

BIOCHEMISTRY

Counter Atomic Radiation

► GOLDEN HAMSTERS lose their fur and it comes back in white instead of golden as a result of radiation damage, Drs. Willie W. Smith, Robert Q. Marston and Leon Gonsbery of the National Institutes of Health, Bethesda, Md., reported at the Radiation Research Society meeting at the State University of Iowa.

The discovery was made in a search for methods of treating radiation sickness such as might affect atom bomb victims surviving the immediate attack but dying a few weeks later.

Infection because of reduced resistance is known to play a part in such deaths. By treating the hamsters with streptomycin, Dr. Smith and associates found they could keep the hamsters alive long enough to see what the heavy radiation does to the body and how it kills when there is no infection. From such studies the next step would be to try methods of counteracting the radiation effect.

Hamsters and mice that survive radiation for seven days can be kept alive for at least 28 days by injection shortly after radiation of a spleen and bone marrow mixture or spleen alone. This is associated with a recovery of white blood cells at that time and consequent prevention or control of infection. By the seventh day after radiation, both mice and hamsters are recovering rapidly whether they had high or low doses of radiation.

During the seventh- to the 28th-day-period was when the hair loss and color change appeared in the hamsters. The animals are also being watched to see whether cancers will develop during this late post-radiation stage.

Science News Letter, July 11, 1953



PROGRESS OF RADIATION DAMAGE—At top is shown a golden hamster shortly after a heavy dose of radiation, the middle view pictures the animal after he has lost his hair, and the bottom photograph shows how the hair has grown in all white. The hamsters are being used in a study at the National Institutes of Health to uncover methods of treating radiation sickness.

PSYCHOLOGY

Dog Can Fail Too Often

► IF AN apparently smart dog stops learning when he is being trained, it is because he has been frightened or has failed too often, Dr. J. P. Scott and Miss Margaret S. Charles of the Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Me., have found.

Their studies were made with beagles, African basenjis, cocker spaniels and wire-haired terriers. These breeds were selected because all can be taught easily and all readily learn some form of hunting.

The behavior of these breeds was tested in different ways to try to learn what it is that makes one dog easier to train than another. Tests of pure intelligence showed little if any differences between the breeds, but differences in temperamental characteristics and physiological traits related to emotions were easy to find.

Of all the domestic animals, dogs have been most highly selected for hereditary

differences and behavior. From their tests the scientists concluded that this selection has largely acted on traits which affect motivation and feelings.

All the dogs seemed to have about the same ability to learn if they could be motivated. The thing that seems to produce differences is the fact that at some point in training the animal stops learning. The kinds of things which stop the animal tend to be lack of success and frightening experiences in the situation.

Direct comparisons with the human situation are not justified, but the work with the animals suggests that a search needs to be made in human beings for measurable traits related to the physiology of emotions which are not greatly subject to environmental change and, therefore, may play an important part in determining how people react.

Science News Letter, July 11, 1953

• RADIO

Saturday, July 18, 1953, 3:15-3:30 p.m. EDT
"Adventures in Science" with Watson Davis, director of Science Service over the CBS Radio Network. Check your local CBS station.

Prof. Edward Smoke, ceramic research specialist, Rutgers Ceramic Research Station, State University of New Jersey, will discuss "New Products From Earthy Materials."

AGRICULTURE

Wheat Protein Content Raised by Leaf Spray

► PROTEIN CONTENT of wheat has been increased from 9% to 17% by spraying nitrogen in solution directly on the leaves of growing wheat, Dr. A. H. Moseman of the U. S. Department of Agriculture told members of the American Home Economics Association meeting in Kansas City, Mo.

Work on spraying fertilizers on leaves is still in the experimental stage, Dr. Moseman cautioned. However, he pointed out, experience has shown that any means of more efficient utilization of nitrogen by wheat usually leads to higher protein yield.

Two new varieties of wheat, Atlas 50 and Atlas 66, are especially efficient users of nitrogen present in the soil. As a result, they show protein percentages two or three points above the best old varieties grown on the same soil and under the same conditions.

There are about 200 varieties of wheat used in the United States, Dr. Moseman said.

Science News Letter, July 11, 1953

DENTISTRY

Dental Association Hits Tooth Paste Claims

► THE AMERICAN Dental Association has announced in Chicago that it will make a "thorough dissection" of the tooth pastes and powders claimed to have anti-caries or other remedial effects.

Those containing chlorophyll, ammonia and urea, antienzymes and antibiotics will, as the layman might put it, be given the works at a special session during the association's convention next September.

"The hucksters' puffs of dental creams and dental powders are deplorable, exasperating and embarrassing" to the 77,000 members of the association who are trying to improve the health of the public and promote the art and science of dentistry, the editor of the association's journal states.

"Many of these puffs and superclaims are on the same low level as those made for discredited cancer cures and arthritis remedies."

No dentifrice offered to the public, the association's council on dental therapeutics has found, has usefulness beyond helping the toothbrush in cleaning the accessible surfaces of the teeth.

Science News Letter, July 11, 1953