

ENTOMOLOGY

Warbling Tells When Bees Are About to Swarm

THE WARBLING of bees in a hive can be used to predict when the colony will swarm some 15 to 25 days before the actual swarming, an English scientist has found.

E. F. Woods of Surrey, England, has developed a method for electronic prediction of swarming in bees based on the sounds they emit. Normal bee sounds range from 100 to 600 cycles per second, within the range of human hearing.

Mr. Woods found that a warble in the range of 225 to 285 cycles per second and a drop of 10 decibels from normal daytime intensity of the sound signaled the approach of swarming. These changes can be detected by electronic means and used to predict future swarming, according to a report in the *Journal of the Acoustical Society of America*, 32:518, 1960.

The device developed and patented by Mr. Woods to do this job is the "Apidictor." There are some 10,000,000 colonies of bees throughout the world, more than half of them in the United States. One method now used to predict imminent swarming is to examine each hive about every ten days from mid-April to mid-July for signs of queen cells.

Science News Letter, May 28, 1960

MEDICINE

Some Tranquilizers May Destroy Animal Tumors

SOME TRANQUILIZERS have been found to increase the blood's natural ability to destroy animal tumors in test-tube experiments.

Dr. Paul Fluss of the Institute of Applied Biology told the American Chemical Society in New York that animal blood serum treated with tranquilizers Compazine and Frenquel halted the growth of ascites (liquid) tumors that had been removed from test animals.

When the treated ascites cells were transplanted into test mice, the mice "seemed to have lost their ability to produce tumors," he said. Untreated cells on the other hand, induced cancer in the animals.

Certain other chemicals, including sugars and urea, seem to decrease the serum's cancer-destroying ability, Dr. Fluss said.

Science News Letter, May 28, 1960

MEDICINE

Too Much Inactivity Bad for Heart Patients

THE STRESS of daily living, now under question as a possible factor in heart disease, may be less harmful to heart patients than enforced inactivity, three New Jersey researchers believe.

Once a cardiac lesion has healed, rest and inactivity do not prolong life. Too much rest is likely to lead to physical and emotional incapacity, Drs. Marvin C. Becker

and Jerome G. Kaufman of Beth Israel Hospital, Newark, N. J., and Wayne Vasey of Rutgers the State University, New Brunswick, N. J., reports in *Circulation*, current issue. The 10,000,000 Americans now afflicted with heart disease will impose a staggering economic burden upon their families and upon Governmental aid funds, unless they can support themselves.

In many cases, the doctors noted, the heart patient's physical problems are more readily solved than the psychological difficulties. The family may be overprotective; the employer may be reluctant to hire the recovered patient, and the community in general may look upon such a person as an invalid. Over-dramatic TV programs and news stories, plus "too restrictive medical counsel," tend to make the patient believe he is more disabled than he really is. This attitude can hinder the patient's recovery.

The doctors conclude that the national economy cannot afford to cross nearly 10,000,000 heart patients off the work list. To prevent such an occurrence, they call for further "education of the public, labor, management, and the physician" in the new concepts of rehabilitation.

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BIOLOGY

3-D Microscope Designed For Biological Research

AN IMPROVEMENT over the conventional stereoscopic microscope has been designed by a team led by Richard Gregory at the Cambridge University Psychological Laboratory. The new 3-D microscope produces a solid looking image and will be displayed for the first time May 23 at the Instruments, Electronics and Automation Exhibition at Olympia, England. Intended for use in biological research, it was made possible by a grant from the Department of Scientific and Industrial Research in London.

Science News Letter, May 28, 1960

DERMATOLOGY

Skin Cancer Caused By Razor Shaving Nicks

A SINGLE RAZOR CUT may result in skin cancer within a month, Dr. Edmund F. Finnerty Jr. of Tufts University Medical School reported to the Pan American Medical Association meeting in Mexico City.

"We have been able to isolate cases of carcinoma of the skin that were caused by a single razor cut. In each case the carcinoma appeared at the exact site of the cut that did not heal but crusted over repeatedly," he said.

Dr. Finnerty said skin cancer is now about 10 times more common than lung cancer.

Each of the 3,500 dermatologists in the United States is now removing about 100 to 200 skin cancers a year, and surgeons and general practitioners are removing hundreds of thousands annually.

For his report, Dr. Finnerty surveyed members of the North American Clinical Dermatologic Society, of which he is secretary.

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IN SCIEN

SURGERY

Clots in Blood Vessels Found Through X-Ray

TWO PHYSICIANS have located clots in the blood vessels of animals' lungs by X-ray and removed them by surgery. This may point to similar techniques for humans.

Dr. William S. Stoney of Vanderbilt University School of Medicine in Nashville, Tenn., described the procedure at the annual meeting of the National Tuberculosis Association and the American Trudeau Society in Los Angeles, Calif.

Pulmonary embolism, resulting from a floating clot, has caused many deaths because it shuts off the flow of blood in a vessel too small to allow its passage. Although only animals have been used so far, the technique of pinpointing clots may be applicable to human beings.

A chemical is injected into the external jugular vein, after which X-ray shows the embolus, or clot, in the circulatory system. Surgical removal before the blood flow is cut off has been successful in 50% of the operations on animals, Dr. Stoney said.

Co-author of the paper was Dr. Jesse E. Adams, also of Vanderbilt University.

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PUBLIC HEALTH

Many Children Under 5 Have Had No Polio Shots

NINETEEN PERCENT of children under five years of age in this country have had no polio vaccine, and 42% of all children in that age group have had less than the three or more shots required. In releasing these estimates, the Public Health Service said that 43% of all paralytic polio cases last year occurred among children under five. Dr. John D. Porterfield, Acting Surgeon General of PHS, warned that paralytic polio will take its heaviest toll this summer among the unvaccinated.

Science News Letter, May 28, 1960

GENETICS

Boy's 69 Chromosomes One-Half Over Normal

THE INSTITUTE of Medical Genetics of the University of Uppsala, Sweden, has reported finding a boy with 69 chromosomes—half again as many as normal. The chromosomes were found in the skin cells of a one-year-old boy who had symptoms of disease in the brain and in the upper part of his body. People usually have 46 chromosomes, 23 from each parent. Geneticists at the Institute believe this is the first time a human triploid, three times 23, has been reported.

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CE FIELDS

MEDICINE

Cigarette Smoking Reduces Lung Power

THE COACH is right, athletes. Smoking reduces lung and breathing capacity, a study, partly supported by the National Heart Institute, Bethesda, Md., shows.

The study indicates certain irritants produced by smoking can lead to chronic infection and permanent damage to the lungs. The researchers conclude that lungs are probably physically changed by smoking.

The study was made in Dallas, Tex., by Dr. Russell H. Wilson and Dr. Robert S. Meador, both of the University of Texas Southwestern Medical School, and Bruce E. Jay and Evelyn Higgins, both of the Veterans Administration Hospital, Dallas. They are reporting details in the *New England Journal of Medicine*, 262:956, 1960.

They studied 14 smokers and 14 non-smokers. These persons were selected from similar backgrounds. They had no significant differences in physical appearance, age or history of disease. The only significant difference reported by the researchers is that one group had smoked a pack or more of cigarettes daily for an average of 18 years and the other group had not smoked at all.

Science News Letter, May 28, 1960

MINING

14-Month Fire War In Mine Described

THE BATTLE against a coal mine fire at Raton, N. M., cost \$750,000, 3,480 man-hours and much effort. It lasted 14 months.

W. K. Dennison Jr., a superintendent for the Kaiser Steel Corp., described the fight at the American Mining Congress in Pittsburgh, Pa. First, he said, air had to be sealed away from the mine fire. Still an estimated 28,000,000 cubic feet of air remained behind the seals.

So 1,300 tons of dry ice was used to produce carbon dioxide to try to smother the fire. Then the air seals were slowly moved toward the fire. Crewmen had to have their own air supplies and lifelines to prevent their being lost in the smoke.

The fire area was then flooded. The area is still sealed from the rest of the mine. The fire area was confined to an area about 400 by 600 feet.

Science News Letter, May 28, 1960

MEDICINE

Staph Carried Home By Newborn Babies

INFANTS IN A HOSPITAL nursery during an outbreak of staphylococcal disease may not immediately fall sick but have a strong chance of becoming ill after they have been taken home. These infant carriers

may also infect their parents and brothers and sisters.

These are the conclusions of Drs. Valerie Hurst and Moses Grossman, faculty members at the University of California Medical Center, San Francisco, who report their work in the *New England Journal of Medicine*, 262:951, 1960.

The study was made 16 months after impetigo, caused by a type of staph that resisted antibiotics, broke out in the Center's nursery. Drs. Hurst and Grossman studied 94 families with infants that had been exposed to the impetigo outbreak. They found that 65% of the families had members who had become carriers of staph or had experienced a staph disease.

Only about half of the babies found to be carriers at the time of the home visit were known to have had the disease strain while in the nursery. Forty-four percent of them had developed staphylococcal disease weeks or even months after discharge from the hospital. Of their 164 brothers and sisters, 12% had experience with disease—19 had boils. Ten of the fathers had contracted carbuncles, abscesses or recurrent boils that appeared to be caused by the nursery infection. Twenty of the mothers had similar experiences.

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METEOROLOGY

Unusual Pressure Rise Recorded in Alaska

A SPECTACULAR pressure rise that occurred during a three-hour period at Yakutat, Alaska, on Dec. 18, 1959, has been reported to the U. S. Weather Bureau.

It may be the "greatest hourly surface pressure rise" not associated with a tropical storm or hurricane ever found, Mac A. Emerson of the Weather Bureau's Anchorage office reports in the *Monthly Weather Review*, 88:18, 1960.

The pressure rise was from 29.30 inches of mercury at 10:55 a.m. Alaskan Standard Time on Dec. 18 to 29.575 inches of mercury three hours later. Yakutat is on the Gulf of Alaska.

The sharp pressure increase was associated with a storm system centered 175 miles west of Annette, Alaska. Meteorologists measure pressures of large air masses in inches of mercury. The standard pressure for mean sea level is 29.92 inches.

Science News Letter, May 28, 1960

PUBLIC HEALTH

Tranquilizers Not For "Lift"

THE DISCOVERER of the tranquilizer Miltown, Dr. Frank M. Berger, president of Wallace Laboratories, told the Brooklyn College of Pharmacy's public health forum in New York that people looking for a lift should not take tranquilizers. In spite of popular opinion, patients feel much worse after taking tranquilizers than before, Dr. Berger said. He added that tranquilizers are useful in treating certain mental illnesses but they are not "happy pills."

Science News Letter, May 28, 1960

MEDICINE

Stopped Heart Started By Inflating Lungs

WHEN A PATIENT'S HEART stops beating on the operating table it may be possible to start it beating again simply by inflating the lungs vigorously with oxygen.

Dr. Jay Jacoby of the Marquette University Medical School told a meeting of the State Medical Society of Wisconsin in Milwaukee, Wis., that for the time being doctors should continue their present resuscitation measures of opening the chest, squeezing the heart rhythmically to restore circulation, and giving artificial respiration through a tube inserted into the windpipe.

However, he said, "the whole idea of treatment for cardiac arrest, or heart stoppage, needs reevaluation."

Dr. Jacoby, formerly on the staff of the Ohio State University Medical School, said he and his colleagues there discovered accidentally that it might not be necessary to open the chest for restarting the heart when asphyxiation is the cause of cardiac arrest.

Experiments with dogs showed that pumping oxygen into the lungs could raise blood pressure, increase the oxygen content of the blood, and circulate the blood a little to bring enough freshened blood to the heart to start it beating again.

Dr. Jacoby said the circulation apparently is caused by the inflated lungs squeezing the heart and large blood vessels. He said he did not recommend the new method for use as yet, since it was still experimental.

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AGRICULTURE

Solar Energy Economical For Drying Grains

FIFTY PERCENT less electricity is used in drying grain by a new solar-heated-air system than by conventional systems, the U. S. Department of Agriculture reported.

The initial experiments were made by Kansas and USDA agricultural engineers. They found that even when the sun shines only 3.5 to 6.5 hours a day, grain containing up to 18% moisture can be dried.

The solar dryer has a plywood sub-floor with air space, a ventilating system and exhaust, an aluminum painted plywood panel, black corrugated sheet metal, and clear plastic. Sun-warmed air circulates down through the heating unit which is covered with clear plastic in the dryer. Air moves under, then up through the corn into the space at the peak of the dryer and is discharged. R. I. Lipper of the Kansas Agricultural Experiment Station and C. P. Davis Jr., of the Agricultural Research Station, who worked on the project, said, "because of faster drying, a solar-heated-air setup will use only about half the electricity needed for moving unheated air."

"Where in-storage drying is used, it is unlikely that any profit can be made by increasing the flow of solar-heated air above that normally recommended for unheated air systems."

Science News Letter, May 28, 1960