ENTOMOLOGY

Wasps Brought From Egypt By Air-Conditioning

THREE flying squadrons of Egyptian wasps recently reached the United States in an air-cooled transport for service as shock-troops against the pink bollworm, a recent invader of North American cottonfields.

These tiny fighters from the banks of the Nile will be the principal offensive weapons used by the U. S. Department of Agriculture to destroy the advance guard of the pink bollworm, the most destructive cotton pest in the world, before it is able to prepare the way for a major invasion of the main Cotton Belt, as yet unpenetrated.

One type of the wasps, which comes from East Africa, was successfully colonized in Egyptian cotton fields, but was unable to withstand the long journey to the United States. Air-conditioning and refrigeration solved the problem, and the present batch reached the Department's insectary in high spirits and ready for a fight, according to C. P. Clausen, director of insect parasite introduction.

Before being turned loose against the bollworm, the wasps will be given time to increase in numbers and build up a formidable army. There have been a number of American-born recruits since the Egyptian detachment landed.

Science News Letter, July 27, 1935

SEISMOLOGY

"Electric Eye" Improves Recording of Earthquakes

A NEW way of making earthquakes write reports of their occurrence in distant parts of the world has been devised by Halley Wolfe of the California Institute of Technology. It combines the advantages of two former systems, and avoids disadvantages that handicap both of them.

Present types of earthquake records are made in two ways. In one an instrument with a heavy pendulum holds a delicate pen-point against a sheet of moving smoked paper, and makes wiggly lines when an earthquake occurs. The advantages of this method are its low cost and its constant visibility; its disadvantage lies in the lower sensitivity caused by the heavy weight.

In the other method a small mirror, mounted on a much lighter, more delicately balanced weight, causes a beam of light to dance back and forth on a sheet of photographic paper when the quake comes. This method has the disadvantages of requiring the use of expensive photographic paper. Furthermore, the only way in which the observer can tell whether a quake has occurred is to remove and develop the recording sheet.

In Mr. Wolfe's new device the mirror-directed beam of light is used, but the photographic paper is omitted. Instead, the beam plays on a photoelectric cell—the "electric eye" of physicists—which sets up a fluctuating current as the beam flickers across it. This electric current, suitably amplified through a vacuum tube hook-up, drives a specially constructed pen which records the waves on a moving sheet of plain white paper.

Mr. Wolfe's apparatus, set up at the seismological laboratory of the Carnegie Institution at Pasadena, has been in successful operation for over a year. Records made by it in ink on paper correspond in exact detail with records of the same earthquakes made by the direct photographic method.

Science News Letter, July 27, 1935

ARCHAEOLOGY

High Culture in Malta Of the New Stone Age

CIVILIZATION of a high order existed on the Mediterranean island of Malta, just south of Sicily, before the human race had learned the use of metals. Recent excavations by Prof. Luigi Ugolini of the University of Rome have disclosed a number of temple ruins, well built, each with several circular and elliptical ground plans, as well as a many-roomed dwelling house, all dating between 6000 and 5000 B.C.

The excellence of the stonemasonry, carved as it all was without the use of metal tools, as well as the good workmanship of the stone axes, knives and sickles, and of the pottery and terracotta images found in the ruins, argues a well-developed, well-ordered civilization that must have stood for many generations when the structures were put up, Prof. Ugolini feels.

To account for so high a civilization as far west as Malta, Prof. Ugolini advances a theory that runs counter to all previously accepted ideas of the origin and progress of civilization. Present theories hold that high cultures arose in the East and moved westward, but the Roman archaeologist believes now that the migration was in the other direction, civilization reaching a high point first in Malta—and possibly in Spain before that—and moving eastward to plant the seeds of the later high cultures of Crete and the Aegean coasts of Greece and Asia Minor.

Science News Letter, July 27, 1935

IN SCIEN

ASTRONOMY-RADIO

Eclipse Veiled by Clouds Studied With the Radio

THE recent moon eclipse improved radio receiving conditions, according to the preliminary results of tests made by Dr. Harlan T. Stetson and T. S. McCaleb of Harvard's Institute of Geographical Exploration.

Continuing comparative tests for subsequent nights after the eclipse are expected to give support to Dr. Stetson's theory that the moonlight affects radio signal intensity.

"It was a novel sensation to observe an astronomical event through clouds by radio methods," Dr. Stetson said. In spite of clouds that obscured the moon visually, the observations of radio signals from Station WBBM, Chicago, were successful, showing improved conditions as the moon entered the earth's shadow.

Science News Letter, July 27, 1935

BACTERIOLOGY

Bacterial "Rockets" Feature Unique Exposition

"ROCKETS" of luminous bacteria, that shine with cold light of their own making, featured a unique bio-luminescent exposition held in Vienna recently, under the direction of the widely known Viennese biologist, Prof. Hans Molisch.

The "rockets" were set off in spiral glass tubes filled with a suspension of luminous bacteria in a nutrient fluid. The ends of the tube were sealed shut, with enough spare space to accommodate a good-sized bubble of air.

When the tube was inverted, the bubble of course rose to the upper end, disturbing the bacteria and exciting them to luminescence.

Recently, as a "stunt," one of Prof. Molisch's students illuminated the great hall in the Paris Oceanographic Institute with a battery of "bacterial lamps." The light was faint, but sufficient to see by.

Over forty species of luminous bacteria are known to science, shining in all colors from deep green to bright yellow. Most of them are found on marine fish.

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CE FIELDS

ENTOMOLOGY

"Geometry" of Bees Is Not Result of Planning

See Front Cover

MATHEMATICAL powers are often ascribed to bees and wasps, in the making of the hexagonal cells of their wax and paper combs. This is a very pretty example of the more naive kind of nature study, but it must be dismissed (however regrettably) as just imagination. Bees and wasps are not architects or even geometricians; their "hexagons" are really squeezed cylinders.

Not often tightly squeezed cylinders at that, as you will see if you inspect a natural honeycomb, or a hornets' nest such as Cornelia Clarke has photographed for the cover of this issue of the SCIENCE NEWS LETTER. Most of the actual cavity openings are approximate circles, inscribed within a hexagon. A little closer inspection will show that the cells are built separately, each as a cylinder, and that they are partly cemented together by looser wefts of tissue between the walls.

A very simple experiment will show how little "planning" is needed to set up an apparent hexagonal structure. Get a few dozen empty tin cans of the same size, or cylindrical cardboard cartons, stack them up loosely on their sides in some kind of a tray, and shake them a little. They will inevitably settle into a hexagonal arrangement. If you put pressure on the pile, the cylinders will become hexagonal prisms. But even in their unsqueezed condition, you will be seeing hexagons in that pile of circles. A honeycomb, then, is partly the effect of simple physical pressure of cell on cell, partly not even that but just optical illusion.

Science News Letter, July 27, 1935

FORESTRY

Airplane Sown Seeds Grow Trees in Untrodden Area

TREES that sprang up from seeds scattered by airplanes are growing today in mountain fastnesses where man has never trodden, according to the reports of Hawaiian foresters. Because some areas in the precipitous volcanic mountains are inaccessible for planting by the usual means, the idea of sowing seeds from airplanes, borrowed from the United States Army, was hit upon.

At the time they were first scattered, it was impossible to determine whether any of the seeds took root, since the area sown could not be reached on foot. Today, however, foresters report that the trees are visible from a distance, particularly such varieties as the African tulips with their vivid scarlet flowers.

This method has been particularly useful in replanting areas on the island of Hawaii devasted by forest fires. According to a report of George McEldowney, forest supervisor for the Hawaiian Sugar Planters' Association on the island of Oahu, trees of the African tulip, Moreton fig, and hutu have been found in the mountains behind Honolulu, growing from plane-scattered seeds.

Dr. H. L. Lyon, a forester of the H. S.P.A., about ten years ago originated the idea of using surplus seed in such a manner. He made several experimental flights in the Maitland-Hagenberger plane "Bird of Paradise," first to fly from the continent to Hawaii.

Science News Letter, July 27, 1935

MEDICINE

Links Hay Fever Treatment With Immunity to Colds

A CURIOUS and still-unexplained relation between hay fever and the common cold which may provide a new method of attack on the latter disease is announced (*New York State Journal of Medicine,* July 15).

Dr. Louis Sternberg of Beth Israel Hospital of New York City has just completed a six-year study of the subject and arrives at the following conclusion:

Sufferers from hay fever in the summer are more susceptible than other people to common colds in winter, BUT when hay fever victims are treated with pollen extract for the affliction they show a greater immunity to colds later on.

"The reason," states Dr. Sternberg, "for this apparent immunity to the infection known as the common cold is not now known. It is presented as a clinical fact that remains to be explained. That those suffering from hay fever or asthma are generally more subject to upper respiratory infections than other individuals is a well known fact, but few among the numerous publications on the 'common cold' have ever mentioned how these colds are influenced by pollen treatment in hay fever subjects."

Science News Letter, July 27, 1935

PHYSIOLOGY

Hormones May Prove to Be Useful to Dairy Industry

HORMONES, products of the ductless glands which are proving valuable aids in medicine, may also be useful in the dairy industry, it now appears. The milk secretion and udder growth of cows are stimulated by certain of these hormones, Dr. C. W. Turner of the Missouri Agricultural Experiment Station has concluded.

The hormones which stimulate the growth of the udder are secreted by the ovary. After these hormones have stimulated the growth of the mammary glands, a second hormone secreted by the pituitary, a tiny structure located at the base of the brain, stimulates the initiation of the secretion of milk.

So well have the various steps of development been learned, that it has been found possible in experimental animals to develop the various stages of growth and finally induce the abundant secretion of normal milk.

Just as the discovery of the hormones, insulin and thyroxin has been found of great value for those whose bodies produce an insufficient amount of these hormones, so the discovery of the action of these hormones stimulating the udder may eventually be used in increasing the milk secretion of animals deficient in milk production, is the belief of Dr. Turner.

Science News Letter, July 27, 1935

MEDICINE

Indian Medicine Man Uses Rum for Anesthetic

SURGICAL procedure by an Indian medicine man in Brazil, surprisingly like that of white doctors in its essentials but with some curious differences in detail, is described by an Austrian scientist, Dr. J. W. Freise, recently returned to Vienna from an exploring trip in the South American jungles.

An Indian hunter was brought in with a broken leg. The medicine man first anesthetized him—with a huge quantity of home-made rum, made from sugarcane juice. Then he set the broken bone, swathing it in the fibers of a native plant. This wrapping he soaked with two kinds of oils, one of which hardened, stiffening the fibers into the equivalent of the surgical cast used in white man's medicine.

Finally the whole set-up was given a protecting covering of bark, and the injured man's friends carried him home.

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