FILE NAME: Cape Asbestos (CAPE)

DATE: 0000

DOC#: CAPE001

DOCUMENT DESCRIPTION: Barry Castleman Expert Report - Cape Asbestos: Public Health & Corporate History

Cape Asbestos: Public Health and Corporate History

Cape's Workers with Asbestosis in the Medical Literature and the Press

Cape's asbestos came from its crocidolite mines in South Africa starting in the early 1890s. The mines were started by a group organized by Francis Oats, a director of De Beers, who then organized Cape Asbestos Company in London to manufacture asbestos products. In 1925, the company acquired amosite asbestos mines in the Transvaal in South Africa (*Asbestos the Raw Material*, Cape brochure 1961).

Following case reports of asbestosis in workers in South Africa and in Britain in the 1920s, the International Labor Office held an international conference on silicosis and asbestosis in Johannesburg in 1930. In the opening address, the generous financial assistance of the Chamber of Mines in South Africa was acknowledged in making the gathering possible (ILO, Introduction, *Silicosis/Records of the International Conference Held at Johannesburg 13-27 August 1930*, p. 11).

As the Factory Inspectorate in Britain moved to develop regulations for the asbestos industry following the issuance of the first survey of the prevalence of asbestosis in asbestos factory workers, government engineers met with representatives of the three largest UK asbestos companies, including Cape (*Report on Conferences Between Employers and Inspectors Concerning Methods for Suppressing Dust in Asbestos Textile Factories*, 1931). The Asbestos Industry Regulations took effect in 1933.

Many of Cape's workers at the Barking plant in East London were reported in the local press as having died from asbestosis in 1929-1938. Concerns were raised in the House of Commons about a Cape worker who died with asbestosis and lung cancer (Barking Man's Death, *The Recorder*, July 10, 1931).

In medical exams of 80 Cape workers at the Barking plant, WB Wood found nearly all had definite evidence of asbestosis (*Br. J. Radiol.* 7: 277-280,1934; G Tweedale, *Magic Mineral to Killer Dust/Turner & Newall and the Asbestos Hazard*, Oxford Univ. Press, 2000, p. 20). Most (about 89) of Wood and Gloyne's 100 cases of asbestosis were from Cape's Barking plant (Pulmonary Asbestosis. A Review of One Hundred Cases. *Lancet:* 1383-1385, 1934; *Magic Mineral,* p. 39). This was the largest reported number of cases of asbestosis in the world medical literature at that time, more than the Factory Inspectorate had found in its medical survey of the asbestos industry published in 1930. At least one worker took Cape to court and was awarded 80% disability for asbestosis in 1934 (*Magic Mineral*, p. 78).

The annual reports of the Medical Officer of Health in Barking raised concern about asbestosis in 1929-1931; in his report in 1945, Dr. Williams wrote of continuing deaths from asbestos at Barking. He concluded that asbestos was so dangerous that, "unless those charged with the responsibility of safeguarding the health of the people in the

industry can give positive assurances that they have now after all these years removed every possible danger, the processing of asbestos, except in so far as its products are essential to our national economy, should be barred." (G. Leonard Williams, *Annual Report of the Medical Officer of Health for the Year 1945*, Borough of Barking)

Amosite

Cape employed Dr. Hubert Wyers in the 1940s, and Wyers' Doctor of Medicine thesis (University of Glasgow, 1946) was based entirely on the medical evaluation and records of Cape's asbestos factory workers. Wyers commented on amosite, the variety of asbestos sold almost exclusively worldwide by Cape Asbestos from its mine in Penge, South Africa. "(A)mosite is friable, dusty, difficult to work ... and its reputation as regards health is utterly pernicious; it is seldom now used." He also wrote, "It is the most pernicious of all" in its fibrosing effects. (pp. 48, 93) The other giant UK asbestos company, Turner & Newall (T&N), had a policy ordered by Sir Samuel Turner, of "no dry processing of amosite." (*Magic Mineral*, p. 235 footnote 117).

A quarter of Cape's 1625 South African amosite mine employees in Penge were under 16 in 1940. "In many cases parents also worked at the same mine, and it was the low rates of pay for adults that made such employment necessary for family survival." (J. McCulloch. *Asbestos Blues/Labour, Capital, Physicians & the State in South Africa*, Indiana Univ. Press, 2002, pp. 126-127).

Perhaps the most horrifying passage in the entire literature on asbestos was recorded by a doctor visiting the Cape Asbestos mines in Penge. Dr. Gerrit Schepers made the first governmental medical survey there in 1949 and recorded his recollections at the major conference on asbestos in New York in 1964.

> I found young children, completely included within large shipping bags, trampling down fluffy amosite asbestos, which all day long came cascading down over their heads. They were kept stepping lively by a burly supervisor with a hefty whip. I believe these children to have had the ultimate of asbestos dust exposure. X-ray revealed several to have radiological asbestosis with cor pulmonale (right heart failure) before the age of 12.
> (Biological Effects of Asbestos. *Ann. N.Y. Acad. Sci.* 132: 246, 1965).

In his discussion at the conference, Dr. Schepers said it was a foreign company, and when I met him in 1978 and asked if that was Cape he confirmed that it was. I have named Cape in recounting this in my own writings about corporations running processes in less developed countries much more hazardously than would be permitted in their home countries (e.g., The Double Standard in Industrial Hazards, *Int. J. Health Serv.* 13:5-14, 1983).

By 1966, a confidential T&N memorandum recorded the dismay of Defense Ministry officials at British naval shipyards. Amosite was extremely dusty and brittle.

> It's worst in confined spaces on ships, particularly when old lagging [insulation] is being removed. Some of this old lagging contains a high percentage of Amosite fibre; and the areas become very dusty indeed.

Dust extraction in ships "would simply exhaust the dust into nearby areas with the possibility of spreading what risk there is." (EA Edmonds. "Asbestos and Mesothelioma," Feb. 25, 1966)

The use of amosite insulation in US Naval ships predated World War II and rose dramatically during and after the war. The US manufacture of "Unibestos" high-amosite thermal insulation started in 1926, and by 1951 there were three plants making it for shipyards and industry. Other major insulation manufacturers used amosite in combination with chrysotile asbestos, making insulation the market for most of the amosite asbestos the US consumed.

<u>High Rate of Pulmonary Cancer as Cape Expands</u>

Dr. Wyers, who worked for Cape until his death in 1956, published a report of his findings in 115 fatal cases. He noted that an excess mortality from cancer of the lung and pleura in cases of asbestosis had been reported by the UK Factory Inspectorate (13.2%, compared with 1.32% in silicotics) and that German authors had written about asbestos causing pulmonary cancer, too. In his series, 17 out of 115 (14.8%) died from cancers of the lung and pleura (Asbestosis, *Postgrad. Med. J.* Dec. 1949). The rate of pulmonary cancer at autopsy in the general population was about 1%.

Cape had five factories in England and others in France, Italy, and South Africa in 1950. The Penge amosite mine achieved an output of 50,000 tons in 1953 and employed 5000 African workers. Mineral rights were owned by an Anglo-American subsidiary to which Cape paid a substantial royalty. Virtually all the crocidolite exported to the US was used to make asbestos-cement water pipes. The major share of Cape's profits came from the mining and sale of asbestos. By 1974, Cape added subsidiaries in Belgium, Germany, and the US, and associated companies in India, Sweden, and New Zealand (Cape Asbestos. *Asbestos Blues*, pp. 42-58).

Cape mines produced 95% of the amosite and 60 percent of the crocidolite in South Africa (Memorandum to File, Nov. 26, 1962, Cape_Receiver_00133187). Aside from a small crocidolite mine in Australia that ran from 1946-1966, South Africa was the only source of these minerals in the world.

By 1950, most authors writing on the subject agreed that asbestos caused lung cancer. An epidemiological study published by Doll in 1955 found that deaths from pulmonary cancer

were over 10 times as frequent in men who worked in an asbestos product manufacturing plant as in the general population in Britain. Like Wyers, Doll included at least one case of "endothelioma of the pleura" in with the lung cancers (*Br. J. Ind. Med.* 1955). Doll had previously approached Dr. Wyers to do a study of Cape's workers' mortality experience, without success (J McCulloch and G Tweedale, *Defending the Indefensible/The Global Asbestos Industry and Its Fight for Survival*, Oxford Univ. Press, 2008, p.73) .

Mesothelioma at Cape Crocidolite Mines in the 1950s

Mesothelioma of the pleura had been reported in workers dying with asbestosis starting in 1943, but as of 1955, there had been no more than 2 cases of this extremely rare disease reported by any of the authors. Then in 1956, Dr. Christopher Wagner, working in South Africa, started to notice cases. By 1958, the pathologist had seen an alarming number of cases from the Cape Province where blue crocidolite asbestos was mined. Upon his visit to Britain that year, Wagner reported this to directors of Cape Asbestos and Turner & Newall, the two biggest UK asbestos corporations.

> The directors showed some interest but assured me that I was following a line of research which seemed to them of little value, and that I would be advised to follow other lines of investigation.
> (JC Wagner letter to solicitors in Sydney in the case of Vivian Olson v. CSR, Nov. 25, 1994)

In 1959, Wagner presented his findings at an international pneumoconiosis conference in South Africa, noting that some of the victims had never worked with asbestos but simply lived in the area where the mining was done. Cape had an asbestos mill in town in Prieska, where some of these people lived. In 1960, Wagner, Sleggs, and Marchand published a report of 33 cases of pleural mesothelioma in the Cape Province, 32 of whom had a history of exposure to asbestos. About half the victims had had only environmental exposure to crocidolite, they had never worked with asbestos themselves (Mesothelioma and Asbestos Exposure in the North Western Cape Province. *Br. J. Ind. Med.* 17: 260-271, 1960).

Cover-Up of Mesothelioma at the South African Crocidolite Mines

At this time, Dr. Wagner worked at the Pneumoconiosis Research Unit (PRU) in South Africa. On October 15, 1958, PRU Director AJ Orenstein wrote to the Managing Director of Cape Asbestos in South Africa proposing a meeting of Dr. Wagner, himself, and officials of Cape to discuss the scope and financing of a new investigation. He noted that Dr. Wagner had discussed the preliminary investigations on the incidence of asbestosis and cancer of the lungs with the Managing Director and other Cape officials.

It was decided to have a survey done in the Cape Province where crocidolite was mined and Penge, where Cape Asbestos mined amosite. This was begun with two-thirds funding by the "Asbestos Mining Industry" and the rest from the South African National Cancer

Association, between 1960-1962. Facilities and equipment were provided by federal government agencies. The research was done by the Pneumoconiosis Research Unit.

The findings were appalling. People living near the mines and mills were getting asbestosis, almost exclusively an occupational disease, just from the air pollution all around them. PRU found:

> Over 100 cases of mesothelioma have been recorded.

The PRU also determined:

> (A)ll but three have either lived in or had some association with the North West Cape Asbestos Areas.

The summary noted that:

> An alarmingly high number of cases with mesothelioma of the pleura have been discovered among people who live or who have lived in the North Western Cape area, and that there is evidence to suggest that this condition is associated with exposure to asbestos dust inhalation which need not be industrial.
> (*Field Survey of the North Western Cape and at Penge in the Transvaal*)

In other words, people were contracting mesothelioma from merely living near the crocidolite mines.

Dr. Walter Smither, Cape's senior medical officer, flew to South Africa soon after the PRU survey was completed in 1962. He visited Prieska, where "quite a cloud of dust was being produced and blown away by a fairly strong wind toward the town." The crusher was outside the plant. Inside, he saw a dust-covered platform and "men working below in a rain of dust." Doctors at the local hospital told Smither they'd seen numerous cases of mesothelioma and had 10 such patients at the time. Smither insisted that the patients be moved immediately to Johannesburg and that Cape would pay the cost. His confidential report, revealed in litigation in Britain in 1999, explained:

> The advantage from the standpoint of the company is that these cases will be treated as a group, will be removed from the area of conflict, if one may call it that, and taken some hundreds of miles away.

Smither was concerned that discovery or documentation of so many cases in the Prieska hospital could further establish the lethality of crocidolite. The removal of the 10 Prieska patients was contrary to their best interests. They would endure a painful and frightening trip, be removed from their families who could not afford to go to Johannesburg, and there was no treatment for mesothelioma. Smither also met the PRU director. The businessman with a medical education concluded:

> My recommendation would be that the company should not support any future wide-ranging survey of the industry with a view to discovering either asbestosis or mesothelioma. The reason for this is that the company is well aware of the problem and has already some idea of its extent.
> (WJ Smither. Visit to South Africa, Barking, August 1962)

Business historian Jock McCulloch, who authored 3 books on the history of the asbestos industry, noted that the timing of the PRU survey findings was opportune.

> Levels of production were still modest, and the heaviest investment in new mines and mills by Gefco and Casap lay in the future. If the mines had to close the industry's losses could have been minimized. While production was still low the numbers exposed in mining, processing, transport, and manufacture were relatively small. The future disease burden could thereby have been greatly reduced.
> (*Asbestos Blues*, p. 183)

McCulloch described the murderous choice faced by Cape's executives.

> There was a great deal at stake for British-owned companies. If a comprehensive survey of the Northern Cape had been completed in the mid-1960s, the mining of crocidolite could well have ended sending the global asbestos industry into a decline from which it may never have recovered ... South Africa continued to mine and export crocidolite until 1996. That suppression bought the asbestos mines 30 years' grace. It may well have done the same for the gold mines.
> (J. McCulloch and P. Miller, *Mining Gold and Manufacturing Ignorance/Occupational Lung Disease and the Buying and Selling of Labour in South Africa*, 2023, esp. pp 393-394)

McCulloch reasoned that it was probable that the Department of Mines feared the incidence of silicosis on the gold mines would become an issue if asbestos-related disease entered public debate. Studies of migrant workers returned from the gold mines would later show well over a third had undiagnosed disability (J McCulloch. Asbestos, Lies, and the State: Occupational Disease and South African Science. *African Studies* 64: 202-216, 2005).

<u>Dr. Selikoff's Insulator Mortality Study and the Big Asbestos Conference in 1964</u>

The news that a rare and fatal cancer was caused by asbestos, and not just crocidolite, was a shock to the asbestos industry. This was borne out by reports of mesothelioma in Belfast shipyard workers in numerous trades (McCaughey, 1962) and members of the insulators' union in New York and New Jersey. The insulators sustained deaths from asbestosis and massive numbers of "excess" deaths from lung cancer, pleural and peritoneal mesothelioma. The asbestos used in insulation was chrysotile and amosite, no

crocidolite was reported by the US Bureau of Mines when such tabulation first appeared in *Minerals Yearbook* in 1972. Selikoff, Hammond, and Churg warned that all the construction trades that worked alongside the insulators shared their risk, even the supervising architect (Asbestos Exposure and Neoplasia, *JAMA* 188: 22-26, 1964).

Months after publishing the insulators study, Dr. Irving Selikoff organized a 3-day international conference on asbestos at the Waldorf Astoria in New York in October of 1964.

Dr. Muriel Newhouse presented the first report of her research at the New York conference (Biological Effects of Asbestos. *Ann. N.Y. Acad. Sci.* 132: 579-588, 1965) Dr. Newhouse and Hilda Thompson identified records of 76 deaths in which pleural and peritoneal mesothelioma could be confirmed at London Hospital. A "control group" of 76 hospital patients was used to see the comparative number of people exposed to asbestos in the general population. Surviving relatives were interviewed about the mesothelioma decedents. The study found statistically significant excesses of the mesothelioma patients versus controls for occupational exposure, a family member living in the household with an asbestos exposed worker, and – in people without workplace or household exposure -- living near an asbestos factory. Most of the occupational exposure cases came from the Cape Asbestos factory in Barking. Some household and most of the neighborhood cases also came from Cape (*Magic Mineral*, pp. 185-186; Anthony Mendele, former Barking plant manager, testimony in Smith v. Pittsburgh Corning, Court of Common Pleas of Allegany County PA, Nov. 13, 1984).

Dr. Wagner reported having seen 89 cases of mesothelioma in South Africa, only one of whom had no definite exposure to crocidolite. One woman born on the Cape asbestos fields left the area at age 5 and developed mesothelioma at 55. She went to an infants' school near an asbestos dump; two of her playmates had also died from mesothelioma (Biological Effects of Asbestos. *Ann. N.Y. Acad. Sci.* 132: 575-578, 1965).

Another speaker at the conference was Richard Gaze from Cape Asbestos in London. He was a chemist and executive director of Cape. Gaze took issue with Dr. Arthur Purdy Stout, who said the relationship between asbestos and mesothelioma had been "so convincingly demonstrated." Gaze questioned that crocidolite caused mesothelioma, saying chemical pollution might be responsible. He said there were other pollutants in the blue asbestos mountains, that manganese and other minerals were also mined there. He said nothing about the PRU survey in Prieska whose funding had been cut off by Cape and whose findings were suppressed. On the contrary, he said:

> Another thing that puzzles me, and I say this quite frankly because Chris Wagner is a great friend of mine and he is a very fine investigator, as I'm sure you will all agree. But it does puzzle me that since he has left South Africa [1962] there have been almost no new cases of mesothelioma.
> (Biological Effects of Asbestos. *Ann. N.Y. Acad. Sci.* 132: 682, 1965)

Dr. Smither also spoke at the conference, presenting some figures on the deaths of workers at Cape's Barking plant in East London. Of 71 deaths in the preceding years, 41 were caused by cancers of the lung, pleura, and peritoneum. He concluded, "Perhaps this is an industry which should be engaged in only by older men." (*Ibid*., pp 166-181)

Mesothelioma Epidemiology Leads to Crocidolite Abandonment in UK but Not in US

Newhouse and Thompson's more detailed report of their findings was published a year later in the UK (*Brit. J. Indust. Med*. 22: 261-269, 1965). Reports in *The Sunday Times*, *The Guardian*, and other media created a crisis for the asbestos companies, raising fear among employees, customers, and the public. The mesothelioma threat to asbestos workers, their family members, and neighbors of asbestos plants would soon be confirmed in the US by Pennsylvania authorities (J Lieben and H Pistawka, *Arch. Env. Health* 14: 559-563, 1967).

This marked the death knell for the asbestos industry, it can be seen in retrospect. Asbestos consumption continued rising because workers and the public didn't know how deadly asbestos was, and there was virtually no regulation or compensation. That would begin to change in the US, with: media publicity led by Dr. Selikoff, environmental groups and unions; the creation of the Environmental Protection Agency, the Occupational Safety and Health Administration and the Consumer Product Safety Commission in 1970-1972; and the precedent *Borel* decision of the 5th Circuit Court of Appeals in 1973, the year US asbestos consumption peaked.

In Britain, new asbestos regulations were being finalized in 1968. On the subject of labelling asbestos building boards, Cape's Dr. Smither suggested this label text to T&N's Stephen Holmes: "In the interest of fire prevention, this board contains 20% asbestos. Handle with care."(Dec. 30, 1968) The final regulations did not include any warning label requirements.

British manufacturers stopped importing crocidolite in 1970 (J McCulloch and G Tweedale, *Defending the Indefensible/The Global Asbestos Industry and Its Fight for Survival*, Oxford Univ. Press, 2008, p. 227). Smither said no blue asbestos was still being used by his company at a 1967 conference on asbestos hazards in UK Naval shipyards. An account of his remarks seemed to accept that crocidolite caused mesothelioma, resulting in Cape's elimination of it in their asbestos product manufacturing plants at that time.

> Unhappily, cases of mesothelioma were still arising. It was hoped that in the future those cases would be fewer, because no blue asbestos was now being used by his company. (*Ann. Occ. Hyg.*11:144, 1968)

Britain set the workplace exposure limit for crocidolite at 0.2 fibers/cc of air in 1971, one tenth the limit for chrysotile. Some other countries, like Britain, set stricter permissible

worker exposure limits for crocidolite and amosite than the most widely used "white" asbestos, chrysotile. US regulatory agencies never set different limits for different forms of asbestos. Many experts on asbestos today believe that crocidolite is the most dangerous type of asbestos with respect to mesothelioma.

US imports of crocidolite, all from South Africa, remained high through the 1970s and into the 1980s. In 1973, the Center for Science in the Public Interest pressed the EPA to ban the additional installation of asbestos-cement pipes for water supply, based on erosion of asbestos in test loops of water flow and worker hazards in maintaining such pipes. At that time, there were 200,000 miles of asbestos-cement water pipe in service in the US. EPA Administrator Russell Train replied that there was not evidence that the small amount of asbestos contributed by the pipes was harmful (letter to B Castleman, CSPI, Jan. 21, 1974). US manufacture of A-C pipes using a combination of both crocidolite and chrysotile asbestos continued until 1992.

Cape Amosite Widely Used in US, as Cancer Dangers are Covered Up

Cape's amosite asbestos was used in the US starting in 1926, when Union Asbestos and Rubber Company (later Unarco) used it to make Unibestos thermal insulation at a plant in Cicero, Illinois. Another Unibestos plant opened in Patterson, New Jersey in 1941, which would be moved to Tyler, Texas in 1954. Another Unibestos plant was started in Bloomington Illinois in 1951. Unarco Vice President and former Patterson plant manager was involved in dealing with workers' compensation cases involving Unarco workers with asbestosis in the 1940s (B Castleman. *Asbestos: Medical and Legal Aspects* 5th Ed., Aspen, 2005, pp. 554-555; P Brodeur, *Outrageous Misconduct/ The Asbestos Industry on Trial* Pantheon, 1985, p. 276).

Unarco was also one of the 10 asbestos companies that sponsored experimental animal research on inhaled asbestos conducted by the Saranac Laboratory in Saranac Lake, NY. The agreement gave the sponsors complete control of any findings made public. After receiving a draft report on asbestosis and noting an excessive rate of lung cancer in mice, the sponsoring company executives met and ordered the laboratory director to omit "all references to cancer or tumors." The report was published with the cancer data removed in 1951 (*Asbestos: Medical and Legal Aspects* 5th Ed., Aspen, 2005, pp. 49-59).

In 1962, Pittsburgh Corning purchased the amosite asbestos insulation (Unibestos) manufacturing plants from Unarco. Prior to acquiring the business, corporate officials met with Cape's Richard Gaze, who described the manufacturing process and precautions to protect workers from asbestos dust. They flew to Canada to observe a plant there making insulation with Cape amosite. Pittsburgh Corning officials secured articles about asbestos disease, visited the company physician at the Cape Asbestos plant in Britain, and had a consulting industrial hygienist examine conditions in their plants between 1962-1965 (*Asbestos: Medical and Legal Aspects,* 5th Ed., pp. 555-556).

Cape sold crocidolite and amosite asbestos into the US through North American Asbestos Corporation (NAAC). NAAC was essentially a one-man sales office for Cape Asbestos, starting in 1953 in Chicago. Robert Cryor was the President of NAAC when it was first organized. NAAC joined the Asbestos Textile Institute (ATI), and Cryor was present when it was proposed on October 7, 1954 to conduct a study on asbestosis and lung cancer using rats. Cryor was also there when the ATI decided against doing an autopsy study on June 9, 1955. The ATI minutes reflect active discussions about lung cancer in 1955-56 and voting in 1957 to reject supporting the animal study ("There is a feeling among certain members that such an investigation would stir up a hornet's nest.").

ATI minutes show that Cryor and a Johns-Manville official protested and "held up" the issuance of a press release at the New York asbestos conference in 1964, titled, "High Incidence of Cancer Deaths Found in Asbestos Workers; Asbestos in Environment Also Threatens City Dwellers." ATI minutes also recorded funding research at McGill University "so that authoritative background publicity can be had" in 1965 and putting pressure on the Mt. Sinai School of Medicine to restrain Dr. Selikoff ("a dangerous man") in 1971 (*Asbestos: Medical and Legal Aspects 5th Ed.,* pp. 682-684).

In 1966, Robert Cryor wrote to Richard Gaze at Cape Asbestos reporting the reaction to a New York Times article about Selikoff's research. The article had been reprinted in newspapers around the country, provoking "quite a lot of anxiety" in the industry. "Bob Buckley (of Pittsburgh Corning) was openly critical that we, and/or Cape had not in any way informed them of these difficulties relating to exposure of the public to asbestos. He said that they were naturally aware of the dust problem in their factories, but quite recently one of their technical people visited Barking and had returned to Pittsburgh reporting very disturbing news he had heard on the subject there. He had evidently picked up the story about the woman washing her husband's overalls, etc., etc." Buckley was urgently requesting something to combat the bad publicity. Cryor related that, "The whole subject seems to be boiling up rather intensively here at present." (Mar. 15, 1966)

Cape would assert for years that there were no mesotheliomas specifically attributable to amosite. This is what Gaze told Cryor to tell Bob Buckley: "It is a fact that <u>not one</u> authenticated case of mesothelioma has been associated with exposure to amosite anywhere in the world." (Mar. 22, 1966). In a confidential memo to salesmen copied to Gaze and Smither, Cape's Sales Director wrote (Aug. 19, 1966):

> The asbestos content of our Caposite and Caposil moulded insulation materials which are now our principal asbestos based products, is entirely amosite asbestos. The same careful research, to which I have referred, has so far revealed <u>not one</u> case of mesothelioma associated with amosite asbestos.

This was contradicted by Cape's own experience, recorded in the testimony of Anthony Mendele, who worked at Cape's plant in Barking starting in 1956 and was the plant manager from 1960-1968. He testified in a trial in Pennsylvania in 1984.

> Q. Mr. Mendele, with respect to the Caposite department, where I think you testified amosite was used exclusively, were there any mesothelioma cases that came out of that department?
> A. Yes, many.
> (Smith v. Pittsburgh Corning, Court of Common Pleas of Allegany County PA, Nov. 13, 1984, p. 66)

Mendele also testified that Richard Gaze was also at the Barking plant for the first 7 years that he worked there and that both Gaze and Dr. Smither were "very close colleagues" of his. Mendele learned about mesothelioma between 1950 and 1960. He frequently discussed asbestos disease in the workers with Gaze. He also discussed asbestos health hazards with Dr. Smither, who reported to the Barking plant manager between 1956-1960 (*Ibid*, pp. 10-13).

Cape Leads in Developing Scheme for Global Asbestos Industry's Defensive Research, Government Lobbying, and Public Disinformation in UK and US

In Britain, Cape Asbestos, Turner & Newall, and British Belting and Asbestos set up the Asbestosis Research Council (ARC) in 1957. By 1968 and onwards, it was ARC's policy to require approval by all member companies for any publication on ARC-funded research. Researchers, including JMG Davis, regularly submitted pre-publication manuscripts for review, and changes were directed before approvals were granted. The "payer review" process involved approval by the ARC Research Committee and subsequent approval by the ARC Management Committee before publication was authorized.

ARC arranged to send industry representatives and pay expenses of favored scientists to attend scientific conferences. ARC withheld measurements of "somewhat higher than expected" airborne asbestos concentrations near members' factories in 1972. ARC sponsored a scientific report in 1974 to counter "adverse publicity against asbestos in foods, beverages, and drugs." ARC support was not acknowledged in putting this forth to oppose a petition by the Environmental Defense Fund to have the US Food and Drug Administration ban asbestos filtration of foods and drugs.

In 1973, JMG Davis submitted an ARC-supported paper about mesothelioma in experimental animals to Smither, who passed it on to Richard Gaze. Gaze objected to an introductory sentence saying that the supposition that crocidolite caused mesothelioma "has been proved correct." The sentence was removed in the published paper (Gaze letter to S. Holmes, Feb. 22, 1973; and JMG Davis, *J. Nat. Cancer Inst.* 52: 1823-1837, 1974). In 1976, Davis submitted a paper that offended ARC corporate reviewers by referring to "polluted" and "contaminated" water supplies. "Less emotive" words ("water supplies containing asbestiform minerals") were ordered (The Asbestosis Research Council, *Asbestos: Medical and Legal Aspects 5th Ed.,* pp. 754-755).

The British asbestos companies realized that they were best served by having separate organizations for research support (ARC) and industry lobbying and publicity. Seeing that the Factory Inspectorate was moving to issue new asbestos regulations, the leading British companies set up the Asbestos Information Committee (AIC) in 1967. AIC shared London offices with the public relations damage control specialists, Hill & Knowlton, which had experience working for the tobacco industry. ARC ran annual advertisement campaigns stressing safety ("where would we be without asbestos?"), printed leaflets for school children, sales representatives, and public inquiries ("Asbestos: Public Not at Risk"), printed posters, circulated promotional films, and initiated media outreach to publish favorable articles. ARC lobbying weakened the UK asbestos regulations of 1969, regulations that would otherwise have been "far more severe." In 1971, ARC convened a conference of "asbestos information bodies" in London, by which time similar asbestos industry propaganda groups had been set up in 10 other countries including the Asbestos Information Association in the US (*International Conference of Asbestos Information Bodies/London 24th and 25th November 1971*, T&N archives). Dr. Smither was there from Cape Asbestos.

Selling Asbestos and Avoiding Liability in the US in the 1970s

Cape's US sales agent, North American Asbestos Corporation, joined the Asbestos Information Association. In 1973, NAAC sent the US asbestos lobby group a position paper from Cape Asbestos. It was suggested that the paper could be provided to selected people in OSHA. The evident concern was that crocidolite and amosite might be more stringently regulated than chrysotile asbestos. On crocidolite, it said "The only evidence based upon exposure to crocidolite alone is that supplied in Wagner's papers. Subsequent work has not confirmed the conclusions that were at one time drawn from Wagner's findings." Conclusion number 1 said, "there are very few cases of mesothelioma where the cause can be said with certainty to relate exclusively to crocidolite exposure."(CG Morgan, NAAC, letter and attachment to Robert Mereness, AIA, Dec. 18, 1973)

Cape's claim that there were very few published cases of mesothelioma with exclusive exposure to crocidolite was helped considerably by their termination and suppression of the 1960-62 PRU survey in Prieska.

Very few internal Cape Asbestos documents have been publicly disclosed. Much of what we know comes from discovered documents from other asbestos companies in US personal injury and property damage litigation. Millions of T&N documents were revealed in litigation by Chase Manhattan Bank, whose world headquarters needed to have 66 floors of sprayed amosite insulation removed in the 1990s at a cost of $85 million.

As judgments in product liability cases mounted in 1977, Cape lawyers concluded that Cape could "withdraw" from the Texas proceedings and rely on British authorities and courts to not enforce payment of judgments from Texas. Cape's corporate counsel wrote,

"(W)e really cannot be said to have a moral responsibility and are simply victims of the US product liability cult." (AJ Penna telex to S. Milwid, July 4, 1977)

Corporate restructuring was used to avoid liability while continuing to sell asbestos in the US. "Cape Asbestos, itself once part of the great South African conglomerates of De Beers and Anglo-American Corporation, provides a classic example of these tactics. In 1982, after Cape had been ordered in one American court verdict to pay $55 million in damages for exporting a lethal product without warnings, the company simply refused to pay and closed its US operations. Reluctant to give up the American market, however, Cape established a secret shell company in Liechtenstein, through which Cape continued to ship blue fibre to America." (Insulating Asbestos Companies from Compensation. *Defending the Indefensible/The Global Asbestos Industry and Its Fight for Survival*, p. 181)

Devastation from Cape's Asbestos Mines in South Africa

The environmental contamination of the crocidolite mines was described by Dr. Christopher Sleggs, who became superintendent of an area hospital (in Kimberley) in 1948 and saw many mesothelioma victims:

> When I first saw it, the land was blue for miles around the asbestos settlements. The mills indiscriminately spewed blue dust clouds over the countryside. And whenever the wind rose, a blue haze hovered over the dumps.
> (J McCulloch. Asbestos, Lies, and the State: Occupational Disease and South African Science *African Studies* 64: 202-216, 2005).

Many women were employed at the crocidolite and amosite mines. These two varieties of asbestos occur in geologic formations within a "host rock" of banded ironstone, which is very hard. Men worked in the mines drilling and blasting, but it remained to separate the asbestos from the host rock before it could be shipped to customers. Because the rock was so hard, it caused severe damage in the machinery and ducting in the mills set up to extract the asbestos fiber. To minimize or avoid such problems, women were employed to hammer the asbestos free from the host rock. Swinging 4-pound hammers, some with babies on their backs and children sorting and bagging, women "cobbed" asbestos, unaware of the danger. They worked in groups, sharing food preparation and child minding. Cape's annual report for 1958 acknowledged that the company depended heavily for its success (and 20 percent per annum dividends) upon the South African mines. "What it did not say was the company's profitability was dependent upon the labour of women and children." (J McCulloch. Women Mining Asbestos in South Africa, 1893-1980. *J South. Afr. Studies* 29: 413-432, 2003)

Cape exploited more than just the considerable lack of human rights in South Africa.

> The poverty and lack of work that plagued communities in both the north-west Cape and the north-eastern Transvaal drove men, women and whole families onto the asbestos mines. (Ibid.)

Grenada television documentary journalist Laurie Flynn investigated the giant gold, diamond, and asbestos companies operating in South Africa. His 30-minute "World in Action" programs had introduced him to the big asbestos companies in Britain. Accompanied by South African Dr. Neil White, Flynn set out in 1980 into the Kalahari to see what Cape had wrought in the town of Prieska.

> Cape (was a) British-registered part of Harry Oppenheimer's Anglo-American empire which had been among the biggest asbestos producers from the beginning, and (a) company whose British factories had been shown to be so negligently run that they brought death, disease, and injury to the communities around them. (L. Flynn, Dust to Dust. *Studded with Diamonds and Paved with Gold: Miners, Mining Companies and Human Rights in South Africa*, Bloomsbury, 1992, pp. 166-188.

Dr. White reported that Cape had left everything, and dust was everywhere. You could pick up tufts of blue asbestos in the main street. Talk about concreting over the worst areas came to nothing. In the town of 12,000, the local doctor said he had seen over 900 cases of mesothelioma and heard of many more in surrounding areas. Of 80 White miners who worked at Prieska, the doctor said 70 died of mesothelioma. Whole families, the pastor's wife, were among the victims. When the desert wind blew, the dump west of town rained dust over the houses, collecting on floors and windowsills. Some useful machinery had been removed after the mill closed, but nothing was done about the pollution around the mill and the waste mine tailings dumped around the area. People for many miles distant across the country were "being cut down by the toxic leftovers of the modern, science-based corporation." Cape refused to be questioned by Flynn, saying only that with the sale of the mines they had disposed of their obligations. South African law enabled Cape to pay little or no compensation to people who worked in or lived near its operations, one of whom was interviewed by Dr. Neil White, crushed by terminal cancer and abject poverty (*Ibid.*).

Richard Gaze, Robert Cryor, and historian Jock McCulloch (who made numerous visits to asbestos mines in South Africa in the 1990s and had no occupational exposure to asbestos) all died from mesothelioma.

<u>Perspective</u>

I have spent my professional life as a public health worker confronting and documenting the corporate crimes of the big asbestos companies. Even with its withdrawal from liability/discovery in US asbestos litigation, Cape stands out for its ruthlessness and the human toll in maximizing profits from asbestos mining and manufacturing.

I was a chemical engineer, a Masters student in 1970 learning about air pollution, when I read about asbestos. It horrified me that millions of construction workers, their family members, and the neighbors living and working near construction sites and shipyards nationwide were in mortal peril. They were oblivious to the danger, which I saw all around as I went to work as a local air pollution control official in 1972. I appeared on the scene at the end of the 'wild west' era of asbestos use, before regulation and liability would induce restraint. Paul Brodeur's articles in The New Yorker in 1968 incited a battle to stop the use of sprayed asbestos on the World Trade Center and skyscrapers going up all over the country. This was taken up first by state and local governments, later by EPA. A national survey done for the Asbestos Information Association in 1973 found that only 22 percent of all Americans were aware that asbestos was hazardous to health; a mere 3 percent of those interviewed thought it was a hazard to the general public. As an environmental activist, I did frequent interviews with the media, hoping to warn people and press the new governmental agencies to regulate the industry. Plaintiffs' lawyers came to me in 1976 about documenting the public health history of asbestos. After a few years of research and with the discovery of corporate documents, I began to testify as an expert witness in 1979. My book on the public health and corporate history of asbestos (1984) was largely identical to my doctoral thesis at the Johns Hopkins School of Hygiene and Public Health.

The Asbestos Pandemic and the Public Health Response to Date

Nearly 80% of the world's asbestos consumption in the 20th century came after 1960.

Wagner and coworkers showed that groups of rats inhaling all varieties of asbestos for as little as one 7-hour day developed lung cancer or mesothelioma; no such tumors were found in unexposed rats. Longer exposures yielded higher rates of these cancers, and there was little difference in cancer potency of the asbestos fiber types (*Br J. Cancer* 29: 252-269, 1974). Britain's Mesothelioma Register included a man whose only known exposure consisted of sawing asbestos boards one day to build a chicken coop (Greenberg and Lloyd Davies, *Br. J. Ind. Med.* 31: 91-104, 1974). It is widely accepted by health authorities the world over that no level of exposure to asbestos can be considered free of cancer risk, and that has been the case since the mid-1970s (*Asbestos*. IARC Monographs on the Evaluation of Carcinogenic Risk of Chemicals to Man, Vol. 14, World Health Organization, 1977).

Swedish unions succeeded in getting Volvo, Saab, and Scania to develop non-asbestos brakes in the early 1980s, while the Swedish government was also gradually forcing an end to the use of replacement brakes containing asbestos. The semi-metallic brakes that replaced asbestos brakes worked fine, lasted longer and were not much more expensive. This set the stage for enacting national asbestos bans, starting in the Nordic countries in the 1980s. As leading European countries banned asbestos in the 1990s, vehicle manufacturers globally went asbestos-free to continue to sell their products in Europe.

EPA published rules to ban all major uses of asbestos in 1989, but they were overturned in a 5th Circuit court challenge in 1991. US asbestos consumption continued steadily down thereafter, in my opinion mainly because of the weight of liability. For the last decade, the US has made no asbestos products but imported asbestos to serve as diaphragm processing material in some old plants that make chlorine. This is ending, too.

The global death toll from asbestos is estimated at 304,000/year worldwide, maybe 40,000/year in the US. Global asbestos consumption is down from its peak of 5 million metric tons/year in the late 1970s to about 1 million, most in Asian countries. Almost all of it is used in corrugated asbestos-cement (A-C) roofs seen all over the developing world. This industry is rife with cancer hazards. Cutting into these construction products with power tools releases immense asbestos exposures. All the A-C product plants produce large quantities of broken waste asbestos-cement sheets and pipes that can't be recycled. In Italy, one plant crushed the broken waste outside and sold the granules for surfacing farm roads and driveways. This irretrievable pollution is now causing new cases of mesothelioma almost weekly in Casale Monferrato, a town of 35,000, most in people who never worked at the plant closed in 1986.

All varieties of asbestos are banned in around 70 countries, worldwide national bans have been recommended by the World Health Organization and the International Labor Organization since 2006. Based on legislation in 2016, EPA is moving to ban imports of asbestos-containing auto parts and end the use of asbestos diaphragms in the chlorine industry. Chlorine interests have challenged the rules in the 5th Circuit. Legislation to ban asbestos has been introduced in Congress. We have done something about schools but still have many thousands of public and commercial buildings with deteriorating asbestos in them.