PCB 716 .

Letters

AIChE placement service

SIR: Through no fault of C&EN, the Jan. 5 article (page 13) entitled "NSF examines technical job characteristics" creates an erroneous impression. The error arises in a quotation from NSF "Highlights" concerning job sources of engineers and scientists: "Third parties—professional societies, public and private employment agencies, college placement offices, and classified advertisements—accounted for very few placements."

The quotation reflects inadequately the question asked in the survey, so far as professional societies are concerned. And the difference is crucial in respect to the placement service of the American Institute of Chemical Engineers, and perhaps of other professional societies as well.

The basic NSF-Census Bureau questionnaire is duplicated in "The 1972 Scientist and Engineer Population Redefined" (NSF 75-313), the full publication from which the "Highlights" was abstracted. The particular question asks the respondent to check the one most important means of obtaining each of his three most recent jobs. It lists 11 choices, plus "other."

An engineer who used the AIChE service could check any one of six categories, without ever getting to "other." The only category he would *not* check is the only one dealing with professional societies: "5. Found position *at professional society meeting*" (emphasis added).

Job placement through AIChE uses just about every avenue *except* meetings; further, direct recruitment is prohibited at AIChE meetings. Therefore, a respondent from our society who could check No. 5 for even one job would be too exotic to stand much chance of showing up in a survey sample. Conversely, he could have used our facilities successfully for all three jobs and still be unable to connect his success with his professional society in answering the question as asked.

A slight alteration in wording of the questionnaire would take care of the difficulty, and will be suggested to NSF. Meanwhile, the present case involves only an unfortunate mismatching of words between document and abstract; this clarification intends in no way to detract from the great usefulness of NSF's postcensal analyses that our office finds indispensable.

Gloria M. Lambson
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Net energy

SIR: This is in response to your Guest Comment, "The net from nuclear power," C&EN, Jan. 26.

The "net energy" issue is another one of those nuclear power issues that seems never to go away, even after repeated, authoritative refutations (compare low-level radiation, "thermal pollution"). So let's try again. In this article, the author also blurs the issue further by discussing fuel cycle economics, plutonium recycle, uranium availability, and the hazards of a plutonium economy. Of these, only plutonium recycle could have a significant effect on net energy, and I will conservatively ignore this effect.

A recent study performed by James McFadden and Charles Rice of Energy Inc., entitled "Energy Input/Output Analysis for Nuclear Power Plants," reviewed the available literature on the subject and tried to arrive at a best estimate of the energy input/output ratio. They concluded that a large modern nuclear plant repays its initial "energy investment" in less than a year of normal operations. They further concluded that, over the lifetime of the plant, it would produce about 14 times as much energy as was required to build, fuel, and operate it.

Near the end of the article is the question "What do the people get out of it?" A safe, clean, reliable, affordable supply of electrical energy is what the people get out of it.

Carl Goldstein
Assistant Vice President, Atomic Industrial Forum, Washington, D.C.

PCB residues

SIR: Dr. Kothny's letter (C&EN, Jan. 19, page 5) raises the interesting question as to how many of the chlorinated hydrocarbon residues in the environment are produced by chlorination of other pollutants. As examples, chlorine has been shown to be incorporated into aromatics during water treatment [R. Carlson et al., *Environ. Sci. Technol.*, **9**, 674 (1975)], and Dr. Kothny suggests that the chlorine released from sea salt particles might chlorinate organics in the atmosphere.

While we know very little about these processes, I do not think they can account for most of the reported polychlorinated biphenyls residues. Gas chromatograms of PCB in marine organisms and seawater [G. Harvey et al., *J. Mar. Res.*, **32**, 103 (1974)] and in the air over the North Atlantic [T. Bidleman and C. Olney, *Science*, **183**, 516 (1974)] resemble those of commercial mixtures much more closely than would be expected by a chance combination of chlorine with assorted organics. It thus appears that direct industrial PCB pollution is responsible for the residues found in the environment.

Terry F. Bidleman
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SIR: The implication that the adverse effects of polychlorinated biphenyls have been known only about 10 years (C&EN, Feb. 2, page 4) needs refutation.

The following are some of the articles to be found in the literature on the deleterious effects of PCB's on human health: Jones and Alden, *Arch. Dermatol. Syphilol.*, **33**: 1022, 1936; Schwartz, *Amer. J. Pub. Health*, June 1936, page 586; Greenburg, *Ind. Med.*, August 1943. The first of these described how chloracne affected 23 men (out of a total labor force of 24) who worked in the first plant to produce PCB's (in the early 1930's); the second reported that PCB's were so stable that, "carried home on workers' clothes, they frequently caused chloracne among the workers' wives and children; the third gave details of chloracne breaking out during World War I among workers handling electrical equipment containing PCB's and chlorinated naphthalenes.

These references are in the article "Workplace Burden" (*Environment*, 15, July 1973, page 15) by Barry Commoner, who made the very telling point that "although the hazard from PCB was first discovered in the workplace in 1933, the problem was given relatively little scientific attention (beyond clinical description of chloracne and its association with PCB's) until 30 years later, when it was first recognized as an *environmental hazard*. As a result, we seem to be better informed about the detailed biological effects of PCB's on quail and minnows than we are about their effects on human beings. . . . A worker once exposed to PCB's might be, understandably, angered to discover from articles published in the special issue of *Environmental Health Perspectives*, April 1972 that: 'The discovery of PCB's in fish from the Baltic Sea in 1966 attracted widespread attention among scientists,' while the discovery 30 years earlier that PCB's cause chloracne, did not."

Perhaps Pope's old saw "The proper study of mankind is man"—has a message for us that the poet did not foresee.

Lester H. Arond
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Bias/unbiased press

SIR: I was quite interested in your editorial in the Nov. 17, 1975, issue of C&EN. The First Amendment does guarantee the freedom of the press. I, as a reader of the press, ought to have the right to be properly served by the press. But I think I would put it another way. Implied in the guarantee of freedom of the press is the responsibility on the part of the press to properly serve the people. We hear a great deal these days about the rights of this group and the rights of that group but we hear very little about the responsibilities that are concomitant with those rights. It would appear that the press features the sensational and the radical because they know that is what sells or because that is what they want to sell. Responsible reporting should result in the same coverage in the *New York Times* and the *Washington Post* as in the *Chicago Tribune*.

You note that "bias can be conveyed by other means, such as selectively limiting or directing the written coverage and this is something the reader should not tolerate." What can the reader do about it? I can show you reams of slanted coverage in the most prestigious dailies and in such periodicals as *Time*. Even the "interpreting" is subject to the presuppositions of the interpreter. It may be intolerable, but what can the reader really do?

Chemical & Engineering News does a good job of coverage and of presenting all sides of the issue. But those segments of the press which are not involved in the reporting of scientific matters leave a great deal to be desired in terms of full and unbiased coverage.

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