feared," says University of Illinois neuroscientist William Greenough, one of those who lobbied NSF to keep neuroscience together. But Greenough maintains that the former division of behavioral and neural science made more sense. That division, he says, "had a kind of independence" that remains to be demonstrated in the new division, which mingles areas as diverse as neuroscience and plant biology. "Brains and behavior go together; they're dealing with the same questions," says Greenough. It's less obvious, he says, that the same is true for brains and plants.

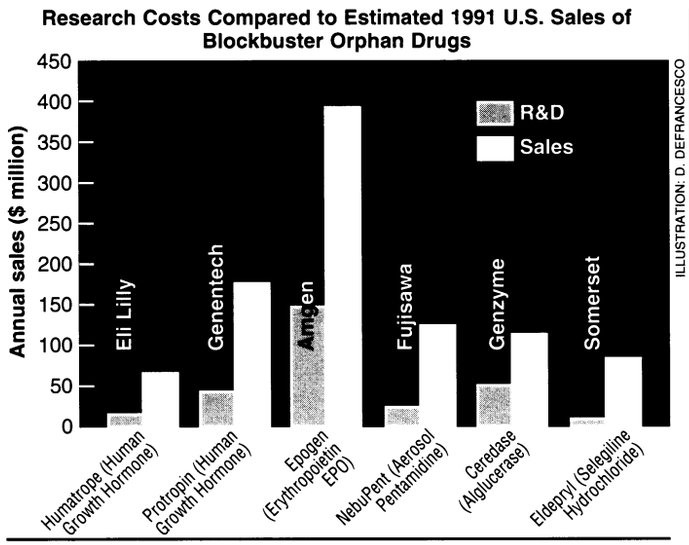
More Turmoil Over Orphan Drugs

The battle over the Orphan Drug Act was rejoined late last month when a Senate subcommittee held a hearing on alleged abuses of the law. The act gives companies incentives to develop medicines for diseases affecting fewer than 200,000 people. But critics have charged that a few biotech firms have been using the 7-year monopoly given to companies for any approved orphan drug to stifle competition and make outrageous profits.

Among the act's critics is Senator Howard M. Metzenbaum (D–OH), chairman of the Judiciary Committee's antitrust subcommittee, who called the hearing. Metzenbaum wants to address the problem with a new measure that would terminate the monopoly once sales of an orphan drug reach $200 million.

The drug industry is divided over that proposal. The Pharmaceutical Manufacturers Association and the Industrial Biotechnology Association claim that the measure would effectively kill orphan drug research by eliminating a needed incentive. Some companies also worry about the loss of protection for original research, since they say the drug patent system is ineffective.

But John Castillo, chairman of Ares-Sereno, Inc., told senators on Metzenbaum's committee that "the orphan drug law was not designed to be a welfare program for the biotech industry or a substitute for patents." And the Association of Biotechnology Companies also supports the proposed change. They argue that "true" orphan drugs would never reach the sales trigger and that the bill would merely open up competition on blockbuster drugs that would have been developed without the act.



Patient advocates are just as sharply divided as industry. While the Cystic Fibrosis Foundation testified in favor of the current act, the National Organization for Rare Disorders (NORD) has broken ranks to support Metzenbaum's bill. NORD executive director Abbey Meyers testified that outrageous prices charged by "a few greedy companies" spurred the group's change in position.

A little more than a year ago, President Bush heeded drug company objections and vetoed a similar attempt to change the Orphan Drug Act (*Science,* 16 November 1990, p. 905). This new bill may not even reach the president. Committee member Orrin G. Hatch (R–UT), who thinks the act works fine, has vowed to stop the measure.

Picture-Perfect Plankton

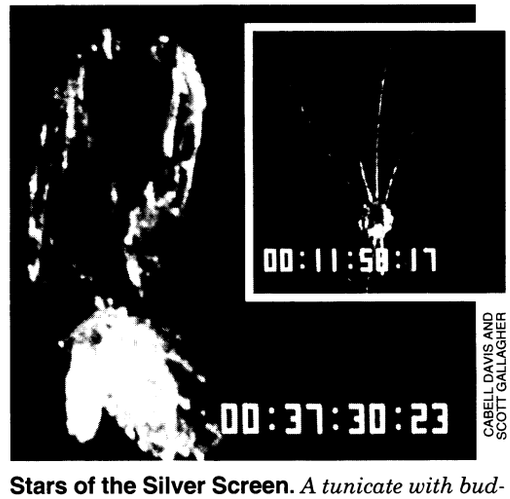
The surface layers of the ocean teem with a drifting and endlessly varied cast of minute creatures, but until recently nobody had succeeded in filming this full profusion in its natural setting. Now, though, a novel instrument, the Video Plankton Recorder (VPR), is bringing about a sea change in scientists' understanding of the critters.

Designed by biologists Cabell Davis and Scott Gallagher at the Woods Hole Oceanographic Institution, the VPR has turned plankton—which range from single-celled plants and animals up to fish larvae and jellyfish—into movie stars. Marine biologists in the past had to content themselves with specimens captured in nets or bottles. Nets risk damaging the delicate creatures, however, and neither technique tells scientists much about how the critters swim, feed, and reproduce. Nor do captive specimens reveal whether the plankton gather in small clumps or are evenly dispersed—a factor that may affect the ease with which other creatures can feed on them.

Into the breach swims the VPR, looking rather like a 4-meter-long metal lobster. At the back is a fanlike tail; from the front extend two arms, one bearing a cluster of four video cameras pointing at the other arm, which carries a strobe light. When the VPR is moored or towed behind a research ship, the strobe flashes 60 times a second. With each flash, the cameras capture freeze-frame images—at four different magnifications—of the creatures drifting between the arms.

By filming the plankton for hour after hour, says Davis, the VPR "can sample on scales from microns up to kilometers." On its shakedown cruise last fall south of Woods Hole, he and his colleagues found that copepods, tiny crustaceans that are a major food source for fish larvae, form dense clumps—a boon for hungry predators.

Just to learn that, Davis and Gallagher had to go through their movie frame by frame. But with the help of Mark Berman of the National Marine Fisheries Laboratory in Rhode Island, the group is rigging an image processing system that will watch the movie for them. At first, says Davis, the system will only indicate, for each frame, "whether there's a bug there." But eventually they hope to program the system to recognize different plankton types, so that it will be able to do a high-speed plankton census on the high seas.



Stars of the Silver Screen. *A tunicate with budding young and* (inset) *an amoeba-like sarcodine.*