

ficient in the diets of a large part of the Chinese population, Dr. Adolph indicated. Unable because of the crowded condition of the populated areas in China to obtain animal proteins such as meat, cheese and eggs, the Chinese rely heavily on a cereal diet, which is overbalanced in the direction of carbohydrates. Chinese nutritionists realize this, and are striving to overcome the difficulty, though as a practical matter they stay within the framework of a vegetarian diet. They are also trying to get their countrymen to use more fresh vegetables, placing special emphasis on Chinese celery cabbage.

In some districts in North China, it

has been discovered, a rather well-balanced ration, practically altogether vegetable, was worked out by the peasants ages ago, and they stick to it today because, as they say, it "stays with you." The cereal mixtures used in this diet differ from locality to locality, but the net results are good for any given blend of foods.

Millions of people in North China never taste rice; they use wheat and millet as their mainstays. For these people a great benefit seems to be in sight, in a recently bred variety of millet that contains 14% or 15% of protein instead of the usual 9%.

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UNDER THE SUN—As a preliminary operation in steel plate production, this workman is turning a slab broadside preparatory to further rolling on a sheared plate mill of the U. S. Steel Corp.

CHEMISTRY-MEDICINE

Penicillin for Public

Enough to treat all urgent civilian cases should be available in the near future, Agriculture expert predicts at chemistry meeting.

➤ ENOUGH penicillin to treat all urgent civilian cases is expected to be available in the near future, Robert D. Coghill, chief of the fermentation division of the U. S. Department of Agriculture's northern regional research laboratory, told the American Chemical Society meeting in Cleveland.

The discovery by Dr. A. J. Moyer in this laboratory of the action of corn steeping liquor on the growth of the mold, penicillium, was "possibly the greatest single factor in making the commercial production of penicillin feasible," Mr. Coghill declared.

That production reached an estimated 40,000 million units of penicillin in March of this year, contrasted with a total of 400 million units for the period of January to May, inclusive, last year.

The cost of the penicillin for treating a severe case of blood poisoning would be \$35, Mr. Coghill estimated, on the basis of using about 1,000,000 units at the present cost of \$3.25 per 100,000 units. A case of sulfa-drug-resistant gonorrhea could be treated for less than \$5, Mr. Coghill said. The first price quoted for penicillin, and acknowledged to be less than cost, was \$20 per 100,000 units. The present price will undoubtedly go much lower and penicillin, in Mr. Coghill's opinion, will be within the reach of everybody.

The chemistry of penicillin, he stated, is considered of enough importance to be a military secret. He gave the following answer, however, to the question

of whether chemists have succeeded in synthesizing penicillin, that is, in creating the mold chemical without benefit of the mold:

"We are not thinking of scrapping our fermentation plants yet."

There are now 21 of these penicillin-producing fermentation plants being erected in this country and Canada at a total cost of \$20,000,000.

In contrast to the size and cost of the plants and their equipment, when they

reach a 200,000,000,000 unit per month production, their output by weight will be only about nine pounds of pure penicillin per day.

Fantastic as this seems, Mr. Coghill pointed out that this amount will treat approximately 250,000 serious cases per month and for our fighting men will mean the saving of thousands of lives, to say nothing of arms and legs.

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CHEMISTRY

Fuel From Plants

Gasoline, lubricating oil and coal can be made faster by man than by nature from many common plants, including even wayside weeds.

➤ GASOLINE to run the world's automobiles, coal to fuel its industries, oil to keep them all moving smoothly, can be made from potatoes, sugar-cane, sawdust, even wayside weeds, after the present reserves in the ground have been used up, Prof. E. Berl of the Carnegie Institute of Technology announced at the Cleveland meeting of the American Chemical Society.

Man can now duplicate in hours the products which slow nature took millions of years to form, through processes which he has developed, involving the use of pressure and temperature, Prof. Berl de-

clared. There is no need to anticipate a fuel famine so long as the sun shines and makes plants grow, he added.

The Pittsburgh researcher was interested at first only in the "pure science" aspects of the fuel problem. He wanted to find out whether oil and coal were formed in nature from the cellulosic part of plant materials or from the lignin. His investigations satisfied him that cellulose was the original material. In the meantime, however, the laboratory techniques he used were beginning to turn out substances that were pretty good synthetic reproductions of the natural