

enough to make them harmful for a child who chews pencils and who gets lead from other sources, such as his food. King emphasized, however, that the BCEM study was limited and that he really did not know whether pencils in general are hazardous.

Recently some experts on lead poisoning have begun to dispute the adequacy of the 1 percent lead safety standard. A lead content of 1 percent is recognized as safe by the American Standards Association and is specified in several municipal ordinances as the maximum amount of lead permissible in paints. However, the recent concern about the 1 percent standard has prompted several cities seriously to consider ordinances banning all but a trace of lead in paints.

Opponents of the 1 percent standard argue that the main criteria for determining hazardous lead conditions should be the weight of the lead in paint and the total number of lead sources available to a person. Their concern is with a person's total daily ingestion of lead rather than with the percentage of lead in particular items.

An ad hoc committee of lead poison experts recently determined that a daily lead intake of 0.3 milligram is the most a child can ingest without harm. A daily ingestion of more than 0.3 milligram of lead, a member of the committee told *Science*, will accumulate in the body, and lead poisoning is likely to develop. He said that, on the average, children ingest 0.1 milligram of lead in their daily diet, leaving only 0.2 milligram to be brought in by other sources. All but one of the pencils tested in the BCEM study contained more than 0.2 milligram, according to statistics in the report.

The BCEM project was in part prompted by similar studies done in New York City and Washington, D.C. In New York, Vincent F. Guinee, director of that city's bureau of lead poisoning, found that the paint on 51 of 138 pencils tested had lead contents well above even the 1 percent level. Leaded paints, according to Guinee, were detected on 17 different brands of pencils manufactured by six different companies.

Moreover, tests by the Washington, D.C. Health Department's Bureau of Laboratories revealed that pencils painted yellow or green had high lead content. Samples of the large round pencils used in the primary grades in Washington, D.C., public schools also registered excessive lead.

The dangers to children who eat chips of lead-based paint are well documented. Pencils covered with leaded paint could present a similar hazard to any habitual pencil chewer.

Responsibility for removing hazardous pencils from the market rests with the Food and Drug Administration. But for the present, FDA officials, who are conducting tests of their own, believe that they lack sufficient evidence to take any action. The initial tests revealed that lead chromate is the principal compound of lead in pencil paints, and FDA officials contend that, at present, there is insufficient data to determine whether lead in the chromate salt form is dangerous. "Some argue," one FDA official told *Science*, "that lead chromate is not that bad." But the same official admitted that "lead in any form is undesirable." The BCEM report asserts that lead chromates are in fact hazardous when they are ingested. Noting the "relatively widespread view" that lead chromates are not dangerous because they are insoluble in water, the report adds that when lead salts and elemental lead are ingested they enter an acid medium in which they are soluble.

For its part, the pencil industry has voluntarily ceased putting leaded paints on pencils. "Today," the Pencil Maker Association's executive vice president David Price told *Science*, "no member company is producing a single wooden pencil with a lead content of more than 1 percent." The association, which represents 90 percent of the wooden pencil sellers in the United States, announced in late June the establishment of a formal certification program that would evaluate each company's pencil paint yearly to make sure the lead content of the paint does not go above the 1 percent safety standard. But thousands of pencils covered with the possibly dangerous paint remain on the market, and the manufacturers have refused to initiate a voluntary recall. "As far as this industry is concerned," Price said, "these pencils are safe. We know of not one single [lead poisoning] illness caused by a kid eating a pencil."—JOE PICHIRALLO

Joe Pichirallo has just received his degree in journalism from the University of California at Berkeley, where he was editor-in-chief of the Daily Californian and wrote for the Washington Post and United Press International. He is working for Science as a summer intern.

APPOINTMENTS

William T. Pecora, director, U.S. Geological Survey, to under secretary, Interior Department. . . . **Dexter L. Hanley**, professor of law, Georgetown University, to president, University of Scranton. . . . **C. C. Nolen**, vice chancellor for development, Texas Christian University, to president, North Texas State University. . . . **Walter S. Owen**, dean, Technological Institute, Northwestern University, to vice president for science and research at the university. . . . **John M. Ward**, director, Desert Research Institute, University of Nevada System, to president of the institute. . . . **George E. Mueller**, former NASA associate administrator for manned space flight, to chairman of the board and chief executive officer, System Development Corporation. . . . **Ned B. Williams**, chairman, microbiology department, University of Pennsylvania School of Dental Medicine, to director, Center for Oral Health Research at the university. . . . **Charles V. Kidd**, director, council on federal relations, Association of American Universities, appointed executive secretary of the association. . . . **D. M. Trotter**, acting dean, College of Veterinary Medicine, Kansas State University, Manhattan, to dean of the college. . . . **Jack J. Stockton**, professor of veterinary microbiology, Purdue University, to dean, School of Veterinary Science and Medicine at the university. . . . **George M. Beckmann**, professor of Asian studies, University of Washington, to dean, College of Arts and Sciences at the university. . . . **Thomas M. Gale**, associate dean, College of Liberal Arts and Sciences, University of Kansas, to dean of liberal arts and sciences, New Mexico State University. . . . **Robert Lougee**, professor of German history, University of Connecticut, to dean, College of Liberal Arts and Sciences at the university. . . . **James W. McKie**, senior fellow, Brookings Institution, to dean, College of Social and Behavioral Sciences, University of Texas, Austin. . . . **William M. Dobriner**, professor of sociology, Hofstra University, to chairman, anthropology and sociology department, Lafayette College. . . . **William J. Kane**, associate professor of orthopedic surgery, University of Minnesota, Minneapolis, to chairman, orthopedic surgery department, Northwestern University Medical School.