

Mosquitoes' Tastes For Food Learned

Entomology

They Like Sweetened Water Better Than Blood

MOST suffering humans have the very natural opinion that mosquitoes do not need any coaxing or compulsion when it comes to eating, but medical entomologists who want to study the ways of the pestiferous insect that carries malaria germs know otherwise.

Anopheles, the malaria mosquito, seems to be quite willing to take an uninvited meal at all sorts of inconvenient times, but turns coy in the laboratory, so that sometimes the malaria patients and uninfected volunteers have to wait for hours before the insect makes up her mind to sink in her bill.

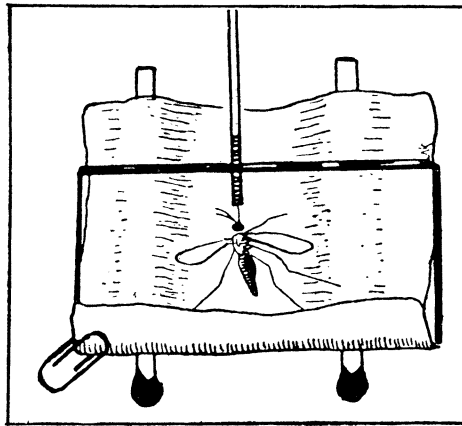
Now, however, two Russian scientists, Drs. N. Kadletz and L. Kusmina, have devised a method for forcibly feeding malaria mosquitoes, so that henceforth much time and many itches may be saved. They report their experiments in the German scientific journal, *Die Umschau*. They imprison a captured mosquito between a slip of thin glass or cellophane and a fold of soft paper, tightly enough to hold her but not so tightly as to break any legs or wings. Then they slip an exceedingly fine glass tube over her proboscis, and by this means feed her on any liquid they wish to try out. In a large percentage of cases the captive mosquito will begin pumping as soon as the liquid comes into contact with her mouthparts.

Can Be Fooled

This forcible feeding method makes it possible to try out many other things besides blood, and thus to study the mosquito's food preferences, her digestive reactions and her susceptibility to various poisons.

One of the first results of the experiments was the interesting discovery that mosquitoes like syrups better than they do blood. In one "run," the insects consented to drink in 90 per cent. of all tries with sweetened water, but took blood in only 48 per cent. This indicates, in the opinion of Drs. Kadletz and Kusmina, that the preferred diet of even female mosquitoes may after all be plant nectars and saps, and that they develop ogreish appetites only on occasion.

Mosquitoes can be fooled, too. Glycerin, which has no food value, ap-



How a mosquito is held while being forcibly fed through a capillary tube.

parently tastes sweet to them just as it does to us, for they drink it as though it were a syrup. But when they do, it does not seem to have the same reaction in the digestive tract, for only the crop, or front part of the tube, becomes filled, whereas when blood or a salty bouillon is fed the whole abdomen swells.

Hibernating Mosquitoes

Tests were made with hibernating mosquitoes. Some of the insects store up fat like bears in summer, and like bears they live on their fat while they doze the winter through. If such hibernating mosquitoes are roused by warming, most of them will refuse to feed, even if their beaks are left in the feeding tube for a long time. But some of them will accept syrup

or blood; and this willingness of a few of the hibernators to take a meal may explain the occasional mysterious attacks of malaria that occur in winter when there are supposedly no mosquitoes around.

When offered unknown fluids, mosquitoes react differently, according to the nature of the stuff in the tube. They can be tricked into drinking poisons, such as formalin, quinine and corrosive alkalies, as if they were ordinary water. But they will not take any kind of ethereal oil, even in the smallest quantity. Syrups which the insects had previously drunk with eagerness were flatly refused when a trace of clove oil was added.

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Esperanto Congress

SCIENTISTS and others interested in the development and use of a universal auxiliary language for international correspondence and meetings will soon gather here for the 22nd Universal Congress of Esperanto to be held in connection with an Esperanto Summer University from August 2 to 9.

Language experts from Paris, Liverpool, Rome, and Budapest will lecture at the summer university on evolution of languages, music, European vocabularies, and special attractions at the congress will be a display of national dances and special theatrical performances.

Language

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No Better Milk From Sun-Bathed Cows

Physiology

SUN-BATHS for cows may have advertising value, but experimental evidence shows that milk from sun-bathed cows does not have the power to prevent rickets, which our enthusiastic belief in sunshine might suggest. A group of scientists at the University of Wisconsin report in a recent journal the findings of a series of experiments which show rather conclusively that "daily exposure of cows to sunlight has little if any effect upon the antirachitic potency of milk."

The flavor and general quality of summer-produced butter has suggested

to scientists as well as to laymen that there may also be a difference in the vitamin value of milk from cows which have been in sunlight and those which have been kept in a barn all the time.

Vitamin D prevents rickets by promoting the formation of calcium phosphate in bones. Animals, both human and otherwise, obtain vitamin D either from food or from the action of sunlight upon their bodies. The source of the vitamin D which the cow puts into her milk is of greatest importance. It is especially necessary that cows get this particular vitamin, since babies are (*Turn to next page*)

so completely dependent upon milk for their supply of this rickets-preventing vitamin.

Early investigators in the field of vitamins were inclined to believe that milk from sun-bathed cows showed greater promotion of bone growth. The stronger evidence, according to the Wisconsin investigators, points to the fact that "well recognized superior quality of summer-produced butter and milk must have its primary origin in other factors than sunlight acting directly upon the cows." The authors state that in all of their experiments "no improvement in milk or butter fat secretion was observed."

Ass and Ostrich Still Wild in Syria

Zoology

THE wild ass and his sons still scamper and bray in the Syrian desert. And wild ostriches still make their nests about the ruins of the once proud Greco-Roman city of Palmyra.

A recent expedition into the Syrian hinterland, sent out by the Hebrew University of Jerusalem, has determined that these animals still exist, and has brought back to headquarters a number of other species new to science. The scientific personnel of the expedition consisted of I. Aharoni, zoologist, M. Zohary, botanist, Miss F. Eckmann, parasitologist, and George Halil Tahan, hunter.

It was found that although the wild ass, mentioned in the Bible, has become extinct over a large part of his former range, he may still be found on a long, narrow strip of territory stretching from Mosul toward Persia.

The Syrian ostrich was seen in the vicinity of Palmyra, and three of its eggs were purchased from an Arab. They were smaller than other ostrich eggs, and Mr. Aharoni is of the opinion that the birds may turn out to be a distinct subspecies.

Another prize brought back by the expedition consists of two fine skeletons of the cheetah, or hunting leopard. This animal is domesticated and used like a hunting dog in some parts of Asia, but these particular specimens were hunting "on their own" too near a flock of sheep. They were shot by a French official of the Syrian mandate, M. Paul Clerc, and presented by him to the Hebrew University.

Many smaller animals were observed and collected. Of one rare species, the Syrian squirrel, three living and thirteen dead specimens were

E. M. Luce, another scientist working in this field, is quoted by the authors as concluding from experiments that any antirachitic properties of milk depended not upon the amount of sunlight the cows had, but upon their diet. This knowledge is of vital importance to the owners of dairy herds, especially those whose dairies supply the milk for thousands of city children, whose chance at sunlight is pretty small.

It is not sufficient that cows have sunlight. They must be fed rations which contain vitamin D ready made, in order that their milk may keep children from having rickets.

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brought in. This little animal seems to be a communist, for colonies of five or six of them will store nuts and other food supplies in a common cache in a hollow tree.

Small birds were also investigated by the expedition. One occurrence vividly illustrated the literal accuracy of the verse in the Book of Proverbs: "The eye that mocketh at his father . . . the ravens of the valley shall pluck it out." A wounded magpie had been captured, and was placed near an owl, also injured. The magpie promptly tried to pluck out the owl's

eyes. Mr. Aharoni states that this bird always attacks the eyes first.

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Sugar for Asthma

A NEW method for treating asthma which makes use of sugar, has just been reported.

Dr. Arnold Osman, medical assistant, Guy's Hospital, London, has been able to render children free from asthma by simply adding sugar to the diet without any other treatment.

He has recently described four typical cases of bronchial asthma which have been treated in this way and have been free from attacks for periods of one to two and a half years. The sugar was administered in the form of glucose in lemonade three times daily in between meals, and extra cane sugar was also given at meal times. In each case there was marked improvement in the general health and spirits as well as complete disappearance of the asthma. Unfortunately this simple remedy is of no use in adult cases of asthma.

In view of the supposed connection between eczema and asthma in children, Dr. Osman tried the effect of sugar treatment in cases of infantile eczema. Here again it was beneficial. Glucose added to the feeds or given in lemonade rapidly cured infantile eczema.

Medicine

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820-lb. Meteorite Falls in Arkansas

Astronomy

AN 820 pound stony meteorite that fell a few months ago near Paragould, Ark., is the largest meteoric stone whose fall was observed and which has been recovered intact, announces Dr. C. C. Wylie, professor of astronomy at the University of Iowa, in an article in the forthcoming issue of *Science*. The large stone is now in the Field Museum in Chicago.

When it fell it seemed to burst into three pieces, at a height of about five miles. A second piece, weighing about 80 pounds, has been recovered, and Dr. Wylie suggests that a third piece may yet be discovered.

The large stone struck in a pasture and went down in rather stiff clay to a depth of a little over eight feet, he says. When the meteorite burst, it produced an explosion heard over a great area, while at points hundreds of miles distant it was interpreted as an airplane accident.

The only larger stone meteorite was

one that fell at an unknown date at Long Island, Kansas. This one weighed more than 1,200 pounds, but it broke upon striking on a rocky ledge.

Many iron meteorites are known which are much larger. The biggest in a museum is one which Peary discovered in Greenland. It is now in the American Museum of Natural History in New York and weighs 36½ tons. A still larger one was discovered a few years ago in South Africa, but has not been removed from the site of its fall. Still larger, probably, was a meteorite, or, more likely, a swarm of them that fell in Siberia in 1908 and produced an air wave that was recorded on a sensitive barometer in England. The famous Meteor Crater in Arizona, about a mile across, is also supposed to have been caused by a huge meteorite or meteoric swarm which fell several thousand years ago.

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