CYTOLOGY

Life Secrets Sought In Ameba Reproduction

➤ BY RIGIDLY CONTROLLING the reproduction cycle of the one-celled ameba, scientists at the University of California at Los Angeles hope to unlock some of life's secrets.

Dr. Thomas W. James and associates in the zoology department have found that, by altering daily temperature of the water in which amebas live between 62 and 76 degrees Fahrenheit, the tiny animals will reproduce once a day. The reproduction cycle is then so regular that the scientists can predict with considerable accuracy when one ameba will become two.

As successive generations expand in numbers, some of them may vary in the reproduction cycle by as much as three hours, but the majority closely adhere to the timetable.

"Under these controlled conditions, we may be able to learn the exact proportions of vital chemicals which are necessary to bring about cell division," Dr. James said. "Such information may tell us something about the origin of this process which is characteristic of all living matter. It may also be basic to a better understanding of normal and abnormal tissue growth in human beings."

Science News Letter, September 3, 1955

AGRICULTURE

Onion Matures Early And Resists Fungus

➤ AN ONION that matures early, resists fungus disease and does not form seeds prematurely has been developed jointly by the U. S. Department of Agriculture and the Texas Agricultural Experimental Station in south Texas.

Seeds of the new onion, Early Crystal 281, will be available for commercial planting this fall. It is resistant to pink root fungus and gives a low percentage of splitting.

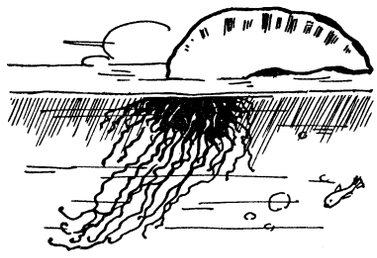
Because of its early maturing feature, it will probably find greatest use as an early marketing crop, with Eclipse onion or similar variety following as the main crop.

Science News Letter, September 3, 1955

MARINE BIOLOGY

NATURE RAMBLINGS

by Horace Loftin



Beehive of the Sea

➤ LOOKING AT the gorgeous hue of a Portuguese man-of-war washed up on a beach by the wind and perhaps still smarting from a sting if you walked barefooted over a tentacle, you might call it a beautiful but dangerous individual.

If you did, you would be wrong.

Handsome it is, and dangerous, for enough of its poison can kill a full grown man. But the Portuguese man-of-war is not an individual! It is a whole colony of different individuals, living together for mutual aid, with each performing its own task for the good of the whole.

Substitute a container of living tissue for the artificially made hive, and you might consider the man-of-war to be a sort of bee colony with its queen, drones and workers each doing their special task.

The colony starts originally from a single jellyfish-like individual, the medusa, which begins to bud off new individuals. But instead of swimming off separately, these remain attached to one another and grow into specialized forms.

The large "sail" that protrudes above the water, containing a gas that keeps the colony afloat, represents one individual. The tentacles, which may extend 60 feet from this float, contain other individuals who "specialize" in feeding, and others who do the stinging for the colony.

Some members of the "hive" are equipped with sensory cells and do the "feeling" for the group, while still another kind are concerned only with reproduction.

The Portuguese man-of-war has no means of locomotion except its gas-filled sail. It can submerge itself, however, by releasing some of the gas from the bladder through a special pore. To come to the surface again, a fresh supply of gas is excreted to refill the sail.

Science News Letter, September 3, 1955

Growing *vegetables* are thirsty plants, drinking up three to nine inches of water a month.

CHEMISTRY

Speed of Sound Used To Analyze Chemicals

➤ THE SPEED of ultrasonic waves measured in alcohols, ethers, esters and other liquid organic chemicals has given scientists a new tool for chemical analysis.

Studies showing a way to calculate molecular weight, surface tension and viscosity, three important properties of any liquid, from the velocity of sound measured in that liquid have been published by Dr. Dudley Thompson, associate professor at Virginia Polytechnic Institute, Blacksburg, Va., and N. N. Bakhshi, research assistant in the department of chemical engineering.

The V.P.I. scientists developed mathematical equations showing direct relationship between these properties while checking general rules, such as that velocity of sound in a liquid increases as the length of the molecule increases, that introduction of a heavier atom into the molecule reduces the velocity of sound, and that ethers and esters transmit sound in the same way.

They hope to develop other definite relationships that will simplify chemical measurement. Qualities hard to measure can then be calculated from the sound measurements, which can be made easily, quickly and accurately. The scientists report their findings in the *Bulletin of the Virginia Polytechnic Institute* (June).

Science News Letter, September 3, 1955

BIOCHEMISTRY

Seek Clues on Artery Hardening from Roaches

➤ COCKROACHES, however distasteful, may some day deserve thanks for aiding scientists find ways to conquer artery hardening and subsequent heart disease.

At the Veterans Administration center, Wood, Wis., cockroaches are being used in studies of cholesterol. This is the fat-like material that deposits in plaques in arterial linings, thickening the walls and narrowing the opening, thus reducing blood flow.

Cockroaches must have cholesterol in their diet for normal growth. They cannot manufacture it in their bodies from simple chemicals as humans can.

In the tests at the Wood Center, the insects are given compounds similar to cholesterol. Some compounds substitute in part for cholesterol to furnish clues to the steps that occur in the natural synthesis of the material.

Other compounds, chemically similar to cholesterol, may act as antagonists to cholesterol and prevent growth even when cholesterol is fed at the same time.

In human beings, such a compound competing with cholesterol might keep cholesterol from being deposited in the arteries, thus preventing arterial hardening.

The study is headed by Dr. Jerre Noland, a VA biochemist.

Science News Letter, September 3, 1955