

Joel Greenberg reports from the American Psychiatric Association annual meeting in Toronto

Marijuana harmful to schizophrenics . . .

If all the conflicting reports on the safety, or unsafety, of marijuana were stacked atop one another the pile might rival the World Trade Center towers in stature, if not structural reliability. Among the latest added to the collection is a report on marijuana's influence on schizophrenics.

Darold A. Treffert, director of the Winnebago Mental Health Institute in Winnebago, Wis., reports that "the use of marijuana is a clear hazard" to schizophrenics, "and patients such as these run a risk of exacerbating an otherwise well-controlled illness with marijuana use." Treffert bases his findings on observation over a period of years of four patients with "well-documented" cases of schizophrenia. Each of the patients smoked moderate amounts against psychiatrists' wishes.

All four suffered relapses of certain symptoms, Treffert says. In two cases, he reports, "the relapse and deterioration were prolonged and severe, one case involving serious self-mutilation, and the other, severe aggressive acting out ultimately requiring care in a maximum security setting."

Treffert concludes that "with 500,000 schizophrenic persons in the United States, this special risk of marijuana use to the schizophrenic has obvious and far-reaching implications. While marijuana can apparently be used safely by many persons, this is not so with the schizophrenic."

. . . but what can help them?

Psychiatrists also have disagreed on the ultimate prognosis of schizophrenics. Traditional beliefs that most schizophrenics deteriorate or fail to improve after the initial phase of the disease have been challenged recently by favorable reports on the success of various combination drug/psychotherapy approaches.

Now, a University of Chicago team that retested 60 schizophrenic and 34 nonschizophrenic control patients more than three years after release from Michael Reese Hospital says that the encouraging conclusions of others may be premature.

The group reports that: Schizophrenics functioned more poorly than the others during follow-up, despite the extensive use of psychoactive drugs and therapy; only 15 to 20 percent showed a high level of functioning without relapses, and 62 percent were rehospitalized at least once.

"The results do not agree with casual observations that after treatment one-third of schizophrenics function well, one-third function equivocally and one-third function poorly," the researchers say. "The present data . . . suggest that modern-day schizophrenic prognosis is still a relatively negative one."

Prostitution: Addiction, not option?

Is prostitution addictive? Yes, according to a follow-up study of 22 ex-prostitutes who renounced and abstained from the practice for two years. Between 2 and 7 years, however, 18 of the 22 resumed prostitution, report Sam Janus and Barbara Bess of the New York Medical College. Eight of the women returned to prostitution full time and 10 resumed on a part-time basis. On the basis of four psychological tests, the researchers conclude that "the renunciation of prostitution is temporary" and "there is an obsessive pull toward prostitution." The women are drawn back by "excitement, courtship with danger, and the ability to outwit a client or beat the law. . . . This study reveals that prostitution is not an option, but . . . an addiction."

Coming next: The brain's own Valium

When researchers demonstrated binding of opium drugs to specific sites on brain cell membranes, the race was on to discover natural substances that would also bind and suppress pain. Enkephalins and endorphins were soon identified. Now Danish biochemists Richard F. Squires and Claus Braestrup report in the April 21 *NATURE* specific binding for another important group of drugs. These psychoactive drugs, called benzodiazepines, which include anti-anxiety medicines and hypnotics, seem to attach to receptors on rat brain cell membranes.

The individual drugs' abilities to compete for binding sites correlate with known pharmacological potencies of the drugs. With this result, the researchers sound the challenge for discovery of a natural substance that acts on those same receptors.

New vision test: Owl watches 3-D TV

An owl that wears crazy spectacles while looking at pictures is the vanguard for early detection of vision defects in babies. The bird, like an infant, can't say what it sees. But researchers expect its eyes to track an intriguing image, such as a mouse scampering across the screen.

The owl experiment may lead to a way to test a young child's three-dimensional vision, which depends on the brain's coordinating signals coming from the two eyes. About 5 percent of people lack three-dimensional vision because they failed to develop it in childhood, say John Pettigrew and Mark Konishi of the California Institute of Technology.

Pettigrew and Konishi are training a great horned owl to look at a scrambled image which they plan to project on a television screen. The owl's goggles, which have one red and one green lens, sort the hodgepodge into separate images for each eye. When the images are correctly processed by cells in the brain, the owl will see a scurrying mouse.

Until recently, scientists believed stereoscopic vision was limited to mammals. But a complicated crossover system in the owl's optic pathways brings messages from both eyes to brain cells, Konishi and Pettigrew show. They suggest depth perception enables birds of prey to spot camouflaged victims.

The researchers predict that a human baby could be tested with a technique similar to the bespectacled owl experiment. If the infant's eyes don't follow the expected image, the visual problem may be corrected in time to prevent permanent loss.

A smell is not a taste, even to a fish

In land animals there is no confusion between what is tasted and what is smelled. Taste is the chemical contact sense while smell detects substances wafting through the air. In fish, however, both smells and tastes are triggered by chemicals in the surrounding water. So it is difficult to understand why the two separate senses ever developed.

John Caprio now reports that in catfish the two systems are not redundant. In work done at Florida State University, he recorded the electrical activity of nerve cells in each system. Although in catfish both taste and smell detect amino acids, the gustatory system is most sensitive to alanine and arginine, whereas the sulfur-containing amino acids, cysteine and methionine, are most effective in stimulating the olfactory system, Caprio reports in the April 28 *NATURE*.

The different sensory systems may compartmentalize important influences on a fish's life. Caprio proposes that smell provides information relevant to social behavior, while taste directs feeding. Future experiments should determine whether the selective sensitivity Caprio sees correlates with signals used in communication and chemicals indicating food sources.