many other applications. For example, it might be possible to make sucrose derivatives with toxic functional groups to obtain pesticides.

That petroleum derivatives are used for the water soluble portion of surface active agent molecules is directly attributable to the vast amount of research carried out by the petroleum industry, according to Hass. In this and many other cases sugar might be a better starting material, he suggests.

Sugar producing capacity has outstripped consumption and it would not be difficult to double world production. Sugar cane yields per acre (including bagasse, molasses, etc. as well as sugar) are high—12 tons per year—and crop rotation is not necessary. This means efficient use of the land.

By-products from sugar refining are also important. Molasses was formerly used in great quantity by the fermentation industries, but this use has declined; there is now only one major producer of fermentation industrial alcohol. Loss of this outlet is being made up by the increasing use of molasses in cattle feed. Monosodium glutamate is also being made from molasses.

Sugar is not the only carbohydrate which might serve as a chemical raw material. Starch has already been mentioned, and forest products may become more important in the future. Waste products such as oat hulls and corn cobs now feed the furfural industry.

One serious question to be taken into account when considering moving the base of the organic chemical industry to agricultural products is whether it is safe to count on agricultural sources with world population growing the way it is. Hass's answer to this is that there are large areas of virtually undeveloped land in the world, such as most of the continent of Africa, so this need not be a problem in any forseeable time.

Government

USDA Has Openings For Chemists in Utilization Research

Expansion of USDA's research on the utilization of Southern farm crops has created a number of job openings for chemists and physicists in such applied and fundamental fields as cotton, vegetable oils, fatty acids, terpenes, and resin acids.

Salary range for these positions is from $3410 to $7040. Those interested can obtain application blanks from any Post Office and file them with the Regional Director, Eighth U. S. Civil Service Region, 1114 Commerce St., Dallas 2, Tex.

Industry

Cyanamid Claims Bristol Infringing on Aureomycin Patent

American Cyanamid has announced filing a patent infringement suit in the U. S. District Court for the Northern District of New York against Bristol Laboratories. Cyanamid claims infringement by Bristol of its patent covering chlortetracycline, sold by Cyanamid's Lederle Laboratories Division under its trade name Aureomycin.

Cyanamid's complaint, filed late last month claims that Bristol, which has a plant at Syracuse, is making and selling an antibiotic composition (under the trade name Polycycline) which contains material covered by Cyanamid's patent, and that in making its product Bristol uses processes and methods covered by Cyanamid's patent.

The complaint asks for damages and an injunction against future infringement.

Solvay's Chloromethane Plant Starts Producing at Moundsville

Start-up of production of its chloromethane plant at Moundsville, W. Va., has been announced by Solvay Process Division, Allied Chemical & Dye Corp.

The new plant, which has been under construction for over a year, will produce methyl chloride, methylene chloride, chloroform and carbon tetrachloride.

Uses for methyl chloride include preparation of greenhouse sprays. Biggest outlet for methylene chloride is as a nonflammable solvent for paint and varnish removers, but it is also used to formulate aerosol propellants.

Chloroform also finds use in production of certain aerosol propellants and in addition is used in manufacture of penicillin as well as other antibiotics. Principal use for carbon tetrachloride today is in manufacture of refrigerants and propellant compounds.

Methyl chloride will be sold in tank car lots, f.o.b. Moundsville, W. Va., freight equalized with recognized producing points. Methylene chloride, chloroform and carbon tetrachloride are being offered on a delivered price basis. These products may be obtained in drums or in tank car quantities.

In addition to its four new products, Solvay has been producing chlorine and caustic soda at Moundsville since last December, and is now also making by-product muriatic acid and anhydrous hydrogen chloride at that location.

Research

Ohio Orchard Tests with Antibiotics Among Most Conclusive

An error of omission occurred in the story on the use of antibiotics to control orchard disease in the Sept. 1 issue on pages 904 and 906. Two paragraphs and a table were omitted referring to the work at the Ohio Agricultural Experiment Station, which was started in 1952 and is said to be the most conclusive of the work presented so far. The omitted material is presented below.

As a result of very striking and favorable results obtained last year, H. F. Winter and H. C. Young, Ohio Agricultural Experiment Station, planned and conducted extensive experiments during the 1954 season. These consisted of controlled experiments involving the inoculation of the trees as well as the application of one or more formulations of streptomycin in 12 different commercial apple and pear orchards in all sections of Ohio. In the controlled tests, streptomycin, Terramycin, and tetracycline were employed, and five different formulations of streptomycin were also tested.

Results obtained in five of the seven Jonathan apple orchards used in 1954 are summarized in the table (insufficient blight for comparison purposes developed in the other two orchards):

1954 Fireblight Studies in Commercial Jonathan Apple Orchards

(Infections per tree)

Material Used	Orchard No. 1 4-yr. trees	Orchard No. 2 18-yr. trees	Orchard No. 3 15-yr. trees	Orchard No. 4 35-yr. trees	Orchard No. 5 18-yr. trees*
Agri-Mycin	0.0	0.01	1.6	3.7	1.3
Streptomycin liquor	...	0.03	...	...	...
Streptomycin STS	...	...	...	...	...
Streptomycin STB	...	...	2.3	...	...
Check	11.1	20.4	39.3	377.0	24.5

Natural infection—no inoculation.

Materials at dosages to give 100 p.p.m. of major antibiotic were applied full bloom, and at petal fall.

* Applied as 5X concentrate.