

PSYCHIATRY

Sleep Lack Causes Illness

Latent psychopathological symptoms may emerge, a scientist has found, by depriving an individual of sleep for an extended period of time.

► **DEPRIVING** a man of his sleep for an extended length of time may contribute to the emergence of significant psychopathological symptoms that might not have become manifest if normal amounts of sleep were provided.

Dr. Louis Jolyon West, head of the department of psychiatry, neurology and behavioral sciences, University of Oklahoma School of Medicine, Oklahoma City, reported the case of a man voluntarily deprived of sleep for 168 hours and 33 minutes to the meeting of the American Medical Association in San Francisco.

The subject was taking part in a radio broadcasting marathon contest and competing for the "title" and a cash prize. The contestants had fairly comfortable quarters with a doctor in attendance who examined each of the contestants twice a day. The participants took 30-minute shifts at the microphone.

Abnormal behavior was noted in the contestant from the fourth day onward. The subject studied began to experience "memory lapses." Broadcasting performance during these memory lapses was not impaired, although they occurred at frequent intervals and for an increasing period of duration until the contest was stopped.

The patient saw a mannequin standing

by a refrigerator at a nearby exhibit and opened the refrigerator door to assist the lady into what he thought was her automobile. During the last two days the contestant became increasingly disorganized, and the broadcasting material was confused, disorganized and rambling.

The contest was finally brought to an end by the attending physician because of progressively psychotic behavior and tremors in the contestant.

Abnormal behavior on the part of the subject studied persisted for a period of many weeks following the seven days of sleep deprivation. Poor financial judgment, increased frequency and severity of "memory lapses" and paranoid ideation were present over a period of three months. It was later discovered that some of these tendencies had been exhibited by the patient previously and were merely latent.

The degree to which sleep deprivation was responsible for the reappearance of paranoid behavior cannot be ascertained, Dr. West said, but loss of sleep was certainly a contributing factor.

Sleep deprivation was one of the methods used by Communist inquisitors in their efforts to obtain the confessions of germ warfare from American flyers during the Korean War.

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body fluids, activation of peptic ulcers, or bone fractures, often associated with cortisone or other steroid drugs.

While these reports indicate the drug may be an important therapeutic agent for the treatment of rheumatoid arthritis, the investigators quickly added that at least one more year of careful observation will be needed to confirm these promising results.

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TECHNOLOGY

Light Chopper Aids Study Of Infrared Radiation

See Front Cover

► A MECHANICAL "light chopper", a device that can cut a beam of light into "pieces" only a few billionths of a second in length, has been developed.

The device can chop both ordinary and infrared light. This, scientists at Westinghouse Research Laboratories, Pittsburgh, Pa., point out, will aid scientists in their studies of fluorescent light, television picture tubes and high-speed photography.

The photograph on the cover of this week's SCIENCE NEWS LETTER shows a thin light beam as it is broken by the device, a six-sided rotating mirror that is surrounded by an arrangement of five stationary mirrors.

Dr. Max Garbun, T. P. Vogl and J. R. Hansen of the Laboratories' electronics and nuclear physics department developed the light chopper.

Science News Letter, July 5, 1958

EDUCATION

Survey Shows College Physics Picture Gloomy

► THE STATE of physics in United States colleges and universities is gloomy and it does not promise to get better.

This is shown by a nationwide survey conducted by the American Institute of Physics, New York, and reported by Dr. Elmer Hutchisson, director of the Institute.

The study, Dr. Hutchisson said, discloses there is a shortage of physics teachers, overloaded teaching schedules and a gloomy outlook for the future which potentially affects 100,000 college students taking one course in physics and 16,000 physics majors and graduate students.

The survey, conducted by the Institute's director of education Dr. William C. Kelly, shows:

1. Only 39 out of 490 colleges and universities with a four-year undergraduate major program in physics answering the survey report that their needs for physics teachers are now being met.

2. Almost half of the 490 colleges and universities said their physics teachers are carrying teaching "overloads."

3. Almost half of the schools answering said their physicists' time for research and other scholarly activities has been "markedly reduced."

4. It is estimated that 688 Ph.D. physicists are needed to correct the shortages in these colleges and universities.

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PHARMACOLOGY

Test Potent Arthritic Drug

A synthetic steroid, hexadecadrol, has been found to be 25 times more potent than hydrocortisone in treating rheumatoid arthritis.

► **PRELIMINARY** reports on a drug that is many times more potent in the treatment of rheumatoid arthritis than the now commonly used drugs, have been presented by two groups of investigators.

The new drug, a synthetic steroid, is called hexadecadrol. It is not, and will not be for some time, available for general use.

Hexadecadrol was described as 25 times more potent than hydrocortisone and six times more potent than prednisone by Dr. Joseph J. Bunim, clinical director of the National Institute of Arthritis and Metabolic Diseases, Bethesda, Md., at the meeting of the American Rheumatism Association in San Francisco.

In addition, Dr. Edward W. Boland of Los Angeles, who conducted clinical studies in patients with rheumatoid arthritis separately with the same drug, stated that "dosage comparison studies made in 21 patients reveal that its average antirheumatic

potency, per milligram, is about eight times greater than that of prednisolone."

The clinical studies indicate hexadecadrol possesses greater anti-inflammatory activity than any corticosteroid now produced, he added.

Dr. Bunim said 16 of 18 patients, previously treated unsuccessfully with other antirheumatic drugs, were treated effectively with the drug. Hexadecadrol brought marked subjective and objective improvement in five patients, moderate improvement in seven and slight improvement in four. In two severe cases, no improvement was noted.

One or another of several minor side effects such as increased sweating, insomnia and transitory skin spots occurred in nine of the 18 patients. However, during the short term test there were no major undesirable side effects, such as high blood pressure, swelling due to accumulation of