LETTERS

Kovalev's Health

In late May and early June 1979, the 20th International Symposium on Electrocardiology will be held in Yalta and a meeting devoted to comparative electrocardiology will be held in Syktyvkar. Electrocardiographers and cardiac electrophysiologists have been invited to attend these meetings at a time when the famous cardiac electrophysiologist Sergei A. Kovalev may be near death in a Soviet prison.

Kovalev was arrested in 1974 in connection with the publication of the *Lithuanian Catholic Chronicle* and the *Chronicle of Current Events* (News and Comment, 5 Nov. 1976, p. 585). In mid-1975, soon after the imprisonment of Kovalev, 48 cardiac electrophysiologists throughout the world appealed to the government of the U.S.S.R. on his behalf. In 1976 an appeal appeared in *Science* (Letters, 8 Oct. 1976, p. 133) which pointed out not only that Kovalev was gravely ill but that if he were free and allowed to leave Russia, a post awaited him at Cornell University.

Not long ago, 55 European cardiac electrophysiologists issued a renewed appeal on behalf of Kovalev. Since then word has arrived from Russia that Kovalev is in very poor health and is regarded by his fellow prisoners as a "doomed man."

Under these circumstances, those who attend these meetings may wish to make their concern about Kovalev known to their hosts if an opportunity for them to do so presents itself. Others may wish to join us in declining to attend either of the meetings and in making their reasons known to their colleagues in Russia, to their own scientific organizations, and to the governments of their own nations.

PAUL F. CRANEFIELD
Rockefeller University, New York 10021
SILVIO WEIDMANN
University of Bern, Bern, Switzerland

Medical School Facilities in Cincinnati

William J. Broad (News and Comment, 23 Feb., p. 724) writes about Caribbean medical schools. I view his article as a balanced presentation of a very difficult problem in which there is a definite possibility that the public, the students, or others may be exploited. Further attention from the regulatory bodies is important and necessary.

One quote in this article suggests that the University of Cincinnati supports and aids the development of the American University of the Caribbean. Our faculty, administration, and students are deeply concerned about this entity and its quality. We neither oppose nor support it because we believe other bodies or mechanisms must reach decisions about its acceptability. In the interim, we shall not act to exclude its students or faculty from resources that are open to the public. We will, however, insist that they do not use facilities and resources intended for our own students.

This very serious and dangerous situation should be given widespread professional and public attention.

ROBERT S. DANIELS
Office of the Dean, College of Medicine, University of Cincinnati Medical Center, Cincinnati, Ohio 45267

Energy: Bechtel Cost Data

J. Michael Gallagher of Bechtel National Inc. (Letters, 22 Dec. 1978, p. 1242) protests that, because my computation (Letters, 22 Sept. 1978, p. 1077) of the high cost of delivered electricity produced by nuclear plants uses Bechtel capital-cost data, my conclusion (*1*, *2*) that nuclear power is not competitive with soft technologies is being "implicitly" ascribed to Bechtel.

Not by me. My allusions to the data base of the 1975 Bechtel Energy Supply Planning Model (ESPM) (*3*, *4*) refer unambiguously and exclusively to the capital costs specified (*5*)—as readers will find by restoring Gallagher's twice-quoted "In fact, they are Bechtel's data" to its restrictive original context. Wherever I use additional, non-Bechtel data (capacity factors, deflators to 1976 dollars, fuel and operating costs, soft-technology capital costs, and so forth), that fact and the data sources are explicitly stated. Gallagher considers this "extremely misleading." I do not see how it can be plainer.

Gallagher writes: "In my judgment his [Lovins's] data and conclusions bear little relation to the ESPM data base with which he purports to have started." This implies that those cost data which I cited as drawn from the ESPM were not in it, or were copied or used incorrectly. Fortunately, Gallagher does not actually say that, for it is untrue. The ESPM data base is good for exactly what I cite it for. It should be, since I was at pains more than 2 years ago to confirm with him (and with the ESPM's then director, Meir Carasso) that I was interpreting their data correctly (*1*). In October 1976, I queried and resolved with Gallagher several unclear or inconsistent details of the unpublished internal documents underlying the published ESPM data base. He and Carasso knew the type of whole-system cost calculation I was doing. Neither expressed any reservation about such a use of their data. Both were helpful (*1*).

I relied on the ESPM data base for hard-technology capital costs (including ancillary facilities) because at the time of my analysis in 1976 it was the most comprehensive, detailed, consistent, and officially credible source available. It was therefore being widely used in 1975 and 1976 in federal agencies, not only for the aggregate resource calculations for which it was mainly intended—and for which I also used it (*1*)—but also for broad technology cost calculations analogous to mine. Whatever uses the data base might be put to, Bechtel surely sought to ensure its accuracy: the ESPM report estimates that its capital costs for the electric facilities I considered are accurate to −10 percent, +20 percent.

Gallagher quotes a part of the report which, read hastily, might seem to warn against using the data base to compare different technologies. It actually said that optimizing the detailed choice of particular technologies was not its main purpose; Gallagher's quotation should have continued (*3*, vol. 1, p. 6-5).

> . . . e.g. no distinction is made [in the data base] between a coal fired power plant using supercritical steam conditions and others; nor between BWR's [boiling-water reactors] and PWR's [pressurized-water reactors], etc. . . .

My analysis, like the ESPM, relies on nominal facility characteristics rather than making fine distinctions of type, size, or design. The ESPM report nowhere suggests that its data are unsuitable for my kind of rough cost comparison between broad categories of technologies. Further, the end-use cost advantage I calculate for soft technologies over nuclear power (*2*) is robust—conservatively a factor of 2 to 3—rather than sensitive to subtle refinements as Gallagher implies.

Having said his data base is unsuitable for comparing technologies, he next criticizes me for *not* having so used it: he claims that for consistency I should have used the ESPM's solar heating and cooling costs. I didn't—an omission irrelevant to the validity of my hard-technology cost calculations—because cooling should be done more cheaply by good architecture and because the ESPM solar heating system (*6*) was