RANDOM SAMPLES

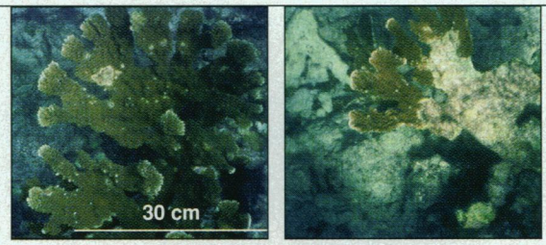
edited by CONSTANCE HOLDEN

Coral Disease Hot Spot in Florida Keys

A host of new diseases has been killing coral off the Florida Keys, and so far, biologists are mystified as to the causes.

The latest is "white pox," recently described by University of Georgia marine ecologist James Porter. It attacks branching corals called *Acropora*, mainly elkhorn and staghorn corals, making them blotchy and, ultimately, killing them.

The afflicted coral tends to be concentrated in one "hot zone" less than 3 km long starting 10 km south of Key West, says Craig Quirolo of a Key West group called Reef Relief. Other mystery scourges that have appeared in the area in the last few years are "white band" (which also affects branching coral), "yellow blotch" (which attacks boulder corals), and "white plague" (which can consume coral at the rate of a centimeter a day). There's also "black band," which was recently traced to cyanobacteria, or blue-green algae.



J. W. PORTER/U. GEORGIA

Creeping scourge. Photos taken 15 months apart show white pox devastating an elkhorn coral (*Acropora palmata*).

The newly identified pox first shows up as stunted growth: In one patch of reef, coral grew only 2% rather than the expected 30% one year, says Porter. A year later, most of the coral in the area had died.

Porter has sent samples to the Environmental Protection Agency (EPA) as part of the agency's reef-monitoring program. "There obviously is something very serious going on," says microbial ecologist Deborah Santavy of EPA's Gulf Breeze lab, who is analyzing samples of diseased corals. It's not clear yet, she says, whether the diseases are caused by living organisms—bacteria, viruses, or fungi—or environmental stresses that make reefs more susceptible to passing pathogens.

Quirolo suspects that nitrogen and phosphates from soil runoff and nutrients from sewage have a big role in the new afflictions. "The Keys have over 20,000 illegal septic tanks," he says. All this runoff has helped turn the fabled "gin-clear" waters off the Keys closer to absinthe green.

Genetic Engineering Lab to Open in Padua

A new, international biotech research laboratory with close ties to industry is being established in Padua, Italy. The Laboratory for Advanced Biomedical Research, announced in early December, has already drawn financing from some 40 local businesses, including the clothing company Benetton. One major aim is to develop new gene therapies for diseases.

Ernesto Carafoli, a biochemist at the Swiss Federal Institute of Technology in Zurich, is slated to become the lab's director. So far, about $10 billion lire ($6.5 million) has been pledged by companies as well as local governments. The lab is to be housed in an old animal vaccine production facility that has been bought by Padua University and will open some time in 1997.

Modeled on organizations such as the Whitehead Institute for Biomedical Research at the Massachusetts Institute of Technology and the Friederich Miescher Institute in Basel, Switzerland, the lab will be free of the "crippling bureaucratic limitations of public institutions in Italy," contends Carafoli. Plans are to cultivate international collaborations with a program of joint research doctorates with foreign institutions and contracts with foreign researchers. Other plans include kidney and prostate tumor studies with the U.S. National Cancer Institute and the University of Heidelberg.

And one of its most pressing projects? To convince the controversial Benetton photographer, Oliviero Toscani, to incorporate the DNA spiral in his giant "United Colors" posters.

Euro-Techies

European countries are producing twice as many people with bachelor's degrees in the natural sciences and engineering than in the mid-1970s, says a report to be released in January by the National Science Foundation (NSF).* The reason: Many more Europeans are going to college.

While the fraction of European college students who major in science is almost double what it is in the United States, the fraction of Europe's total population holding science degrees is much smaller. But that's changing, says NSF's Jean Johnson: In 1992, the latest year for which data are available, roughly 4% of all 24-year-olds in Europe held university degrees in science or engineering—close to the 4.6% figure for the U.S. The biggest producer of techies is Bulgaria, where the comparable proportion is 7.5%. At the other end of the spectrum are Portugal and Romania, at less than 2%.

*Human Resources for Science and Technology, the European Region (NSF 96-316).

Papyrus for the 21st Century

A six-university consortium in the United States is launching a project to preserve, catalog, digitize, and put on the Internet thousands of fragments of papyrus documents from ancient Egypt.

The material includes a huge collection that has been stacked in boxes at the University of California, Berkeley, for almost a century. The documents were collected during an 1899 expedition to the Fayyum, in Western Egypt, where archaeologists found cemeteries containing hundreds of mummified crocodiles, a sacred beast in the area. The papyrus documents had been used to stuff and swaddle the animals. The scientists retrieved the papers and threw out most of the crocodiles.

Anthony S. Bliss, curator of the Berkeley collection, says the estimated 21,000 pieces are so fragile that few have ever been seen by the public. Now, with the aid of a $300,000 grant from the National Endowment for the Humanities to the consortium, the collection will be rehabilitated. Papyrologist John Oates of Duke University says it should offer new insights about middle Egypt more than 2000 years ago. The crocodile stuffing was just "old waste paper" to the Egyptians, but it comprises a wide range of documents, from real estate and tax records to excerpts from Virgil.

Members of the consortium, the Advanced Papyrological Information System, met with computer experts this month to discuss how to standardize codes to link all the collections and, says APIS leader Roger Bagnall of Columbia University, "how to handle Greek over the Net." The consortium includes Berkeley, Duke, Columbia, Yale, Princeton, and the University of Michigan, Ann Arbor.

SPECIAL COLLECTIONS LIBRARY/DUKE UNIVERSITY

Lots more like this. Fragment of 2nd century B.C. papyrus tax record in Greek, from Duke University's collection, on the Internet at http://odyssey.lib.duke.edu/papyrus.