



Luckless Rodents

"Triune is death  
For the race of the rat,  
Feathered owl, scaled snake,  
And velvet cat."

**T**HUS a well-written bit of verse in the *New York Times*.

The poet might well have extended the list of carnivorous foes of the rodent tribe to include all flesh-eaters big enough to kill an animal from the size of a field-mouse on up. Rats and mice and such small deer have been the food of others beside Tom in Velvet for much more than seven long year; the struggle of the rodent race to survive, to breed faster than it is eaten, has without any question been going on through all the millennia since mammals became differentiated enough to draw a line between hunter and hunted, devourer and devoured. If one were to ask one of the old-time philosophical naturalists, "What is the role of rodents?" the answer might well be, "To furnish food for other animals."

Not one of the gnawing tribe escapes. Cat, owl and snake, as the poet has said, feed on the humble rats and mice; lithe-bodied weasels and their relatives coldly and terribly track squirrels and chipmunks; coyotes live on plains rodents from field-mice up to woodchucks; the crafty fox knows how to set at naught the formidable armament of the porcupine; man, the latest and most dreadful of killers, trapped the beaver nearly to extinction for his fur, and still slaughters rabbits for their meat.

Yet the rodents survive. Theirs is a simple program; breed and feed, and do both steadily and rapidly. And it has worked. By the most pragmatic of all tests, the rodents are "fit" in a world where survival is a terribly difficult job.

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## BIOPHYSICS

# Invisible Radiations From Cells Are Detected by Yeast

**I**NVISIBLE radiations from living cells that stimulate other cells to divide and grow are being detected by a new method by Dr. Dmitry N. Borodin, working at the Boyce Thompson Institute at Yonkers, N. Y.

These radiations, whose very existence is still doubted by many biologists and physicists, seem to be something in the nature of ultraviolet light, with a wavelength about half that of the shortest-wave visible and not monochromatic light. They are so feeble that only the most delicate methods can be used to detect them, and these have required so much skill in manipulation that possible errors in experiment or observation have rendered many results dubious in the eyes of skeptical scientists. "M-Rays," as they are often called, have been recorded thus far from 56 living things. Among these are bacteria, yeasts, plant tissues (mostly roots), fertilized eggs and embryonic tissue of animals, blood, nerve cells, cancer growth and muscles.

Dr. Borodin's method is an effort to simplify the detection of the radiations without losing sensitiveness. In two drops of malt sugar solution he plants a few yeast cells. The drops hang down in a miniature moist chamber formed by a cover glass at the top, a glass ring, and a filter at the bottom, consisting of a crystalline quartz plate or a sheet of cellophane, which are both transparent to short-wave radiations. Under one of these drop cultures in a hollow microscope slide, placed below the filter, he puts living bacteria, or yeast colonies, plant or animal cells or tissues suspected of being capable of sending out the "M-Rays." The other he leaves as it is, as a check or control. Then he puts both in an incubator at a definite constant temperature, to promote rapid growth of the yeast in both drops.

In a definite time, visible colonies of yeast appear in both drops, showing difference in size. They are photographed through a microscope, and the areas of the colonies as they appear on the plates are measured by means of an instrument called the planimeter. Dr. Borodin states that in a long series of these plani-

metric measurements of hanging-drop yeast colonies the ones subjected to the influence emanating from living cells have practically always shown greater growth than their untreated twins kept as controls. The new method of "M-Ray" detection is called planimetric drop culture method.

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## ENGINEERING

## Two Elevators in One Shaft To Relieve Traffic

**A**N ELEVATOR with two cars operated separately in the same shaftway has been built and successfully operated in East Pittsburgh, Pa.

This feat depends on the development of safety devices which prevent the one car from moving when the other is in the way. The upper car is an express serving the upper half of the building and is half way up on its journey before the other is ready to start. The lower car is a local serving the lower floors.

If the lower car tries to rise to collide with the car above or if the express descends too quickly, both mechanical and electrical brakes are brought into play.

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