letters

A scholar, teacher and friend once said, "Do not condemn a new technology because it *may* become important and hence economical." The authors based their scheme of waste management on the "cow" philosophy of taking the minimum energy path. The "cow" does not think in terms of dollars as we do. If the maximum energy path produces a product with higher dollar value we will certainly follow it. I wonder if humanity chose to move horizontally, what would have happened to our civilization? I guess we could have been creeping still in the cow age (stone age!).

References

1. B. Bonnevier, "Experimental Evidence of Element and Isotope Separation In a Rotating Plasma," Report No. 70-8, Division of Plasma Physics, Royal Institute of Technology, Stockholm, Sweden (1970).
2. B. Eastlund, William Gough, "The Fusion Torch, Closing the Cycle from Use to Reuse," WASH-1132 (1969).

ZEINAB A. SABRI
University of Wisconsin
Madison, Wisconsin

AN AUTHOR COMMENTS: Our criticism of the fusion torch was quite specific and related to what has appeared or been implied in a number of public and semi-public pronouncements, to wit: a materials reprocessing system ties on to a controlled nuclear fusion reactor, and using the raw output of escaping plasma to do the work. That is what has commonly been understood as the fusion torch.

Actually we have little substantial quarrel with Eastlund and Gough, who intend the term to cover a whole range of plasma processing phenomena not connected with controlled fusion, but utilizing advanced ultrahigh-temperature plasma techniques. Those are different things—aluminum-ore reduction, CF_4 production, and so on—and utilize specifically nonfusion plasmas much more suited to the purpose. We applaud rational development of such technology, and had no intention of criticizing it.

Thus the difficulty seems to be semantic and reminds me of a small company that once existed not far from MIT, which was called Stellar Expansion, Inc—once you realized that they manufactured expansion bits, the term of reference became simplified.

Many of the same comments could apply to the letter by Sabri, but we do not agree with some of his "back of the envelope" calculations. He makes the point that separation requires only a weakly ionized plasma at fairly high pressure; these conditions are quite inconsistent with nuclear fusion itself. We assure him that we are aware of the main concepts of these things. A small collection of analyzed articles presently at hand weighs two pounds.

DAVID J. ROSE
Massachusetts Institute of Technology

Can children aid physicists?

The searching article by Jean Piaget on children's views of the world (June, page 23) points up a general principle I have seen at work both in my own children and in my recollection of my evolving views from childhood onward—a principle that I would tentatively express by the two propositions:

- If something is important, it is simple.
- Simplicity is the most difficult thing to achieve.

This, of course, agrees with Piaget's findings that the child begins with the "undifferentiated" (complex) concept, and is led eventually to the "differentiated" (simple) concept.

From this viewpoint I would conclude, now possibly at variance with Piaget, that the only interest a physicist could have in a child's view of the physical world would be either historical or pedagogical, but that he could not possibly be inspired professionally, except through sheer accident, by a child's view of the physical world. Indeed, there is, for instance, an enormous gap between the child's concept of action and Maupertuis's.

This is all to say that physics forms part and parcel of civilization and constitutes the beautiful inherited artifact carved out of observations by the great simplificators of the past.

MARCEL J. E. GOLAY
Clair-Azur
Switzerland

THE AUTHOR COMMENTS: Marcel Golay has not understood the intention of my article. It goes without saying that I do not suppose that psychogenetic results can "inspire" the physicist in terms of his professional work. On the contrary these results contribute to the analytic work of *physical epistemology* and for this reason have caught the interest of famous physicists such as Einstein, Oppenheimer, and de Broglie and have motivated physicists such as Louis Rosenfeld and Jean-Marie Souriau to collaborate with our efforts.

JEAN PIAGET
University of Geneva
Geneva, Switzerland

Help for hurricane victim

The physics department at Wilkes College is located in The Stark Hall of Science, which is only 500 feet away from the banks of the usually sleepy Susquehanna River, which on 23 June rose to over 40 feet in wake of the rain