

Multiple drug use: A dangerous trend

The pattern of drug abuse across the United States appears to be taking a turn for the worse. Rather than latching on to one "drug of choice," people are increasingly ingesting several drugs at once in combinations that pose serious health dangers and create hazards for detoxification programs, say researchers at the national 800-COCAINE Helpline in Summit, N.J.

A random survey of 300 helpline callers during May revealed that 87 percent of them abuse several drugs at the same time, says psychiatrist Mark S. Gold, founder of the telephone advice and treatment referral service. The number of "polydrug" abusers has increased 19 percent since the helpline began to survey callers in May 1983.

The sample only includes people seeking help for drug abuse, notes helpline research director Arnold M. Washton, but the reported increase has prompted the service to install additional telephone lines and train its counselors more extensively.

"Multiple substance abuse is becoming the norm for people heavily involved in drugs," says Washton. Survey respondents report combining alcohol, cocaine, marijuana, tranquilizers, prescription narcotics and sleeping pills. They are often ad-

dicted to two or more drugs.

The greatest portion of callers — 63 percent — said they were addicted to cocaine; 31 percent reported alcohol addiction, 23 percent said they were addicted to tranquilizers and prescription narcotics and 17 percent were addicted to sleeping pills.

Polydrug abusers seek out additional drugs to increase, balance or maintain the effects of drugs they are already taking, says Gold. "Cocaine addicts often use other substances to soften the crashing effects of the cocaine high," he explains. "Cocaine users are especially prone to alcohol abuse during withdrawal from cocaine."

Mixing drugs apparently leads to increased health problems, adds Gold. Nearly half of the polydrug abusers in the survey reported a progressive worsening of medical symptoms, particularly stomach ailments and liver problems. Data collected by the National Institute on Drug Abuse indicate that about two-thirds of hospital emergency room cases admitted for drug abuse involve combinations of drugs.

"The polydrug abusers we spoke to do not match the description of street addicts one usually associates with drug abuse," says Washton. Multiple drug abusers in the survey are fairly young, with an average age of 29. Nearly three-quarters are employed, and another 15 percent are students. About half the sample reported family, social and job problems related to drug abuse.

Diagnosis of polydrug abuse is difficult, cautions Washton. During intoxication and withdrawal, multiple substance abusers may exhibit symptoms that mimic psychiatric disorders. In addition, since most treatment programs require patients to be drug free, polydrug abusers often admit only to using one drug.

Even with the proper diagnosis, says Gold, detoxification of multiple-substance abusers is complicated. "People who mix alcohol, for example, and tranquilizers are in danger of having brain seizures during withdrawal unless treatment is tailored to the individual's condition."

There is no uniform approach to polydrug abuse treatment, explains Gold, but because of the dangerous reactions during withdrawal, detoxification should take place in a hospital or residential center. The mix of multiple drug use, medical disorders and family problems then requires individually designed treatment.

Adds Gold: "Drug abuse specialists are unprepared to deal with polydrug abuse. Treatment centers, and the medical community in general, are only experienced at treating single-drug addictions."

800-COCAINE counselors are linked to a network of treatment centers and hospitals, "but there aren't many facilities that are experienced at treating polydrug abusers," says Washton. "This problem simply hasn't been well studied." —*B. Bower*

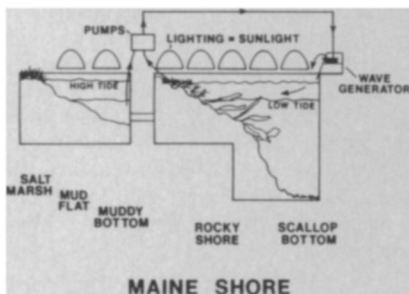
Maine ecosystem at the Smithsonian

The creatures in the Smithsonian Institution's new aquarium exhibit are eating each other up, but museum scientists couldn't be more pleased. It's just evidence that their scheme is working. The 3,000-gallon aquarium, which opened last week in Washington, D.C., holds a miniature Maine coastal ecosystem — a microcosm that is almost entirely self-perpetuating.

What makes this exhibit unusual and exciting — its self-sufficiency — is all but invisible. Only the three crabs fighting over the carcass of a small fish hint at the difference between this and other aquariums. These animals aren't waiting for the 2:00 feeding. There isn't one.

The animals in the tank aren't fed, and the water isn't replaced or chemically treated. Artificial lights simulate daylight and supply energy to the plants, which are eaten by the animals. Pumps and wave generators simulate tides and waves, which keep nutrients and wastes circulating. The tank water is cycled through two other tanks, where luxuriant growths of algae remove animal wastes from the water.

To the uninitiated, the tank looks much like other excellent aquarium ecosystem exhibits: Artificially generated



Left, only a rack of lights and a series of pumps drive this cold-water microcosm. Right, a single lobster is at the top of the food chain in the tiny ecosystem.

waves crash against a wall of rocks covered with rockweed, brown kelp, muscels and barnacles; a periwinkle climbs up the glass wall of the tank; fish glide behind rocks in the turbid water. Yet the project's scientific value far exceeds its exhibitional value, says Walter Adey, director of the Smithsonian Marine Systems Laboratory.

"[The exhibit] allows us to experiment with ecology in a laboratory context," he says. Adey compares the Smithsonian's two microcosms: the new cold-water microcosm, which contains about 50 of the 100 or so species natural to the Maine coastal waters, and the five-year-old warm-water coral reef microcosm, which includes nearly 600 species (SN: 10/18/80, p. 250). He has found that although the Maine coast ecosystem includes far fewer species than the coral

reef system, it is actually more complex in some respects. The cold-water ecosystem depends on seasonal changes that do not occur in the coral reef system. It is also harder to manage because the addition of new species, an ongoing process at the museum, affects the Maine microcosm much more rapidly than the coral reef system. The large number of species gives the reef system greater stability.

The research also has potential economic value. Using technology developed to maintain the coral reef exhibit, Adey and his colleagues have developed a way to raise commercial spider crabs on algae farms growing on rafts in the sea (SN: 4/6/85, p. 220). Now Adey wants to use the same ideas to develop an open-water mussel-farming industry off the Northeast coast. —*J. Dusheck*

Illustrations: Smithsonian Inst.