

## Fire-breathing research

Most fire deaths are caused not by burns, but rather by the inhalation of smoke or hot gases. Moreover, the unusually high incidence of cardiac disease among firefighters has been associated with occupational exposure to smoke. In both cases, carbon monoxide—a combustion product of most burning materials—long has been considered the major toxic agent. But recent studies—including two reported in the May *TOXICOLOGY AND APPLIED PHARMACOLOGY* by William C. Thomas, now of Phillips Petroleum Co. in Bartlesville, Okla.—suggest there may be more than one mechanism responsible for the toxicity of smoke. In the Thomas studies, for example, release of hydrogen cyanide from polyurethane foam—used in furniture, mattresses and so on—appeared to contribute to the heart-related toxicity of smoke inhaled by rats.

Meanwhile, after a collaborative effort of members of 20 academic, industry and government associations, the National Bureau of Standards recently released a set of guidelines for future smoke inhalation studies. The guidelines, released June 11, were designed in hopes of clearing up some of the conflicting or ambiguous results that have plagued this research field due to the lack of an agreed-upon laboratory test procedure.

## Chemistry capsules

- The elusive chemical culprit causing cork taint in wine may have been caught. In research published in the March-April *JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY*, Hans-Rudolf Buser and colleagues of the Swiss Federal Research Station in Wädenswil, Switzerland, analyzed a series of red and white wines. Some of these wines had a distinct cork taint—the unpleasant, musty off-flavor that “can render an otherwise excellent wine completely useless,” the researchers report. (Says Buser, “It is a feared and serious problem for both wine producers and wine tasters.”) After identifying various compounds found mostly in the tainted wines, Buser and colleagues concluded that a chemical called 2,4,6-trichloroanisole (2,4,6-TCA) is the main component responsible for cork taint.

That same chemical, Buser notes, previously has been identified as an off-flavor component in eggs and broiler chickens. In that case, the chemical appears to have originated as a contaminant in feed and litter that was transformed to 2,4,6-TCA through microbial action. In the case of cork taint, Buser and co-workers “presume that 2,4,6-TCA originates from the chlorination of lignin [a wood component]-related compounds during chlorine bleaching in the processing of cork.”

- This year's chemical industry best seller list—compiled annually by *CHEMICAL AND ENGINEERING NEWS*—indicates that Dupont, Dow Chemical, Exxon, Monsanto and Union Carbide were the five U.S. front-runners in 1981 sales. The list is published in the May 3 *C&EN*.

- A truck with a cargo of herbicides overturns in a small U.S. town and gallons of the toxic chemicals leak from damaged barrels. How prepared is that community to cope with the potential disaster? Most U.S. communities are almost totally *unprepared* to deal with such situations, according to a recently released four-year study funded by the National Science Foundation. The study—conducted by Enrico L. Quarentelli of Ohio State University's Disaster Research Center—indicates that while most chemical companies plan well for in-plant accidents, “there is only a low degree of preparedness planning for chemical emergencies in most American communities.”

Community plans for dealing with potentially dangerous chemical incidents are imperative, the report states; from 1971 through 1979, 95,167 such “incidents” were reported to the Department of Transportation.

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## The cost of ‘covering up’ health hazards

A federal jury ordered Procter and Gamble Co. on April 21 to pay \$300,000 in compensatory (actual) damages to Michael Kehm, the widower of a 25-year-old toxic-shock victim who died in September 1980. The firm was held responsible for Patricia Kehm's death because it continued to aggressively promote its Rely tampons after learning in the summer of 1980 that use of tampons—including Rely—had been linked with the sometimes-fatal toxic-shock syndrome (SN: 7/5/80, p. 6). The plaintiff also charged that P&G covered up the link between tampons and toxic-shock by failing to voluntarily notify users swiftly after the firm first heard of Rely's link to the disease.

This was the second court ruling against the firm over toxic-shock, but the first to pay a cash award. An additional 400 suits are pending against P&G over the tampons, which are no longer being marketed.

But P&G's woes are nothing compared with the litigation plaguing Manville Corp., the free world's largest producer of asbestos. According to a financial analysis of the firm in the June 9 *Wall Street Journal*, “Manville faces suits by 15,000 plaintiffs in 10,400 cases, and new suits have been rolling in at the rate of 410 a month this year.” The relatively high rate of mesothelioma (a rare cancer linked almost exclusively to asbestos) and other health effects plaguing asbestos workers are behind the suits.

Until recently, Manville has claimed that it lacked sufficient data to establish that the mineral was dangerous. But investigations by unions and other affected parties have shown that the firm has for decades been in possession of data offering strong suspicion of asbestos's hazards. And that has led to recent awards against the company not only of compensatory damage, but also punitive damages—in some cases exceeding \$2 million. This has proved especially costly to Manville because the corporate-insurance carriers who have written policies for the firm to help defray the cost of compensatory awards are balking at claims for punitive damages. Many of the carriers are charging Manville has defrauded them by not revealing the data it had linking asbestos with human health hazards.

## Computer wars

At a recent computer-security symposium in Monte Carlo, Monaco, Donn B. Parker, a consulting computer-security analyst, conjured up visions of the type of wars he sees coming within a decade—wars by and against computers where the threat of nuclear war is replaced by spectres of economic holocaust. A report of the conference in the Feb. 2 *COMPUTERWORLD* noted his predictions of what these wars might involve: manipulation of global weather forecasting to sabotage commodities markets; surreptitious alteration of computer files that control the distribution of energy; and a shutdown of the Electronic Funds Transfer network, which already moves \$600 billion between international banking institutions daily.

Bloodless wars of another type are already being waged, however, on an Apple II computer. Gerald Van Diver, an owner of Vital Information Inc. in Savage, Minn., has developed a computer-graphics simulation of the Falklands dispute. According to a report of the system in the May 31 *COMPUTERWORLD*, Van Diver says, “You'd send the troops in to invade the islands and [when they won a battle], they would take a part of the islands home with them. After a certain amount of ground was taken, the islands would sink, and, at that point, the score would be tallied.” Victory would go to the country that used its strategic resources—money, troops and arms—to best advantage.

Though Van Diver has offered the system to British Prime Minister Margaret Thatcher and Argentine President Leopoldo Galtieri, both seem to have preferred the real thing.

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