

Kamchatka" in 1768, or earlier, since this issue is not the first of that work. If we are to have a change of scale let it be to something less objectionable than the centigrade form.

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#### NOTE ON CELLOBIOS AS A DIFFERENTIATING SUGAR FOR CERTAIN BACTERIA

THROUGH the kindness of Dr. Wise, of the New York State College of Forestry, the writer was recently enabled to test the fermentative powers of a number of strains of bacteria of the colon-aerogenes group on the rare sugar known as cellobios. This disaccharide is derived by the acetolysis of cellulose (which yields the octacetate) followed by the removal of the acetyl groups.

The studies so far made indicate that this sugar may be of definite assistance in differentiating members of the genera *Escherichia* and *Aerobacter*. Particularly interesting is the fact that certain strains of *Escherichia neapolitana* can be separated into two groups by the use of this sugar; one group fermenting it with very abundant gas production and the other failing to act on it at all.

Further studies on the use of this sugar in bacteriological work are in progress, and bacteriologists having stock cultures of the colon-aerogenes group are invited to submit them for tests with the sugar.

Although this sugar has heretofore seldom been prepared in any considerable amounts, and is not now available in the market, should the demand arise it could doubtless be supplied by certain concerns, since the raw material from which it is prepared (cotton cellulose) is cheap and abundant.

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#### COLOR INDICATORS FOR BLIGHT DISINFECTANTS

ONE of the serious practical difficulties involved in control of fire blight (due to *B. amylovorus*) in the orchard lies in securing thorough prophylactic treatment of the lesions after removal or scarification of diseased tissue. This difficulty is, of course, intensified when the treatment must be in the hands of untrained fruit-growers or hired help. Even when the affected tissues are completely removed the sterilization of the remaining exposed tissues is frequently careless and defective. Consequently, any device that will aid in securing thoroughness in this step can not but help make the whole treatment more effective.

Careful check on the thoroughness of the application of the mercury solution is difficult because of its lack of color. The writer has tried several coloring

materials and at the suggestion of Professor Patton, Experiment Station chemist, fuchsin red and methylene blue were used. Fuchsin red has proved particularly satisfactory. Added to the Reimer-Day mercury and glycerine solution it has imparted a pronounced color, permitting the operator to detect any small untreated surface and to tell at a glance whether all the cut tissues in the tree have been treated. Field observation has not indicated any diminution in the effectiveness of the material, and the treatment because of the greater thoroughness becomes more effective.

In addition, because the operator is not forced to retrace his steps to make sure that a given wound has been sterilized, time and material is saved.

It should be noted that no laboratory tests of this material with the dye added are available at present, and this communication is based on field observation.

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#### ARIZONA RUINS

IN the course of a recent prospecting trip in the neighborhood of Clifton, Arizona, I had the opportunity to visit some prehistoric ruins. These consisted of, apparently, dwellings and storehouses built under overhanging cliffs. The storehouses were formed of three adobe walls reinforced with wickerwork. The fourth wall at the back was the natural face of the cliff. Slight excavations disclosed the small Indian corn-cob and several types of seed-pods unknown to me. Excavations on the dwelling platform in front of the storehouses, which were some six feet square, disclosed pot shards, remains of grass sandals and some fragments of basketry. The walls of the cliffs outside of the smoked surfaces showed a number of disconnected outline paintings. These were in red or green and in some instances combinations of the two colors. I suspect that the green pigment was some copper mineral pulverized but had no facilities for analysis. Subjects were varied. They included geometrical designs, men, mountain goats, centipedes and fish. They ranged from a foot to two feet in length and the same in height. I made sketches in pencil of many of them of which I would gladly send copies to any person interested as well as any further details desired. Messrs. Thompson and Lenard, the owners of the Spur Cross ranch on which the caves are located, assure me that there are other caves in the vicinity which were not visited because of lack of time and further that no archeologist has ever visited the district. It seems to me worthy of exploration.

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