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The anti-asbestos lobby

In its report on the reasons that led the European Parliament to pass a resolution on health risks relating to asbestos, the Commission for the environment, public health and consumer protection *"expresses its concern at the stir being raised in member states over the use of asbestos."*

These currents of opposition are largely the work of a powerful European anti-asbestos lobby, whose stridency — not to mention its influence — might well be a great deal less if the asbestos mines were situated not at Thetford or Asbestos, for example, but in Great Britain, West Germany or France.

Phobia

Whatever the real motives of this lobby, whose financial sources may not be entirely disinterested, the fact remains that the *stir* it has caused among certain European circles has given rise to a kind of asbestos phobia. This phobia is fostered by the spreading of misleading information often unsupported by the slightest shred of scientific evidence.

For sheer incoherence there is little to beat the report of the Strasbourg Parliament, currently under consideration by the European Economic Commission. Its recommendations to reduce or even ban the use of asbestos are full of peremptory declarations on the dangers involved with this fibre while the arguments supporting them are inaccurate, vague and poorly worked out.

Thus, having affirmed *"that there is sufficient proof to show that asbestos is dangerous (...) and that we must now draw the logical conclusions"*, the authors of the resolution admit that the diseases which they attribute to asbestos *"only become apparent after several years and are extremely difficult to diagnose precisely. The currently available statistics on these diseases are related to exposure to asbestos which took place many years ago. It is as yet impossible to draw up statistics on diseases relating to present exposure levels"*.

Contradictions

In addition, the European Parliament suggests that the greatest possible effort be made to develop suitable substitutes for asbestos products, and in the same breath recommends that research be carried out *"into the carcinogenic nature of all kinds of replacement fibres so as to ascertain the possible carcinogenic effects of fibres used to replace asbestos."*

In other words, the members of the European Parliament would like to ban the use of asbestos, — though they admit that they cannot be sure if it is really dangerous in view of technological developments which have enormously reduced exposure levels, — and replace it with other products whose possible biological effects they know absolutely nothing about.

We hope that the executive branch of the European Economic Commission is capable of greater rigour and discrimination.

Weighing the facts

No one would deny that asbestos, though irreplaceable in most of its uses and generally a life-saver with its qualities of incombustibility and heat insulation, can represent a health risk for anyone who is exposed to abnormally high dust concentrations over a period of several years.

From this point of view, the European Parliament's recommendation to adopt suitable measures to govern the handling of asbestos in its member states is only reasonable. As the authors of the resolution themselves recognize, *"this should not present too many problems given that other countries such as Sweden, Canada and the United States have already adopted up-to-date procedures which can be used as examples."*

And while taking Canada as an example in this respect, the authors might also find it useful to consult, in Canada, the world's largest store of information on the biological effects of asbestos, and finally confront the anti-asbestos lobby with the conclusions of fifty years of scientific and medical research which establishes that asbestos products in no way endanger the public to which, on the other hand, they provide innumerable benefits.

Asbestos filters proved useful and effective

A series of analysis carried out by the Chemistry Department of the Faculty of Sciences and Engineering at Laval University in Québec City shows that beverages filtered through asbestos filters contain fewer magnesium particles related to chrysotile asbestos fibres than non-filtered beverages.

According to this study supervised by Dr Claude Barbeau of the Chemistry Department, filtering through an asbestos membrane not only adds no asbestos fibres to wine but even reduces the concentration of fibres that it contains before filtering. In addition, the average asbestos content in the wine was found to be about seven times less than the concentration of asbestos found in samples of drinking water taken from large urban areas in Québec and Ontario

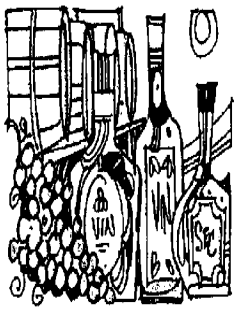
Reduction of magnesium

"Our results, says the study report drawn up for the quality control service of the "Société des alcools du Québec", *show that not only does adequate use of an asbestos filter not add any magnesium compounds, but it in fact reduces the magnesium content."* Chrysotile asbestos is a magnesium compound, namely a hydrated magnesium silicate, whose chemical formula is $Mg_3 Si_2 O_7 2H_2O$

The method of analysis and comparison used in this research is based on the measurement of insoluble magnesium compounds in beverages. *"Even if the method of measuring the magnesium residues does not enable us to distinguish between fibrous and non-fibrous silicates,* says Dr Barbeau, *and gives no indication of the dimension of the fibres, it is nonetheless suitable for assessing the efficiency of the filtration as regards the interception of magnesium compound particles."*

Comparative analyses

The water from various cities was analysed and the magnesium content compared with that of apple juice and grape juice and that of wines bottled or imported by the "Société des alcools du Québec". Thus, while the magnesium content of drinking water in Montréal was somewhat under 2 μg/litre (micrograms per litre), and that of water in the Québec region varied



between 1 and 10 μg/litre, the magnesium content of wines after filtration through asbestos filters varied between 0.2 and 1.0 μg/litre Before filtration, this content was 5 μg/litre, falling to 2 μg/litre after a first filtration and to 0.3 μg/litre after a second filtration Contrary to previous reports, this indicates that a filtration process using asbestos membranes not only adds no fibres to the wines, but also has the effect of significantly reducing the natural asbestos content of these wines

"It is natural, Dr Barbeau said to an audience of filtration specialists, *that water should contain chrysotile because, through land erosion or atmospheric fall-out, this fibrous material can infiltrate water and join with other particles, on account of its high flotability and its structural form."*

Counting the fibres

Referring to the magnesium content of Montréal tap water, Dr. Barbeau explained that, if we assumed that all magnesium particles measured are chrysotile, we would obtain a total of 150 million fibres per litre But fibre counts made some years ago with an electronic microscope showed that Montréal drinking water contained no more than 2 to 3 million chrysotile asbestos fibres per litre

Since, for example, 2 million fibres of grade 4 asbestos weigh 0.1 microgram, it would be necessary, in order to ingest 5 milligrams of asbestos fibre – which is about half the size of a small pea – to drink 50 000 litres of a liquid containing 2 million fibres per litre

Moreover, points out Dr Barbeau, no-one has been able to establish a relation between stomach cancer and the ingestion of asbestos fibres. *"In fact,* he stated, *the stomach acid should break down chrysotile and leave an amorphous silica residue, as usually happens when silicate-containing matter is digested, as is the case for soil particles or dust which are often taken in when eating."*

Confirmation

These findings are borne out by a memorandum published on the 18th of October 1976 by the French Minister of Agriculture, which informed the public welfare council (Conseil superieur d'hygiène publique) *"that proof has yet to be found that the ingestion of asbestos causes any anomaly whatsoever"*

Dr. Barbeau goes as far as to conclude, from the overall results of his research on the subject, that *"if all beverages were so well filtered as are the wines, it would appear safer to drink bottled beverages than to drink water"*

Health conditions among asbestos workers

A close study of 6 785 files shows that asbestosis is in decline.

A study of the medical files of almost all the asbestos mine workers in Québec reveals that, of the cases considered, 6% show signs of pulmonary fibrosis (asbestosis)

These results were compiled after a review in 1977, by the special asbestosis committee of the pneumology service of the Québec Workman's Compensation Board, of 6 785 files relating to workers employed in asbestos mines in Québec in 1975-76

Though these results have not yet been the subject of a public report by the W.C.B of the Ministry of Labour, Dr Jean-Jacques Gauthier, director of the pneumology service at the Sacré-Coeur Hospital in Montréal, where the review of the files was carried out, has revealed some of the findings in an interview given to the private television network Télé-Métropole

From 80% to 6%

Asked to comment on the enormous difference between the results drawn from his service's compilations and the allegations arising from a study by Dr I.J. Selikoff of the Mount Sinai Institute, according to which 80% of all asbestos workers would be affected by asbestosis, Dr Gauthier explained that Dr. Selikoff was referring to radiological anomalies. *"These anomalies",* Dr Gauthier continued, *"are not necessarily caused by asbestosis They may be after-effects of infections, or pleural plaques which are not attributable to asbestosis."*

Asbestosis, as is generally known, is a disease which tends to appear among those who have been exposed to abnormally high concentrations of asbestos dust over several years It damages the lungs and affects breathing

After studying the 6 785 files drawn up by the special asbestosis committee, the pneumology service diagnosed ten cases of advanced asbestosis, 53 cases of mild asbestosis, and 372 cases considered as minor

Traces of the past

Whereas Dr Selikoff chose 1 200 workers for his study who had had more than twenty years' exposure to primary activities, the files reviewed by the special asbestosis committee concerned all asbestos workers in 1975-76 *"It may be observed that the incidence of asbestosis increases with the number of years of exposure, but even here the figures for workers having more than twenty years' exposure is very different from the 80% mentioned,* Dr Gauthier stressed. *"We wonder how this figure of 80% was obtained",* he added during a later interview from his clinic at the Sacré-Coeur Hospital, pointing out that the publication of this figure had served to *"cause a phobia"* among the workers

It is worth stressing also that the workers with the greatest number of years of exposure are usually those who were working in mines and mills in the 1920s, 30s and 40s. At the time, the technology for the extraction and processing of asbestos and the means for reaching diagnosis were relatively undeveloped, compared with the hygiene conditions, the dust elimination methods and the means of early detecting signs of health changes which scientific and technological progress has now made possible

Committees of experts

The pneumology service at the Sacré-Coeur Hospital runs one of the three clinics used by the W.C.B. pneumology service The two others are at the Maisonneuve-Rosemont Hospital in Montréal, and at the Laval Hospital in Québec City. Each of these clinics calls upon committees of experts which include at least four doctors, of whom one is a chest specialist, one a radiologist, one a doctor named by the union, and one a doctor suggested by the employers.

Apart from their other numerous responsibilities, these committees provide expertise on industrial lung diseases, particularly on the various forms of pneumoconiosis, such as silicosis, siderosis, asbestosis, talcosis, byssinosis etc The W.C.B pneumology service issues medical certificates to workers employed in all mines and quarries in Québec, after inspection of their medical and radiological files

The pneumoconiosis committee assesses on behalf of the W.C.B. the degree of incapacity of workers through radiological tests and highly specialised medical examinations

Sophisticated equipment

The clinics run by the pneumology service possess the most up to date and extensive equipment available Thus, at the Sacré-Coeur Hospital, where the special asbestosis committee reviewed the asbestos workers' files, once breathing measurements are made in a special isoleting cabin, the results are fed into a computer that produces a most accurate diagnosis

Interview with the President of the Québec Asbestos Mining Association



Mr. M.J. Messel, President of Lake Asbestos, is undertaking a second term as President of the Québec Asbestos Mining Association. At the outset of his new term of office he gives his comments on a number of current topics related to the asbestos industry.

– What do you think to be the reasons for the decline in asbestos deliveries in 1977?

– There are mainly two reasons First, the economy of some of our large consumer countries has been declining Building has been on the decrease and consequently the sale of asbestos-products, thus influencing the sale of our fiber. Secondly, the USSR has increased its production of asbestos and has put about 50% more fiber on the market While in other years Russian fiber sales were about 440 000 tons, in 1977, these sales were up to 870 000 tons and as their prices are very competitive, our sales have gone down

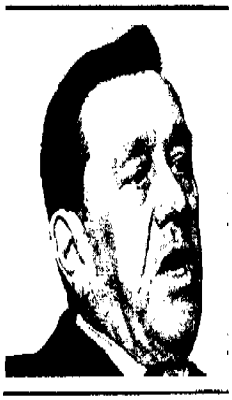
– How to cope with this situation?

– To compete, we will have to improve our productivity and technology and consequently lower our production costs However, there are a number of asbestos-cement* product plants being built in the developing countries and we are making great efforts to increase our market share in these countries On the other hand, we hope that in a few years the economy will have picked up, and so will our share of the market.

– How is the industry reacting to the marketing of substitutes for asbestos?

–Following the exageration of the environmental questions linked with asbestos, people are looking for substitutes. In some areas, these products will find their place, but in others, as in the fibro-cement products, asbestos will hold its own Basically asbestos-cement is a cheaper product. All countries have cement to which they can add asbestos, to build homes, panels, pipes etc In the Middle-East, in the Far-East, in Africa, they are all building asbestos-cement plants and this market will always be important In other areas, we feel that it will take a lot of time and research to find efficient and economical substitutes to replace asbestos Some substitutes already exist, but none has the low cost-efficiency relation we find in asbestos. And talking about risks to health, asbestos is no more dangerous to use than other essential products, like PVC for example Today we have the technology and knowledge necessary to use asbestos safely, while for the substitute products, we don't have the historical background and the experience necessary to evaluate their risks Who knows what will be said in 20 years about some substitutes? It took more than 60 years before we knew that asbestos could present certain risks to health

– What do you think of the government proposal to carry out research in conjunction with the industry?



– We welcome initiatives in this area and if government officials can come up with realistic projects with economic possibilities, we are certainly ready to collaborate But research is not a universal panacea. There is a big job to do to change the attitude of architects and construction people towards asbestos and get them to use more asbestos-containing products

– Would it not be advisable to make a bigger effort in research into new asbestos products and applications?

– A lot of research is being carried on For example, ten years ago, flooring felt which contains 85% asbestos was still unknown. Hopefully, new products and new applications will be discovered through ongoing research But in the present atmosphere, it is difficult to get people to put a lot more money into new asbestos products because of misinterpretation of health problems Research is expensive and requires major investments.

– Do you think that the government's aim to transform 20% of Québec's fibre production is realistic?

– The Sorès report does not foresee the realisation of this objective. But the Sorès report is for investors and investors cannot take risks as important as a government which can afford to lose money on one hand but create jobs for its people on the other hand Québec is not an easy market as we do not buy here a lot of asbestos-containing products A big educational program has to be put into action to convince people to use more asbestos products Here in Québec, we have developed the world's most modern technology on mining, milling and grading asbestos, but we have not been able to develop the same kind of expertise in transformation, because you cannot build a strong manufacturing industry if it does not have a strong domestic market base

– What is the industry's attitude towards recent resolutions of the European Parliament concerning asbestos?

– The situations referred to are mainly those of the past, dating back 30 and 40 years Today, with technology, we can properly control the environment and reduce dust exposure to employees as can now be verified in our mines and mills in Québec Europe is one of the oldest consumers of our asbestos. Perhaps some politicians thought they had to make some rules, but Europe has been using asbestos products for more than a hundred years and once this crisis is over, I am sure that, with proper information and knowledge of the safe methods of manufacturing, asbestos will continue to be used.





– How do you see the future of the industry?

– Even if the outlook at this time is somewhat pessimistic in the short term, I feel that in the long run we will see an important change in attitudes At the moment, we have the health problems, the misinformation and exaggeration of information to cope with But we shall overcome and we possess the brain and energy to do so We have in hand a great product, an essential, basic raw material of great value which simultaneously offers many qualities that we cannot find in any other product, and that's our future

* 70% of the Québec asbestos production is used in the manufacture of asbestos-cement products

Friction products and air purity

For brake linings and clutch plates, asbestos is the ideal friction material Experts acknowledge that friction products made with other fibres do not carry the same advantages as products which are asbestos-based

Asbestos is used in brake linings because of its thermal stability, its relatively high friction level, its reinforcing properties and its low cost No substitute provides the same cost-quality compromise

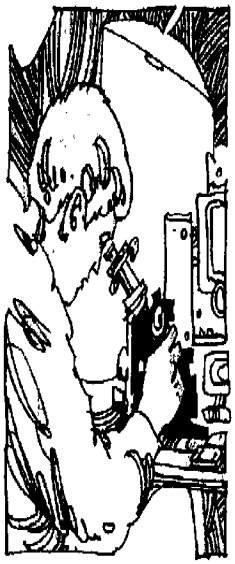
Low dust emission

Furthermore, as the asbestos in the brake linings and clutch is retained in the baked resin housing, the emission of dust into the air is reduced almost to nothing

It has in fact been shown that the rise in temperature of the main body of the asbestos product causes a chemical conversion of 99 7% of the fibre, which is thus converted into inert and harmless particles

Experts' report

These conclusions are the result of a research program carried out by three American experts. Michael G Jacko, of the Bendix Corporation Research Laboratories, Robert T DuCharme, of the same company's Automotive Control Systems Group, and Joseph H Somers, of the Office of Air and Water Programs of the Environmental Protection Agency



Conclusive tests

The results of this research program, published a few years ago, have never been contradicted since

The aim of the program was to measure the asbestos dust emissions from a popular make of automobile fitted with asbestos-based brake linings. Numerous tests were therefore carried out reproducing customary driving conditions for a vehicle fitted with special apparatus enabling the dust emissions to be collected

The dust particles were then recovered and their weight calculated. They were analysed by means of optical and electronic microscopy techniques

Thus after 90 tests it was observed that the asbestos dust emissions accounted for only 0 3% of all emissions deriving from wear on the brake linings, and that heat converted 99 7% of the asbestos into olivine and fosterite particles which are considered harmless.

New pit at Carey-Canadian Mines

In January, Carey-Canadian Mines started to develop a new open pit, six miles from its mining installations at East Broughton When this third pit, known as pit A, is worked at full capacity, it will provide 2 000 tons of ore per day The Company management estimates that the mine will continue producing fibre for 12 years. The ore will be transported by truck to the mill at East Broughton

The opening of pit A will allow continued feeding to the mill after pit B is finally worked out Pit B has reached 320 feet in depth and production will soon be terminated Another pit, known as pit C, provides 4 to 5 000 tons of ore per day and is now 405 feet deep

Hydraulic shovel

In addition, the company has recently acquired a new hydraulic shovel for use in pit A. It is a Liebherr R981 D powered by two Diesel engines Its operation is entirely hydraulic which allows for easier operations on soft ground.

Carey-Canadian Mines has a current annual capacity of 200 000 tons, consisting mainly of short fibres, particularly of grade 7

The production of asbestos in 1977

In Québec

Québec asbestos fibre deliveries totalled 1 277 874 short tons in 1977, making a drop of 7% compared with production in 1976 (1 373 941 tons). This falling off reflects the general tendency in the world economy and also results from a slackening of demand in the United States and in Western Europe.

On the other hand, the estimated value of fibre deliveries in 1977 reached a new peak of over $400 million

It should be noted that these figures take no account of production from the *Asbestos Hill* deposit in Northern Québec The ore which is mined there is sent for processing to Nordenham, in the German Federal Republic, and the fibre produced is therefore considered as being part of the European production

In Canada

For Canada as a whole, where eight companies are involved in asbestos mining, fibre deliveries in 1977 totalled 1 577 990 short tons, compared with 1 693 250 tons in 1976 Canadian sales on the world market were worth some $520 million in 1977, rising from $452 5 million in 1976

World Asbestos Production - 1977

	Short Tons
USSR	2 596 000
Canada (Quebec 1 277 874)	1 578 000
South Africa (including Rhodesia)	750 000
Europe	330 000
China	220 000
United States	105 000
South America	80 000
Australia	75 000
Other countries	45 000
	5 779 000

Québec topped the list of Canadian provinces with 81% of deliveries supplied from the mines located in the Eastern townships, which employ more than 6 800 workers and distribute their products to more than 80 countries all over the world The other Canadian asbestos producers are located in British Columbia, in the Yukon, in Newfoundland and in Ontario

World production

Asbestos deposits are to be found in numerous countries and in a wide variety of forms However, chrysotile asbestos makes up 90% of world asbestos production, and is the only type produced in Canada

Although Canada retains first place among producers of asbestos in the western world, the Soviet Union has for some years now been the world's major producer Official figures supplied by the Main Board, asbestos industry, of USSR indicate that Soviet fibre production in 1977 was as high as 2 596 000 short tons of groups 3 to 6 inclusive and some 660 000 tons of group 7

World production in 1977 may be estimated at around 5 800 000 short tons, of which approximately 27% is chrysotile asbestos coming from Canada Other countries with notable production of fibre are South Africa, Rhodesia, Italy, the United States and Australia

Perspectives

In spite of a slight fall in demand during 1977, it is generally considered that the consumption of asbestos in the western world will increase in coming years at a yearly average rate of between 1 and 2% It is estimated that the currently known asbestos ore reserves in Canada will be sufficient to meet demand well beyond the year 2 000 Canadian asbestos ore reserves in fact total more than one billion tons, and contain about 48 million tons of recoverable fibre In view of the foreseeable evolution of demand for asbestos fibre, Canada – and particularly Quebec – should have plenty in stock for some time to come

Approximate fibre content for various uses

Products	% by weight	% by cost*
Asbestos waterproofing products and anti-leak joints	50-70	15-20
Friction material (molded)	50-60	15
Friction material (woven)	70	30
Asbestos textiles (cloth, yarn)	85-90	40
Asbestos papers (felts)	80-90	60
Asbestos finished sheets	10-15	30
Asbestos pipes	16	45
Asbestos-vinyl tiles	8-14	8

* Approximately

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$81 million for hygiene conditions

Between 1975 and the end of 1977, asbestos producers in Québec invested a total of $26 134 970 on projects directly related to air purification in the mines and mills of the mining companies at Thetford Mines and Asbestos.

These sums, however, are only part of the investment programs undertaken by the asbestos-producing companies since the 1960s, and particularly since the beginning of 1970, which aim at meeting the government norm of 0.20mg/m3 of asbestos in the total respirable dust, to be enforced from 1981. **By that time, the asbestos mining companies will have devoted some $81 million to works designed to achieve the optimum dust elimination and to improve the hygiene conditions in their mills and other installations.**

These works consist for the most part of the installation of new ventilation equipment and dust elimination systems, and of the modernisation of certain plant and laboratory facilities.

Extensive improvements

Thus, last year, *Carey-Canadian Mines* continued to cover all the screens and conveyors at its mill and undertook to install dust filtration units in the drying and packing sections, the pilot plant and the recently built laboratory.

Lake Asbestos carried on the automation of its packing section and installed a new automatic stacker which considerably reduces exposure to dust. Several conveyors have been completely covered to reduce the emission of dust.

Bell Asbestos completed the installation of new equipment in its new mill and the modernisation of its original mill, and made substantial improvements to its underground installations and waste disposal system.

Canadian Johns-Manville, pursuing its systematic program of modernisation and renovation begun in the 1960s, recently changed the 90 000 filter bags at one of its mills. The dust level reading in this section has improved by 80%.

Asbestos Corporation, as part of its $30 million air purification program, has since the beginning of 1976 set up new dust control units in its installations at Thetford, Black Lake and Coleraine. Other projects which have been carried out are the construction of a dry-house at King Beaver no. 3 and the installation of a new mechanical vacuum system at the Normandie and British Canadian 1 processing plants. A similar system is being installed at King Beaver. Also in 1977, the dryers at British Canadian 2 were fitted with a dust elimination filter sytem. In addition, covers are being fitted to the coveyors and screens of the different installations.

New equipment

In addition, following a survey of all the dust-level monitoring and measuring equipment recommended by the research committee on hygiene in the asbestos industry, the Québec Asbestos Mining Association has advised its member companies to buy two monitoring devices, namely GCA's APM for continuous surveillance and the RDM-101-4 for internal checks. The Tyndallometer was also recommended for certain applications in the mills. All companies now use these devices to maintain a constant check on hygiene conditions in working areas.

Bulletin

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