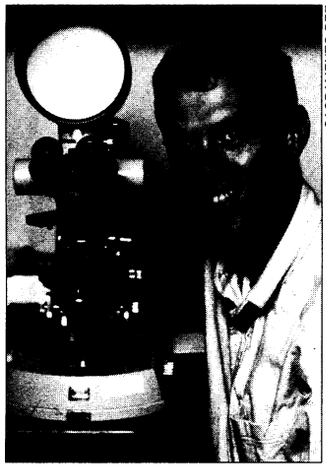
Briefings

edited by RICHARD STONE

Single-Celled Killer In Monterey Bay

At first, California wildlife experts were nonplussed when dozens of brown pelicans began having seizures and dying at the Santa Cruz end of Monterey Bay in September. An investigation spearheaded by the California Department of Fish and Game's Wildlife Investigations Laboratory (WIL) ruled out pesticides, heavy metals, and other ocean pollutants before finally fingering the unlikely killer: diatoms.

A species of unicellular algae abundant off the West Coast, *Nitzschia pseudoseriata*, apparently produced a potent neurotoxin called domoic acid for a short time in September. The pelicans got a deadly dose of the poison by dining on diatom-stuffed anchovies.



SACRAMENTO BEE

Diatom detective. *Wildlife vet Thierry M. Work.*

This wasn't the first domoic acid poisoning: In 1987 the neurotoxin caused 107 cases of poisoning in humans, including four deaths, when Prince Edward Islanders ingested mussels contaminated by another plankton species. However, this was the first sign of domoic acid on the West Coast, and an ominous one at that, says wildlife veterinarian Thierry M. Work, who headed the WIL effort. For one thing, he says, the California diatoms had never been known to produce domoic acid, which can damage the brain's hippocampus and lead to memory loss. Unusually calm, dry weather caused a local "bloom" of algae, but the researchers haven't figured out why the diatoms briefly produced the neurotoxin. As to whether the contaminated anchovies can somehow poison people, the scientists simply don't know. "It's not like we're trying to yell 'fire' in a theater," Work says, "but it's something for people to think about."

Rx for Speedy Drug Approval

The Bush Administration has prescribed medicine for speeding up the Food and Drug Administration's (FDA) drug-approval process, but some key members of Congress say it's too bitter to swallow. The prescription comes in the form of a plan released last week by the Vice President's Council on Competitiveness, which recommends that the FDA hire contractors to help review the clinical data on new drugs, and use more advisory committees.

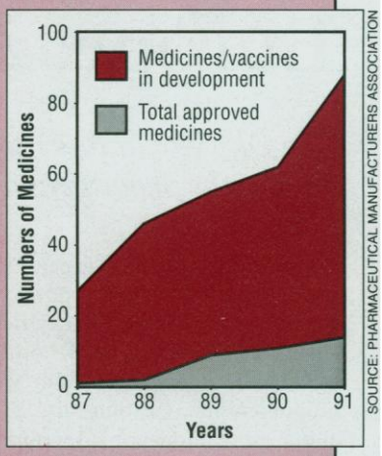
The council claims its reforms would reduce the average time it takes to develop and approve a drug from 9.75 years to 5.5 years, and it is eager to see the reforms adopted—so much so, says a spokesman, that it has no intention of letting Congress "slow down these changes."

As soon as the plan was released, however, several prominent lawmakers complained that those reforms were "thinly veiled efforts to weaken the agency." In a letter to FDA Commissioner David Kessler, Senator Edward M. Kennedy (D–MA) and Representatives John D. Dingell (D–MI) and Henry A. Waxman (D–CA) wrote that if the FDA were to hire outside experts, it would "abdicate its statutory responsibility to make key decisions on the safety and efficacy of drugs." They added that those reforms might lead to inconsistent standards for the review of new drugs, and that outside panels could have conflicts of interest and be vulnerable to lobbying.

But the council threw in a little painkiller, in the form of one reform that everyone seems to like: new rules that would allow drugs for life-threatening diseases to be approved more quickly—the so-called accelerated approval already granted to AIDS drugs.

Tracking the AIDS Drugs

On the rise. So far in 1991, the Food and Drug Administration (FDA) has approved three new drugs to combat AIDS-related illnesses: Foscavir (foscarnet, for cytomegalovirus infection of the eye), Videx (ddI, for advanced HIV infection), and PROCRIT (epoetin alfa, for anemia caused by Retrovir (AZT), another AIDS drug). Of the 14 approved drugs only two—ddI and AZT—are used to fight HIV itself; aside from epoetin alfa, the rest fight opportunistic infections such as pneumonia and Kaposi's sarcoma. But many more drugs are in the pipeline. The number of therapies that are being developed to combat AIDS has increased 42% since last year, according to a recent survey by the Pharmaceutical Manufacturers Association. Among the 88 promising therapies are a handful of new drugs (some directed against HIV) and some tried-and-true medicines such as Zovirax (acyclovir), an antiviral compound used to treat genital/anal herpes that is being tested for different symptoms, or in combination with other approved or experimental drugs.



SOURCE: PHARMACEUTICAL MANUFACTURERS ASSOCIATION

A Big Chill Grips Geothermal Energy

California isn't such hot stuff after all. The latest inventory by the U.S. Geological Survey (USGS) of the heat trapped in the state's rock that could be extracted for power generation shows only about half the amount estimated 13 years ago. Considering that the California underground was supposed to account for roughly half the country's geothermal energy prospects, the outlook for this alternative energy source is now a good deal less rosy.

Why has California's reservoir of geothermal energy lost its steam? "It's 13 years later... [and] there's a lot more data," says USGS hydrogeologist Patrick Muffler, who supervised the previous survey in 1978. In case after case, the new data reveal that California's geothermal fields are smaller and more difficult to exploit than was indicated by the skimpy information available in the 1970s, says Garry Maurath of Ebasco Services in Sacramento, who, with his colleague Kelly Tilford, produced the new evaluation for California's Energy Commission.

The geothermal lead balloon comes on the heels of the realization that the premier geothermal field in the United States—The Geysers of northern California—is fizzling out far short of its planned power output (*Science*, 12 July, p. 134). This doubly deflates energy planners because The Geysers, which yields straight steam rather than superheated water, was not included in the latest evaluation.

While geothermal energy may have lost its luster, it isn't washed up. The Ebasco study found that geothermal fields outside The Geysers are producing 1300 megawatts of electricity, more than a large coal-fired plant, while fields yet to be thoroughly explored might yield almost 6000 additional megawatts of power. Energy planners will just have to learn to live with the fact that California's geology is more like a toaster oven than a broiler.