

Debate over aspirin's safety

The long-held opinion that a feverish child always needs aspirin has been challenged since late 1980 by study results suggesting that it can contribute to the transformation of common cases of flu, chickenpox or other viral illnesses to a rare but often fatal disease called Reye's syndrome. More recently, the studies' authors—from the Centers for Disease Control, studying the problem in Michigan, and from the Ohio State Department of Health—have reconfirmed their results. These findings, along with those of Karen Starke of the Maricopa County Department of Health in Phoenix, are triggering intense debate among government, medical community and aspirin industry representatives over aspirin's safety.

On June 4, Richard Schweiker, director of the Department of Health and Human Services, issued a directive to the Food and Drug Administration to put a warning label on aspirin that would inform the public of the risks of giving aspirin to children with certain illnesses. On June 11 the question of aspirin's safety was thrust into the

limelight again by three coincidental events—the publication of the Michigan studies, conducted by CDC's Ronald J. Waldman, in the June 11 *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*; the publication of two related commentaries—one pro and one con—in the June *PEDIATRICS*; and the declaration by the Aspirin Foundation of America, headquartered in Scarsdale, N.Y., that the results of the studies were “wholly inconclusive.”

The issue is not closed. The Ohio health department studies are scheduled to be published in an upcoming *JAMA*. The CDC is currently preparing a bulletin alerting physicians and other health professionals to the possible connection between aspirin and Reye's syndrome. And FDA lawyers are arguing over what type of warning label should appear on aspirin bottles as the Aspirin Foundation of America ponders a possible lawsuit against the pending warning labeling.

One reason aspirin was suspected of causing Reye's syndrome is that excessive aspirin intake can trigger some of the metabolic and pathological changes that accompany the syndrome. Another is that excessive aspirin ingestion can damage the liver, and the syndrome consists of liver and brain degeneration.—*J.A. Treichel*

Termites: New soldiers fade away

Termites, the pesky creatures that munch away at the structures of countless houses, have been shown to be extraordinarily social creatures that depend on mutual cooperation for survival. Termite colonies, in fact, resemble fairy tale cities, with a king and queen, worker termites that care for and nourish the colony and soldier termites that defend the colony against occasional attacks by groups of marauding ants.

Because termites have specific jobs to perform, colony survival depends on having the proper balance between soldier, worker, reproductive and other caste forms. This balance led pest-control research to chemicals that mimic a natural hormone that regulates how many termites belong to each caste.

This month, USDA Forest Service researchers in Gulfport, Miss., reported at

the American Chemical Society meeting in Normal, Ill., that methoprene, one such chemical, controls termites by disrupting their intricate social structure and by poisoning the intestinal protozoa that termites depend on to digest wood.

Methoprene causes about half the worker termites to moult or physically change into soldier termites. The soldier's mouthparts are shaped like swords so they can bite attacking ants; but the unusual shape also leaves soldier termites helplessly dependent. Unable to grasp wood with their unwieldy mouths, soldiers must rely on worker termites to feed them saliva that contains partially digested food. With massive numbers of methoprene-induced soldiers clamoring for food, the depleted worker caste can't keep up with demand and the soldiers starve.

Principal USDA chemist, Ralph W. Howard, cautions that while methoprene works with small numbers of termites, further study is needed to see if methoprene will be effective on colonies in nature that contain up to several million termites.

Another researcher, Glenn D. Prestwich, associate professor of chemistry at the State University of New York at Stony Brook, said that methoprene acts slowly and that termites might have to eat treated wood for long periods of time for the chemical to work. He said an advantage to methoprene is that it is less toxic than other chemicals being tested and it easily degrades to harmless byproducts.

—*K.A. Fackelmann*

Water pollution law to be reviewed

The Clean Water Act, due for a routine five-year reauthorization by Congress, may be the next in a series of environmental laws debated on Capitol Hill this year. The administration has proposed several amendments—discussed for the first time last week at a hearing on the “research needs” of the Act before a subcommittee of the House Committee on Science and Technology.

Among 15 amendments the Environmental Protection Agency sent to Congress last month is a proposal to end a requirement that industry “pretreat” toxic discharges into public sewage systems. Because cities would have to treat the toxics in their local plants, the amendment would place a tremendous financial burden on municipal governments, testified James Banks, senior staff attorney for the Natural Resources Defense Council. “As a result, the serious toxics problems caused by these discharges will continue.”

Banks sees this proposal as a reflection of the administration's overall desire to “discard the Act's current approach to toxics control (nationally uniform, technology-based limits) and revert to the approach Congress abandoned in 1972 (site-specific controls based on ambient standards).” The problem with basing pollution control on ambient water quality standards, said Banks, is that EPA does not have enough information on the effects of toxic pollutants. It “is impossible to evaluate the changes throughout the ecosystem of the release of such pollutants,” agreed Thomas Jorling of Williams College and an EPA Assistant Administrator from 1977 to 1979. EPA Deputy Administrator John Hernandez said, however, that “by increasing the role of the states...in addressing water quality problems, we believe those problems will be resolved more quickly and efficiently.”

A second controversy involves the direct discharge of toxics into rivers, lakes and streams. Under current law, industries are supposed to install the “best available technology” (BAT) to remove toxic pollutants from their effluents by 1984. Because EPA has issued guidelines for only a few industries so far, the agency is asking Congress to extend the industry deadline to 1988. But four more years is too long, said Banks: “For each year that BAT regulations are delayed, EPA has estimated that over 100 million pounds of toxic chemicals will be discharged to the nation's waters.”

On the other hand, J. David Thomas of Eastman Kodak Co.—speaking on behalf of the Chemical Manufacturers Association—said that a recent CMA-EPA survey showed that existing biological treatment systems “provide a high level of removal of most organic priority pollutants.”

—*L. Tangley*

Richard J. Eizinga, *Fundamentals of Entomology*, 2nd ed., 1981, p. 206. Reprinted by permission Prentice-Hall, Englewood Cliffs, N.J.



A cross-section of a termite passageway showing workers traveling to their food source: a wooden house in Kansas.