

behavioral sciences

Marijuana and deep EEG's

Since 1950, electrodes have been implanted in the brains of 60 patients at the Tulane University School of Medicine in New Orleans. Studies of the patients by electrical stimulation of various areas of the brain have led Robert G. Heath to conclude that the behavioral phenomena of pleasure feelings are related to physiologic activity in the septal region of the brain (SN: 4/22/72, p. 263).

Scalp electrodes are not sensitive enough to make electroencephalogram recordings in this deep area of the brain, but implanted electrodes are. Using this method, Heath studied the effects of marijuana smoking on behavior and deep EEG in one patient. He reports in the June ARCHIVES OF GENERAL PSYCHIATRY that marijuana produced the expected mood elevation with intermittent peaks of euphoria. These peaks were associated with bursts of high-voltage, slow-wave delta activity in the septal region. Heath concludes that marijuana asserts a localized effect in this region. Similar activity was not produced in other areas of the brain, and was not produced by tobacco, alcohol or amphetamines.

Behavioral scientists and the war

The board of directors of the American Psychological Association, in an unexpected and unprecedented move, has passed a resolution expressing "its profound distress with the continuation of the killing and uprooting of the Indochinese population and the devastation of its society and countryside." The APA represents more than 34,000 psychologists. Seven other organizations, representing more than 65,000 mental health and social work professionals, released last week a statement condemning the escalation of the Vietnam war as psychologically damaging to young Americans. They elaborated on how the model of violence being set by the conduct of the war is being adopted by young people acting in gangs, as assassins and in other individual acts of violence. The statement was signed by spokesmen for the American Orthopsychiatric Association, the Association of Black Social Workers, the Committee of Concerned Psychiatrists, the National Association of Social Workers, the New York Psychological Association, Psychologists for Social Action and the Physicians Forum.

Suicide by automobile crash

International classification standards specifically list "suicide by motor vehicle exhaust gas" but not "suicide by deliberate crashing." Alex D. Pokorny and James D. Smith of Baylor College of Medicine in Houston believe this is a mistake. Using a series of personality scales, informant's reports and detailed studies by police and automotive specialists, the researchers reexamined 28 consecutive auto fatalities. Four of the persons had exhibited a pattern of depression, alcoholism, personal loss or other stresses that tended to predict the forthcoming auto suicide. In each case the person went off for a drive after a particularly severe argument or violent interaction with an emotionally involved partner. The report, to be published in the summer issue of LIFE-THREATENING BEHAVIOR, concludes that perhaps 15 percent of the 55,000 annual auto accident deaths should be reclassified and added onto the 22,000 annual deaths by suicide in the United States.

environment

Regional air pollution

Airline personnel and passengers say that as they fly from remote Western areas either toward the more heavily populated portions of the Midwest or into California, there sometimes appears to be a pall of dirty air all the way across the horizon. The dirty air is not necessarily restricted to any particular city, and it has been theorized that air pollution is becoming region-wide.

Two scientists from the National Oceanic and Atmospheric Administration report they have verified the theory by studying air pollution readings from wide areas. Readings close to the annual maxima for regions have been reported, they say, at points all over the regions—which, in some cases, cover as many as 100,000 square miles, the size of an average state.

Levels of particulates in certain rural areas not particularly near cities, but still not classified as remote, average about half the urban level and about 10 times the remote area level. The same patterns hold for carbon monoxide. Even in the remote areas, there is steadily declining visibility. The region-wide pollution is increasing, says the researchers, D. H. Pack and R. J. List.

Danger of proposed diesel additive

With the possible exception of certain nickel compounds in diesel exhaust, smoky diesel emissions generally are more of a nuisance than a peril. Nonetheless, barium carbonate and sulfonate additives have been proposed for diesel fuel as smoke suppressors.

Emil E. Gutwein, Purdue University doctoral candidate in bionucleonics and environmental health, reports that the barium may be far more harmful than the smoke.

Gutwein piped diluted diesel exhaust from engines using fuel with the barium additives into 14 rats in a chamber. He found that barium was eliminated from the rats' lungs, stomach, gastrointestinal tract and other organs after three days. However, barium remaining in the rats' bodies concentrated in bones, where it persisted during the 24-day test.

He says there is no doubt the barium concentrates in the bone as a direct result of the animals' breathing the diesel fumes. There is no question, he adds, that barium is a highly toxic substance, known to cause respiratory ailments, vomiting, diarrhea and certain kinds of central nervous system disorders.

Three years after the oil spill

Chemist Max Blumer of Woods Hole Oceanographic Institution is probably the pioneer in studies of long-term effects of oil spills, now having done detailed analyses of the 1969 West Falmouth, Mass., marine spill for three years (SN: 3/14/70, p. 263).

Blumer reports that in one sense his work is encouraging. For the most part organisms have been able to resettle the spill area. Hydrocarbons have either been degraded or have decreased in toxicity due to bacterial attack, dissolution, evaporation and chemical attack.

On the other hand, the oil that actually entered organisms persists throughout their lifetimes and probably into further generations. Likewise, the hydrocarbons still remaining in West Falmouth Bay, of which there are considerable amounts, will continue to enter life forms and the marine food chain.