Morphine Causes Upsets

Physiology

The physiological reason for the physical and mental misery of a morphine addict when he is suddenly deprived of his "dope" has been sought by a group of Louisville physiologists, who reported on their experiments before the meeting of the Thirteenth International Physiological Congress. The group consists of Doctors H. G. Barbour, B. E. Russel, S. H. Flowers, E. S. Dunham and L. G. Hunter.

An animal to which enough morphine has been administered to make its condition comparable to that of a human addict will have the water distribution in its tissues rather notably disturbed, Dr. Barbour said. There is less than the normal amount of water in the interior organs, such as the liver, kidneys and brain. Conversely, there is an increase in the water content in those organs through which contact is maintained with the outside world, such as the skin, stomach and intestines. The blood also suffers an increase in water content.

But when the accustomed daily doses of morphine were suddenly stopped, a remarkable redistribution of water in the body occurred. The blood, spleen and surface tissues all showed a loss, while the previously water-shy organs became edematous —that is, were gorged with water to an abnormal extent. The animals thus deprived developed trembling fits, a loss of calcium in the blood, disturbed temperature regulation and other physiological disturbances.

The experimenters regarded the edema of the brain—which might be roughly termed a condition of "water on the brain"—as especially significant, in that it might explain the psychological symptoms seen in morphine addicts who have been subjected to too sudden a "cure."

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Laboratory of Death

Physiology

An international organization for the experimental study of death was the proposal put before scientists attending the Thirteenth International Physiological Congress by Dr. Eusebio Adolpho Hernandez of Paris.

The idea was first suggested about a year ago by Prof. A. Kouliabko of Russia, who has made experiments on the human heart that survived 30 hours after death, Dr. Hernandez declared.

"Classical physiology has not approached the question of death in a methodical and direct fashion," he added. Some experiments have been made on the survival of isolated organs but, the physiologist pointed out, "the problem of death is not only the problem of conservation of life. It includes also the preservation of 'consciousness', that is to say, our 'associative memory' ".

It is necessary, he concluded, to coordinate the experiments already made to arrive at a control of the mechanisms of death.

"The experiments are important enough, also," he stated, "from the point of view of surgery and may possibly lead up to the site of origin of the causes of old age. Therefore, we need special centers for the physiological researches of experimental thanatology in which, without explaining the phenomena of life, we may prevent those of death."

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Bean Sauce Has Vitamin

Physiology

Don't scorn the humble bottle of soy bean sauce sitting beside the sugar bowl the next time you eat at a Chinese restaurant. Soy sauce aids digestion, Dr. A. A. Horvath of Princeton told members of the Thirteenth International Physiological Congress.

Soy sauce contains a number of ferments and other substances stimulating to the digestion of starches and protein and the absorption of food generally. The soy bean, which is a universal article of diet in China and other countries of the Orient, is the only seed which contains both water soluble and fat soluble vitamins, Dr. Horvath declared. It has the additional advantage, he pointed out, of containing a rather large proportion of the vitamin that promotes fertility.

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Increase Nerve Sensitivity

Physiology

Mercury injected into the system greatly increases the sensitivity of the autonomic nervous system, the webwork of nerves that controls a large part of the functions of the internal organs. This clue to the action of one of the most dangerous classes of poisonous compounds was supplied by Dr. William Salant of the Cold Spring Harbor Biological Station, who spoke before a meeting of the Thirteenth International Physiological Congress.

Dr. Salant administered doses of mercury salts to anesthetized cats, and tested the nerve action with a slight electric current. The sensitivity of the nerves increased progressively with additional doses up to a certain maximum, and then fell off again.

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Brain Injury and Rage

Physiology

The chronic and uncontrollable rage that is characteristic of some insane patients may be due to a direct mechanical injury to a certain tract in the base of the brain. Experiments on cats pointing in this direction were reported by J. F. Fulton and F. D. Ingraham, of Oxford University, speaking before the Thirteenth International Physiological Congress.

By surgical procedure under anesthesia, lesions were caused in the brain area under investigation. The cats recovered from the operation without difficulty, but they were changed cats. Gentle stroking, which before would send them into an ecstacy of pleased purring, now evoked only signs of the most violent cat-anger: spitting, biting, scratching, and tails like bottle-brushes.

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Glands Take Kidneys' Job

Physiology

The elimination of certain poisons from the system, normally the task of the kidneys, can be imposed on the sweat glands of the skin when the kidneys are afflicted with nephritis, putting them out of commission. At the meeting of the Thirteenth International Physiological Congress Dr. Frederick M. Allen of Morristown, N. J., told of a dry heat treatment he has used on his patients to induce this health-restoring perspiration. Harmful protein compounds are reduced by this means, and abnormal conditions due to the presence of too much water in the body are corrected. Blood pressure is but little affected, but it is necessary to exercise a certain caution in administering the treatment to cardiac patients.

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