TUNISIA BREATHES A SIGH OF RELIEF

A recent study shows that pneumoconiosis — a disease caused by inhaling irritant particles day after day — isn't a serious problem among Tunisia's phosphate miners and plant workers. The sea of dust surrounding some of the mining towns and processing plants, however, remains a real nuisance.

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"You want to see dust, do you? I'll show you dust!" exclaimed the National Guard officer when questioned by Prof. Abdelaziz Ghachem, the Tunisian Ministry of Health's head of occupational medicine. "Come home with me, look at my linen, my bed, my fridge! There's dust all over the place!"

The air in the mining town of Redeyef, in the south of Tunisia, is so dusty that one can't really see the sky, only a vague glimmering through the gray clouds.

Prof. Ghachem, the director of the National Centre for Occupational Medicine and Ergonomics, heads a mission to verify the extent of the damage in the town. The problem is that an enriched-phosphate plant spews out effluents and is directly upwind of the town which has consequently become covered with a uniform layer of dust. "It's like living in a snowy climate. Around the plant you can sink into the dust up to your thighs," reports Prof. Ghachem.

Redeyef is one of the 16 sites in Tunisia where phosphate is mined and enriched by the state-owned Gafsa Phosphate Company.

Phosphate is one of Tunisia's greatest underground sources of wealth. Reserves are estimated to last for a century. However, mining them has considerable adverse effects on the local population and on the approximately 12 500 people who work for the company.

As early as 1970, radiological studies of Gafsa miners had raised the possibility that some of the workers were suffering from pneumoconiosis, a lung disease caused by habitual inhalation of irritant dust particles. The biggest concern was silicosis, a form of pneumoconiosis caused by inhaling dust which contains large amounts of silica. Sufferers cough and spit and have difficulty breathing. The decline in the functioning of the lungs is often accompanied by heart problems.

But the risks and the composition of harmful dust had yet to be pinpointed. With a grant from IDRC and the cooperation of McGill University in Montreal, a team from the National Institute for Occupational Medicine and Ergonomics started an epidemiological study in 1984. The sample consisted of 942 Gafsa employees selected according to the mine they worked in, their job, age, and length of exposure. The survey was accompanied by an environmental study in which 1214 samples of dust were taken in the different mines, quarries, and factories of the company and in mining towns.

For the medical study, workers answered a questionnaire designed to assess their respiratory symptoms, exposure to dust, and professional background. They were also given a clinical examination which included lung X rays and lung capacity measurements.

The researchers are reassuring about the results. The clinical study indicates that in most cases, the pneumoconiosis is a benign form caused by inert dust. The team's lung specialist adds cautiously, however, that on a very few work sites, where there is a lot of silica in the dust, there are cases of silicosis. This form of pneumoconiosis doesn't seem to be very serious and it develops very slowly, the doctor says.

Of the 942 workers in the sample, only four of them will be entitled to financial compensation for permanent physical disability. It should be noted that all four have smoked for over 20 years.

Not that the environment is blameless. The dust which bothers the whole town and the workers especially is certainly a nuisance.

The dust levels in seven underground mines and six factories and quarries were measured.The results indicate that silica is present everywhere, but at low levels not exceeding 6 percent. And it appears that the miners who work underground are less exposed than workers in the enrichment plants.

Mourad Chaker, the chemical engineer in charge of the environmental study, was trained in analytical methods at McGill University. His calculations show that wherever a mine or processing plant is mechanized, dust levels are higher. In particular, crushing operations produce dust which is rich in silica and, therefore, potentially harmful. According to the researchers, injecting water during drilling would substantially reduce the amount of dust.

The researchers noted that Tunisian mines are "never adequately ventilated, nor are they well built. In general, the broader the tunnel, the less the dust." They observed the benefits of wide tunnels at Lalaa Khasha and the Séhib mine.

The researchers termed the study results "reassuring". They were, however, agreed that a watch should be maintained in future. To this end, they are planning to recommend measures to control pollution and to protect workers in Tunisia's phosphate industry. ■

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Photo: CNMTE

No use waiting for the dust to settle. In Tunisia, Ministry of Health researchers visit a phosphate-enrichment plant.