



Pampered, But Not Pets

► GRASSHOPPERS live on a luxury diet compounded of dried brewers' yeast, skim milk powder and alfalfa meal, in cages in the laboratory of Dr. Mykola H. Haydak at the University Farm of the University of Minnesota. Their food is served up in appropriate little dishes, made by prying the cork liners out of crimped caps from soft drink bottles. Water is supplied in little vials with cotton plugs, at which the little 'hoppers suck.

All this doesn't mean that Dr. Haydak is so fond of grasshoppers that he keeps them for pets. Far from it: they are the destined victims of tests of the relative deadliness of various kinds of insect poisons. He finds it easier and cheaper to rear his insect "guinea pigs" from eggs found in the soil than to go out and capture them in the wild.

Some of the grasshoppers were permitted to live out their full life span unmolested in the cages. Under constant indoor conditions, with electric light as their "sun" a large part of the time, the first deaths of adults occurred 45 days after hatching, and 43 days later half of the adults were dead. The last insect, a male, died on October 26 at the approximate age of 152 days.

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Each potato seed piece should contain at least one vigorous eye and weigh over an ounce.

Hatcheries reported the number of chicks on order March 1 to be 77% greater than last year.

Most textile fabrics can be made fire-resistant by rinsing in a gallon of water and one pound of ammonium sulfamate.

NUTRITION

Gluten Makes Bread

It is the gluten in wheat flour that makes it better for bread than any other cereal. Glutens hold ingredients together.

► THANK the gluten in wheat for the quality of our daily bread, Dr. John C. Baker, chief chemist of Wallace & Tierman Co., Newark, N. J., told the American Association of Cereal Chemists.

"Gluten gives wheat flour the remarkable property of bread making shown by no other cereal. The properties of the gluten control the characteristics of the bread," he said.

Gluten separated from wheat flour "is a material that is like unvulcanized rubber, particularly like heated unvulcanized rubber, which when stretched and released does not spring back to its original position."

Dr. Baker reported on extensive laboratory studies made under his direction on the effect of oxidizing agents upon the baking properties of flour.

The glutens hold the ingredients together in the dough. They must possess strength.

"One can take a gluten and increase its strength by thorough washing or by fermentation with yeast or by manipulation in an oxidizing agent, the effects in all cases reaching the same maximum," the speaker continued. "This indicates that the materials which are responsible for the change in gluten properties by washing and fermentation or oxidation are to be found in the water soluble portion of the flour extract and point to it as a profitable problem of research."

The greatest perfection in the bread making art, Dr. Baker pointed out, is to obtain a loaf in which the crumb or soft inner part contains "the maximum number of cells arranged in the most uniform bubble structure. The object of bread making . . . is to produce the maximum number of small bubbles in the dough and to retain them or renew them throughout the bread making process."

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RESOURCES

Few Women Training

► QUALIFIED women are failing to take advantage of the free scientific training now being offered throughout the country. This charge was made by George W. Bailey, of the Office of Scientific Research and Development, at a conference in Washington held by the Institute of Women's Professional Relations.

Scientifically trained women, particularly physicists, are urgently needed to replace men leaving for the armed forces. Women already adequately trained are known to be scarce, but women are not enrolling in sufficient numbers in the tuition-free courses to meet the present demand, Mr. Bailey asserted. Today only 22%, or 118,000 out of 900,000 of those taking the engineering, science, management war training courses, are women.

Too few women seem aware of the widespread opportunities for scientific training and they appear reluctant to tackle technical subjects, he continued.

A number of fields are being opened

to women for the first time. The U. S. Weather Bureau is offering training courses in meteorology. The Civil Aero-

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navics Administration is paying women in training for specific technical jobs. Some industrial concerns are even giving nominal salaries to women while they are being educated in first-rank engineering colleges.

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METALLURGY

New Method Reported For Silver-Plating Magnesium

➤ SILVERPLATING objects made of magnesium by the electroplating method presents many difficulties which perhaps may now be overcome by new processes. After the war magnesium will probably be used very widely on appliances in common use, as the manufacture of magnesium has very greatly increased as a war measure. It is lighter than aluminum and can be used for many of the same purposes.

Magnesium is a white, lustrous metal, the lightest of metals in common use. Large pieces oxidize superficially and it is sometimes desirable to protect household articles with silver.

A method by which silver can be electroplated on magnesium was given at Pittsburgh by Francis J. Bowen and L. I. Gilbertson, of Washington State College, at the meeting of the Electrochemical Society. These men collaborated in the development of the process.

The magnesium must be brought to a bright finish before electroplating. This can be done with fine emery paper, followed by a cloth-covered wheel. It is then cleaned in a bath containing sodium carbonate, tri-sodium phosphate, sodium hydroxide and ammonium lauryl sulfate.

The electrolytic bath contained silver cyanide, potassium cyanide and boric acid. The silver electro deposited on magnesium by this treatment was in the form of white, smooth, hard, adherent silver films.

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MEDICINE

Drug Being Sought

Important part of war effort is work in many laboratories to find more effective drug against the venereal diseases.

➤ A HIGHLY important but little known part of the medical war effort is the intensive work now in progress in many laboratories throughout the United States to find a more effective and more acceptable prophylactic drug against the five venereal diseases, syphilis, gonorrhea, chancroid, lymphogranuloma venereum and granuloma inguinale.

The scope and urgency of the problem were reported by Dr. Geoffrey Rake, of the Squibb Institute for Medical Research, at the meeting of the New York Bacteriologists' War Research Projects Group.

"Although the rate of new infections with venereal disease in the armed services of the United States, 4%, is the lowest rate in our military history, there are reasons for concern," Dr. Rake stated, "for this rate is three and one-half times the civilian rate.

"It will result in the loss of some 8,000,000 man-days a year and it may be expected to increase unless active measures are taken to prevent it.

"Added to this is the fact that the distribution of our armed forces throughout the world and particularly in the tropical and subtropical zones will mean an increase particularly in those venereal diseases, lymphogranuloma venereum, chancroid and granuloma inguinale, about which least is known from the prophylactic point of view."

Present methods of prophylaxis, if properly applied, are probably efficacious against gonorrhea and maybe against syphilis, but are of unknown value so far as the other three venereal diseases

are concerned, Dr. Rake said. Even with regard to syphilis and gonorrhea, however, many improvements are urgently needed, for example, to provide more effective penetration of the drug into the infected tissues and to make the prophylactic easier to use.

Disinfection Needs Further Study

Disinfection, of utmost importance in protecting health in military and civilian life, needs further study to bring about more satisfactory practical application, the bacteriologists were told by Dr. M. L. Isaacs, of Yeshiva College.

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GEOLOGY

Great Magnesium Source In Nevada Deposit

➤ MAGNESIUM in major quantities, for the war effort and for the light-metal era that will come after the war, can be obtained from an immense deposit of dolomite near Las Vegas, Nev., in the Boulder Dam area, the U. S. Bureau of Mines declares. Bureau chemists state that they have developed a process for converting the dolomite (a magnesium-containing limestone) into magnesia, and also an electrolytic method for extracting the pure magnesium from the latter compound.

Sufficient engineering data are already in hand, the chemists added, to justify the erection of a small commercial-scale plant to process the dolomite and thus pave the way for full development of the great beds by private industry. One privately owned plant already operating in the vicinity is using magnesite that has been hauled more than 1,000 miles by a roundabout route from another dolomite deposit in Nevada, and it is believed that the expense and delays thus involved might be obviated through the development of magnesite-producing establishments at the Las Vegas site, where total available dolomite amounts to an estimated 400,000 tons.

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