

long as the high lasted. When the high did wear off between doses the nausea and vomiting began. This, say the researchers, may be due to the manner in which the marijuana was taken. Smoking the drug, they suggest, might be a more efficient method of administration because it gives the patient greater control over the dosage and makes it easier to maintain the high.

The fact that marijuana has a calming effect is certainly not news. The fact that a therapeutic use for marijuana is being reported in a medical journal is, however, somewhat of a departure. For years, legal and social strictures have kept physicians from prescribing marijuana, and bureaucratic entanglements still make it difficult for researchers to thoroughly investigate the drug. But these facts do not completely explain the one-sided stance the medical profession seems to have taken against a drug that has long been known to have possible therapeutic effects.

Zinberg offers another possible explanation. He told SCIENCE NEWS that, "Generally speaking, doctors have taken quite a hard line against illicit drugs, and this may be basically out of self interest." Illicit drugs do not come under their control, he explains, and doctors may fear losing their privileges to grant or withhold drugs. A physician, for instance, might warn a patient against marijuana or cocaine and then turn around and prescribe tranquilizers. This situation is irrational, says Zinberg, whose "basic contention is that drug abuse is prevented by social

control, not by legal control." In other words, people must learn how to use or avoid drugs. And they can best learn with the help of valid inputs from the medical profession. Zinberg and his colleagues hope that the work they have done with marijuana and cancer patients will lead to a more open-minded approach to the study of illicit drugs. The fact that cancer patients were involved, of course, helps. Any therapy (even one involving an illegal substance) that alleviates their suffering is likely to be taken seriously. And as they say in their carefully-worded study, this research "deserves being reported."

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Changing attitudes toward marijuana continue to be apparent in several areas. The Domestic Council Drug Review Task Force has now suggested, in a white paper for the President, that Federal drug strategies and priorities might have to be changed to meet current needs. "The task force recommends that priority in Federal efforts in both supply and demand reduction be directed toward those drugs which pose a greater risk to the individual and to society—heroin, amphetamines (particularly when used intravenously), and mixed barbiturates—and toward compulsive users of drugs of any kind." Cocaine, the task force finds, ranks relatively low in seriousness as an individual and social problem. Marijuana, the task force concludes, is the least serious on all counts of any of the currently abused drugs. □

The Cayman Trough is thought to be bounded by the North American Plate on its northern side and by the Caribbean Plate on the south. It was chosen, says a researcher with the Woods Hole Oceanographic Institution, which is directing the scientific aspects of the project, because it is the only plate boundary besides the Mid-Atlantic Ridge that has been studied in enough detail to give confidence that it contains an accessible "spreading center." The floor of the trough, more than four miles below the ocean surface, contains part of the boundary along which the two plates are slowly moving apart, in the inexorable shiftings of plate tectonics.

The other key word is "accessible," a matter of logistics (the project will be based in Jamaica), weather and simply the exposed nature of the evolving rift. The first human beings to actually visit the trough will be encapsulated within Woods Hole's titanium-hulled super-minibus Alvin (a major contributor to Project FAMOUS), now scheduled to make its dives in January and February of 1976. But Alvin will not be able to reach the deepest parts of the huge fissure. That task will have to wait a year until the U.S. Navy bathyscaphe Trieste can join the program.

Before either craft can get down to work, however, much more detailed mapping of the site is necessary, both because of the hazards of the tricky terrain and to be sure of getting the most from the two submersibles' finite exploration range. Early next month, the Navy's sophisticated survey ship Wyman will set out from Florida to do the job, equipped with elaborate navigation and positioning aids and a 90-channel bottom-sounder capable of profiling the sea floor in detailed swaths as much as two miles wide.

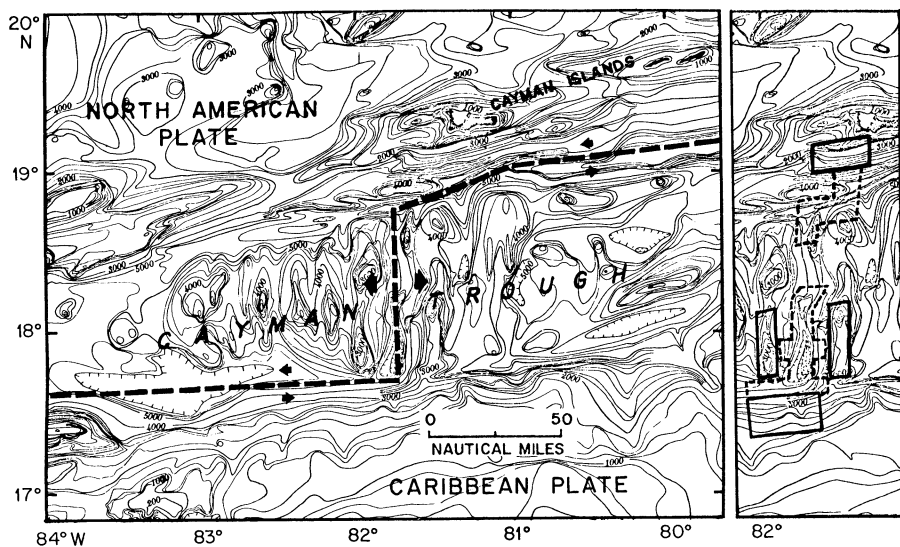
Accurate positioning will be equally important for the submersibles themselves, so that their measurements can be precisely placed on charts of the ocean bottom. To give the two submersibles a common navigational reference system, Alvin's position-recording system (which logs locations relative to sounding buoys on the sea floor) will be transferred to Trieste before the bathyscaphe begins its descents.

The major differential movement between the two crustal plates may be a sideways displacement, with the North American Plate having shifted westward relative to its southern neighbor. Most of the dives, however, will be concentrated along a north-south jog in the plate boundary, where this longitudinal motion has apparently caused a pulling-apart. Alvin, equipped with lights, cameras and a sampling arm, will spend much of its time exploring the exposed strata of the vertical trough walls and the plateaus connecting them, accompanied from above by its support ship Lulu and Woods Hole's research vessel Knorr. It will remain for Trieste to get to the bottom of the matter. □

Return to the deep: The Cayman Trough

Following the success of Project FAMOUS's exploration of the Mid-Atlantic Ridge (SN: 8/24/74, p. 118), a second major manned deep-sea expedition is preparing to visit a vast ocean-bottom chasm believed to lie on the juncture of two of the major plates of the earth's

crust. Unlike FAMOUS (the French-American Mid-ocean Undersea Study), which probed the floor of the chilly North Atlantic near the Azores, the upcoming effort will plumb the Caribbean to study a monumental canyon known as the Cayman Trough.



Map shows Cayman Trough region (contours in meters), while inset (right) shows route plans for Alvin (solid line) and Trieste with surface-ship Knorr (broken line).