PHYSIOLOGY

Eye Movements Tell What Dreams Are About

➤ IF YOUR EYES move up and down while you are asleep, you are dreaming about climbing. If they move from side to side, your dreams are about watching activities on a horizontal plane.

Electrodes attached to the eyelids of sleepers plus interviews when they awakened show this, Drs. William Dement and Nathaniel Kleitman of the University of Chicago reported at the meeting of the Federation of American Societies for Experimental Biology in Atlantic City, N. J.

The average person spends about two hours a night in dreaming. But, however long the dream, he may not be able to recall it when he awakens. If he wakes up within five minutes, he can recall much of the dream, less if he wakes up 15 minutes after dreaming.

Contrary to older ideas that dreams took place almost instantaneously, the Chicago scientists found a single dream can last as long as an hour.

Science News Letter, April 28, 1956

MEDICINE

Pain After Beer May Be Disease Symptom

➤ PAIN after a few swallows of beer, a highball or other alcoholic beverage may be a sign of Hodgkin's disease, Drs. John O. Godden, O. Theron Clagett and Howard A. Andersen of the Mayo Clinic and Foundation, Rochester, Minn., report in the *Journal of the American Medical Association* (April 14).

Even the amount of alcohol in a sherry wine gelatin dessert has been known to bring on this pain.

Hodgkin's disease is normally a painless but progressive enlargement of the lymph nodes, spleen and general lymphoid tissue. Why alcohol should bring on pain in the affected tissues is not known. The fact that it does, however, may lead to diagnosis of the disease when it has otherwise been suspected but not proved.

Alcohol pain is also a test for detecting recurrences of the disease among treated patients.

Science News Letter, April 28, 1956

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MARINE BIOLOGY

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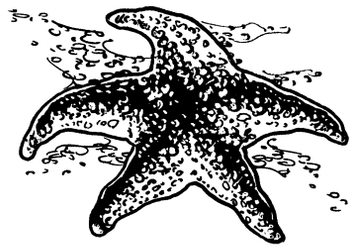

The Many-Sided Starfish

➤ FROM THE SHAPELESS MASS of a sponge colony to the sleek lines of the tuna, inhabitants of the ocean display an almost endless variety of body forms.

Each large group of marine creatures exhibits its own peculiar set of body structures, gained in the experiments of nature to find the best means of survival for animal life under different conditions. Among the members of these larger groups, different families, genera and species may show great differences one from the other.

The starfish, with its familiar star-like form, illustrates how diverse in shape an animal group can become through the process of evolution. In the first place, the general starfish pattern of radiating arms that contain many of the animal's vital organs is unique. Then the variation within the group itself is striking.

How many arms does the starfish have? Well, as you might have supposed, five is the number typical of most species. But among the 1,000 or more species known to science, there are those with from four to 25 arms.

Generally, the arms of a starfish are more or less flattened, but in some species they are almost like round tubes. In some, the arms are long, and the central portion of the starfish appears to be only a point of union for them. But in others, the arms are almost completely joined together along their length, so that their existence can only be told by slight angles found at the outer edges of the starfish. Between these two extremes, many variations in arm length can be found.

Although the starfish is a pleasing, harmless creature to most of us, to the oyster-man he is a serious and costly pest. By wrapping himself around an oyster and exerting tremendous pressure with his arms, a starfish can eventually force open the shell. When the oyster opens up, the starfish inverts his stomach through the crack and digests the oyster while it is still in its shell.

Formerly it was thought that the starfish was merely able to outwait an oyster, applying constant pressure with some of his arms, then switching to others as these tired. But when it was shown that the starfish usually wins his battle long before the oyster should be expected to open, then a theory was advanced that the starfish secretes a type of anesthetic to weaken his prey.

More recently, experiments indicate that starfish can exert steady pressures great enough in themselves to open oysters in fairly short order.

Science News Letter, April 28, 1956

BIOCHEMISTRY

Radiation Antidote

➤ A POSSIBLE ANTIDOTE to atomic radiation injury may exist in a soy bean chemical, Dr. Clarence C. Lushbaugh, Miss Lora B. Hughes and Miss Dorothy B. Hale of University of California's Los Alamos Scientific Laboratory, N. Mex., reported at the meeting of the Federation of American Societies for Experimental Biology in Atlantic City, N. J.

The chemical is known as a trypsin inhibitor and is available commercially.

Its possibility as a remedy for any persons exposed to atomic radiation was suggested by finding that it gave "some apparent protection" to laboratory mice when injected after the mice had been exposed to radiation.

Injecting trypsin itself into laboratory mice before irradiation more than doubled the survival rate of animals exposed to 600 roentgens. A chest X-ray, the scientists said, usually amounts to about one-tenth of a roentgen.

The injections of trypsin, which is an enzyme chemical that destroys protein, caused a natural build-up of the trypsin inhibitor substance that normally is present in the blood stream of animals and man.

Trypsin or a trypsin-like enzyme in the blood helps to dissolve dead and broken cells of the body and invading bacteria. It is kept from dissolving the living tissues themselves by the trypsin inhibitor.

Radiation, the Los Alamos scientists found, destroys the trypsin inhibitor. This lets the cell-dissolving enzyme "run wild," resulting in destruction of healthy living cells.

The experiments, Dr. Lushbaugh said, have led his research team to suppose that one way in which radiation causes death of a cell or an animal is by increasing the rate of purposeless digestion of cell proteins so that the vital functions of various tissues can no longer be carried out, while cell-building processes are slowed down or stopped by the same radiation.

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