

medical sciences

Inner ear activity during dreams

The start of rapid-eye-movement (REM) sleep in mammals is associated with distinct alterations in physiological processes. People also have their most active dreams during REM sleep. In the Nov. 17 *SCIENCE*, Michael A. Pessah and Howard P. Roffwarg of Montefiore Hospital and Medical Center, Bronx, N.Y., report they have detected activity of the muscle of the middle ear during REM sleep. Such activity has not been detected before.

They measured middle-ear muscle activity while five human subjects were sleeping. They used controls to discriminate between spontaneous ear activity and swallowing, murmuring or snoring, which may alter air pressure in the middle ear. They found spontaneous activity of the middle-ear muscle in every subject in every REM period. About 80 percent of all ear activity occurred during the REM periods. Most intriguing, the Bronx psychiatrists found that REM dreams may contain more auditory images when the middle-ear muscles are active. Such evidence suggests that dream content may be influenced by physiological inputs during dreaming.

Does a slow virus cause multiple sclerosis?

Multiple sclerosis is a slow, progressively debilitating disease of the central nervous system. It is characterized by destruction of the fatty sheaths around nerve fibers in the brain and spinal cord. There is mounting evidence that a slow virus, the paramyxovirus, might cause the disease.

Measles is caused by the paramyxovirus. Antibodies against measles are more prevalent in the spinal fluid of multiple sclerosis patients than in healthy subjects. One group of researchers identified a paramyxovirus in cell cultures from the brain tissue of two multiple sclerosis subjects. In the Nov. 17 *SCIENCE*, John Prineas of the University of Sydney, Australia, reports he has identified paramyxovirus-like particles in brain tissue taken from a multiple sclerosis patient.

A striking feature of Prineas' findings is that the virus-like particles were in cells that were infiltrating areas in which nerve-cell sheaths were being destroyed. This finding suggests that multiple sclerosis may represent transfer of virus-bearing cells, perhaps lymph cells, to the central nervous system.

Herpes virus and "mono"

Efforts continue to link a herpes virus not only with certain cancers (SN: 11/25/72, p. 345) but also with infectious mononucleosis.

Blood tests from mono patients have given evidence of a herpes virus known as the Epstein-Barr (EB) virus. The virus is thought to enter the body by the throat, however, and no one had managed to identify an EB virus in throat cultures from mono patients. In the Nov. 11 *LANCET*, Paul Gerber of the National Institutes of Health and colleagues at some other laboratories report they have now done so.

The throat culture material they took from mono patients transformed human white blood cells into lymphoblasts with unlimited growth potential. The transformed white cells also contained EB virus-specific antigens (cell responses to the virus) and EB DNA (virus genetic material). These findings, the authors conclude, indicate that the throat cultures contained EB virus.

behavioral sciences

Hypervulnerable children

The trend in mental health care in recent years has been away from institutionalization and toward community and family involvement. This may be fine for the patients but dangerous for their families, says E. James Anthony of Washington University School of Medicine in St. Louis. For seven years he has been studying families containing a psychotic parent and comparing them to families in which a parent has either a physical illness or no physical or mental illness at all.

One person in 10 is usually considered a candidate for mental illness. Anthony has found the percentage to be much higher for children living with a psychotic parent. At least 15 percent, he says, become psychotic and another 40 percent eventually show deviant or anti-social behavior. This is a result of being subjected to the delusions of the parent or of being abandoned by the parent. To reduce the hypervulnerability of these children Anthony suggests psychotherapy and corrective measures aimed at "making the self of the child less fuzzy, at clarifying the world of things around him, at increasing his organizational skills, at decreasing his sense of magic and at rendering him altogether less mystified by the crazy behavior of his parent." These methods have been demonstrated to be at least temporarily effective, says Anthony.

Who dislikes welfare

Welfare agencies are among the most criticized of all major social institutions, and an eventual restructuring of those agencies is in the works. A national survey taken by Donald I. Warren of the University of Michigan and Eugene Litwak of Columbia University has found that persons most critical of welfare agencies—whites earning more than \$10,000 a year—are those least likely to have had any personal contact with them.

The researchers polled 1,926 adults on their perceptions of major institutions. Of the whites interviewed, 44 percent of those earning less than \$10,000 opposed the welfare system. The figure jumped to 58 percent when the salary went above \$10,000. Blacks, however, showed a reverse pattern. Of those earning less than \$6,000, 46 percent were critical of welfare institutions. The figure fell to 26 percent when the salary went above \$10,000.

Physicians and psychotherapy

Physicians who have undergone psychotherapy show an increased interest in psychiatry but not an increased rate of psychiatric referral of patients. Researchers at the William A. White Institute of Psychiatry, Psychoanalysis and Psychology in New York questioned 1,156 physicians in an attempt to delineate some characteristics of physicians who had been treated by a psychotherapist. Esther Haar, Maurice R. Green and Lyon Hyams report in the November *ARCHIVES OF GENERAL PSYCHIATRY* that the analyzed physicians had a higher rate of diagnosis of mental disturbance than did their untreated colleagues. They also attended more post-graduate courses in psychiatry and had a greater belief in its efficacy. They did not, however, treat patients with emotional problems more often. They did not find these patients easier to deal with and they did not make more psychiatric referrals.