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Letters

PCB's in Microscope Immersion Oil

Polychlorinated biphenyls (PCB's) are widespread and persistent environmental contaminants (*1*, *2*). Many persons carry measurable body burdens of PCB's derived from food, inhalation, and skin contact (*3*). Repeated skin applications of PCB's can kill experimental animals in 11 to 98 days (*4*). More than 1000 persons have been poisoned by ingestion of rice oil containing PCB's (*5*).

PCB's are sometimes used in electrical capacitors and transformers and have been used in vacuum pump oils (*1*). Mizuhira (*6*) informed us that microscope immersion oils used in Japan contain PCB's. Since laboratory workers are frequently exposed to electrical, vacuum, and immersion oils through skin contact and inhalation of vapors, we endeavored to evaluate (*7*) the PCB hazard posed by exposure to oils used commonly in research laboratories.

We found no PCB's in any of 31 samples of electrical, vacuum pump, and ultracentrifuge drive oils used in our laboratories. Nine samples of microscope immersion oil marketed in Europe, North America, and Japan under the brand names of Cargille, Crown, Nikon, Zeiss, Fisher, Harelco, and Carolina Biological Supply Co. all contained 30 to 45 percent PCB's, averaging about 5 to 6.3 chlorines per biphenyl residue, in hydrocarbon vehicles, but their labels carried no indication of PCB content or hazard.

Microscopists frequently permit immersion oil to make contact with skin, especially when wiping lenses or slides with lens paper. We now use cedar oil for routine light microscopy and reserve immersion oils containing PCB's for special use, as in fluorescence microscopy.

H. STANLEY BENNETT
Laboratories for Reproductive Biology, University of North Carolina, Chapel Hill 27514

PHILLIP W. ALBRO
Analytical and Synthetic Chemistry Branch, National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina 27709

References and Notes

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4. J. G. Vos, *Environ. Health Perspect.* (Experimental Issue No. 1, April 1972), p. 165.
5. M. Kuratsune, T. Yoshimura, J. Matsuzaka, A. Yamaguchi, *ibid.*, p. 119; M. Kuratsune, *ibid.*, p. 129; see also articles by many authors in *Fukuoka Acta Medica*, 60, No. 6 (1969); *ibid.*, 62, No. 1 (1971); *ibid.*, 63, No. 10 (1972).
6. V. Mizuhira, personal communication.
7. Infrared spectrograms were recorded from each sample. Those with spectrograms characteristic of PCB's were analyzed further by the method of P. W. Albro and L. Fishbein, *J. Chromatogr.* 69, 273 (1972).

Plastic Sandbags

I recently returned from an investigation of the effects of the March and April floods in the St. Louis–St. Charles, Missouri, area. Aside from the farmland and property damage, which I expected to see, the thing I found most disturbing were the tremendous rows of sandbag dikes still scattered throughout the area. What was quite startling was that the bags were predominantly of a green, interwoven, nonbiodegradable plastic, rather than the standard biodegradable cotton in use for decades. Cotton bags rot away within a year under normal circumstances.

Further investigation showed that the sandbags were provided by the U.S. Army Corps of Engineers as part of a massive effort to minimize property damage. The St. Louis office of the Corps provided 6.5 million sandbags—of which 60 to 80 percent were of the nonbiodegradable plastic. In addition, the St. Louis office informed me that there are no funds available for cleanup of the bags placed in the fields.

The use of the new plastic bags ensures that these flood dikes will remain in the fields for an indefinite period of time. In an age of superconsciousness about solid waste problems and the environment, it seems odd that the federal government and its agencies have no concern about the long range effects of their actions. Perhaps a coordinated effort by the Environmental Protection Agency and other federal agencies, such as the Army Corps of Engineers and the Soil Conservation Service, could prevent future repetitions of this type of unthinking action, while not interfering with the well-meaning activities of the agencies.

BRUCE F. MOLNIA
Department of Geology, Amherst College, Amherst, Massachusetts 01002

Women in the Job Market

We have made an observation that might partially explain the low percentage of female job applicants reported by Beverly R. Green (Letters, 10 Aug., p. 496). Among many of the married, recent Ph.D.'s with whom we are acquainted, there seems to be a consistently followed pattern of job hunting. The husband applies for jobs, and, when he finds one, he and his wife move to the new area. Only then does the wife begin seriously to look for a job; frequently all she can find in her geographically limited search is a position as a technician or a "soft-money" research associate.

We suspect this is a general but unrecognized feature of the position of women in the job market, although our sample size is limited. It would appear that, even among highly educated couples, the man is considered to be the primary job candidate, and the woman's career is regarded as of secondary importance.

ANN C. DEAN, ROBERT C. DEAN
Department of Zoology, Duke University, Durham, North Carolina 27706

Invading the Unknown

The polemic engaged in by Henderson, Stein, and Stetten (Letters, 4 May, p. 448) on how far research should, or can, be planned runs out of steam largely because they fail to agree on definitions of research and research planning. The issues are (i) how much of the thinking, reading, and talking that precedes the first experiment can be regarded as planning; and (ii) should the term "research" be applied to work in already charted areas of science?

Surely the former is immaterial. What

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