

## MILK-FED BLUEBERRIES THRIVE IN U. S. GARDENS

Milk-fed blueberries will probably figure along with milk-fed pullets on restaurant bills of fare before long. In the greenhouses of the U. S. Department of Agriculture Dr. F. V. Coville, expert on blueberries and other acid-soil plants, has been experimenting with buttermilk and sour milk as fertilizers, and he finds that they work very well.

Some years ago Dr. Coville showed the world how to put blueberry culture on a regular, profitable farming basis, by seeing that they got acid soils in which to grow, instead of the neutral or slightly alkaline soils demanded by most crops. The question of a nitrogen-bearing fertilizer, which all plants must have, still remained, for acid soils are notoriously poor in nitrogen and somehow seem to resist the application of the ordinary kinds of nitrate fertilizers.

Milk, Dr. Coville reflected, is rich in nitrogen compounds, and buttermilk, sour milk, whey and similar acidulous dairy products are rather a drug on the market. So he tried those various nitrogen-bearing milk products on a lot of young blueberry bushes, as well as on some azaleas and a few other similar plants that naturally thrive in sour soils.

The results of his experiment, reported in a recent issue of Science, are a striking confirmation of his initial theory. The bushes, which are as yet too small to bear a crop, pushed along their growth in a most astonishing fashion, outstripping companion plants left without milk by a good third in length of stem, and producing larger, greener, healthier-looking leaves.

Apparently, however, there can be too much of a good thing. One lot of bushes was given a heavy overdose of whey, and showed definite signs of ill health. This Dr. Coville attributes to too much acid; for bushes on a smaller ration of whey thrived very well.

Dr. Coville concludes that if further experiments bear out the first results, there is an excellent prospect of using dairy materials now largely wasted or sold at low figures to encourage the young and pushing industry of blueberry culture and to help along the growth of rhododendrons, azaleas and similar ornamental plants.

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## RATS SLAUGHTERED WHOLESALE BY COLLOIDAL ARSENIC POISON

The Mellon Institute of Pittsburgh boasts of the presence on its campus of a veritable Pied Piper of Pittsburgh; for Dr. Oscar F. Hedenburg, holder of one of its industrial fellowships, has worked out a new method of using an old poison that promises to wipe out rats and mice in the wholesale fashion related by Browning in his famous poem.

In his search for the most efficient means for cleaning out rodent pests Dr. Hedenburg tried numerous unusual poisonous compounds, but finally came back to the old favorite white arsenic, or arsenious oxide, known since the days of the Borgias. He found, however, that the ordinary commercial product is too uncertain in its action, and that rats could sometimes swallow what should be killing doses and only

get fat on them. The trouble seemed to be that the ordinary white arsenic was not ground fine enough, and that it would not dissolve satisfactorily in water. But when he ground it in water containing an organic colloid substance, like gum arabic or glue, the arsenic was reduced to an almost impalpable fineness - became, in fact, a colloid itself.

In this condition it was extremely effective and almost incredibly rapid. A bait containing one two-hundredth of an ounce killed a rat in thirty minutes, whereas the same dose of ordinary arsenic required twenty-four hours for fatal effect.

A large-scale test was made on a dump where scores of big rats fattened. Two pounds of poisoned bait was distributed, and many rats were seen carrying it off. Ten days later only a couple of rodents were left out of the whole population.

Dr. Hedenburg suggests that when his discovery is put into regular use and marketed, it may be put up into tubes as a paste, to make for economy in use, and that for safety's sake the paste should be colored blue.

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#### WATER GAS MAY BE NEW SOURCE OF GASOLINE

Water gas, which forms a part of most city gas, and is obtained by passing steam over hot coke, may become an important source of gasoline in the future. This is indicated by experiments of Prof. Franz Fischer and his assistants working at the Kaiser Wilhelm Research Institute for Coal Products, at Muelheim on the Ruhr.

The process makes use of a catalyst, a substance which accelerates a chemical reaction, but is not itself changed in the process, and Prof. Fischer says that by choosing the proper catalyst, temperature and pressure, not only gasoline, but wood alcohol, vaseline, and other related substances can be obtained.

To make gasoline, says Prof. Fischer, the water gas, from which all traces of sulphur must have been removed, is passed over a catalyst consisting of a finely divided mixture of cobalt with oxides of such metals as chromium or zinc, at a temperature of 500 degrees Fahrenheit.

It is said that gasoline thus prepared compares favorably with the best natural product, and requires no further refining, because the sulphur has already been eliminated from the raw material.

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The Arabian horse has fewer vertebrae in its back and tail than other horses.

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Searchlights that can be attached to lifeboats are now on the market.

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