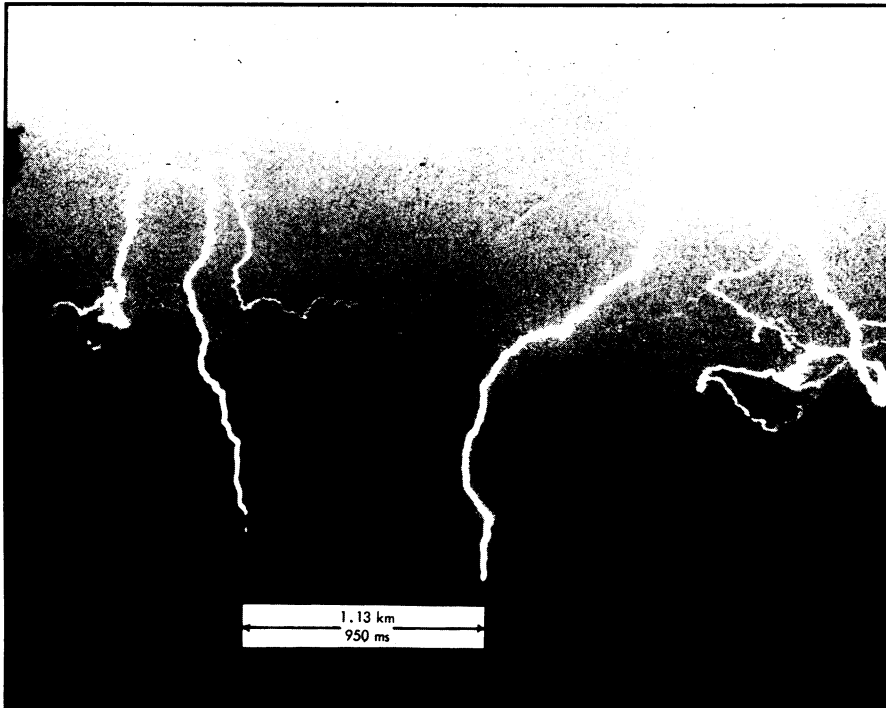


## A flashy pair caught in the act



In 77 hours of thunderstorm observations during 1979 and 1980, physicist Gill Kitterman of Kansas City, Mo., recorded 15 pairs of concurrent flashes, like the one above, that struck two 300-meter-tall TV transmission towers 1.13 km apart. While flashes often rapidly follow one another, separate flashes rarely occur at the same time; these were in progress simultaneously for 140 milliseconds. Kitterman suggests they may be attracted to the towers, the first triggering the second.

© 1991 Gill Kitterman

## The limited world of college students

World affairs may well be a foreign subject matter to many college students. The first national study of how well college students understand world issues reported last week that 85 to 90 percent of the students have an inadequate knowledge of the modern world.

The two-year project found that the majority of students could not correctly answer questions about such issues as world religions, the OPEC countries and the world's fuel consumption. Additional questions about the U. S. record on human rights and the purpose of recent multilateral trade negotiations proved difficult even for high scorers on the test.

The study included 3,000 randomly selected students at 185 public and private colleges and universities. It concluded that 85 percent of the schools lack appropriate educational programs in international affairs. The Council on Learning, a nonprofit organization, and the Educational Testing Service of Princeton, N. J., the nation's major producer of college entrance exams, conducted the research. It was funded by the National Endowment for the Humanities, the Department of Education and the Exxon Education Foundation.

The test contained 101 complex questions that required students to know

something about economics, politics, defense, energy, population, nutrition and health from a global perspective. A committee of 13 scholars in the field of world affairs determined that students who answered fewer than two-thirds of the questions correctly had an inadequate knowledge about world issues. In their final report, they recommended that colleges incorporate international issues in their existing courses and put a greater emphasis on the teaching of foreign languages.

"This was a first crack at finding measures of global understanding among college students," says Tom Barroughs, research scientist at Educational Testing Service in Washington and director of the study. "The measures may be modified in future studies." For example, there is no way to tell how results were affected by students' outside reading habits and possible preference for television. There may be a general lack of interest in foreign affairs, says Barroughs. In addition, a highly controversial study by sociologist James Coleman indicates that private high schools do a better teaching job than their public counterparts. Another study might compare results for college students who had attended public or private high schools. But the recently completed study

has attracted media coverage and many inquiries from colleges and universities. "The lack of foreign affairs coverage in college curricula," says Barroughs, "indicates that the schools do play a part in the study's results." □

## Alcohol and fetal muscle

During the past decade or so, scientists have discovered that excessive use of alcohol by pregnant women can lead to a variety of serious defects in their offspring, such as facial deformities, central nervous system dysfunction, heart disorders, skeletal problems or growth deficiencies. Now it looks as if excessive drinking during pregnancy can severely damage fetal muscles, say Edward Adickes and Robert Shuman of the University of Nebraska Medical Center in Omaha.

Adickes and Shuman used an electron microscope to study tissue samples from three newborns whose mothers had been alcoholics during pregnancy. In addition to facial abnormalities, a heart disorder and skeletal problems, severely weakened muscles prevented the infants from breathing correctly and they had to be put on respirators. The scientists found that the muscle cells from the infants were abnormally small, and that the proteins in the muscles were frayed and entangled rather than uniform and parallel. "The weakness associated with fetal alcohol syndrome was always attributed to damage in the central nervous system," Adickes says. "But our research shows that the primary cause is in the muscles themselves." Adickes and Shuman are now comparing their findings, in press with the *JOURNAL OF PEDIATRIC PATHOLOGY*, with muscle damage seen in other disorders of newborns. □

## X-rays and heart disease

High and low doses of ionizing radiation (X-rays and gamma rays) have been found capable of causing cancer (SN: 3/4/78, p.135). And now exposure to X-rays has been linked epidemiologically with heart disease, says Genevieve M. Matanoski of Johns Hopkins University School of Public Health in Baltimore and colleagues in *Cancer: Achievement, Challenges and Prospects for the 1980's*.

Matanoski and her co-workers compared the death rates of radiologists (physicians who use X-rays and other forms of radiant energy to diagnose and treat patients) with those of physicians in other fields and found a significantly greater number of deaths from heart disease among the radiologists. Whether excessive or cumulative exposure to X-rays actually causes heart disease, however, will have to be studied further. The cause could be some other factor common to radiologists. □