

## Spielberg, Move Over

Steven Spielberg's wizards used computer graphics to bring dinosaurs to life on the silver screen. Now Mitsubishi Heavy Industries wants to go the computer jocks one better with swimming robots that are reproductions of extinct fish.

The effort grew out of research for shipbuilding, one of Mitsubishi's main businesses. Yuuzi Terada, manager of electronics R&D for the firm in Kobe, Japan, and his colleagues were working on a new ship propulsion method called the flexible oscillating fin, a thin plate that waves back and forth much like a fish's tail fin. Once they succeeded in harnessing the complex oscillations for propulsion, says Terada, "I found we had captured the reality of

how [aquatic] creatures move."

With shipbuilding in a slump, he got the OK to pursue a new line of business—developing robotic fish for amusement parks and aquariums. Four years and \$1 million later, Terada's team recently unveiled its first models—a sea bream and a coelacanth, a "living fossil" that looks much the same as it did 400 million years ago. An uncannily realistic silicone skin covers the mechanical parts. The fish, which can go for about 2 hours before their batteries need recharging, perform in a special tank



Life-sized (60 cm) sea bream robot.

lined with sensors that transmit signals to guide the movements of their aluminum fins. Terada hopes to exploit what he calls "the new field of animatronics" to recreate some of the aquatic life that existed 525 million years ago in the Cambrian era, when there was an explosion of new life-forms.

## Lobby Time for Biometrics

Another technology that was once a gleam in a scientist's eye has muscled up enough to launch its own lobbying group. Last month, the \$40 million biometrics industry—which makes machines that scan hands, eyes, or other body parts to confirm a person's identity—opened an office in Washington, D.C. The 15-member International Biometric Industry Association will work to smooth over privacy concerns—such as those over access by government officials to biometric scans—that could prompt Congress to impose new regulations on the evolving technology.

For months now, geochemist Claude Allègre, France's minister for education and research, has been under heavy bombardment by teachers and scientists who dislike his ideas for science and education reform (*Science*, 5 March, p. 1442). But although Allègre may be losing friends fast, somebody still loves him—his mum.

In a letter published in the 1 April issue of *L'Express* magazine, Lucette Allègre, who gave birth to baby Claude in March 1937, defended her son against the "unjust torment of which [he] is victim." Refuting teachers who claim that Allègre does not understand their problems, Mrs. Allègre—who, with her husband, was a schoolteacher and union militant—recounts how, during the Nazi occupation of France during the 1940s, young Claude would carry union tracts hidden in his satchel to school for dissemination to other teachers. "When I hear the shouts of my young colleagues in the street, I cannot help but think of the little boy whose life we risked to save the union," she wrote.

Allègre mère also shed light on her son's early scientific influences. When he was only 7, she relates, he accompanied his parents to a birthday celebration at the Sorbonne for the legendary French physicist Paul Langevin, where speakers included physicist Frédéric Joliot-Curie and medical researcher Gustave Roussy. "He asked us a lot of questions afterward." As for Allègre's outspokenness, which has often gotten him into trouble, this too, his mother said, began at an early age. "Since his most tender childhood, he has always been impulsive, frank, and sincere."



## Canada to Regulate Herbals

Canadians are eager consumers of herbal medicines, scarfing up \$1.3 billion worth a year. Now their government is moving in to bring some order to the booming industry for herbal preparations, nutraceuticals, so-called functional foods, and other "natural" health products. Many herb lovers, however, fear that this effort to protect consumers will allow big drug companies to take the "natural" out of natural health preparations.

The government announced on 26 March that over the next 3 years, it will sink \$4.5 million into a new Office of Natural Health Products and another \$2 million into research on herbal therapies. The office will develop and oversee regulations on all aspects of natural health products, from standardizing contents to licensing and advertising, says interim director Colin Broughton. Herbal makers will be required to prove that their products work as advertised—although,

says Broughton, "the depth of evidence that we will expect ... will not be as stringent" as with drugs.

The government's move is in response to public concern over the growing use of unproven remedies, Broughton says. Canada has chosen a compromise, he says, between the U.S. approach, which treats natural health products as dietary supplements that don't require safety review, and the European approach, which treats the products as drugs.

Not all consumer advocates are happy with the new regime. Mike McBane, director of the Canadian Health Coalition, speculates that the efficacy requirements could mainly benefit big drug companies, by facilitating "more adulteration of natural products by genetically altered processes and other pharmaceutical inputs." The new office is expected to be up and running by the end of the year. A scientific advisory committee will be appointed later this month.