

## GENETICS

**Crippled Mice Seen Aid in Muscular Dystrophy**

► CRIPPLED, humpbacked mice may speed the conquest of a crippling, fatal disease of humans, muscular dystrophy.

The mice suffer from the same ailment in hereditary form. They are apparently the first experimental animals of known hereditary background to suffer this particular muscular disease.

They were discovered at the Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Me. This laboratory is world-famous for the standardized inbred strains of mice it supplies to more than 500 research laboratories in the United States and 23 foreign countries.

The dystrophic mice are considered so valuable as a tool for research on this incurable disease that the Muscular Dystrophy Associations of America have granted \$50,000 to Jackson Laboratory for continued study of the strain and production of more muscular dystrophy mice for study at other laboratories.

Discovery of the mice, reported in the *Proceedings of the National Academy of Sciences*, (Dec. 1955), dates back to 1951, when Dr. Elizabeth S. Russell of Jackson Laboratory found a few small, weak-looking animals in her colony of inbred mice of strain 129.

These mice did not leave any descendants, but their relatives frequently produced similar small, weak mice that showed muscular incoordination, then paralysis and humpbacks.

Further study of the mice was made by Dr. Russell, Miss Ann Michelson, who came from Smith College as student apprentice at Jackson Laboratory, Dr. Pinckney J. Harman, visiting investigator from New York University Medical School, New York, and Dr. Leroy C. Stevens Jr. of the Laboratory.

Dr. Stevens transplanted ovaries from dystrophic mice to healthy mice in order to perpetuate the strain for research.

This team succeeded in pinpointing the defect in muscles but not in nerves of mice, which is the characteristic of the disorder in humans. By breeding experiments, they found that in the mice the condition is caused by the direct action of a single mutant autosomal gene. The gene's full recessive expression of 25% is obscured by several factors to a maximal average of 21%.

Science News Letter, January 21, 1956

## BIOLOGY

**Discover Sense Organ in Mosquitoes' Heads**

► MOSQUITOES have more sense than scientists have credited them with up to now, or at least they have more "senses."

Dr. M. F. Day, Australian entomologist presently acting as scientific liaison officer of his nation in Washington, told Science Service that he has discovered a new sense organ in the head of mosquitoes and closely related flies.

The paired organ, located between and just above the antennae, probably has to do with the detection of changes in pressure around the insect, Dr. Day speculated, though this has not been proved yet. Dr. Day suggests the name "tambour organ" for the newly-found structure.

Does the tambour organ increase the mosquito's efficiency in finding and biting humans? Probably not, said Dr. Day, since the mosquito has a battery of well-known sense organs that are quite enough to take care of that matter.

For example, there are organs that detect radiant heat to let the mosquito know it is near warm-blooded prey, there are moisture-detecting and carbon-dioxide-detecting organs, as well as organs of sight and smell.

Assuming the tambour organ detects changes in pressure, how might that benefit the mosquito? It might act something like an air speed indicator for the flying insect, said Dr. Day. The wind pressure encountered while flying at different speeds might be registered by the organ, giving the insect a measure of his speed.

But this is guesswork, the scientist added. Actually the organ is so small and so little studied that there is not much fact to go on. In most of the species in which it is present, it is so small that it cannot be detected externally even with a microscope. Only among some of the very large "daddy-long-legs" flies (Tipulidae) can the organ be spotted relatively easily.

Dr. Day said he has found the tambour organ only among the more primitive of the two sub-orders of two-winged insects (Diptera). The higher group, which includes the common house fly, apparently does not have the organ, and there is nothing quite like it in any other insect group to his knowledge, Dr. Day said.

Dr. Day reported his research in detail in the *Australian Journal of Zoology* (Oct. 1955), while attached to the Commonwealth Scientific and Industrial Research Organization in Canberra.

Science News Letter, January 21, 1956

## MEDICINE

**Moderate Drinking Clumps Red Blood Cells**

► DRINKING, even moderate drinking, alcoholic beverages makes red blood cells stick to each other in clumps, instead of repelling each other to flow separately through the small blood vessels as they do in normal, healthy persons.

The finding, by Dr. Heikki Suomalainen and O. Forsander of the State Alcohol Monopoly research laboratories, Helsinki, Finland, is reported in the *Quarterly Journal of Studies on Alcohol* (Dec., 1955).

Clumping of red blood cells can be injurious, since it can slow the blood stream speed, with consequent decrease in oxygen supply to the tissues. Whether or not the clumping after moderate alcohol drinking is injurious is not stated by the Finnish scientists.

Science News Letter, January 21, 1956

**IN SCIENCE**

## PSYCHOLOGY

**Poorly Adjusted Less Disturbed by Noise**

► YOU MAY think that a loud irritating noise when you are trying to work will drive you crazy, but actually being maladjusted may help you work better if it is noisy.

This was learned in a study of students at the University of Oklahoma conducted by Drs. Edmund V. Mech and Henry Angelino and reported by them to the American Association for the Advancement of Science in Atlanta.

It is only the exceptional person these days who can work free from such noises as the neighbors' radios and televisions, children shrieking at play under the window, blaring auto horns, the blast of exhausts, the crash of fenders, and aircraft flying low overhead.

Some people are irritated or distressed by such noises. Others are not affected.

An experiment showed that a group of students who scored on a personality test as having "low" adjustment worked significantly better in loud noise than did another group with "high" adjustment.

Science News Letter, January 21, 1956

## CHEMISTRY

**Find Fungi That Synthesize Rubber**

► FUNGI that can manufacture rubber have been discovered by a team of scientists with the B. F. Goodrich Company at Brecksville, Ohio.

The scientists report in *Science* (Dec. 30, 1955) that they have isolated and identified rubber in material extracted from species of the fungus organisms *Lactarius* and *Peziza*.

Forms of mixed species of *Lactarius* contained, on a dry-weight basis, 1.7% of a substance that on analysis proved to be cis-polyisoprene, a rubber polymer. Analysis with infra-red light showed the rubber to be nearly identical with that from the Hevea rubber tree.

Rubber extracted from forms of *Peziza* fungi was much tougher than that from *Lactarius*. This rubber is probably cis-polyisoprene, too, they said.

Since fungi are considered offshoots from the algae on the evolutionary family tree, it is probable that some algal species may be synthesizers of rubber, report W. D. Stewart, W. L. Wachtel, J. J. Shipman and J. A. Yanko.

Mr. Stewart and Mr. Wachtel are now with the Atlantic Research Corporation, Alexandria, Va.

Science News Letter, January 21, 1956

# CE FIELDS

## ENTOMOLOGY

### Pakistan Insect Brought To Florida for Pest Control

► AN INSECT from Pakistan has been introduced into Florida in the war against destructive insect pests, reports the U. S. Department of Agriculture.

The newcomer is a lady beetle, *Brumus suturalis*, imported from Pakistan because of its healthy appetite for aphids, mites, some scale insects, mealy bugs and a host of other citrus and vegetable pests.

This lady beetle is one of several beneficial insects turned up by the USDA's insect explorer, George W. Angelet, during a hunt in India and Pakistan in 1953-54. Mr. Angelet is presently in the Far East, looking for natural enemies of an alfalfa-destroying aphid doing serious damage in the southwestern U. S.

So far, 19 batches of *Brumus* have been released in Florida in citrus groves that are not being sprayed with insecticides. Where possible, Temple orange and tangerine groves were selected, as these furnish a better supply of aphids for the lady beetles to feed on while they are becoming acclimated.

The first successful introduction of foreign insects to control pests took place in California in 1888, the USDA said. At that time, the California citrus industry was threatened by the cottony cushion scale, a native of Australia, and growers in despair were preparing to remove their trees. But back in Australia, natural enemies had long kept the scale in check.

The USDA sent an entomologist "down under" to search for these natural enemies. He returned with the most important insect enemy of the scale, and 18 months after its introduction, the beneficial insect had practically cleared California of the scale.

Science News Letter, January 21, 1956

## GENERAL SCIENCE

### Youth Science Hits Record in Interest

► MORE HIGH SCHOOL seniors have shown interest in scientific research careers this year than ever before.

Completed entries in the Fifteenth Annual Science Talent Search for the Westinghouse Science Scholarships hit an all-time high of 3,375, contrasted with 2,575 last year, an increase of 31%.

Number of examinations requested by teachers and school officials for administration in December, 1955, also reached a new high, with 20,828 examinations sent to 2,959 teachers.

Completing the very stiff science aptitude test and finishing the science project that

must be performed and reported are considered to be hurdles in picking the nation's top young scientists. Only one in six of the seniors who planned to enter the Science Talent Search actually completed their entries.

Judges are now selecting 300 finalists from the completed entries. Forty of these, eight girls and 32 boys, will be invited to come to Washington for the Science Talent Institute, March 1 to 5, at which \$11,000 in Westinghouse Science Scholarships will be awarded.

The 40 and an additional 260, who receive honorable mention, will be recommended to the leading colleges, universities and technical institutes of the nation for scholarships. Those who need assistance are awarded scholarships by educational institutions so they may go to college.

All who complete entries in the national contest are recognized by state Science Talent Search committees in 30 states. Many thousands of dollars are awarded by state committees; one typical state, Indiana, provided \$85,000 in scholarships in one year.

Greater awareness by youth of the need for scientific creative ability in the nation's future is credited by Watson Davis, director of SCIENCE SERVICE, as the main cause of the increased participation in the Science Talent Search. Enrollments in high schools have not increased to the extent of interest in science as measured by the Science Talent Search.

The Science Talent Search, an annual affair, is conducted by Science Clubs of America, a SCIENCE SERVICE activity. It is financed by the Westinghouse Educational Foundation.

Science News Letter, January 21, 1956

## PSYCHIATRY

### Suggest Establishing Relaxing Drug Clinics

► RELAXING DRUG clinics for patients who have recovered and been discharged from mental hospitals are needed, Dr. Werner Tuteur and staff psychologist David Lepson of Elgin (Ill.) State Hospital declared at the meeting of the American Association for the Advancement of Science in Atlanta.

A special clinic for such patients who have been discharged from the Elgin institution has already been set up with the aid of Dr. Otto L. Bettag, director of the Illinois Department of Public Welfare, and Dr. Daniel Haffron, superintendent of Elgin State Hospital.

A combination of two tranquilizing drugs, chlorpromazine and reserpine, has been used with considerable success for patients at Elgin. The combination seems to be better than either drug used alone, and less of each can be given.

When the patient goes home, he remains improved because the hospital dispenses these drugs in the necessary combination.

Science News Letter, January 21, 1956

## SURGERY

### Instrument Recorder For Heart Operations

#### See Front Cover

► AN IMPROVED instrument that registers bodily events during heart surgery, and can aid surgeons and anesthesiologists in all operations, has been developed at the National Heart Institute, Bethesda, Md.

In difficult heart surgery, it is often desirable to monitor such delicately balanced variables as a patient's blood pressure and electrocardiogram. Sometimes a sharp drop in blood pressure or a series of abnormal deflections in the electrocardiogram can have vital meaning to the surgeon. Both events, therefore, are watched continuously and simultaneously throughout the operation for warning signs.

The usual device for following both events is a cathode-ray oscilloscope displaying two separate beams, one to trace the blood pressure curve and a second to trace the electrocardiographic curve across the face of the screen. These oscilloscopes are expensive, often bulky, and rather difficult to operate because of an excessive number of controls.

F. W. Noble, Dr. B. R. Boone, N. McC. Garrahan and R. E. Gorman of the National Heart Institute, Public Health Service, U. S. Department of Health, Education, and Welfare have now developed a modification of this instrument that reduces all these disadvantages.

The result is an inexpensive, compact and easily operated electronic switch that makes possible the adaptation of all existing single-beam oscilloscopes to perform like more complex double-beam instruments.

The switching process continues indefinitely, leaving behind two separate and distinct tracings. It is described in *The Journal of Laboratory and Clinical Medicine* (Sept., 1955).

The switching device is shown in use in the photograph on the cover of this week's SCIENCE NEWS LETTER. The electrocardiograph is the top curve and arterial pulse is the bottom curve.

Science News Letter, January 21, 1956

## VIROLOGY

### Virus Diets Include Sugar and Proteins

► INFLUENZA viruses like sugar, even if the sugar is not sweet.

Some other viruses go for vitamins or for metals such as copper.

Many viruses contain fatty chemicals, indicating perhaps a fatty kind of diet.

All viruses need proteins such as those found in the nucleus of every cell.

Virus diet needs were described by Dr. James V. Moulder of the University of Chicago at the meeting of the American Association for the Advancement of Science in Atlanta.

Science News Letter, January 7, 1956