

stage in the radioactive decay of uranium, this accomplishment should materially aid in the determination of the age of meteorites, and hence of other material in the universe, as soon as the uranium content of the original sample has been ascertained.

Dr. Brown, who was assistant director of the chemistry division at Oak Ridge during the war, stated that the techniques for separation of chemical

isotopes developed as part of the work on atom-bomb production will be highly useful in his researches from here on.

In a book, "Must Destruction Be Our Destiny?" which was published shortly after the atom-bombings of Hiroshima and Nagasaki, Dr. Brown was one of the first to raise the disturbing questions of the relation of atomic energy to world peace that are still being debated in world forums.

*Science News Letter, January 10, 1948*

ZOOLOGY-AAAS

## Killer Trait in Animals

This inherited deadliness to other strains of the same species was discovered in microscopic animals and traced to their possession of the factor Kappa.

► **PEACEFUL**, unaggressive citizens of the microscopic world within a drop of water can be transformed into killers by giving them access to the weapons of slain aggressors of their own species. Not only that, but they can also hand down this acquired killer trait to their descendants.

This sinister situation among invisible animals, which might well be a parable for present times in our more magnified cosmos, is a new discovery by Prof. T. M. Sonneborn of Indiana University, whose earlier work on peculiarly inherited deadliness in the so-called slipper animalcule, paramecium, won him the \$1,000 prize of the American Association for the Advancement of Science a year ago. It was disclosed in a discussion with a group of other zoologists who have been working on the same minute animals.

### Strain Deadly to Own Species

Among slipper animalcules there are strains whose mere presence is deadly to other strains of the same species. This lethal action is due to their possession of a factor called Kappa, or K (for killer). This killer factor is handed down through the generations in the general protoplasm of the cell, not by means of genes in the chromosomes of its nucleus.

Prof. Sonneborn took large numbers of such K-equipped micro-organisms and made a kind of mash of them by squirting them very forcibly through a hollow needle against a plate; into this debris of dead killer-animals he introduced small numbers of non-killers, each in its own individual kit of this witch-brew. They picked up the killer

factor and made it part of themselves, and thereafter they and their descendants were killers.

### Each Carries Killer Factor

In the same discussion, Dr. John R. Preer of the University of Pennsylvania stated that each killer individual carries an armament of between 200 and 800 particles of the killer factor. If a suitably disposed paramecium possesses even a single particle, this particle can multiply itself up to the number necessary to make its owner a killer. Dr. Preer has also measured the size of the deadly particles by means of X-rays. He found that they are larger than genes, more nearly the size of larger filterable virus particles. Dr. Mary L. Austin of Wellesley College added her contribution: a killer individual, to keep the neighborhood unsafe for its fellows, needs to release only one particle of its deadly substance every five hours. One particle is enough to kill an unaggressive neighbor.

### Snapping Shrimp Studied

◀ **DARWINIAN** competition for survival goes on not only among the individual animals but among individual cells in the tissues of the same animal, Dr. Hugh H. Darby of the Carnegie Institution of Washington pointed out. He has demonstrated this in experiments in the re-growth of pieces of claw clipped off the snapping shrimp of gulf waters.

When the shrimp next shed its shell and grew a new one, the replacement-

growth on the partially amputated claw was not as large as it would have been under normal conditions. On the other hand, the other end of the claw, which should have merely remained the same size, became larger. Dr. Darby interprets this as indicating a competition for growth material between the two parts of the same claw.

The snapping shrimp, incidentally, has been in the news already. During the war, the underwater noise made by millions of them snapping their claws together fouled up very badly some of the Navy's sound detectors used in tracking submarines.

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Corn is Mexico's most important crop.

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