Behavior

Women as medical ad victims

Anybody who is bombarded by medical journals knows they're chock full of depressed, anxious, overweight, pained, hypertensive, generally screwed-up females. "Menopausal aftermath" and "Can this hospitalized schizophrenic relate to herself at all?" are typical catch phrases. So psychiatrist Christine McRee and her team at the Dorothea Dix Hospital in Raleigh, N.C., sent questionnaires to 30 psychiatrists to see whether they think medical ads in THE AMERICAN JOURNAL OF PSYCHIATRY downgrade women. The results of the survey are reported in the November issue of AJP.

Forty-five percent of the psychiatrists agree that the ads indeed show sexual bias. Seventy percent thought one of the main reasons for using so many women was to attract the attention of male physicians. However 55 percent thought women were used primarily for these reasons: because 65 percent of the patients all doctors see are women; because women, being in a male-oriented culture, are more vulnerable to illness and, because ads of sick women are less threatening to male physicians. Seventy-four percent felt that the ads indicate that more women than men are mentally ill. However 77 percent of them said they treat just as many mentally ill men as mentally ill women.

"Medical journals . . . have some responsibility toward redirection and evaluation of these influences," McRee and her co-workers conclude.

Depression and the cell membrane

The cell membrane is emerging as critical in obesity, cancer and other diseases (SN: 10/19/74, p. 248). Abnormal cell membranes may also lead to depression, two Philadelphia psychiatrists report in the November AMERICAN JOURNAL OF PSYCHIATRY.

From past experiments, J. Mendels and A. Frazer of the Veterans Administration Hospital had reason to believe that there is a special group of depressed patients whose problem is due to abnormal cell membranes. They decided to test this hypothesis. They found that depressed patients who got relief from lithium also experienced an upsurge of sodium through their cell membranes. But depressed patients who did not get relief did not show much uptake of sodium.

These results suggest that some depressed patients have cell membranes that don't let the right ions through, but lithium can get ions through and reverse depression.

Genes, nutrition and behavior

The effects of early malnutrition on body and brain are pretty well documented (SN: 10/12/74, p. 229). But studies of the effects of early malnutrition on behavior have shown contradictions. The reason may be that results obtained are colored by genetic differences among experimental animals, and by the environments in which they are raised, David A. Blizard and Clark T. Randt of the New York University School of Medicine report in the Oct. 25 NATURE.

The New York City investigators raised two strains of mice in three different environments and on two levels of dietary protein. After that, the mice were given behavioral tests. One strain of mice tended to be upset more by early malnutrition than was the other strain. However the other strain tended to be affected more by its environment. But since each strain was influenced to some degree by both malnutrition and environment, it appears that genes and environment both have a bearing on how early malnutrition affects behavior.

Chemistry

EPA Study: Fibers in the lake

Court battles have raged for five years over allegations that the Reserve Mining Co. at Silver Bay, Minn., is dumping dangerously high amounts of carcinogenic asbestos into Lake Superior. The Environmental Protection Agency is trying to win a suit that would prohibit the dumping, but various scientific disputes have arisen, clouding the issue. Asbestos particles are tiny, and Reserve Mining Co. officials have questioned whether standard analytical methods can be used to assess the asbestos levels accurately.

A new EPA study uses analytical methods (electron microscopy and X-ray diffraction) which the author calls "clearly sufficient" to differentiate between samples from the polluted western shore of the lake and the nonpolluted eastern shore. Environment chemist Billy Fairless of the EPA's regional laboratory in Chicago presented the study at an American Chemical Society meeting in Iowa City last week. Fairless and a large group of EPA scientists sampled and analyzed lake and drinking water in twelve cities on the shores of Lake Superior that use the lake as a source of potable water.

The study shows high concentrations of amphibole asbestos fibers which are a by-product of mining iron-ore-containing taconite, Fairless says, but low concentrations of chrysotile asbestos fibers which are directly mined. The concentrations are highest in Beaver Bay, a few miles south of the plant, and decrease in a counterclockwise direction around the lake. These findings are consistent with the proposal that the western arm of the lake has a counterclockwise current and that the major source of the asbestos is the Reserve Mining Co., Fairless says.

This was the first comprehensive report on the degree and extent of pollution in drinking water from the lake.

Motorboats and marine life

Oil spills are big and messy and have drawn a lot of public and scientific attention. A less dramatic source of pollution in the marine environment is the hydrocarbons leaked by outboard motors. About 10 percent of the oil-fuel mixture is unburned, it is estimated.

Environmental chemists Robert C. Clark Jr. and John S. Finley of the Northwest Fisheries Center in Seattle and Gary G. Gibson of the Oregon Fish Commission's research laboratory in Newport now report on this problem in the November ENVIRONMENTAL SCIENCE AND TECHNOLOGY. They exposed oysters and mussels to water containing about 50 parts per billion of the hydrocarbons and examined the mussels over a 10-day period. The gill tissue of mussels was damaged after only 24 hours of exposure, and although the animals were removed from the polluted water after one day and placed in fresh water for the remaining time, 66 percent died.

Oysters fared a little better; they didn't show gill degeneration until five or ten days of exposure. Fourteen percent of them died during the test period. Oysters can close their shells for long periods of time and apparently exclude some of the hydrocarbons, the researchers state.

Clark says the study is preliminary and can't be projected to natural conditions. Ocean water taken from Puget Sound had concentrations of the hydrocarbons between about two and seven parts per billion, an order of magnitude less than the test water conditions. But, Clark says, the differences are not extreme, and it is conceivable that levels of 50 parts per billion could be approached in closed bays or marinas.