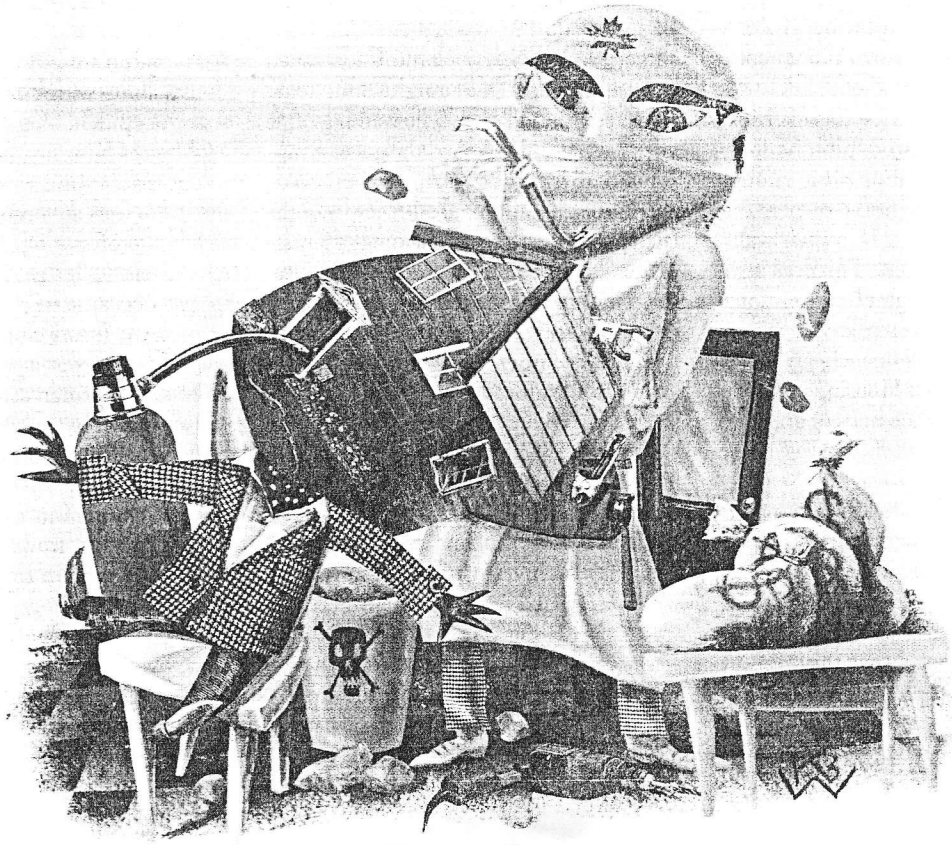

Homesick

Urea-formaldehyde insulation turned out to be harmless after all. But home-owners are still feeling the pain

Early one autumn evening in 1977, George Cantlie heard the doorbell ring. "It was this fast-talking salesman who said he could install insulation at a very reasonable cost," recalls Cantlie, a doctor who was living in a sixty-seven-year-old brick house in the upscale Montreal community of Westmount. In trying to come to grips with the energy crisis, the Liberal government of the day had just announced a new grant programme: home-owners would be reimbursed $500 if they insulated their houses. The salesman suggested that Cantlie get in on it. "[He said] when you go to sell your house, you'll get a premium price for having this wonderful insulation in place."

Like most of those who took the pitch, Cantlie used urea-formaldehyde foam insulation (UFFI) and, as it turns out, the salesman's vision of the future was more than a little optimistic. Only three years later, UFFI would be banned under the Hazardous Products Act. Once the ban was announced, it seemed as if every day a new story surfaced about families being driven from their houses by noxious odours. And even if you didn't smell it, the newspapers said, UFFI gas was still seeping into your house, poisoning you and your family and dramatically increasing your risk of developing a rare and deadly type of nasal cancer.

Home-owners were terrified, and angry too – in interviews on the nightly news, in letters to the editor, and across the backyard fence – about a government that knew as early as 1977 about the possible health threat posed by the foam.

Consumer groups quickly formed after the ban was announced, and lawsuits were filed against both the companies that had made and installed the insulation and the government that had approved it. Bowing to increasing public pressure, the federal government set up the UFFI Centre in June, 1981, to inform people of possible health risks. The centre was deluged with 6,000 calls in its first two months. André Ouellet, then the minister of consumer and corporate affairs, called UFFI a "national disaster."

By 1983 the government, which had spent $50-million encouraging people to install the stuff, had spent $272-million handing out grants of up to $5,000 to 57,700 home-owners to help them remove UFFI or reduce its emissions. It's never been calculated how much non-taxpayer money was spent. But a person who went the whole nine yards of UFFI removal – tearing down interior walls and physically scrubbing the insulation from every surface – could easily have spent $50,000.

When Cantlie sold his house in 1983, he took a $50,000 loss, making him one of about 100,000 Canadian home-owners who lost money on their houses, thanks to UFFI.

Now, almost fifteen years later, inquiries ▸

by Derek Drewry

illustration: Kathy Boake

about urea formaldehyde are, more often than not, met with a shrug. The insulation is still widely used in Europe; the case against it has been thrown out of court three times in the U.S. and once in Canada for lack of evidence; and the Canada Mortgage and Housing Corporation no longer considers the insulation a big enough health threat to make home-owners disclose whether they have it in their walls.

But the stigma remains. Financial institutions still refuse to grant conventional mortgages to UFFI houses, leaving buyers no recourse but to seek financing from the Canada Mortgage and Housing Corporation, which can add thousands of dollars to the purchase price. And if George Cantlie were selling his house today, he'd still receive $10,000 to $20,000 less than market value for it. Why? Because despite all the evidence to the contrary, the government ban remains in place. It seems federal bureaucrats, once so anxious to admit a mistake, can't understand that they're now making another.

Invented in Germany in 1933, UFFI is a complex chemical mixture with two main ingredients: urea, a by-product of protein metabolism in mammals, which is passed out of the body in urine; and formaldehyde, a ubiquitous chemical found in trace amounts in every cell of the human body and in the environment at large. Both can be made synthetically and are used as common industrial chemicals in the manufacture of everything from plywood, carpets, dyes, and explosives to embalming in the funeral business. UFFI was introduced to North America in 1959 but only came into wide use after the 1973 Arab oil embargo had the public and governments scrambling to find ways of reducing heating costs.

Under various trade names, such as Rapco Foam and Insulspray, the foam was one of several insulations approved by the government in 1977 for use under the Canadian Home Insulation Program. UFFI seemed like the perfect solution for older houses because it was relatively cheap and could be easily installed. It's mixed on site, then pumped through holes drilled in the outside wall into the cavity between the inside and outside wall, where it dries over several weeks, changing from a shaving-cream-like foam to a material with the consistency of sponge toffee. Because UFFI can break down when subjected to changes in heat and humidity, the government limited its use to exterior stud walls, not allowing it in ceilings and basements where temperatures tend to fluctuate more.

Concern about a possible health threat began in late 1977, when the U.S. Consumer Product Safety Commission issued a warning that UFFI might emit toxic fumes after installation. The warning came after several studies linked the gas to symptoms that included burning eyes, headaches, coughs, and nausea. A few months later, home-owners, complaining of illnesses they attributed to formaldehyde gas, pressured the governor of Connecticut into setting up a task force to study the problem.

On December 4, 1978, the attorney general of Colorado filed a suit against several foam companies for failing to disclose that UFFI could emit gas at levels that might be harmful to humans. In March, 1979, Massachusetts also began investigating health complaints by UFFI home-owners. The investigation led to a statewide ban that November. Connecticut soon followed suit. The public's worst fears were realized in January, 1980, when a study by the U.S. Chemical Industry Institute of Toxicology linked nasal cancer in rats to formaldehyde-gas exposure.

Despite the rising tide of public fear and outrage south of the border, the Canadian government received only two UFFI-related complaints in 1978 and thirty-five in 1979. But Health and Welfare was monitoring the events unfolding in the U.S. and, in November, 1979, established 0.1 parts per million (ppm) as the maximum acceptable in-home formaldehyde-gas level. An internal report released the following June said that UFFI can break down under high temperatures and release formaldehyde, which can cause "all well known toxic symptoms" including eye and throat irritation, headaches, skin rashes, vomiting, diarrhoea, and chronic colds. But, the report concluded, health complaints were less numerous in Canada than in the U.S. because better installation techniques here meant formaldehyde levels were much lower. The next month, the Canadian General Standards Board published standards for training UFFI installers. On September 19, the Liberal minister of health, Monique Bégin, formed an expert committee to study UFFI. The committee reported back December 8, recommending a precautionary ban until a complete review of the scientific data could be performed. On December 17, 1980, the minister announced a temporary ban. By that time, though, the public scare was in full swing.

This despite the fact that, almost from the beginning, critics had been pointing out gaping holes in the scientific evidence used to support the ban.

A Hamilton lung doctor, Michael Newhouse, along with Geoff Norman, a professor of epidemiology and biostatistics at McMaster University, has spent years trying to convince Ministry of Health officials that UFFI fears are unfounded. Newhouse, a clinical professor of medicine at McMaster University, first got involved in the controversy because he'd had UFFI installed in his own house and wanted to know whether there was any risk to his family. So he and Norman set out to see if there was any truth to the newspaper reports.

As a media scare, "UFFI had it all," says Geoff Norman. "Invisible, undetectable odours seeping out of your walls, high-tech chemistry, multinational chemical companies were in on it, the conspiracy theory that always goes along with these sorts of things. Then we have the photographs of little old ladies in their back yards watching their houses being bulldozed. It was far more vivid than PCBs or Dioxin ever was. You can't blame the average individual on the street for being convinced that this was the worst thing since the black plague."

"After collecting what scientific information there was and deciding that the likelihood that UFFI was doing all the things that it was being accused of was extremely low, we began trying to stop the avalanche," says Michael Newhouse. "We were very naive."

The most damning report on UFFI was the U.S. Chemical Industry Institute of Toxicology study, which found that formaldehyde caused nasal cancer in rats. Mice, in the same experiment, did not develop cancer. According to U.S. regulations, if one species develops cancer under experimental conditions, the substance under investigation must be considered carcinogenic to humans. But the rats were exposed to daily levels of formaldehyde gas 300 to 600 times greater than those found in the average UFFI house.

In a 1977 Washington State Health Department study, much of the information about formaldehyde-gas exposure was collected from mobile homes, which are more airtight than conventional houses and contain large amounts of other formaldehyde-producing materials, such as particle board and plywood. Experimenters did not bother to isolate UFFI off-gas, or even formaldehyde, as a source of people's complaints. In 1982, when re-

searchers in New Jersey used a control group to isolate its effects, they found no difference between reported symptoms in UFFI and non-UFFI homes.

Later studies conducted with morticians and workers in the plywood industry who are regularly exposed to formaldehyde levels up to 100 times that found in UFFI houses did not show increased rates of cancer. When it overturned the nationwide ban on UFFI in 1983, the U.S. federal court of appeal said, "It was not good science to rely on [a] single experiment, particularly one involving only 240 rats, to make precise estimates of cancer risk."

In Canada, studies by the Department of Consumer and Corporate Affairs in 1981 found that the average formaldehyde-gas level in UFFI houses was 0.049 ppm, well below the 0.1 ppm national safety standard and only slightly higher than the .034 ppm average found in non-UFFI houses. Only a very few people can detect the noxious-smelling gas in concentrations of 0.1 ppm, and most of those people begin to experience minor throat and eye irritations only when concentrations are at over five times that level.

To put the ban in perspective, mobile homes made from plywood or particle board had average formaldehyde concentrations of 0.47 and 0.5 ppm respectively. Although these products released formaldehyde at levels more than five times the national safety standard, no regulations were passed to control either of them.

About 100,000 houses have been insulated with urea formaldehyde in Canada, but it's never been established that anyone has become seriously ill or died because of the material. And even the minor irritations that people have complained about are contested.

Environmentalists who at one time said exposure to small amounts of UFFI could have devastating long-term results now admit that the gas is not as big a problem as they once thought. Activists try to get people with chemical sensitivity to focus on formaldehyde as opposed to UFFI, says Ed Lowans, a building and health consultant who works in Caledon, Ontario. UFFI is "a contributing background factor," Lowans says. "Whether or not it puts [the level of formaldehyde] over the limit depends on how much it is contributing. It could be the greater or the lesser source in any given case."

Moreover, the government, in trying to protect the indoor environment, actually succeeded in making things worse for the environment at large by causing thousands of tons of wood, drywall, and other debris to be torn from homes and deposited in already crowded landfill sites.

Until recently, Michael Newhouse wrote the minister of health annually, each year citing more scientific evidence to support lifting the ban. "I got silly letters back like 'Most of it's been taken out anyway so why bother with that?' Then they finally said 'Stop writing to us because we're not going to pay any attention,'" he says. "In the U.S. the whole thing got thrown out and they went on installing UFFI where it was appropriate, and Canada passed silly law[s]... making it sound as though it's a hazard."

Indeed, Richard Viau, acting director of Health Canada's product-safety bureau, who in 1978 was one of the first people in Canada to sound the UFFI alarm, says the ban will remain in place "until it's demonstrated that removing [it] would not result in products coming on the market that would cause the same situation that led to the ban back in 1980." The onus of proof, he says, is on the industry. But the kind of proof needed to exonerate the foam in the eyes of Health Canada is unlikely to be made available soon, because, as Viau says, there hasn't been a "groundswell" of people coming forward asking for a review of the ban. "Until there is absolutely incontrovertible proof that there is no problem, why should the government change its position?"

Newhouse shakes his head when told about the ministry's stand. "It's totally unscientific to make a statement like that. What was the hazard? What was ever proven? There was never a scientific basis for any of the regulations."

It may be that the ministry is waiting for the outcome of an ongoing UFFI court challenge in Quebec, where six families are suing two foam makers, the CMHC, numerous UFFI installers, and insurance companies. The families each want about $150,000 in medical and financial damages for UFFI poisoning. If they win, they could set a precedent that could end up costing UFFI producers and the government $1.5-billion. In 1991, Mr. Justice René Hurtubise, in a 1,099-page judgment, dismissed the claims and concluded that "the physical and chemical effects of UFFI remain the object of speculation and uncertainty." The judgment has since been appealed. Already the longest-running civil lawsuit in Canadian history – it began in 1983 – a final decision is expected in 1996.

But as Canadian regulatory bodies wait until the last T is crossed in the legal battle, UFFI home-owners continue to suffer the economic effects. The Canadian Real Estate Association still requires homeowners to disclose whether or not they have UFFI in their houses. This means that in most Canadian jurisdictions, a disclaimer appears on home-purchase offers. "I'm sure if you were in the position of being a buyer, you would want to know everything pertinent to a property," says Shirley Taylor, the association's manager of government and industry relations. She says her organization no longer sees UFFI as a threat – in fact, she'll happily send you information to that effect – but the realtor's code of ethics requires them to tell consumers about anything that could affect the value of a property. She says the association is also concerned that homeowners could sue real-estate agents if they were to find out that they unwittingly bought houses with UFFI.

"It is not good science," said a U.S. court, "to rely on a single experiment, involving only 240 rats, to determine cancer risk"

But what protection does this policy give to thousands of home-owners like George Cantlie? "I was quite willing to fill the [disclosure] form out," he says, "but I preached the same message I'm preaching now to the real-estate agent. [I said] look, tell them this house never had a problem. We never suffered anything."

In all of this, government bureaucracy looms large as the villain. Not because it allowed itself to be swept up in concern for public health, which in 1980 seemed the right thing to do; but because, like an overzealous pit bull with its jaw locked, it has held onto a position that has long since lost all semblance of truth. SN