

Coral Colonies' Violent Chemical Warfare

The strange, silent world of the coral reefs, continuously engaged in internecine struggles, is currently the center of a scientific dispute between two schools of thought. One school holds that corals worldwide are seriously imperiled from global warming, overfishing, pollution, and reef destruction wrought by fishermen and tourists. The other holds that only a "case by case" study can describe what's actually transpiring worldwide on the coral front.

William K. Stevens of the New York Times News Service examined the evidence in a feature that appeared in papers nationwide in February 1993. He painted a grim

picture of the violent reality underlying the seemingly dreamy tranquility of a healthy, normal coral reef—"colonies staging unrelenting chemical warfare on each other, their polyps stinging, dissolving and poisoning each other. Bigger reef creatures savage large chunks of colonies and fill the water with toxins."

But such competition—with no quarter asked or given—is the rule, he notes, in this interdependent but mutually hostile world. "When polyps in one colony come face to face with another in a constant competition for scarce space, they expand their bodies to engulf their rivals and exude digestive juices that turn the competitors to jelly."

Judith Land, a reef ecologist at U/TX's Memorial Museum, describes how polyps in

the attacked colony grow "sweeper tentacles" studded with special stinging organelles that "zap the neighbors." Still other polyps enshroud their enemies in a sticky mucus that dissolves the tissues. Coral reefs, Stevens says "may be one of the most naturally poisonous environments on earth. On Australia's Great Barrier Reef, 73 percent of 429 species of exposed invertebrates were found to be toxic to fish.

Stevens quotes Drew Harvell, a coral reef ecologist at Cornell University, as seeing "tremendous potential" in these toxins as pharmaceuticals—as anti-inflammatory agents, as effective against AIDS, and even as anticancer drugs—"and that's just one class of organisms," Harvell said.