Letters

Basic research

SIR: Dr. Rustum Roy, on your editorial page of Jan. 10, discussed what can be done about the present "unhealthy state of basic research."

Before we can remedy this state of ill-health, we will have to know why it exists. I think that a very important reason is this: We do not know, ourselves, why we should do basic research. "Because it is there" to be done, will no longer do. Nor will the query, "Who knows what we will find?" do. We now know that what we may find may be disastrous. The argument that we may spin off all sorts of goodies, as by-products, is unconvincing. *I* wouldn't want to raise everybody's taxes so that we could go to Alpha Centauri, on the basis of hopes that a new invention comparable to the laser just might be developed in the process.

For that matter, we don't have any definition of basic research that any two scientists could agree upon. A nuclear physicist, chosen at random, a mathematician, and a biologist would be very unlikely to agree with Roy's definition, whatever it is.

When—if ever—we have the answer to these two questions, we *may* be in a position to start curing the ill-health of "basic research."

Robert J. Good

Professor, SUNY, Buffalo

Trouble with casual

SIR: The article entitled "Insecticides blamed for nervous disorders" (C&EN, Dec. 6, 1976, page 6) does a disservice to the Environmental Protection Agency and National Institute for Occupational Safety & Health officials involved in the leptophos problem. Leptophos has been of great concern and interest to both agencies since the first application for a permit to apply this compound as an insecticide. Leptophos is undoubtedly a delayed neurotoxin [Abou-Donia and Preissig, *Toxicol. Appl. Pharmacol.*, **35**, 269 (1976)] in chickens. Presumably leptophos is also responsible for delayed neurotoxic symptoms in man when exposed to sufficient levels. To suggest that the handling of the leptophos health effects has been carried out by "a casual memo from one chemist to another" does a disservice to Dr. Gunter Zweig and his associates at EPA who have actively supported research programs directed at a more realistic assessment of the hazards of leptophos.

While I am certain that we have not heard the last of leptophos and that as time progresses more information will be unearthed about the hazards of this compound, it is critical that we keep the record straight and recognize that both agencies have not been derelict in their duties. EPA has convened an expert panel and withdrawn approval of leptophos. EPA has sponsored a symposium to consider the mechanism of and means of testing for delayed neurotoxicity in organophosphorus compounds and is sponsoring research on this general problem of organophosphorus insecticide delayed neurotoxicity. I only wish that we had more officials such as Zweig who hardly take their responsibilities in "a casual manner."

Daniel B. Menzel

Director, Laboratory of Environmental Pharmacology & Toxicology and Laboratory of Analytical Pharmacology, Associate Professor of Pharmacology & Medicine, Duke University, Durham, N.C.

Editor's note: There was no intention in the story to cast any aspersions on the work of Dr. Zweig. The use of the word "casual" was meant to indicate that the memo in question was an informal one between two researchers and was not an official communication from one agency to another.

Dragons and witches of today

SIR: In response to the letter of A. L. Jones (C&EN, Dec. 13, 1976, page 5), in the Dark Ages the *fear* was well justified that dragons and witches should be presumed guilty of hazardous behavior unless proven innocent. Although I am not convinced this is truly the Age of Reason (nuclear war, famine, political oppression, environmental degradation, and natural resource overexploitation are reasonable?), contemporary dragons and witches are a lot more real: vinyl chloride, asbestos, Kepone, PCB's, cadmium mercury. But these were all, on the basis of negative evidence, considered innocent of any harm whatsoever. There was no knight to protect the PVC workers, the residents of Minamata, the asbestos workers, the fishermen of the James River, so many of them now suffer rare forms of cancer, birth defects, loss of livelihood, and so on.

At last we now have a knight, a small and weak one perhaps, but a first step: the Toxic Substances Control Act. Chemicals are not U.S. citizens, protected by the Constitution. Jones would evidently balance the risk of thousands of additional cancer deaths per year against the convenience of deodorant at the press of a button. We humans seem to have somehow survived several million years without fluorocarbon aerosol propellants; why can't we try a few years more without them, to see if those already released are or are not affecting stratospheric ozone levels. I'd just as soon verify fluorocarbons are not witches first; otherwise they may be casting a spell of evils before we know it.

David C. Locke

Professor of Chemistry, Queens College, Flushing, N.Y.

Editor's note: Writer Jones was not attempting to balance "the risk of thousands of cancer deaths per year against the convenience of deodorant at the press of a button." Among other matters, he was pointing out that even the recent NSF study on the topic did not find "risk" for an immediate ban.

SIR: Your correspondent A. L. Jones' amusing, but flippant, comment (C&EN, Dec. 13, 1976, page 3) on the actions to be taken by the government to reduce release of fluorocarbons misses the point. While there was *never* any evidence that dragons and witches (or dragonlike and witchlike entities) posed a hazard for people, we have abundant evidence that many chemicals can do great harm. Some of these were considered safe initially, but proved hazardous in the long term.

No! The point at issue is not whether a group of chemicals can ever be proven safe, but whether we need to risk using chemicals for relatively unimportant needs when they might well, in the long term, prove dangerous. The passage of the Toxic Substances Control Act, long needed, illustrates that we dare not rely on the wisdom of executives of the chemical industry to foresee the dangers of the chemicals which it spreads into our environment.

William Lijinsky

Director, Chemical Carcinogenesis, Frederick Cancer Research Center, Frederick, Md.

More on Chemical Grassroots

SIR: For what it is worth, I agree 100% with Jay A. Young's letter on page 5 of the Dec. 20, 1976, issue of C&EN. His last paragraph is especially good and "well put." We do, indeed, owe a debt to Chemical Grassroots for pointing out some of the existing problems of ACS. But, as a former section chairman (Western New York 1972–73), I am tired of being bombarded with very biased, very one-sided newsletters, which border on propaganda rather than pure information. CG has a place, but it is, unfortunately, not as important as they would like it—or think it—to be.

Edward A. Heintz

Manager, Carbon and Graphite, Airco Speer, Niagara Falls, N.Y.

Residential heat loss

SIR: As chemist and scientist, we are not too aware of where the heat goes in our homes. A Technical Report No. 2, National Forest Products, Washington, D.C. (1961), indicated the following heat losses from a wood frame structure:

	Heat loss Btu/hour	Per cent
Walls	1533	19.8%
Ceiling	946	12.2
Floor	591	7.6
Door	605	7.8
Windows, wood	2570	33.2
Air, Infiltration	1490	19.3
TOTAL	7735	99.9

The above is the total calculated heat loss validated at a designed temperature difference of 70° F for a wood frame structure of typical construction with 3-inch blanket insulation in ceilings and walls.

As I see it, $2.00 worth of tape to seal the cracks of storm windows to prevent chimney effect, and a little additional caulking, will do wonders to reduce your heating bill. (Don't forget to leave a small hole on the bottom of wood storm windows to prevent condensation and resulting dry rot.)

An additional energy savings can be realized by the reduction of temperature from 72 to 68° F by the use of proper humidity control. However, it should be noted that a typical 1000-sq-ft average home with full basement will require a humidifier capable of putting out 16 to 24 gal of water per day. That is four to nine 10-qt pails per day, if your wife is carrying it.

With empathy.

Midland, Mich. Adam P. Banner

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