

CHEMISTRY

Rays Spoil Fermentation

Sterilization of preparations by cobalt-60 radiation can affect fermentation unless the rays are properly used. Only separate nutrients should be irradiated.

► **COBALT-60 RADIATION** can spoil fermentation processes, such as are used in the manufacture of food, drink or antibiotic preparations, unless the radiation is properly used. Only the separate nutrients should be irradiated. These may then be mixed to make up the solution that feeds the microorganisms.

Comparing results of sterilization by irradiation with those when heat is used in the conventional way, Dr. Robert A. Gillies of the University of Michigan reported his conclusions to the American Chemical Society meeting in Cincinnati. He stated that in his experiments both yields and rates of fermentation were substantially reduced when these organisms were grown in solutions which had been exposed to the rays.

But irradiation of either malt sprout nutrients or corn steep liquor, for the purpose of killing unwanted organisms, Dr. Gillies said, and subsequent mixing of this sterilized material into the solution used to grow the wanted cultures gave better yields than if the nutrients had been sterilized by heat.

How strange sugars are formed in small percentages which may add up to many pounds total production were also described to the division of carbohydrate chemistry by Dr. Nelson K. Richtmyer of the National Institutes of Health, Bethesda, Md. While only one percent to two percent of the sugar formed by hydrolyzing starch comes out as anything but the usual dextrose, the rarer sugars produced from tons of starch amount to a considerable quantity.

Sedoheptulose, recently found among the products of photosynthesis in plants, is one of the rare sugars studied by Dr. Richtmyer. Forming no crystals itself, this growth sugar is recognized by beautiful crystals formed by the anhydride made from it.

Chemical relatives of dextrose vary as the

chords of a musical scale, Dr. Richtmyer stated, illustrating how 16 rearrangements of six carbon atoms can produce 16 different kinds of sugar, all different but similar to ordinary dextrose. Other rearrangements can produce a variety of other sugars built of seven carbon atoms, of which sedoheptulose is one.

Chemical balance between calcium and fat in the blood may be an important factor in clot formation, Dr. Herbert L. Davis and Nora L. Davis of Wayne County General Hospital, Eloise, Mich., reported to the group. When little calcium is present, they find, addition of fat or oil to blood samples speeds up the rate of clotting. Change in the amount of fat in the blood may be a cause of thrombosis, resulting in "stroke," in persons under unusual stress, the team reports.

Science News Letter, April 9, 1955

ASTRONOMY

Faint Comet Spotted In Constellation Leo

► A VERY faint comet has been spotted in the constellation of Leo, the lion, now directly overhead, by Robert G. Harrington and G. O. Abell of Mt. Wilson and Palomar Observatories, Pasadena, Calif., Harvard College Observatory in Cambridge, Mass., reported.

The object, of magnitude 17, was found on March 22 during the National Geographic-Palomar Observatory Sky Survey. News of its discovery was sent to observatories by Harvard College Observatory, clearing house for astronomical information.

Science News Letter, April 9, 1955

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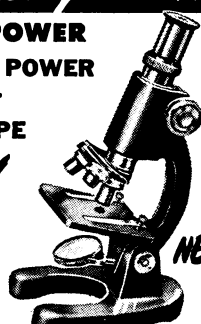
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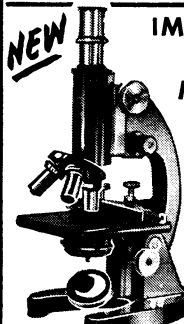
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