BIOLOGY

## New Crime Detectors Confuse Most Jurors

➤ MOST PERSONS on a jury do not understand the newest methods of scientific crime detection designed to help them decide the fate of the accused.

Many of these new techniques have made it possible to present juries with almost foolproof evidence, Dr. Mary L. Willard, professor of chemistry at the University of Pennsylvania, told members of the American Institute of Biological Sciences meeting in Gainesville, Fla.

As an example, Dr. Willard cited a case in which a tool was used to force open a window.

Samples of paint found on the tool and samples from the window sash were compared scientifically, with a spectrograph, an instrument that takes the "chemical fingerprints" of paint. At the same time, casts of the tool and of the marks on the window frame were made.

"With an ordinary jury," Dr. Willard said, "the casts which are actually put in the hands of the jurors, and fit, will win a case. The spectroscopic data, although better, are difficult to explain in five or ten minutes."

New methods being developed for crime detection include:

Speedier separation of drugs from human tissues.

The use of the X-ray diffraction to identify drugs and poisons found in tissues.

The removal of dried blood after soaking in water.

A new method of blood typing using paper chromatography.

Science News Letter, September 25, 1954

OPHTHALMOLOGY

## Brain Waves Give New Lead to Blindness Cause

➤ DISCOVERY THAT brain waves are likely to be abnormal in patients with the eyesight-destroying disease, glaucoma, was announced by Dr. Edward Hartmann of Paris, France, at the International Congress of Ophthalmology meeting in Washington.

The finding points the way to learning more about this baffling eye disease that is estimated to attack as many as two out of every 100 persons over 40 years old. The disease is characterized by intense pressure within the eyeball.

Emotional disturbance is known to be important in glaucoma. When giving sedatives to calm the glaucoma patients, Dr. Hartmann was impressed by the fact that the glaucoma patients could tolerate quantities of sedatives as large as those needed by epileptic patients.

Since brain wave recordings, called electroencephalograms, have been valuable in learning more about epilepsy, Dr. Hartmann and associates started a brain wave study of their glaucoma patients. The study has just begun, but of 18 patients studied, only two of them have shown normal brain waves.

This suggests that the nervous disturbance in the glaucoma patients is related to the cause of glaucoma, rather than being an effect of it.

In 11 patients who had psychiatric examinations, Dr. Hartmann attempted to correlate the results of these examinations with the brain wave records. There was a certain degree of correspondence, he reported, but the numbers were too small to admit any conclusions.

He thought, however, that a promising field for study had been found and suggested several subjects for research. Among them were changes in the encephalogram after the tension in the eye has been relieved; comparison of data from the tracings of patients with different forms of glaucoma, and correlation of the brain wave tracings with psychiatric data.

Science News Letter, September 25, 1954

PSYCHOLOGY

## Language Viewed as Conditioning Method

➤ THE COMMONLY held idea that the function of language is to transmit ideas or feelings from one mind to another was disputed by Dr. O. Hobart Mowrer of the University of Illinois in his address as retiring president of the American Psychological Association at its meeting in New York.

Instead, Dr. Mowrer said, language serves to connect one idea or meaning with others in the mind of the speaker or of the listener. Thus it is like learning, or what the psychologist calls "conditioning."

Thus, Dr. Mowrer explained, if one man tells another "Tom is a thief," he assumes that his listener knows Tom. Also that the idea of thief or stealing is already part of the listener's knowledge.

What happens as a result of the statement is that the listener's idea of Tom is changed so that he may treat that person differently when next he meets him. He is conditioned to think "thief" when he sees or thinks of Tom.

Science News Letter, September 25, 1954

BIOLOGY

## This Spinach Is He, She or It

➤ THE SEX of a spinach plant can now be changed to be a he, a she or an it.

As a result of breeding and growing experiments, two Purdue University biologists have discovered a method for determining and altering the sex of a spinach plant.

Drs. Jules Janick and E. C. Stevenson described the raising of either all-male or all-female spinach plants to the American Institute of Biological Sciences meeting in Gainesville, Fla.

The breeders were also able to produce a plant of neither sex, but which has both male and female flowers on the same plant.

Science News Letter, September 25, 1954

# IN SCIEN

PATHOLOGY

## Human Throats Have More Than 150 Viruses

➤ MORE THAN 150 viruses have been isolated from human tonsils, throat and eye secretions, and stools by special culturing technique, Drs. R. J. Huebner and W. P. Rowe of the National Institutes of Health, Bethesda, Md., reported at the International Congress of Pathology meeting in Washington.

These viruses have been segregated into six types. One of them has been found in military recruits afflicted with ARD, or acute respiratory disease. Others have been found in patients with sore throat and fever, and in patients with conjunctivitis, or "pink eye."

These viruses may cause the various ailments, but more evidence is needed for proof of this, the scientists said. Infection with these viruses is extremely common in childhood and early adulthood.

Science News Letter, September 25, 1954

GENERAL SCIENCE

## Smyth Resigns From AEC, Libby New Commissioner

➤ DR. HENRY DeWolf Smyth has resigned from the Atomic Energy Commission effective Sept. 30. To succeed him as the lone scientist member of the Commission, President Eisenhower has said he will appoint Dr. Willard F. Libby, professor of chemistry at the University of Chicago's Institute for Nuclear Studies.

Dr. Smyth, author of the famous 1945 report on the atomic bomb, will return to Princeton to take over the newly-created post of chairman of the Board of Scientific and Engineering Research at Princeton University.

Before joining the AEC five years ago, Dr. Smyth was chairman of the physics department at Princeton, and Joseph Henry professor of physics.

When the Atomic Energy Commission voted four to one last June to uphold the security suspension of Dr. J. Robert Oppenheimer, director of the Institute for Advanced Study, Princeton, Dr. Smyth was the lone dissenter. (See SNL, June 26, p. 403, and July 10, p. 19.)

Dr. Libby, who developed the technique of radiocarbon and tritium dating, has been a member of the AEC's General Advisory Committee since 1950. During World War II, he worked with the Manhattan District.

In his letter of resignation to the President, Dr. Smyth said that he hoped atomic weapons will continue to act as "deterrents to war."

Science News Letter, September 25, 1954

# CE FIELDS

HERPETOLOGY

## How Snakes Bear Young Years Later Revealed

➤ JUST HOW female snakes have been able to have young for several years after being separated from their mates has been discovered.

Biologists have long known the snake's ability to reproduce by a technique known as "delayed fertilization." Dr. Wade Fox, assistant professor of anatomy at the Louisiana State School for Medicine, reported the exact methods to the American Institute of Biological Sciences meeting in Gainesville, Fla.

The female snake has specialized organs in her reproductive tract that act as storage spaces for the male sperm cells at body temperature.

The storage receptacles are tiny, multiple-lobed sacs, containing the sperm cells. They are lined up in an orderly fashion, heads facing in the same direction.

"These sacs may in some way supply nourishment for the sperm and thus make possible extreme longevity," Dr. Fox said.

The discovery was made while Dr. Fox was working with garter snakes. Delayed fertilization also occurs in turtles, and it is hoped that now the turtles' secret can be learned and compared to that of the female snake.

Science News Letter, September 25, 1954

PSYCHOLOGY

## Medical School Makes Students More Cynical

➤ THE TRAINING a doctor gets in medical school makes him more cynical. It does not, however, break down the spirit of helpfulness to his fellow man, or humanitarianism, that probably caused him to select this profession.

These conclusions, reported to the American Psychological Association meeting in New York, were based on interviews and tests of practically all the members of the first-year class and the fourth-year class of Yale Medical School.

The fourth-year students were found to be the more cynical in the study made by Dr. Leonard D. Eron of Yale University.

The cynicism of the medical students was demonstrated by their agreement with such statements as the following:

"I think most people would lie to get ahead."

"If you don't look out for yourself, nobody else will."

"People pretend to care more about one another than they really do."

The students showed their humanitarianism by agreement with the following:

"The opportunity to do good work is one of the important aspects to be considered when selecting a vocation."

"If one has the opportunity, he should go out of his way to help another person even at the cost of some self sacrifice."

The fourth-year students are also more anxious than the first-year students, Dr. Eron found, although the differences are not large enough to be statistically significant.

Anxiety is also related to the specialty selected by the student, he observed. The most anxious pick psychiatry; the least anxious want to become surgeons.

Those who have selected psychiatry are also the greatest cynics, but on this scale the baby doctors have the lowest scores.

To nail down these differences as a product of the medical training rather than a dropping out of students with other tendencies, Dr. Eron urges a "longitudinal" study, that is, following up the same individuals from the time they enter medical school until they are ready to enter practice.

Science News Letter, September 25, 1954

PSYCHOLOGY

## Psychology Course No Help to Maladjusted

➤ TAKING A college course in abnormal psychology does not improve significantly the personality adjustment of a student, Dr. Eugene S. Mills of Whittier College, Whittier, Calif., told the American Psychological Association meeting in New York.

The students did gain a freedom in recognizing and discussing their personal problems, however, Dr. Mills found.

The most poorly adjusted students are the ones who make the best grades for the course. This tendency is in contrast to that in a course in European history. In history, the better adjusted students tend to make the better grades.

Science News Letter, September 25, 1954

ASTRONOMY

## Astronomers Will Meet In Moscow in 1958

➤ THE INTERNATIONAL Astronomical Union will meet in Moscow in 1958, subject to a final decision to be made at the next general assembly of world astronomers in Dublin, Aug. 29 to Sept. 5, 1955.

The international astronomical meeting will be held in he United States in 1961 "if the U. S. government could see its way to meet the essential requirement that all competent astronomers who are members of the International Astronomical Union would be welcome." Recently, visas have not been given to some foreign scientists because of the restrictive provisions of the McCarran Act. (See SNL, July 10, p. 24.)

Dr. Otto Struve, University of California astronomer, reports in *Science* (Sept. 10), these decisions made at the astronomical meeting held recently in Belgium.

Science News Letter, September 25, 1954

OPTICS

## Optical Device, Axicon, Eliminates Focusing Need

➤ A NEW kind of optics, which makes possible an unusual sort of lens without definite focal length, is described in the *Journal of the Optical Society of America* (Aug.) by Dr. John H. McLeod of Eastman Kodak Co., Rochester, N. Y., who developed it.

Axicon, meaning axis image, is the term applied to the new class of optical elements. Axicons form a continuous straight line of images from small sources.

The most important axicon is a glass cone. This can be used in a telescope, in which the usual spherical objective is replaced by the cone. This axicon telescope is in focus for targets from a foot or so to infinity without the necessity of moving any parts. It can be used to view simultaneously two or more small sources placed along the line of sight.

Add a source of light and this kind of telescope becomes an autocollimator, which can be used to determine whether a mirror is perpendicular.

A search for a universal-focus lens led to this new class of optical elements.

Science News Letter, September 25, 1954

WILDLIFE

## Arctic Animals Decline in Numbers

➤ A DECLINE in numbers of many species of Arctic animals during recent decades was reported by Prof. R. Sparck of the University of Copenhagen at the Fourth General Assembly of the International Union for the Protection of Nature in Copenhagen.

The decline of a number of species, such as the East Greenland reindeer, the narwhal, white whale and several species of seal, was attributed largely to climatic changes.

Persecution by man was also given as the explanation of the drop in numbers of many species. Indians and Eskimos now have modern rifles and motorboats, and many hitherto inaccessible parts of the Arctic are now within easy reach by airplane.

The walrus is now very rare east of Greenland, Dr. Sparck reported, and in the west of Greenland, the total walrus population probably does not exceed 7,000 to 10,000 animals. (See SNL, Aug. 21, p. 116.)

The hooded seal is thought to have declined by one-third. The number of nesting white-tailed eagles in all Greenland is put at less than 100 and, in the abnormally heavy snows of 1953-54, almost the entire stock of one- and two-year-old musk-oxen are believed to have died.

Since many of these animals wander widely, Dr. Sparck pointed out, effective protection must be an international project.

Science News Letter, September 25, 1954