

CORRESPONDENCE

Prevalence of occupational lung disease among Botswana men formerly employed in the South African mining industry

EDITOR.—Steen, *et al*¹ reported on a study to evaluate the prevalence of occupational lung disease among Botswana men who were formerly employed in the South African mining industry. The article states that an initial objective was to determine the magnitude of previously unidentified occupational disease. Statements were made by the researchers which they cannot validate as they failed to collect information on previous evaluation, certification, and compensation of these former mine workers. A recent request for information from the Chamber of Mines of South Africa (even though this study was done in 1994), confirmed that the researchers failed to acquaint themselves with the compensation framework and neglected to collect essential information from the relevant authorities involved. The accusation made by the researchers: "Significantly, it indicates a failure of measures to prevent or identify pneumoconiosis while these men were in employment. Very few of them had been compensated, indicating a poor performance of systems set up under the ODMWA."¹ stands to be corrected by these researchers.

When considering the compensation framework it is important to understand the South African Occupational Diseases in Mines and Works Act (ODMWA), the certification arrangements in terms of this Act as well as the Compensation Commissioners functions. This system is briefly as follows:

- Miners have to be examined periodically by medical practitioners employed by mines. In terms of the regulations of ODMWA no miner may, or could legally previously, leave the industry without a previous medical examination within the last 30 days of employment

- Should a compensatable disease be present, the Medical Bureau for Occupational Diseases has to be informed with the necessary documentation

- The Certification Committee (subject to appeal to the Reviewing Authority) appointed by the Minister of Health, considers each case and certifies the presence (or absence) of a compensatable disease

- Details of certification are then forwarded to the Compensation Commissioner to arrange compensation of such a person. The Compensation Commissioner first has to ascertain that the person did not receive due compensation previously, and if not, payment is arranged.

In the article published, a cross sectional sample of former miners were examined which detected pneumoconiosis in a considerable number of cases. It is stated in the article that many of these miners actually indicated to the researchers that they have received compensation for diseases: "Of the participants 83 (27.3%) reported that they had previously been compensated for an occupational injury or disease."¹ However, despite this, the researchers continued to claim that many of these miners were not recognised as having compensatable occupa-

tional disease when leaving the industry. To make an informed statement to that effect, the histories of these miners would have needed to be checked at the Medical Bureau for Occupational Diseases and the Compensation Commissioner. The researchers seem not to have done this and their allegations are thus unsubstantiated.

The Chamber is concerned about allegations that miners with compensatable disease were undetected. Administrative arrangements of the compensation authorities in certain regions such as the TBVC and foreign countries may have failed to compensate miners, even after assessment and certification, due to corruption or other reasons outside the control of the industry.

To establish whether these cases were truly undiagnosed and therefore not compensated, the Chamber briefly checked the registers kept at the MBOD and the Compensation Commissioner to evaluate the true situation of the Botswana men submitted by the researchers. It proved that from these 304 cases (66% being self selected and not random) only 31 were considered to have a certifiable disease of whom 15 were not eligible for compensation in terms of ODMWA or were already previously diagnosed and compensated. The remaining 16 cases were forwarded to the Compensation Commissioner and here another four proved to have been compensated before.²

The Chamber has urged the researchers to complete their research and thoroughly follow up the cases as important information on these individual cases would be essential to plan for informed action. Crucial questions would be as to whether the cases actually received their money, and more clinical information and a full work history would be required on some of the cases.

M A C LA GRANGE
Health Adviser to the Chamber of
Mines of South Africa

- 1 Steen TW, Gyi KM, White NW, *et al*. Prevalence of occupational lung disease among Botswana men formerly employed in the South African mining industry. *Occup Environ Med* 1997;54:19-26.
- 2 La Grange MAC. Occupational lung disease in ex-mineworkers - misinformed critique (letter). *S Afr Med J* 1997;87:469-7.

Authors' reply—We appreciate the opportunity of responding to La Grange's letter. We are surprised that she has chosen to pursue this matter in further journal correspondence as we have already exchanged views in a series of correspondence on related matters in the South African Medical Journal.¹⁻⁴ The context of this exchange relates to our survey of 304 Botswana men identified by census as former miners living in or around the village of Thamaga. Of these 234 had been underground gold miners in South Africa. This was the first systematic respiratory health evaluation of black former South African gold miners for >50 years. During that time millions of men, migrants from all over the subcontinent, have worked in a large scale industry that is well known to have high risks of occupational lung diseases, sometimes with long latency periods. The gold mining industry has seemingly shown an indifference to what happens to the health of these men after they leave a mine.

La Grange seems to defend this status quo. She tutors us on South Africa's miners' compensation system as though it were not problematic, quotes our study² out of context, and expresses the belief that we stand in need of

issuing a correction. In support of her views she presents statistics from the registers of the South African compensation system to derive a minimal prevalence figure for our survey (compensable disease), that is the not the same as the ILO classification of pneumoconioses actually used by us to define prevalence. Even with this outcome we found that 16/234 men had compensable pneumoconiosis (68.4/1 000) with a cumulative prevalence of men who could qualify for compensation but had gone unrecognised of 51.3/1000. This cumulative prevalence is of an order of magnitude higher than might be inferred from official compensation statistics and reflects a failure of the system somewhere. We think that the failure is principally that there was never any form of systematic follow up of the health consequences of mining for the black miners of Southern Africa. Since 1993 all miners, regardless of race, have had a theoretical right to regular follow up by a dedicated state occupational health service but a lot needs to be done to make this a reality.

Our experience of the South African state compensation system for miners is that it is not user friendly. Gyi, as the referring doctor for the 188 claims submitted to the MBOD in 1994, has had no direct notification of the outcome of any of these claims. We have made our own enquiries and understand that 24 claims went missing at the MBOD and subsequently we have asked for a further 13 claims to be referred to the Reviewing Authority. We do not yet know all of the outcomes. Although the Compensation Commissioner seems to have accepted at least 12 new cases of pneumoconiosis among these men, as far as we can ascertain nobody in Thamaga has actually received any compensation money as a result of one of our claims. It has always been our intention to publish the outcomes of these compensation claims once we were able to ascertain that they were finalised.

La Grange seems to suggest that we should have directly checked whether these 188 men were known to the Compensation Commissioner before we submitted claims on their behalf. This was clearly impractical and is not required by the ODMWA. Further, we do not think that we should have delayed publication of our survey until all of the claims were finalised. La Grange quotes that 83 (27.3%) participants in our study had been compensated for occupational injury or disease. Reading on, our paper states that in 71 the compensation was for injury (not the subject of our debate, nor covered by the ODMWA). Ten men reported that they had been compensated for pulmonary TB and one was uncertain as to what disease he had been compensated for. Although we were not happy with all of the decisions of the MBOD, we know that the Certification Committee admitted 31 cases as certifiable disease. Consequently we still feel justified in our critique of the systems set up under the ODMWA and the earlier failure of the mining industry to detect such cases.

La Grange refers to "the Chamber" briefly checking the registers of compensation claimants kept at the MBOD and Compensation Commissioner. The Chamber of Mines is an institution representing mining employers, not a persona and La Grange is not telling us who actually physically checked these Department of Health registers. To our knowledge these named registers of miners are not

public documents that anyone is free to scrutinise at will.

After La Grange's first disclosure in April 1997 of outcome information from our survey, NWW wrote to Bayini, Director of the MBOD, expressing dissatisfaction at employer representatives gaining access to named patient records at the MBOD. In her reply in June 1997, Bayini stated that there was no record of La Grange requesting outcome information for miners involved in our study. La Grange does not collaborate with us and as far as we know she has never been to Thamaga. In the absence of consent from any of the parties to this matter, we fail to understand how La Grange's possession of this information can be viewed as legitimate and why she assumes that she has the right to publish and republish it.

Although we are dismayed by La Grange's research and publication etiquette, we are not disheartened by her assertions about our study's conclusions. We know that many health scientists in various areas have taken a very different approach to the publication of our findings. Our study has stimulated interest and debate and has thrown the spotlight on a area of occupational health epidemiology that has previously been neglected. We know of three generically similar studies of Southern African former gold miners that are in various stages of completion or planning that have in some way been stimulated by the publication of the Thamaga survey. Our hypothesis that there is a high cumulative prevalence of previously unrecognised and uncompensated occupational lung disease among former gold miners in Southern Africa has been empirically validated and stands confirmed until it is refuted by further investigations.

N W WHITE

*Respiratory Clinic, University of Cape Town, and
Groote Schuur Hospital,
South Africa*

K M GYI

*Occupational Health Unit, Ministry of Health,
Gaborone, Botswana*

T STEEN

Fylkeslegen I Vest-Agder, Kristiansand, Norway

- 1 Trapido ASM, Mqoqi NP, Macheke CM, *et al.* Occupational lung disease in ex-mineworkers -

sound a further alarm [letter]. *S Afr Med J* 1996;86:559.

- 2 la Grange MAC. Occupational lung disease in ex-mineworkers [letter]. *S Afr Med J* 1996;86:841.
- 3 White N. Occupational disease in ex-mineworkers - who answers the alarm [letter]? *S Afr Med J* 1996;86:1127.
- 4 la Grange MAC. White N. (reply) Occupational lung disease in ex-mineworkers - misinformed critique [letter]. *S Afr Med J* 1997;87:468-71.
- 5 Steen TW, Gyi KM, White NW, *et al.* Prevalence of occupational lung disease among Botswana men formerly employed in the South African mining industry. *Occup Environ Med* 1997;54:19-26.

BOOK REVIEW

Book review editor: R L Maynard

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Air Pollution in the United Kingdom

Edited by: Hewitt C N, Davison G, eds. (Pp viii+148; £49.50) 1997. London: Royal Society of Chemistry. ISBN: 0 85404 767 0.

This is a small, useful but expensive book providing an up to date summary of air pollution in the United Kingdom. The editors have drawn together a series of papers presented at a Royal Society of Chemistry

Symposium held in 1996: the contributions are thus pleasingly up to date. The authors are all well known experts and several have played important parts in re-establishing the study of air pollution in the United Kingdom. It is always invidious to single authors for praise but Derwent's contribution on global air pollution problems, Harrison's on urban air pollution, and Williams' on the United Kingdom national air quality strategy will be especially important to those seeking to understand the current issues. Derwent explains global atmospheric chemistry more elegantly than the reader has any right to expect in such a difficult area.

Of course this is a fast moving field and some chapters are dating already. Ayres has contributed an excellent review of the health effects of air pollutants but must rue his prediction that animal studies have little more to offer. Work in the United States with animal models of chronic respiratory disease have—during the past year—changed our perception of the toxicity of the ambient aerosol. The cautious tone of the chapter is, however, absolutely warranted. All those who speak of the effects of air pollutants on health should read this chapter—indeed, they should read this book.

The target audience is broad: practising doctors, research workers in epidemiology and public health, and especially environmental health officers will find this book of great value. The chapters on techniques for measuring concentrations of air pollutants and the quality of such methods should be important to all those setting up or running monitoring sites or small networks.

Inevitably there are quibbles. In the chapter on concentrations of indoor air pollution, pollutants given are without averaging times, particles of diameter <2.5 µm are defined in one place as inhalable and in another as ultrafine: both incorrectly. Misprints are few although flux (for flue) gas desulphurisation seems to fit well with the Latin: calor, dolor, rubror, etc quoted in Chapter 1!

In summary then, a good book and one that deserves to be widely read. However, £49.50 for 147 pages seems expensive to me even in this day and age.

R L MAYNARD