PHYSIOLOGY

Queen Bees Developed On Fertility Vitamin

QUEEN BEES develop their full maternal powers, which make them the mothers of their hives, apparently because they are fed during infancy on food containing the fertility vitamin E. Their young sisters in the brood comb, denied this essential food element, grow up into practically sexless worker bees—"old maid" bees incapable of producing useful offspring even in emergencies.

Indications that this is the case have been obtained by Sir Leonard Hill and E. F. Burdett of the National Institute of Medical Research, London, in experiments reported to *Nature*.

The two English researchers kept female rats on a diet from which the fertility vitamin had been carefully excluded, so that they could not have young. Then they gave some of them minute daily doses of "royal jelly," the substance which is given to the young queen bees in the nursery cells but denied to young worker bees. Other rats were kept without this, as "controls." When mated with the same males, the females receiving the royal jelly produced litters of young, while the deprived rats remained without offspring.

Science News Letter, October 29, 1932

PUBLIC HEALTH

Effect of Depression On Health Will be Felt in Future

DON'T be misled into thinking the health of the country will not be affected by the depression, just because official figures show the present year to have been unusually healthy, warns the American Medical Association.

It is only natural that fatal industrial accidents and breakdowns due to disease unfavorably influenced by industrial employment should be less now when there is less employment, the Association points out. Likewise, enforced rest may possibly enable persons with tuberculosis, heart and kidney diseases and high blood pressure to live longer.

However, the ultimate effects of the depression will be seen in the future. The countries of central Europe are still paying the penalty of malnutrition among their children because of food shortages during war blockades. A similar fate may be in store for America.

"If dentistry is neglected, declares an editorial in the Association's journal, infections, arthritis, rheumatic conditions and heart disease may be expected in the future. Necessary surgical operations are being postponed until the last minute, when it is often too late to save the patient. As a result deaths from appendicitis, cancer, gallbladder disease and hernia will probably increase during coming years. Mental health is also being affected by worry over unemployment and economic insecurity.

"In the long run, no condition of prolonged depression and anxiety can inure to the benefit of the public health."

Science News Letter, October 29, 1932

PHARMACOLOGY

New Drug is Five Times As Powerful as Morphine

A NEW pain-relieving drug which is about five times as potent as morphine without the latter's habit-forming quality was described by Dr. Walter C. Alvarez of the Mayo Clinic at a recent staff meeting of the Clinic in Rochester, Minn.

The new drug is dihydromorphinone hydrochloride. It was developed in Germany in 1926 by the Knoll laboratories but it is only now being brought to the attention of physicians in this country. It is particularly useful for cases of cancer that cannot be operated on. It gives more relief from pain than morphine and prolongs the useful life of the patient, who can be up and working while taking this drug. Of course, it is not a "cure" but it does help the patient by relieving the pain and other symptoms of the last stages of the disease. Dr. Alvarez also suggested that it might be used in treating morphine addiction.

"Occasionally it may be helpful in the treatment of morphinism through its power to relieve distress while the patient is getting a grip on himself," he said.

The drug does not seem to be dangerous, does not produce the pleasurable sensations of morphine and consequently is not habit-forming. In a few persons it has some of morphine's nauseating effect, but to compensate for this it has none of the troublesome costive effect on the intestines.

The new analgesic is made from morphine hydrochloride with the help of a catalytic agent which causes it to combine with water.

Science News Letter, October 29, 1932

IN SCIENC

LIBRARY SCIENCE

Library of Unpublished Manuscripts Founded

SCIENTIFIC manuscripts which cannot be published in full because of hard times are to be assembled in a special library in Halle, Germany. Brief abstracts will be published in the standard scientific journals, each with an announcement that the original has been deposited in the Halle collection. German scientists regard the plan with much interest, and expect it to be extensively used.

Science News Letter, October 29, 1932

CHEMISTRY

Yeast Fed to Cows Multiplies Milk Vitamins

FEEDING COWS on irradiated yeast or other good source of vitamin D increases the vitamin D content of the cows' milk fifteen to thirty times, Drs. J. G. Hardenbergh and L. T. Wilson of the Walker-Gordon Laboratory Company, Inc., at Plainsboro, N. J., reported to the American Public Health Association in Washington.

Milk ordinarily contains only small amounts of vitamin D, but when this is increased by supplementing the cow's ration with a source of vitamin D, the milk acquires the rickets-preventing quality of this vitamin. The amount of vitamin D that must be fed the cows to give their milk rickets-preventing potency has been worked out and found not only not harmful but instead rather beneficial to the animals. The production of such a special milk must be under adequate official supervision to insure reliability, it was stated.

A practical, economical method of irradiating milk directly to give it high potency as a preventive of rickets was described by Dr. G. C. Supplee of the Dry Milk Company research laboratories of Bainbridge, N. Y. The method, which has been used commercially for nearly six years, is based on the application of high energy intensities for not more than sixteen seconds.

Science News Letter, October 29, 1932

E FIELDS

ENTOMOLOGY

Bees "Gang Up" On Insect Murderer

IRATE CITIZENS of a beehive at the Brooklyn Children's Museum recently made short work of an insect thug that had killed two of their fellows and was threatening the lives of others.

The aggressor was a praying mantis, one of the big species that has become established in the New York region as an immigrant from the Orient. Mantises are carnivorous insects, preying on other insects by catching them in their powerful folding forelegs and chewing them up with their powerful jaws.

This particular murderer caught two bees, one in each foreleg, and devoured them at his leisure. Then he made for a third bee nearer the entrance of a hive. Instantly the bees fell upon him by dozens and hundreds, until the angrily buzzing mass was as big as a baseball. Unable to pierce his tough wings, they turned him over on his back. Then they inflicted swift and final punishment with their stings.

Science News Letter, October 29, 1932

MARINE BIOLOGY

American Oysters Mate With Japanese

REGARDLESS of politico-economic differences between the statesmen who eat them, Japanese and American oysters get along most amicably together. They are perfectly compatible in their mating activities, Dr. P. S. Galtsoff and R. O. Smith of the U. S. Bureau of Fisheries have found. The two investigators report their results in *Science*.

Sex in oysters is a quite topsy-turvy affair, from the higher-vertebrate point of view. The same individual is first male, then female. Both sexes discharge their sex cells into the water, and sperm-cells find and fertilize eggs as they float.

Dr. Galtsoff had previously shown that oysters in the female phase could be induced to discharge their eggs by the presence in the water of a small amount of the male sex element. American oysters would not respond to the sperm of any but their own species.

However, Dr. Galstoff and Mr. Smith have now discovered that oysters of a quite different species brought over from Japan supply sperm that stimulates female American oysters; and conversely, sperm from male American oysters causes egg discharge by the female Japanese bivalves.

The two species of oysters not only thus stimulate each other's egg-laying activities, but actual hybridization takes place, the two investigators report. The young hybrid oysters show no higher mortality than control cultures of the uncrossed parent species, and they appear to grow in healthy, normal fashion.

Science News Letter, October 29, 1932

GEOLOGY

Enormous Fuel Deposits Discovered in Germany

GERMANY'S fuel resources have received an important addition through the discovery of deeply buried lignite beds of enormous thickness, in the lower Rhine district. Exploratory deep borings indicate a total area of approximately a thousand square miles, with a maximum thickness of over 500 feet, Dr. Hans Breddin of the Aachen Mining Institute informed a Science Service correspondent. It is estimated that the deposit contains more fuel than the Pennsylvania coal beds, and at least fifty per cent. as much as all the exploitable coal reserve of Great Britain.

Lignite, or "brown coal" is a type of fuel softer than ordinary soft coal. Pressed into briquets, it is by far the most widely used domestic fuel in Germany and is much used under steam boilers as well.

The present open pit lignite mines operated in the lower Rhine region already yield about a fourth of Germany's total lignite output, and they only nibble the edges of the huge deposit described by Dr. Breddin. The present workings have developed where the overlying layers of earth and rock were thinnest. To get at the best of the newfound beds it will be necessary to go through an over-burden as much as 1,500 feet thick, often containing water-bearing strata which will make the job of mining much harder. It will be necessary to organize mining plants on a titanic scale to bring about the most profitable exploitation of the beds.

Science News Letter, October 29, 1932

ENGINEERING

No Big Industry Seen In Steel House Production

IN THE FACE of a virtual epidemic of steel residences springing up all over the country, the U. S. Steel Corporation has decided that the mass production of standardized steel houses will not become a big new industry.

A survey of 56 new systems of steel construction now invading the brick, mortar and lumber industries was made before this conclusion was reached, F. T. Llewellyn, consulting engineer for the Steel Corporation, told the American Institute of Steel Construction at Pittsburgh.

Mr. Llewellyn believes, however, that houses of individual design using standardized steel units will furnish the chief demand for steel for home building. He said the survey showed that conditions attending the construction of residences have very little in common with those fields in which multiple production methods are applicable, such as in the manufacture and marketing of automobiles.

It was announced that a booklet describing new uses for steel in the home is being prepared.

Science News Letter, October 29, 1932

ZOOLOGY

The Owl and The Pussycat Rivals at Mouse-Catching

See Front Cover

ONE of the favorite riddles of childhood was, "Spell 'mousetrap' in three letters"; and the answer was "C-A-T." With even more appropriateness the answer might have been "O-W-L," for the Owl is an even better mousetrap than the Pussycat, besides being somewhat more restrained in the matter of midnight serenades, and not addicted to messing up the place with frequent litters of kittens. Mankind might well look upon owls as special gifts of Providence for the abatement of mice. Owls, on the other hand, might consider men as special gifts of Providence for the building of barns to live in, and the cultivation of grain crops to insure an abundant supply of mice. It all depends on the point of view.

The solemn gentleman portrayed on the cover of this issue of the SCIENCE NEWS LETTER posed for Cornelia Clarke.

Science News Letter, October 29, 1932