AAFP credits for Session I and 40 hours for Session III. Fees: \$1200 for physicians, Session I; \$600 for physicians, Session III. Contact Postgraduate Programs, 521 Parnassus Avenue, C-405, San Francisco, CA 94143-0656.

Corrections

Mortality of a cohort of tin miners 1941-86 (1990;47:665-76). For heading, table 5 "... time from first exposure" should read "... cumulative time underground".

In table 12, 2nd row, 6th column "31% (15)" should read "31% (5)".

On page 671, the sentence above STOMACH CANCER should end "... arsenic exposure there was a significant excess of deaths from stomach cancer ($p = 0.02$)".

On page 672, section headed SILICOSIS line 8, "17%" should read "35%".