Letters

Working with Asbestos in Brazil

To the Editor:—As President of the Brazilian Asbestos Association (ABRA), an organization which is concerned with scientific and medical research on asbestos, I would like to comment about the article "Occupational Exposures to Asbestos in Brazil," by Fernanda Giannasi and Annie Thebaud-Mony, published in the April/June 1997 edition (Int J Occup Environ Health 1997;3:150–157). Some of the statements in the article must be clarified so that a perfect understanding of the circumstances of asbestos use in Brazil can be reached.

Chrysotile asbestos has been used in Brazil for more than 60 years, primarily in fiber cement production (92% cement and 8% asbestos). The use of asbestos in the form of chrysotile asbestos takes Brazil out of the list of countries where the inappropriate use of asbestos has caused serious problems to workers' health, especially in Europe and in the United States. Until the 1970s, these countries made extensive use of amphibole asbestos in the construction and naval industries, to coat metal structures. The high-pressure spraying of asbestos exposed workers to extremely bad conditions. Nowadays this process is prohibited nearly all over the world. In Brazil, asbestos was never used in this way.

It has been proved that chrysotile asbestos may pose a risk to human health solely in the work environment. Only when large quantities of asbestos fibers have been inhaled over many years is there the possibility of lung disease. ABRA has been monitoring the development of companies that mine chrysotile and manufacture asbestos products in Brazil. It also provides them with technical support and carries out systematic measurements to check the adequacy of environmental controls. We can guarantee that in the fiber cement industry, which is responsible for 92% of use of chrysotile asbestos in Brazil, working conditions are far superior to those mandated by international regulatory requirements.

As an example, the data from our latest research confirm that 78.2% of fiber cement companies operate within the regulatory standard of 0.1 fiber/cc, the same level adopted in the United States. In other sectors, including brake manufacturers, they operate with dust levels below that suggested by the World Health Organization (WHO), which recommends a maximum of 2 fibers/cc in the work environment. This level is also mandated by Federal Law 9055/95, which applies to asbestos utilization all over Brazil.

This level is stricter than that set up by the tripartite agreement between Brazilian workers, industry, and the [illegible] agreement. [illegible] mum [illegible] iron- [illegible] ls are fiber cord- [illegible] duce [illegible] lieve [illegible] non- [illegible] companies are well equipped to safely mine and manufacture chrysotile asbestos. Only with a thorough knowledge of the technology of fiber processing is it possible to obtain such a high level of environmental control.

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Moreover, the tripartite agreement that regulates asbestos mining and manufacturing has in its structure a component that ensures its effective implementation, the Asbestos Control Commissions. These commissions are made up exclusively of stable workers (they may not be dismissed) whose function is to check the safety conditions of the companies. The commissions' representatives have the authority to stop a plant's operation if they find any change in the level of dust emission.

This procedure shows the maturity of the relationships between the workers, industry, and the government in the mining and manufacturing of asbestos. The position of the Syndicate of Workers in the Mining Industry of Non Metallic Minerals of Minaçu, an organization that represents the workers of the only asbestos mine in Brazil, and of the Federation of Workers of Mines, both affiliated with CUT (Brazil's national workers' confederation), is to extend the control procedures for asbestos to the whole mining sector. The idea is to use this successful experience with asbestos to encourage other mining companies to start investing in technology and environmental controls to benefit all workers.

Control measures with asbestos are absolutely necessary in the work environment. In this respect, the Brazilian companies have been pioneers in the introduction of control procedures. Documents show that since 1978, before the introduction of the first regulatory standards in Brazil, there have been investments for this purpose. Both in the mining area and in the asbestos manufacturing industry, all workers undergo periodic medical examinations. The medical files of the workers and ex-workers are concrete proof of the efficiency of the control measures im-

plemented at the companies. All mining workers' files, x-rays, spirometry, and medical examinations have been used by the Medical Sciences College of the University of Campinas (UNICAMP), one of the most important universities in Brazil, as the basis for studies of occupational health.

Since 1980, the asbestos manufacturing industry has maintained good operational conditions, with no occurrence of illness caused by asbestos. There are 27 cement factories in Brazil, with about 8,000 workers, operating under the strictest safety standards. In countries such as Brazil, where the housing deficit is a challenge to be met by the whole society, fiber cement products are of vital importance. Because of their durability, weather resistance, and low price, they are essential to the construction of new buildings, particularly for the low-income population.

Moreover, the last study published by the WHO, which gathered experts from ten countries to re-evaluate all the studies related to chrysotile asbestos, confirmed its safety and showed progressive reductions in the levels of dust occurring in asbestos mining and in the manufacture of asbestos products. This re-evaluation was part of the International Program on Chemical Safety (IPCS) developed by the WHO in cooperation with the International Work Organization of the United Nations Environment Program (UNEP). This analysis was carried out at the request of many countries interested in studies of chrysotile asbestos.

In view of these facts, we consider that the measures to ban asbestos taken in some European countries may not be appropriate in a different context such as Brazil. The Brazilian condition does not allow the occurrence of any epidemic as it appears in the article published in the journal. Brazil has a modern chrysotile asbestos industry and one of the most advanced regulatory standards in the world. Finally, we would like to point out that the use of chrysotile asbestos in the United States was approved by the U.S. Environmental Protection Agency (EPA).

I hope that the above is enough to dismiss any possible doubts about the subject. Feel free to contact us for any further clarification you might need.

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In reply:—The President of the Brazilian Asbestos Association (ABRA) takes issue with our article "Occupational Exposures to Asbestos in Brazil" while defending the production and use of asbestos in Brazil. He primarily uses three arguments to support the asbestos industry position, to each of which we give our response:

1. **Exposure to asbestos is under control in Brazil.**

The exposure data given by ABRA are produced by the asbestos industry, without participation by the Brazilian government and worker organizations. ABRA states that "As an example, the data from our latest research confirm that 78.2% of fiber cement companies operate within the regulatory standard of 0.1 fiber/cc, the same level adopted in the United States."

An internal document from the Capivari asbestos-cement plant, the largest and most modern of all the Saint Gobain operations in Brazil, spelled out the extent of deplorable working conditions at the plant. The company referred to several workplace settings where they admitted that it was "impossible to keep asbestos dust under control."

The President of ABRA asserts that good industrial hygiene is practiced widely in Brazil's asbestos plants. In actual fact, even in the newest of the plants, control measures are far from adequate. He does not mention that most asbestos-manufacturing enterprises are small and entirely unregulated. Many thousands of workers in Brazil work with asbestos in plants where they have absolutely no exposure controls. Even something as simple as a particle mask is rarely found in these workplace settings.

The asbestos mining operations are also dangerous. An international environmental audit done by CEMSO of Costa Rica, which studied the SAMA mine in Brazil, found 35% of the work areas analyzed had inadequate dust control. One year later, a report by the Instituto de Pesquisas Tecnológicas de São Paulo (IPT) confirmed that the asbestos-dust–control measures at SAMA were effective only part of the time in protecting workers and the inhabitants of a nearby village.

2. **There are no cases of asbestos-related disease in Brazil, and there will not be in the future.**

ABRA states that investments in dust control began in 1978, and suggests that there has been no occurrence of asbestos-related disease since then. But even if all the asbestos mines and plants in Brazil were made completely safe in 1978, there would still be disease from previous years. The denial of any asbestos-related disease among the thousands of workers employed in the first 40 years of the asbestos industry in Brazil says more about the industry's neglect than it says about the true occurrence of asbestos-related disease.

Diagnosis and treatment of cancer are available to few Brazilians. Most workers would not be likely to receive such advanced medical care. It is a rarity that a cancer caused by workplace exposure is diagnosed as such and seldom if ever is it treated. Moreover, the Cancer Registry in Brazil covers less than 5% of the country's population.

There are a few Brazilian studies of asbestos-related disease. One

early study initiated by the Medical Sciences College of the University of Campinas (UNICAMP) reported cases of mesothelioma in a journal article.[1] Later studies pointed out asbestos-related diseases in various areas in Brazil. The most recent study was conducted by Fundacentro/Labor Ministry, UNICAMP, the Heart Institute of the University of São Paulo (INCOR), and Centro de Referência em Saúde do Trabalhador de São Paulo (CRST), a public occupational health center. A study is currently under way at Osasco, a large industrial area near São Paulo. Here, from 1940 to 1992, the Swiss Eternit group operated one of the oldest of the asbestos-cement factories in Brazil. Preliminary data from this study demonstrate that of 645 ex-workers examined to date, many have asbestos-related diseases or evidence of high levels of chronic asbestos exposure. There are 57 confirmed cases of asbestosis, 130 cases with pleural plaques, and 82 cases of impaired respiratory function. There are at least four cases of pleural mesothelioma, and many suspected cases are under investigation. Eight cancer fatalities (four pulmonary and four gastrointestinal), and another 20 cancer deaths under investigation, are of particular concern to the researchers.

3. Brazil needs inexpensive housing materials.

Many inexpensive alternative building materials are available in Brazil. The asbestos industry knows very well how to deal with alternative materials and technologies, as Saint Gobain and Etex did in France and other European countries after the ban of asbestos. For the low-income people of Brazil, an abundance of tropical fibers is already widely used for housing material, and galvanized metal roofs, as well as Parry-type lightweight concrete roofing tiles, prestresseed concrete pipe, clay pipe for sewerage, and high-density polyethylene pipe are available. Interior building walls can be made with many things other than asbestos-cement. Potential alternative natural resources are almost unlimited, yet little research is provided by industry and government.

The President of ABRA expresses his concern for the housing needs of low-income families in Brazil. Yet his company refuses to provide housing and medical care for the many thousands of former employees who have lost their health to the asbestos industry in Brazil. Let ABRA demonstrate its compassion first to the victims of the Eternit asbestos plant in Osasco. Then ABRA can begin to demonstrate its concern for Brazil's citizens by protecting them from further asbestos exposure.

Last, it is preposterous for ABRA to say that the U.S. EPA has "approved" the use of chrysotile asbestos. The EPA tried to ban asbestos in the United States, but the industry challenge in court overturned the ban. It remains the EPA's position that chrysotile and other forms of asbestos should be replaced in all uses with safer materials, and U.S. asbestos use has steadily dropped to very low levels even since the ban was overturned.

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1. Diffuse malignant mesothelioma of the pleura etiologically related to asbestos exposure: discussion of three clinical cases.

refs to be added in final printing. B