Letters

Molecular Biology for Beginners

I have two daughters who have taken high school biology. One, a linguist, had the "old-fashioned" kind: general principles plus anatomy, physiology, and taxonomy of the plant and animal kingdoms. The other, who wants to be a nurse, took the blue version of the Biological Sciences Curriculum Study. She learned molecular biology and very little else. The first girl, who got a C in the course, knows much more about the world around her than the second, who got an A and doesn't know the difference between grass and moss, or beetles and crickets, or even plants and animals, although she is well versed in DNA. (Please: no comments on the ultimate difficulty of telling plants from animals.)

A question: Which of my daughters will find her high school biology course more useful in later life? If the BSCS is intended to be a terminal (does this mean "only"?) course, it should leave the student with some appreciation and understanding of the world around him. My daughters are much more likely to encounter frogs and trees, and be concerned with the physiological systems of the body, than with DNA in their everyday lives.

Why is it considered impossible, or inadvisable, to design a high school biology course concerned with both gross and cellular aspects of anatomy and physiology? I include both in my lectures to medical technology interns, who are college seniors. Their immediate interest in bacteriology is learning how to tell the human pathogens from the nonpathogens. Enzyme systems and genetics are discussed only from the standpoint of their effects on bacterial physiology and pathogenesis.

Some of us have refused to jump on the molecular biology bandwagon; we do not believe it is the be-all and end-all of biology. I supect that among these nonconformists would be found many applied biologists. We realize the importance of molecular biology but do not worship it. Its tenets are academically interesting, and we welcome those aspects which are useful, but we find even more useful our training in the "old" biology: anatomy, physiology, and taxonomy.

What is the value of emphasizing molecular biology in a beginning course? In my experience with students, I've found that molecular biology is easier for them to understand after a foundation has been provided by a general biology course. And for the future housewife, or engineer, or shoe clerk, which is apt to be more useful: an understanding of the Krebs cycle or the knowledge that the maggots in the garbage can will turn into flies?

DOROTHY BRANSON
3514 North Murray Avenue, Milwaukee, Wisconsin 53211

I don't think that Babbin (Letters, 9 Sept.) touched on the most impractical aspect of BSCS which is the program itself! The majority of teachers who have tried to utilize BSCS as envisioned by the writers just don't have the time or the necessary help to do the job. BSCS apparently cannot be taught "according to the book" in most high schools. The solution to the problem would be to consider the last few years as a further trial period, and to rewrite the program, making use of the criticism and suggestions that have come from this testing period. This should result in a *practical* program being written which could be used effectively in high schools.

JOHN KLIMAS
Department of Biology, Fairfield University, Fairfield, Connecticut

A Limnologist Visits Russia

My family and I have just returned from an 8-month stay in the Soviet Union as participants in the Scientific Exchange Program directed by the National Academy of Sciences of the U.S. and the Akademia Nauk of the U.S.S.R. We lived in Leningrad for 4 months, where I worked at the Zoological Institute, and for 4 months in Borok, Yaroslavl District, during my association with the Institute of Inland Water Biology. Both institutes are affiliated with the Akademia Nauk.

We had initial difficulties adjusting to living conditions, particularly in Leningrad during the winter. Except for some greatly appreciated aid from the American Embassy in procuring food, we had to rely completely upon the staff of the Akademia Nauk and on our Russian friends. I was allowed to travel rather extensively. In addition to Moscow and Kiev, I took a 2-day cruise on Lake Baikal, where I collected all the animals I wanted, and also traveled by boat from Borok on the Rybinsk Reservoir (north of Moscow) to White Lake, a 6-day cruise. Much more traveling would have been allowed if time had permitted, and if living accommodations had been available.

Our relations with the Akademia Nauk were at times strained, particularly at first in Leningrad, because they were unable to have an apartment ready for us, or because they were slow to notify the various institutes of my visits. These were unpleasant inconveniences, but probably will be lessened in the future. Yet the Academy was always helpful and provided automobiles, guides, and English-speaking scientists for my travels. Our Russian friends were most cordial and we were continually invited into the homes of friends. In Borok we were given a cottage with a beautiful large garden. We made many strong friendships, and hope to maintain contact through exchange of scientific information, books, and publications.

At the Institute in Borok, I presented many of the ideas developing in our own country in community and population ecology and these were accepted with great interest. I personally feel that this exchange was a remarkable experience which benefited both my own scientific studies and probably those of the few Russian scientists with whom I worked. I believe the Russians would like to increase the number of scientists who are exchanged on a long term basis (over 2 months), and I hope that U.S. scientists would support such an expanded program and that the younger ones, particularly, would be eager to participate in it.

CLYDE E. GOULDEN
Department of Limnology, Academy of Natural Sciences of Philadelphia, Philadelphia, Pennsylvania 19103