

poles. Where the aphs (woolly or green), or red spider, or pear blister mite were bad last year on pear or apple trees, they should be now sprayed, before leaves appear, with a strong emulsion of kerosene, made as follows:

"Take half gallon of extra-strong soap water (whale oil soap preferred, but other kinds will answer, if nothing better can be had), and have it boiled after removing from the fire, add one gallon of coal oil, and pump it up and down until thoroughly mixed. Five minutes' agitation of the water will generally suffice. If the water is hard, add one ounce of lye and five gallons of hot water. Agitate it for three minutes, so as to blend everything. If it doesn't mix even, heat it again until it does, and pump it up and down in itself. Now spray your trees with this solution, and you will come very near killing all the insects and eggs that are on your trees. Peach and cherry trees will not take as strong a solution. In case of either, dilute, after the leaves are out, to about 24 to 1. Apple and pear trees can stand it at 15 to 1 after leaves are out. If you have plenty of milk you can substitute cold sour milk instead of soapy water to cut the coal oil, and after the same is cut, add the quantity of water given above. Don't kill peach and cherry trees by using strong solutions. With apple and pear trees there is danger.

Always remember that before the leaves come out you should have the solution about three times stronger than when they are out. Five gallons of water to one of coal oil, before leaves are out is the proper strength for pears and apples.

"JOHN P. SORENSON,
"County Fruit Tree Inspector."

SCIENTIFIC MISCELLANY

The bacteria known now number 560 species, according to a London Institution lecture by Prof. W. B. Bottomley, and practically our entire knowledge of these has been worked out since 1830 through the influence of Pasteur. Of the harmful species there are only about forty. Bacteria are found everywhere in the air and in our homes, they are so minute that 250,000,000 could be accommodated on a penny postage stamp, and they multiply with incredible rapidity. It is estimated that a human being takes in by respiration 30,000 germs each day, or 100 millions a year. Not only are most of them harmless, but they give flavor to butter, cheese, game, etc., and they are the scavengers of nature. They are absolutely necessary for the "round of life."

Eggs treated in various ways were kept by Director Strauch, of the Nelsse Agricultural school, from June 2 to February. The best then proved to be those preserved in a solution of water glass. Those coated with vaseline and those kept in lime-water were also good; but those that had been wrapped in paper, rubbed with salt, packed in bran, coated with varnish or paraffine, buried in wood ashes, etc., were in considerable part spoiled.

Cerosle, a new product extracted from the scum rising on sugar-cane juice, is claimed by a French chemist to have the properties of ordinary beeswax, which it resembles in appearance.

Republican civilization is tending to destroy itself, in the view of M. Arsene Dumont, a clever French writer, by exalting the individual at the expense of the race. It leads to greater and greater personal development, and the numerical increase of the race is in inverse ratio to such development. This

explains the steadily decreasing birth rate of Massachusetts and other parts of New England. The salvation of the Americans, as foreseen by this author, depends upon the high intelligence that will govern itself by scientific teachings.

Civilization is transforming nature in surprising ways. The dehorning of cattle is an example, as this practice is gaining favor so rapidly that hornless cattle may be expected soon to become the rule rather than the exception. The first objections were that it is cruel and unnatural. The early method of dehorning with a saw was undoubtedly slow and painful, but specially constructed clipers are now used that often remove a horn in a second, and with so little suffering that operation is really humane, the frequent injuries in herds from goring being prevented. The horns have become utterly useless, being no longer needed as protection against natural enemies. In calves less than three weeks old the embryo horns can be removed with one stroke of a sharp knife, or they can be treated with a caustic sufficiently powerful to destroy them. For three years the Maine Experiment station has dehorned calves by rubbing the horns four or five times with caustic potash. In every case but one the operation has been successful, the calf in the exception having reached the age of thirty-five days before treatment with the result that dwarfed horns an inch or an inch and a half long were subsequently developed.

Spiral growth is one of the mysteries yet to be worked out by naturalists. In describing some of the puzzling things about it to an English medical society, Mr. George Wherry mentioned the shells of the whelk, which in the fossil form are usually left-handed, but in the present generation are always right-handed. Plant spirals offer like perplexities. The hop and honeysuckle take the form of a left-handed screw, while the majority of twining vines follow the course of a right-handed screw. Some spirals, however, are less mystifying. The left horn of the kukoo, for example, is a right-handed spiral and the right horn a left-handed spiral, and it is easy to see that these twists give the horns a wedge-like action in forcing back the bushes through which the animal runs.

The action of castor oil, supposed by some experimenters to depend upon a body from the castor seeds suspended in the oil, has been found by Meyer to be due to the ricinoleic acid of the oil itself. The pure acid and its salts are as effective purgatives as the oil, and are practically tasteless, while they operate in small doses.

Some physiologists suppose that electric shocks produce death by asphyxia, others that the heart is suddenly paralyzed. The subject has been experimentally investigated by Prof. T. Oliver and Dr. R. A. Bolam, who, using an alternating current, have found that the heart appears to be affected before the respiratory center. Only with currents of much higher voltage than was necessary to kill, did both heart and respiration fall at the same moment. Stoppage of the heart being undoubtedly the usual primary effect, resumption in apparent death from electric shock must be much more difficult than in that from drowning, which effects first the respiration.

An artificial serum of common salt and cooking soda (sodium chloride and sodium carbonate) is used by an Italian specialist, Dr. Tomasoli, for the treatment of extensive burns. Injections of this serum daily for three weeks brought recovery to a young man who had been burned over the en-

tire right side of his chest and back and the right arm and shoulder, and successful experiments have been made on animals. Injections of serum from a scalded dog were found to kill a well one, while the artificial serum prevented this fatal result.

A valuable water-proof and transparent cement for glass has been found by a German chemist, Prof. H. H. Schwartz, in a mixture of fine parts of a moderately thick gelatine solution with one part of potassium chromate. The fracture is mended with this mixture, which becomes hard and insoluble on exposure to light. Not even hot water will effect the hardened cement. Fabrics in which some stiffness is not objectionable can be water-proofed by painting with the hot chrome gelatine and afterward exposing to light.

An inexpensive process of producing alcohol from ethylene has been discovered in Germany. The action of dilute sulphuric acid on calcium carbide in the presence of small pieces of zinc yields ethylene gas, and when this is taken up by concentrated acid at 80 degrees C the result is ethyl-sulphuric acid. This, on further heating, breaks up into sulphuric acid and chemically pure alcohol.

BEAVER'S SILVER GRAYS.

Beaver, Utah, March 2.—In commemoration of the 91st birthday of President Woodruff, our citizens vied with each other in preparing and spreading before the aged of this city yesterday the most ample and abundant feast of good things palatable seen here on any occasion. Eight or ten of the oldest, through sickness and infirmities, were not able to be present, including Widows Jane Henderson, 89; Jane Gillies, 81 past; and Mrs. Mary McEwen, 86. These came from Scotland to Utah between forty and fifty years ago; but Sister Lucinda Howd, having to use a crutch on account of an accident three years ago, and being the only one here of the band of Pioneers that came into Salt Lake July 24th, '47, was helped into the assembly hall as one of the most honored of her sex. Following as to ages, were ex-Judge Wm. J. Cox, 82, and his wife, 81; Sarah M. Dell, 84; Wm. Morris, 81; and Mrs. Vaughn from Wales, over 82. The India and Africa missionary, Wm. Fotheringham, aged 83, who spent eight years on the two calls, was present and heard from, and Caleb C. Baldwin, aged 81, baptized in 1831, makes him the oldest member of the Mormon Church in all southern Utah. From 80 to 70 were more of the Pioneers and first settlers of Beaver and Cedar City, including Wm. Greenwood, John X. Smith, James Farrer and Mrs. Mary Campbell. The Mormon battalion was represented by President M. L. Shepherd, 73; John R. Murdock, 71; and his brother Orrie C. Murdock, 73—all in the pink of health. The local fraternity was represented by Jno. Ward Christian, 76; who walked in, like Thomas Parr to his second wedding, with two big pitchers of cream, following these with a three-foot platter filled with choice beef and ham. The veterans of the late Civil War were represented by Mayor Underwood and his wife, the latter carrying a three-terraced cake, envied by our lady cooks, and which was given to the oldest citizen, Mrs. Henderson; then Willis Coplan, the Texan ranger, aged 81, born in 1812, on Mexican soil, and, who fortunately drew a white bean out of the death sack, while some twelve of his comrades in arms, drawing black beans, were shot that same day. The coal miner for forty years, the dyer for thirty years from England, the Scotch Highlander Davy Pollock, the iron