Bromley Worries About Engineering

The influx of foreigners into U.S. engineering departments —where 20% of all faculty positions are currently vacant—may solve one problem but exacerbate others. Presidential science adviser D. Allan Bromley, speaking at a conference on engineering manpower staged last week by the American Association of Engineering Societies, said there are three "negative consequences" of the shortage of native engineering faculty.

One problem is that foreign faculty members are contributing to the "intellectualization of engineering," because training in many other countries tends to emphasize the theoretical over the hands-on aspects. Another drawback is that many foreigners come from cultures that "believe women have no business in the science and engineering professions." But perhaps worst of all, Bromley indicated, many foreign engineers have such a poor grasp of English that they can't teach effectively. "You would be surprised at some of the letters I get from irate parents," he told the audience. Parents are complaining that their expensively educated offspring "are coming home at Thanksgiving and telling them they haven't understood a damn word of anything the teaching assistants have said since they arrived."

The Promiscuous Boy-Next-Door

Who's going to get AIDS? Not me. But maybe the boy next door. That's what many people—even those in high-risk groups—believe. And government health campaigns have done little to dispel that kind of contradictory thinking. Witness research carried out recently in Dundee, Scotland, where a high incidence of drug abuse may speed the spread of the disease.

A survey of 1000 young people of Dundee, conducted by University of Kent psychologist Dominic Abrams, reveals that a substantial majority believe they are "extremely unlikely" to be infected by the AIDS virus in the next 5 years. But, at the same time, they believe that half of their peer group will become infected.

Part of the explanation, says Abrams, is that young people tend to assume their friends are way ahead of them in sexual activity: While the average 20-year-old male confesses to only three sexual partners, he believes that the average for his peer group is more than ten. For women, the numbers are slightly lower but the pattern is the same. Abrams says his findings imply that what's needed is a much harder-headed approach to anti-AIDS promotion, putting more emphasis on the fact that no one is exempt from possible HIV infection.

Thumbs Up for Monoclonal Drugs

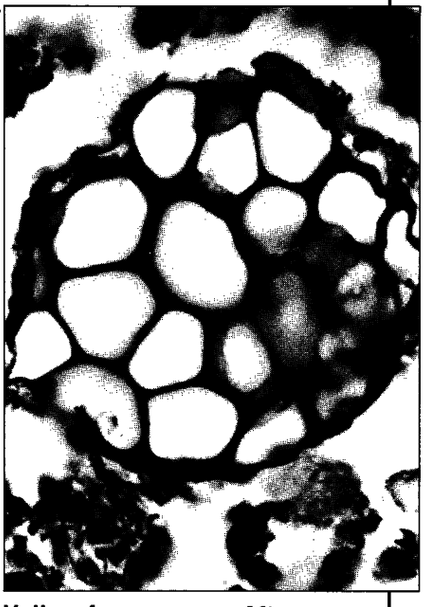
How time flies! It has been more than 5 years since the Food and Drug Administration (FDA) gave its first, and so far only, approval for marketing a drug based on a monoclonal antibody. Many researchers were beginning to wonder whether the agency would ever again look favorably on a monoclonal-based product—until recently. Two committees that advise FDA on whether drugs are ready to receive licensing approval have given a thumbs up to two new products, and a third is around the corner.

The first monoclonal antibody approved for human therapy—used to prevent acute rejection of organ transplants—was developed at Ortho Pharmaceuticals in the early '80s. Now Centoxin, a monoclonal antibody manufactured by Centocor, Inc. of Malvern, Pennsylvania, has received a positive review from the FDA vaccines and related biological products advisory committee. In addition, a monoclonal antibody developed by Xoma, Corp. of Berkeley, California, used to treat acute graft-versus-host disease, got a green light from the FDA biological response modifier advisory committee. A second Xoma product, also for septic shock syndrome, was held up from presentation to an advisory committee earlier this month because FDA said it wanted more time to study the data.

FDA has yet to decide whether to act on the committee recommendations. But Cynthia Robbins-Roth, editor of the monthly newsletter *Bioventure View,* says the latest FDA action sends an encouraging sign to companies struggling to find funds to develop monoclonal products. "The question was, can companies continue to work on monoclonal therapies" and expect to get FDA approval? Currently, the answer appears to be heading toward yes.

Mycomummy

Ten years ago, a group of Arizona State University researchers, working at the Chavez Pass archeological site in Northern Arizona's high desert, unearthed the skeleton of a 40- to 50-year-old Sinaguan Indian who had died at least 500 years before, perhaps of lesions clearly visible on the skeleton. Because those lesions resembled the effects of tuberculosis, a disease that thrived in the Americas long before Columbus, the team placed the Sinaguan skeleton in storage. But 2 years ago an enterprising undergraduate, William Harrison, examined sections of the bone for a class project and found something so interesting that he, with paleopathologist Charles Merbs and anthropologist Chester Leathers (also at Arizona State), has published a paper on the findings.


Arizona State University

Valley fever spore. *Microscope image of a 600- to 1000-year-old spore.*

In the August *Journal of Infectious Diseases*, the researchers announce that the skeleton was riddled not with tuberculosis but with petrified spores of the *Caccidioides immitis* fungus. The fungus causes valley fever, a southwestern disease that kills about 40 people a year. Since the skeleton has been dated to between 1000 and 1400 AD, this find becomes the first microscopic evidence of a fungal disease in ancient North America.

"We've been looking for any sign of the disease in our digs for years," says Merbs, who studies how diseases migrated between Europe and the Americas during Columbus' voyages. Until now, though, the valley fever fungus had proved to be a tough quarry for the paleo-sleuths: The spores attack the skeleton in fewer than half the cases, and they come in two varieties, the disease-causing parasitic form and a saprophytic form that infects human remains. Merbs says they found the parasitic kind, adding, "In this case we've [finally] found unequivocal evidence."