

behavioral sciences

When you cut the grass . . .

Marijuana, amphetamines and LSD—in that order—have been the most popular and widely used drugs on high-school and college campuses. When these drugs become scarce or difficult and expensive to obtain, users revert to an old standby (alcohol) or search out new trips. One such drug that was virtually unknown on campuses six to nine months ago is rapidly becoming a national phenomenon.

Methaqualone—known on the street as *sopor* or *qualude*—is a nonbarbiturate hypnotic downer. It is prescribed to induce sleep and is legal when sold by prescription. The drug was thought to be non-habit forming but Judi M. LaForme, director of the University of Wisconsin Madison Drug Information Center, says, "Now it looks as though it may be addictive." In excess or in combination with alcohol the drug causes loss of motor coordination, and may cause the user to black out. "In other areas we've seen that when grass gets scarce, people turn to other drugs," and that could be happening here, she says.

When you get a vasectomy . . .

Married couples seeking a means of permanent birth control may apply for either a vasectomy for the husband or a tubal ligation for the wife. Opting for the ligation may be a sign of marital difficulties, says James L. Nash, staff psychiatrist at the Veterans Administration Hospital in Durham, N. C. He cites the three characteristic reasons given for not having a vasectomy: The man feels the responsibility is the woman's because she bears the children, the man feels he might decide to have children by another woman at a later date or the man feels the operation will make him less of a man. The first reason, says Nash, implies that the woman is merely a sex object. The second implies that the man is unwilling to make a permanent commitment to his wife. The third erroneously equates vasectomy with castration. Such chauvinistic attitudes, says Nash, are often at the heart of a marital disturbance.

Nash feels that recognition of these attitudes and proper therapy can result in acceptance of the vasectomy (an easier and safer operation than ligation) and also in improvement of the marriage. Nash interviewed 68 men after vasectomy and found that 44 percent of them felt their enjoyment of sex had increased, and 55 percent reported that their wives were more sexually responsive. Only three percent said their enjoyment of sex had decreased.

When you stick out your tongue . . .

Everyone gets the message when young children stick out their tongues. W. John Smith of the University of Pennsylvania knows what it means when children, adults and several species of nonhuman primates stick out their tongues. Five years of observations in public places—city streets, buses, waiting rooms, shops, sporting events and public meetings—and in zoos has revealed that this particular form of sign language is not confined to defiant children. Adult humans, gorillas, orangutans and chimpanzees also indulge in tongue showing to various degrees. The display, says Smith, is not always as exaggerated as with children but usually occurs in similar situations. Undesirable social interaction (a scolding by a parent, employer or zookeeper) and dangerous and involved tasks (working a difficult puzzle, backing a car into a tight parking space or swinging precariously from a tree) usually prompt tongue showing.

earth sciences

Oceans may be shrinking

The oceans of the world may be gradually shrinking, leaking slowly away into earth's mantle, suggests a comparison of older and newer oceanic rocks.

Although the oceans are constantly being slowly augmented by water carried up from earth's interior by volcanic activity, according to Clement G. Chase of the University of Minnesota in Minneapolis and Eugene C. Perry Jr. of Northern Illinois University in De Kalb, some process such as sea-floor spreading seems to be letting the water seep away more rapidly than it is replaced.

The key is the growing rate of change in the ratio of oxygen 18 isotopes to oxygen 16 isotopes in cherts—pure silica sedimentary rocks formed from material once dissolved in ocean water. The cherts serve as a fossilized record of the changing isotope balance during the oceans' evolution.

Water raised from the mantle by volcanic activity is enriched in oxygen 18 through chemical reactions from contact with the hot mantle rock. The researchers found that the heavy-to-light-oxygen ratio changes slowly in the older cherts and more rapidly in the younger ones. This could be explained by a decrease in size of the oceans, they believe, since the reduction in volume would cause the influx of heavy oxygen to be less diluted, thereby allowing more rapid changes in comparison with the amount of oxygen 16.

Voiceprints of quaking buildings

A method similar to the "voiceprint" analysis of human speech is being used to study the responses of structures to earthquake vibrations.

Data from an accelerometer at Pacoima Dam, which was shaken by the February 1971 tremor at San Fernando, Calif., have been assembled into spectra that show how the different frequencies of vibration changed as the shaking continued. Virgilio Perez of the National Oceanographic and Atmospheric Administration's Seismological Field Survey used the accelerometer data to produce a graph showing how 40 selected frequencies of vibration in the dam decayed, or were damped out, in one-tenth-second intervals in response to varying tremors.

This decay spectrum makes it possible to evaluate the effects of interference and reinforcement between the movements of the earth and the responses of the structure. In future studies, Perez says, it will also be possible to detect the point in time at which structural damage starts or becomes critical, which can be valuable to structural designers.

More Pacific seamounts found

Two previously unknown chains of undersea mountains called seamounts and 24 individual seamounts have been discovered during analysis of data from an oceanographic research voyage.

The seamounts, all in the northeastern Pacific about 300 to 850 miles west of Oregon and Washington, range from 3,000 to 5,950 feet in height above the ocean floor. At least four of them reach about a mile high.

The two seamount chains border the Sedna Fracture Zone, one a high ridge immediately north of the chasm and another, somewhat lower, just north of the first.

The seamounts were discovered in data gathered during a five-month 1971 ocean bottom survey by the National Oceanic and Atmospheric Administration's ship *Surveyor*, and analyzed by NOAA geophysicists John A. McAlinden and Douglas J. Elvers.