

## ENTOMOLOGY

**Bees Have Sky Compass To Fly Bee-Line**

► A COMPASS in the sky is the secret of how bees navigate, making the famed "beeline" a byword for straight and true flying.

The compass is polarized light, Dr. Karl von Frisch, Austrian zoologist, reveals in a book "Bees: Their Vision, Chemical Senses, and Language," (Cornell University Press). Bees, with compound eyes of many facets, somehow take their bearings from the planes of polarized light in the sky, the University of Munich professor has discovered.

The book also describes a strange dance by which explorer bees tip off the rest of the hive to a rich source of food.

In this "wagging dance," the bee runs a short distance in a straight line, meanwhile shaking his body from side to side. Then he turns and repeats the process. The number of turns tells how far away the food lies; the direction the bee takes in his dance gives the course in relation to the sun, Dr. von Frisch has found.

Toothpick-shaped organs in the bee's compound eyes apparently enable the insect to find the position of the sun even if it is hidden from direct view, the scientist believes. This organ, called an ommatidium, can measure planes of polarization in light from the sky.

Science News Letter, December 9, 1950

## ANIMAL HUSBANDRY

**Belgian Cows Give More Milk**

► MILK production per cow is higher in Belgium than it is in the United States, according to a Marshall Plan report made for the Belgium Institute for Encouragement of Scientific Research in Industry and Agriculture.

Belgian cows average between 6,500 and 7,000 pounds of milk per year, whereas American cows produce about 5,000 pounds. The butter fat content, however, is lower—about 3.4% compared with 4% in the United States.

A high-producing cow is sometimes milked three times a day in Belgium. Many farms keep an official record of production by a system similar to the dairy herd improvement association method practiced in the United States.

Almost all Belgian cows are of excellent stock, with very few scrub cows, the ECA-sponsored report continued. One of the most popular breeds is a black and white Holstein-Friesian from Holland, which, surprisingly enough, is more common in the area near the French border, far from the Netherlands border.

Another popular breed, similar to the Holstein, but with red and white coloring, is found on many farms in northern Bel-

gium. A third breed is a cross between Holstein and Durham which has been developed for increased meat production. Meat is particularly important in the central, heavily populated region of Belgium.

Most Belgian dairy farms are small, particularly in the northern or Flemish region. The average farm does not exceed more than 15 or 20 acres. Practically none of the farms are restricted solely to dairy production, although milk products account for the largest part of farm income in the country, some 37%.

A large quantity of sterilized milk is produced in Belgium. The milk is bottled and heated to a temperature of 240 degrees Fahrenheit. The product is similar to evaporated milk and will keep indefinitely. One of the reasons for the popularity of sterilized milk is the fact that relatively few homes are equipped with refrigerators. In most homes, the housewives boil all their milk.

Research agencies and farmers are working hard to stamp out animal diseases, especially tuberculosis and Bang's disease.

Science News Letter, December 9, 1950

## PLANT PATHOLOGY

**Serious Oak Wilt Disease Spreads Out from Midwest**

► OAK wilt, one of the most dangerous forest diseases to appear in America since blight swept the continent clear of its chestnuts, has been found in Pennsylvania for the first time.

The disease appeared near the exact geographical center of the state, in a wooded grove about 70 miles northwest of Harrisburg. It was identified by Dr. Charles L. Fergus of Pennsylvania State College and Caleb L. Morris, a state forester.

Caused by a deadly fungus, *Chalara quercina*, oak wilt was first found in 1944 in northern Illinois. The disease has since spread rapidly. Although science still does not know how it is transmitted, in six years it has struck across Illinois, Wisconsin, Minnesota, Iowa, Missouri and Indiana.

It was reported for the first time this year in Arkansas and Ohio. Its appearance in Pennsylvania, however, marks its closest approach to the Atlantic seaboard.

Whatever its manner of travel to a new locality, oak wilt can kill a tree within weeks, and it is causing forest pathologists grave concern. There is no known prevention or cure.

Dr. Fergus and Mr. Morris report that the wilt has apparently been in Pennsylvania "for several years," judging from the condition of the trees they found. They believe it probable that other areas of infection exist in the state.

The task of finding these fester spots will not be easy, they say. There are approximately 15,000,000 acres of forests in Pennsylvania, and about half the trees are oak.

Science News Letter, December 9, 1950

**IN SCIEN**

## ANIMAL HUSBANDRY

**Terramycin Puts Extra Pounds on Pigs**

► TERRAMYCIN, newest of the earth-mold "wonder drugs," can put on an extra pound for every six that a growing pig gains.

The antibiotic was the most effective of four drugs tested as animal feed supplements, Dr. J. H. Brown of Shoemakersville, Pa., and H. G. Luther of Brooklyn, N. Y., reported to the American Society for Animal Production in Chicago.

Checked against a pen of control hogs, the swine which were fed antibiotics with their food gained more weight consistently as they grew to market size. A group fed terramycin gained 18% more weight; streptomycin brought a 15% gain; aureomycin an 11% boost, and penicillin 7%.

Less than a third of an ounce of antibiotic was mixed with each ton of hog feed. Yet this was enough to produce gains in weight as high as 50% over the control pigs during the first weeks of the 16-week experiment.

Why these wonder drugs are effective is still a mystery. The Nutrition Foundation found this year that a tenth to a third more nourishment can be obtained from food if one of the new disease-fighting wonder drugs is taken along with it. This appears to hold true for humans as well as for animals and poultry.

Science News Letter, December 9, 1950

## POMOLOGY

**American Apple Does Not Turn Brown in Air**

► THE AMERICAN people as well as the Germans, (SNL, Nov. 11, p. 308) have a commercial apple whose flesh does not turn brown when exposed to the air. In 1915, the New York State Agricultural Experiment Station introduced the Cortland, an apple derived from a cross between the Ben Davis and the McIntosh.

This apple has a very white flesh that oxidizes very slowly and consequently is used extensively in salads. In fact in New York City it is known as the "salad apple." Although introduced only 35 years ago the Cortland ranks third in importance in New York State and its popularity is on the increase.

In the extensive apple breeding studies of the New York State Agricultural Experiment Station occasional nonoxidizing fruits are noted but unless they possess other attributes essential for a commercial variety they will not be introduced for general trial.

Science News Letter, December 9, 1950

# CE FIELDS

## MEDICINE

### Aureomycin Not a Cure For Influenza Type A

► HOPE that aureomycin, one of the so-called mold remedies, might prove a cure for influenza, is set back by a report to the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION (Dec. 2).

Tried during an epidemic of influenza A at Fort Ord, Calif., last January, patients did not get well any faster than those given penicillin or those given no chemical treatment at all.

In a different situation, with a different influenza virus than the A virus, or with the patients carrying lots of other germs in their noses and throats, which these previously healthy young men did not, aureomycin or some other antibiotic might reduce complications, it is pointed out.

The carefully controlled study is reported by Maj. William G. Thalman, Dr. C. Henry Kempe of San Francisco, Capt. Joseph A. Worrall and Dr. Gordon Meiklejohn of Berkeley, Calif.

Science News Letter, December 9, 1950

## SAFETY

### Retired "Tommies" Bombed In Civil Defense Training

► RETIRED sergeants of the British Army are willingly serving as "live decoys" for civil defense rescue team training, Dr. Herman E. Hilleboe, New York State Commissioner of Health, reported at the conference of State and Territorial Health Officers in Washington, D. C.

Actual fires and destruction of buildings are other features of the extremely real training of civil defense workers in England which Dr. Hilleboe saw on a visit there this fall.

The English method of teaching through actual experience as well as through verbal exercises is one we should follow, he told his fellow health officers.

The army sergeants bury themselves in concrete cells in the basement of the house which is to be blasted. They are made up as if they were injured, so as to give realism to the rescue work. They do not mind the dirt or danger of being bombed as long as they are protected and "find the extra money comes in handy," Dr. Hilleboe reported.

The rescuers go through a three-foot brick wall in a matter of seconds.

After a week of indoctrination, a rescue squad of eight will be alerted in the middle of the night—usually a rainy one. They look out the window and see a brick building being blown up. They have to go out

with their trucks, enter the building and listen for the cries of the injured. This is where the retired army sergeants play their parts. Sometimes trained dogs are used to help find entrapped victims.

Proper construction of shelters is stressed in England. Unless properly constructed, Dr. Hilleboe pointed out, basement shelters may become "tombs" with people left to starve to death in concrete cells with walls three feet thick.

Science News Letter, December 9, 1950

## RADIO

### Now Three-Dimensional Color Television

► THE NEWEST entry in the field of color television is a system which not only produces images in natural color but also in three-dimensional perspectives.

A patent has just been issued for a set which can turn this trick. It was invented by Thornton W. Chew, a U. S. Navy scientist who submitted his patent application just after V-J Day in 1945.

Unlike other color television methods which are based upon spinning color wheels or several electron-beam scanning rays in one set, the new system has a single projection tube with no outside mechanical adapters.

Its screen is a bank of tiny fluorescent strips, with every third strip adapted to produce one of the three primary colors, red, blue or yellow.

A single electron beam scans each color group in split-second succession, synchronized with the transmitter. Because of so-called vision persistence in the human eye, the three images produced in different colors blend to form a single natural color image.

To make certain the pinpoint beam falls on the proper color strip, magnetic lines of force act as guides within the tube. This is the secret of the new system.

Its high point is that it can be used to produce stereoscopic images, a picture seemingly in three dimensions. This is done, the inventor says, by using one color to show the picture taken by one stereoscopic camera, and another color to show the picture from a second camera. Royalty-free rights on the invention, covered by patent 2,529,485, are assigned to the U. S. government.

Science News Letter, December 9, 1950

## CHEMISTRY

### Peppery Chemicals Made in Laboratory

► SOME peppery chemicals have been made in the Quartermaster General Laboratories. They are known chemically as piperazinium salts. They dissolve in water and their pungent taste is like that of the piperine of black pepper. Details of the production of these snappy chemicals are reported in the journal, SCIENCE, (Nov. 24) by Torsten Hasselstrom, Norene E. Kennedy, Clifford E. Balmer and Harold W. Coles.

Science News Letter, December 9, 1950

## AGRICULTURE

### All Time Record Peanut Crop Expected

► PEANUTS, peanuts, peanuts. More peanuts. In fact, the Department of Agriculture reports, there will be enough peanuts grown around the world in 1950 to set an all-time record.

This is despite a lower-than-usual peanut output by U. S. farmers, who reduced their acreage by nine per cent this year at government request. The result was the smallest peanut crop since 1941 in the United States—885,700 tons as compared to 937,900 tons last year.

But in the rest of the world, booming crops were grown to satisfy the demand by humans and livestock for peanuts. All told, the Office of Foreign Agricultural Relations said, peanut production will come close to 11,400,000 tons in the shell this year, the highest on record.

Science News Letter, December 9, 1950

## ENGINEERING

### Sound Measurer May Give Sound-Proof Walls

► SOUND-PROOF walls and ceilings in hotels and apartment houses may result from investigations now under way in Cambridge at the Massachusetts Institute of Technology. Acoustical scientists of its staff have developed a sound-measuring device to record the sound that gets through various types of wall panels.

This pick-up and measuring instrument consists of a microphone to pick up the sound which gets through a panel being tested and an electronic mapping device on which the sound from the microphone is mapped in curved lines to indicate its intensity.

Together with it is employed a special sound-making device to create the noise to be directed through the panel. This sound-maker consists of 256 small loudspeakers mounted close together in 16 rows of 16 speakers each. They are operated electrically, all in unison or some quickly following others. Together they can make as much noise as a battalion of field artillery.

In use, a panel to be tested is mounted in a steel frame and set into one wall of sound-proof concrete test chamber. Noise from the sound-maker is directed against the outside of the panel. The measuring device is on the inside.

The tiny microphone is moved systematically across the face of the panel so that records are obtained of the amount of sound getting through at various positions, including at windows, studding and insulation in the panel. This sound-measuring method was first proposed during World War II by Prof. L. L. Beranek, of the M. I. T. staff, who is largely responsible for the equipment now ready for use in Cambridge, Mass.

Science News Letter, December 9, 1950