letters

"Back-to-nature" movement a threat?

The articles by Marvin Goldberger and others in December seem to indicate a misunderstanding of the character of the current "ecology" fad. This concern with the environment, if studied in the publications of its proponents, is something much more serious and ominous.

Last April the "Earth Day" teach-in published a paperback *Environmental Handbook* putting forward the concerns and goals of this movement. This handbook urges a return to tribal economies (page 6), rejects solutions based on technology whether through a capitalist or a socialist system (page 32) and advocates a diminished standard of living through a reduction of energy consumption (page 323).

The level of scientific competence possessed by members of this movement is indicated by an article that appeared in the *Los Angeles Free Press* of 10 April 1970. This article, by H. Bert Frank, claimed that the increased use of electricity is rubbing charges off electrons. These neutralized electrons are allegedly causing an imbalance of positive charge, producing a disease called "Locatelli's Syndrome." Frank further charges that the federal government is ruthlessly suppressing all evidence for and warnings about this catastrophe.

In short, the "ecology" movement is a contemporary version of the unrest and unhappiness about the scientific revolution, which can be traced back at least as far as John Ruskin's opposition to the 19th-century industrialization of Britain. Lewis Mumford's attack, mentioned in your editorial (December, page 80), is of a piece with this attitude. It is presumed that science and technology have "dehumanized" life, and that science must be curbed if certain human values are to be retained. Forty years ago, at the time of the "monkey-law" troubles, this was urged in the name of religion; now it is urged in the name of ecology.

What this can lead to may be seen in the advocates of "ecology," and the things they have already accomplished. Kenneth Watt has put it this way: "My feeling is we simply go back to the kind of culture we lived with handily in 1800 when everything was horsedrawn." (*New York Post*, 3 March 1970.) Such a course of action would sentence over three fourths of the human race to death by starvation or disease.

The ecology movement's practical effect on the problem of air pollution so far has been the prevention of the building of a plant to remove sulfur from fuel oils. (*New York Times*, 1 April 1970.) They are also lobbying a bill before the New York City Council to prevent the construction of nuclear reactors within the city limits. They seem to imagine that electrical power can be generated with no waste whatsoever, and that if it can't, we should do without it. In contradiction to the evidence, they are claiming that the oxygen content of the atmosphere is falling. And, as one might expect in this violent era, the slogan "Environment Control Grows Out of the Barrel of a Gun" has already been heard. The *Los Angeles Free Press* (31 July 1970) is urging a national day of sabotaging automobiles next 4 July.

The current concern over the environment does present an urgent problem for physicists, but not of the sort discussed in the December issue. We need more and better science education at all levels for nonscientists, so that pseudoscientific views of this sort do not get generally accepted by laymen. The present educational system does not make people aware of the profound beneficial changes produced by the scientific revolution. The current drop in the number of undergraduate science majors, and in public funding for scientific research, is a reflection of this failure.

"The 'ecology' movement is a contemporary version of the . . . opposition to the 19th-century industrialization of Britain." (Sketch of the destruction of a spinning jenny from The Bettmann Archive.)

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Discussion on the chemical bond

In his article "The Chemical Bond and Solid-State Physics," February 1970, page 23), J. C. Phillips discusses my development of a treatment of ionicity of chemical bonds[1,2] in 1932, and reaches the conclusion that it "is simply not accurate" and is far inferior to a treatment that he has formulated. He states that "the scatter associated with Pauling's scale is 10 or 20 times greater than that of the dielectric scale (labelled "Phillips" in the table)," and that "From a statistical point of view the dielectric definition is at least 20 times more accurate than Pauling's."

These conclusions by Phillips result from errors in his paper, which are themselves the result of a basic failure by him to understand the principles of structural chemistry that he is discussing, as they are presented in my papers from 1927 on and in my book *The Nature of the Chemical Bond*.

One misunderstanding is essentially the same as the one that he made in another paper.[3] In this earlier paper Phillips discussed crystals such as beryllium oxide, and stated that "Pauling's resonating bond theory is reformulated in terms of an itinerant dielectric model. In extreme cases discrepancies of more than 200 kcal/mole between the observed cohesive energy and Pauling's value are reduced to 1 kcal/mole." I