

Editorial

High School Biology Textbooks and College Biology Teaching

Recently, I reread Joe McInerney's excellent article about choosing high school biology textbooks (October, 1986 *ABT*, p. 396). He makes a strong case for supporting innovation and using more foresight while selecting textbooks. New books then would encourage teachers to use more inquiry and to stress the processes of biology in their teaching. High school teachers are one of several groups exhorted by McInerney to work for changes in the way textbooks are produced and chosen. However, teachers tend to teach as they have been taught, and choose textbooks similar to the ones they have used. Shouldn't we aim first to change college textbooks and teachers?

College biology textbooks have become increasingly encyclopedic during the past twenty years. For example, the second edition of Keeton's *Biological Science* (1972) had 834 pages (exclusive of appendices), while the fourth edition (1986) has 1175 pages. Ambitious college students attempt to memorize this mass of information, and college teachers prepare exams that reward memorization. New high school biology teachers coming from memorization-type courses are impressed with the volume of information in biology and not its significance; they are overwhelmed by details and overlook the integrity and elegance of biological concepts. It is unrealistic to think that they will immediately embrace inquiry/process-oriented textbooks and materials. How can we produce a new generation of biology teachers who are trained in the methods and concepts of biology? The responsibility lies with the authors and purchasers of college texts that perpetuate the idea of biology as encyclopedic.

Authors of introductory college biology textbooks face increasingly difficult tasks—staying abreast of advances in biology and understanding all of biology well enough to write about it. The easy approach is to begin with a collection of old textbooks as models. Diagrams, organization, detail, and even misinformation are handed down from one generation of textbooks to another as if they were encoded in DNA. Each new textbook is much like the old ones, but with a few new pages. Joe McInerney contends that because of lack of diversity in textbooks, we really do have a national biology curriculum. This is certainly true at the college level.

Teaching introductory biology classes in colleges and universities is often left to teaching assistants or new faculty members. Most experienced faculty members prefer to teach advanced courses in their specialties, and thus the most important teaching is done by the least experienced teachers. Newer teachers are generally overworked; for lack of time, they will often structure their course around the textbook, and compile exams from "test banks" and "teacher's manuals" which contain the same tired memorization questions.

We need some truly "general" college biology textbooks, ones that stress concepts and processes. Such textbooks would encourage college teachers to modify their teaching and thus start prospective biology teachers out on a path of thinking, investigating and understanding. We might then anticipate some success from our efforts to improve high standard textbooks and teaching.

Dan Wivagg
Associate Editor

Because They Care ...

NABT thanks its **Sustaining Members** for their dedication to the goals of America's biology teachers. Because of their special membership, sustaining members receive discounts on advertising, exhibit space and list rentals.

Carolina Biological Supply Company

Burlington, NC

Difco Laboratories*

Detroit, MI

Eli Lilly and Co.

Indianapolis, IN

Lab-Line

Instruments, Inc.

Melrose Park, IL

Nasco, Inc.

Fort Atkinson, WI

National Geographic Society

Washington, D.C.

Sargent-Welch

Scientific Company

Skokie, IL

Triarch, Inc.*

Ripon, WI

Ward's Natural Science

Establishment, Inc.

Rochester, NY

* charter sustaining member