A Tale of Two Countries

Dear Editor:

During my tenure as a Biology Teacher I taught courses in heredity and in evolution. When I taught heredity, no one asked me whether I believed in genes or whether the chromosomal theory of heredity was good or evil. The students and I were looking at the data. I was teaching heredity as a science. If, however, I had lectured about genes and chromosomes in the Soviet Union, I would have been dismissed from my job and put into prison. What was deemed science in the United States was deemed heresy in the Soviet Union. Genetics, indeed, was outlawed. Textbooks were destroyed and institutes of medical and agricultural genetics were closed. Geneticists were deemed "insincere and badly motivated." Heredity was a political matter. It was decided by the Central Committee of the Communist Party that genes do not exist.

During this period (in the 1950s) I was accosted by people who doubted the validity of Mendelian genetics. These critics threw out genetics because it was deemed contrary to Communist philosophy. In 1952, I gave a lecture on this genetics controversy to my general biology class and now was accosted by my scientific colleagues. "What are you doing? You are supposed to be teaching biology." It is poignant that to one group, genetics was not science, but politics. Scientific interpretation must conform with political views. To the other group, genetics was pure science. Its social and political implications were not to be considered in a biology course.

When I taught biological evolution I was asked, "Do you believe in evolution or do you believe in God?" Or, "Are you a secular humanist?" When a person tells me that he cannot accept the theory of evolution because of his religious beliefs, what do I say? He is not asking for a scientific answer. He will not accept a scientific answer. Evolution is not a scientific matter but rather a religious belief. It is deemed a threat to Scripture.

According to a recent Gallup Poll, 49% of the United States population rejects the theory of evolution. Legislatures in Tennessee, Georgia and Mississippi have passed laws designed to remove evolution from the curriculum. Evolution has been removed from high school biology texts. The concept of evolution is not only a religious but also a political hot potato.

In the Soviet Union, the idea of evolution as a historic process was accepted. In the United States, evolution as history was rejected. Both the acceptance and rejection of evolution was based not on science, but on politics.

Curiously, both in the Soviet Union and in the United States the concept of natural selection, a theory to explain how evolution occurs, was rejected because it explained the evolutionary process in terms of chance events.

What is the difference between being a teacher and being an advocate? Are scientific concepts true simply because they advance social purposes? Should theories of science be taught that do not support social purpose? What is the difference between being a teacher and being a minister? Teachers have been called "Rebel Angels." They pass on to the next generation the wisdom of the ages and they challenge some of our most sacred ideas.

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Science Education Promoted for All Women

Dear Editor:

The focus of Dr. Rosa Bradley's article, "Science Education for a Minority Within a Minority," focuses solely on African-American women. As a science educator and now as a high school principal (of an all minority and almost all female population), I believe that the "reassessment" mentioned by Dr. Bradley should focus on all women.

As a former President of NABT and having worked closely with another former President, Dr. Jane Kahle, NABT developed a section, "Women and Minorities in Biology Education." Much of what Dr. Bradley states applies to all women, whether or not they are part of a minority group. While there are certain factors pertinent to the African-American population, it is well known that in our society it has not been "fashionable" for women to enter the fields of science and mathematics. Unfortunately, the added burden that is placed on the African-American population is to "dis-identify" with academic achievement. High school students of color are often heard to say, "To be smart is to be white!"

In my role as a high school principal, I have worked with a team of educators to help our minority students to discover this philosophy. We have worked with Uri Treisman, Xavia University (Project SOAR), Josiah Macy Foundation, and Ventures in Education to provide our students with a belief that school success can be a basis to self-esteem. We help our students reaffirm this belief each and every day.

Upgrading standards, providing role models in textbooks, having the opportunity to see and meet with women and minorities in the fields of science and mathematics, and recognizing and rewarding students who academically achieve must not only be limited to minorities. All of the preceding recommendations must be afforded to all women of all color. Lest we forget, the latest studies show that the highest dropout rate from high school occurs within the Hispanic/Latino population.

I have several recommendations to make that will support Dr. Bradley's focus as well as mine:

1. Parents need to become intimately involved in the education of their children—especially the female children. They need to be educated so that they understand that science and math are viable options for females. This education cannot begin in the high school years, it must begin in elementary school.
2. We need to develop a set of incentives (financial?) to encourage more women of multicultural backgrounds to teach science and mathematics—especially at the lower levels of education.
3. Women and minorities must see a future in science and math education. More summer programs must be made available to students beginning with their middle school years. More internships must be made available for women and minorities. NSF and "Corporate America" must give these programs more than lip service.

Dr. Bradley is correct that "to many African-American young people science and mathematics are subjects that

white students study." This attitude can *not* be changed by "Just Saying No!" In my high school, we have 64 students in Advanced Placement Calculus, 150 students in Physics, plus courses in Advanced Placement Biology, AP English, AP Political Science and AP U.S. Government. Who sits in these classes? Since the school is 75% female and 100% minority, the answer is obvious!

It is important that we challenge *all* women to rise to higher expectations. While admittedly, the formula for success for different racial and ethnic groups may be somewhat different, if we are consistent in our demands, we will achieve the goal.

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