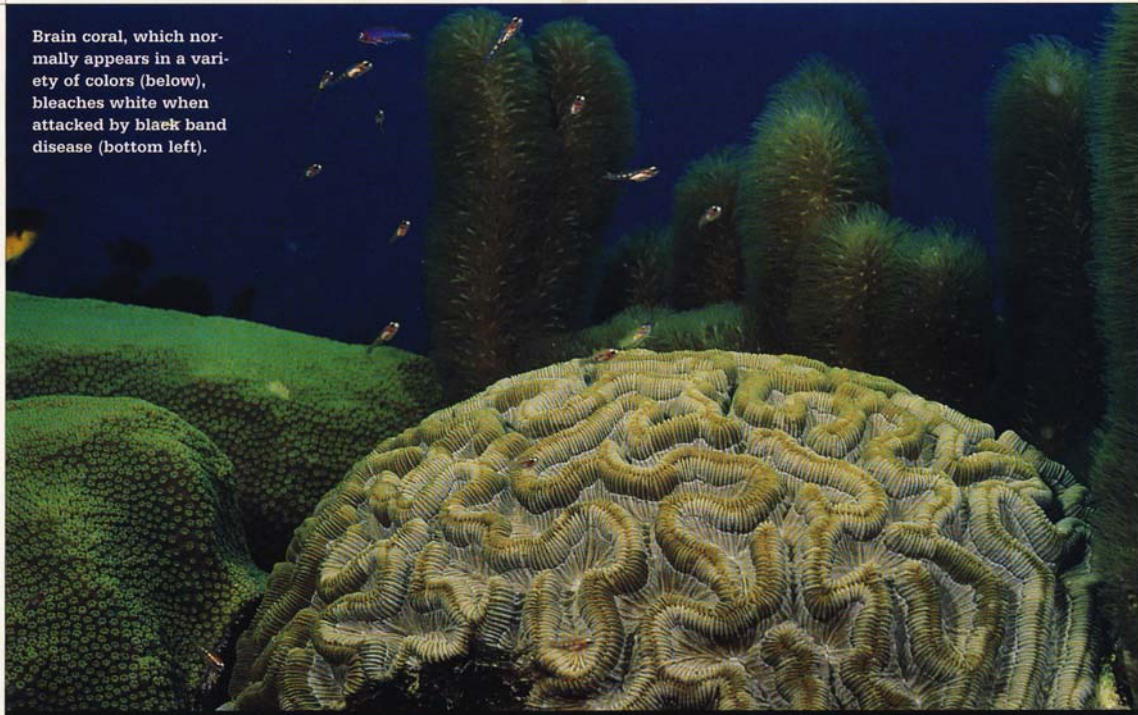


Brain coral, which normally appears in a variety of colors (below), bleaches white when attacked by bleek band disease (bottom left).



White plague, type II: "There were pure-white skeletons of coral all over."

since the early 1990s under the assault of a fungus known as *Aspergillus*, which is normally found on land. Last summer marine scientist Ray Hayes at Howard University discovered a new coral disease in the Caribbean caused by a yeast called *Rhodotorula*, which is also common on land and can attack humans, causing a variety of infections of the heart, skin, and respiratory system. "It looks as if the fungus is establishing itself as a pathogen in the marine environment," says Hayes.



Researchers have tried to find something on a par with these coral outbreaks in the past by studying fossils, but have come up empty. Richard Aronson, a marine scientist at Dauphin Island Sea Lab in Alabama, and his colleagues drilled out a core spanning the past 4,000 years from a coral reef off the coast of Belize. At no point during these past 40 centuries could Aronson find evidence of a similar outbreak. Not even when hurricanes raged through the Gulf of Mexico and killed much of its coral did the composition of the reef change the way it has in recent years. Aronson's research suggests that coral diseases today have a power unlike anything in their history.

"Something has changed," says Hayes, who compares corals today to people with compromised immune

systems. For example, both *Aspergillus* and *Rhodotorula* can devastate AIDS victims, because HIV has wrecked their defenses against diseases. "Something of this sort could be happening in the marine environment," Hayes says. Pollution pouring into coastal waters may be affecting corals' immune systems and at the same time fertilizing bacteria and fungi.

Sick corals may be impossible to treat. "It would be hard to vaccinate every single coral underwater," says Laurie Richardson. "We don't even know that much about the coral immune system." For now, marine biologists are trying to figure out how corals fight off disease—and preparing for the possibility of a sicker ocean. ▶

*A former editor at Discover magazine, science writer Carl Zimmer won the 1999 Pan-American Health Organization Award for Excellence in International Health Reporting.*

#### What You Can Do

##### SEE WHAT'S IN THE SEA

HEED MMEDs, Major Marine Disturbances, has an informative web site about marine diseases and their effects: <http://heed.unh.edu/index.html>.

The Aquatic Botany Laboratory at North Carolina State University has a web site about *Pfiesteria* at [www.pfiesteria.org](http://www.pfiesteria.org).