

tomycin, is effective when given by mouth, and its toxicity is of a very low order. So far, no reports of any serious side-effects have been made.

In the process of making the synthetic drug, several surprising facts about it were discovered. For the first time a natural compound was found containing a nitrobenzene grouping. This chemical grouping has always been thought harmful to animal life, but in chloromycetin it is harmless. The chemists also found that the drug is a derivative of dichloroacetic acid, another compound never before found in a natural product. Its chief medical use in the past

was for the removal of warts. Thus by two counts the mold-drug should have been toxic but is not.

Chemists now are working on preparation of closely related structures which may have even wider usefulness in medicine than chloromycetin itself. Two other Parke, Davis chemists, Dr. Loren M. Long and Harvey Troutman, have already developed a second feasible method of making chloromycetin commercially on a large scale.

Chemically, chloromycetin, or chloramphenicol, is D-threo-1-paranitrophenyl-2-dichloroacetamide-1,3-propanediol.

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#### CHEMISTRY

## Acetylene Used Safely

► CHEMICALS from acetylene are to be made in Grasselli, N. J., under high pressures and temperatures with safety in a plant just opened by General Aniline and Film Corporation of New York. It is the first establishment of its kind in the United States.

Acetylene, long known to chemists for its wide versatility but little used because of its explosiveness under pressure, can now be exploited with safety as a result of new techniques, Dr. Carl Marvel said at the dedication exercises. With this development a whole new field of organic synthesis is opened up which should prove of intense interest in the manufacture of resins and adhesives, pharmaceuticals, paper, rubber and textiles.

The technique to be used there is based



**EXPLOIT EXPLOSIVE** — Huge tanks provide storage capacity for vinyl ethers, alkynols and other acetylene derivatives in this first U. S. high pressure acetylene plant.

on processes developed in Germany during the war. Briefly it consists of two methods, one involving the dilution of acetylene with an inert gas, and the other one in which acetylene is reacted in what is essentially small-bore equipment providing a minimum space for gases to collect.

With a shortage of hydrocarbons, the Germans during the war were compelled to find new raw materials for essential wartime chemicals especially for the production of synthetic rubber, pharmaceuticals and synthetic fibers. Derivatives of high-pressure acetylene answered these needs and played a vital role in Germany's ability to carry on for nearly six years.

At the opening meeting, Dr. Hans Beller of General Aniline said that the high reactivity of acetylene under pressure makes it perhaps the most versatile tool available to the organic chemist, and that for this reason it is impossible to predict with much hope of accuracy the full extent to which acetylene derivatives may contribute to future economy.

Acetylene is a well known gas easily made by adding water to calcium carbide. Uncontrolled, it is an explosive. It burns with an intensely hot flame, which accounts for its use in the well-known oxygen-acetylene torch used in welding or cutting metals. It is already the starting point for the synthesis of a large number of organic compounds. It can be made in large quantities, the basic materials being limestone and coke, used to make the calcium carbide.

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#### AGRICULTURE

## American Know-How to Help Other Countries Grow Food

► THE United States and Canada, which have been heavy exporters of food during the world's post-war emergency, are now beginning to export improved seed and agricultural know-how that will enable countries where recovery has started to increase

their own supplies. How this is happening was related in a talk by Gove Hambidge, adviser to the Director-General of the Food and Agriculture Organization of the United Nations. Mr. Hambidge spoke as guest of Watson Davis, director of Science Service, in the Adventures of Science series, heard over the Columbia network.

Despite the great losses of life during the war the population of the world is increasing rapidly, the speaker stated. Every day some 55,000 new mouths to feed are added to the total of the day before. At the same time, the amount of food per person now being produced is below the pre-war level. And emergency exports from North America cannot go on indefinitely.

The problem is aggravated, Mr. Hambidge pointed out, by the fact that the very countries where the population is greatest and increasing most rapidly are the ones where production methods have lagged most in their development. It is imperative, he declared, not only to help them grow more food but to find ways to get some of their surplus population off the land and into industry, so that the land may be more efficiently farmed by fewer people using better methods.

"For a widespread development job," he said, "the main needs are technical skill, equipment, and funds. Some of the money will have to come from public international funds, especially to get developments started. Some will be drawn from national treasuries, both within and outside of the countries where extensive developments are taking place. Much may come from the investment of private capital.

"The equipment necessary for expanded production—for example, equipment for irrigation and for transportation—will have to come at the start from the highly developed countries. So will most of the trained technical workers. Gradually, however, these resources of materials and skills will increase in the countries undergoing development."

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#### AERONAUTICS

## British Twin-Jet Fighter Has Great Climbing Speed

► A BRITISH twin-jet fighting plane recently climbed seven-and-one-half miles in seven-and-one-half minutes. It is said to be the fastest climb on record with the exception of that made by the American Air Force XS-1, a rocket plane, and perhaps by other rocket-powered aircraft.

The plane that made this remarkable climbing speed was an experimental Beryl-Meteor twin-jet fighter. It climbed two miles in the first minute, and took only three minutes to reach a five-mile altitude. Experts in London believe that with the use of newer and still more powerful jet engines, British fighters will be able to equal the climb-rate of the rocket plane.

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