there is second-rate science involved, this will be duly determined.

Though imperfect and evolving, the impact evaluation process has, on balance, been one of the more important advances in decades for the protection of environmental quality. It has been used at federal and state levels to bring the environment to the planning table and drawing board where before it was absent. It has opened the courts to environmental concerns. The issues that Schindler raises are largely issues for science itself, and not for the environmental impact evaluation process.

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1. Council on Environmental Quality, *Environmental Quality—The Sixth Annual Report of the Council on Environmental Quality* (Government Printing Office, Washington, D.C., 1975), pp. 626–651.

The correspondence resulting from my editorial has shown that most readers grasped the spirit of my comment—that is, to attempt to stimulate a widespread scrutiny of impact science. A few did not correctly judge my intentions.

Among these were "pure" ecologists, who continue to ignore current environmental problems in order to pursue their passion for determining the niobium content of horsefeathers, or whatever.

Another large group of correspondents were impact scientists, most of whom agreed with the editorial, but who almost universally said, "Our impact statements are not like that." Many (not all) of the examples they enclosed were.

I have no quarrel with the impact study concept and do not mind that my own work is regarded as such by most scientists [for example (*1*)]. But much of the work that I have seen has not been of the rigorously documented sort described by Auerbach *et al.*

Loftin's last sentence describes a general philosophy of science with which one must agree. Science has traditionally developed as he describes, and one is confident that correct results will always come eventually, leaving only a relatively harmless pile of worthless papers, wasted man-hours, and broken test tubes behind. But we cannot afford to let impact science follow tradition. The legacy will not be broken test tubes, but hopelessly and permanently crippled ecosystems.

It is this belief that leads me to think that impact work should be published, even if it is after the decisions relevant to a particular study have been made. We must develop an international, accessible, and comparative body of impact-related literature in order to allow extrapolation and generalization. It is simply not economical to treat each impact as though it were entirely unique. Synthesis will be impossible as long as relevant scientific work is hidden in inaccessible impact literature. The long-term loser will be the North American public, already subjected to high resource prices, which must be still higher if impact statements are not efficiently done.

Finally, I believe that it is time for educational institutions to pay more attention to the multidisciplinary training that good impact science demands. We would benefit in the long run if some impact dollars were diverted into such training programs instead of being applied to immediate problems.

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References

1. D. W. Schindler, *Science* **184**, 897 (1974).

The Origin of Pulmonate Land Snails

It has been brought to my attention that in my review (7 May, p. 547) of V. Fretter and J. Peake's *Pulmonates* (*1*) I ignored evidence that a higher limmic Basommatophora (including major freshwater families such as the Physidae, Lymnaeidae, Planorbidar, and Ancylidae) almost certainly are derived from air-breathing forms rather than the other way around (*2*). Thus the presence of air in the lung would not be a "preadaptation" but a holdover, and I am probably wrong in having criticized Ghiretti and Ghiretti-Magaldi. Fretter's statement that the terrestrial pulmonates originally came from the sea via fresh water is still probably valid, but what group or groups were involved is an enigma.

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1. V. Fretter and J. Peake, Eds., *Pulmonates*, vol. 1, *Functional Anatomy and Physiology* (Academic Press, New York, 1975).
2. W. D. R. Hunter, in K. M. Wilbur and C. M. Yonge, Eds., *Physiology of the Mollusca* (Academic Press, New York, 1964), vol. 1, pp. 1 and 93.