

European wheat-importing countries are still striving for as much self-sufficiency as possible in wheat. They are expected to harvest as large an area as last year's, if not a little larger, but the crop is expected to be smaller by 100 to 150 million bushels. This will be at least partly balanced, however, by a larger crop anticipated from the great wheat-exporting regions on the Danube.

In Russia the area sown to winter wheat was more than four million acres smaller this year than last, and spring wheat plantings will probably be no larger. But even if the crop increases, as is fairly likely, much of the early surplus normally exported will have to relieve the domestic food shortage.

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## BOTANY

## Ever Eat Gum-Jum? Try It In Soup

CHINESE cookery is credited with using weird things, like birds' nests, sharks' fins and exceedingly ancient eggs; but the Chinese are also capable of dishes incorporating real poetry. Dr. A. B. Stout of the New York Botanical Garden describes in an official publication of that institution the use in China of dried flowers of the day-lily, cut up in soup, which he says gives the dish a distinctive and agreeable flavor.

The Chinese names for this commodity are gum-jum, which means golden needles, and gum-soy, meaning golden vegetable. New York's Chinatown imports quantities of these dried lilies, as much as two tons having come into the port in one year.

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### INDIVIDUAL DIFFERENCES

#### IN MENTAL GROWTH

by

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Friday, June 9, at 1:45 p. m. Eastern Standard Time over stations of the Columbia Broadcasting System. Each week a prominent scientist speaks over the Columbia System under the auspices of Science Service.

## ORDNANCE

# Squeezed Bullets Fired at Mile a Second From New Gun

BULLETS speeding at a mile a second, able at moderate ranges to drive through the tough steel armor plates of tanks, can be fired from a new type of rifle invented by H. Gerlich, an American-born German citizen now resident in England. Because of their potentialities as anti-tank and anti-aircraft weapons, the Gerlich rifle and ammunition are under investigation by the small-arms technicians of the U. S. Army, as well as by several foreign powers.

The Gerlich bullet is something of a paradox. It is of .35 caliber when it goes into the breech of the rifle, and when it comes out of the muzzle it is of only .25 caliber. That means that its diameter has been squeezed down a tenth of an inch as it has travelled through the bore.

This is done by having the bore tapered through a part of its length. The first section forward of the ammunition chamber is cylindrical and of .35 caliber. Then comes a section in which the bore tapers from .35 down to .25 caliber. Finally there is a third section, ending at the muzzle, that is cylindrical and of .25 caliber.

This arrangement enables the bullet to start with a wide area to take the push of the powder gases, and to leave the rifle with a small area, suffering less loss of velocity from air resistance.

To obtain a "compressible" bullet that can be fired from a barrel of this type, Mr. Gerlich fashioned his projectile of .25 caliber, with two flaring bands or flanges of .35 caliber. These fit into the .35-caliber section of the bore, and as the bullet travels down the tapering section they are folded down, fitting into channeled spaces cut into the body of the bullet behind them. The bullet thus leaves the rifle as a smooth cylinder coming to a sharp point at one end, not essentially different from the conventional rifle bullets in common use.

The terrific velocity of 5,000 feet a second, nearly double that of standard army rifles, gives the new weapon several advantages. It naturally flattens the line of flight or trajectory considerably, so that the soldier using it need not trouble himself so much about having the right elevation. It shortens the time

of flight from rifle to target, a highly important matter for anti-aircraft machine gunners. Finally, it enables the small-caliber bullet to drive straight through tank armor, even without the advantage of special armor-piercing devices; for at such velocities even soft projectiles have no time to "upset" on striking a hard target—they act like the straws that get driven through boards in a tornado.

All these advantages must of course be purchased at a price. The rifle barrel, with its somewhat complicated bore, is more difficult to make, and more expensive. The ammunition is considerably costlier also, and its greater bulk in transportation is something of a military disadvantage. The recoil is heavier. Whether the rifle will wear out faster under firing conditions is not yet determined.

Nevertheless, if military authorities see sufficient tactical advantages in the new weapon, its final adoption may be expected.

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## ENDOCRINOLOGY

## Gland Secretion Rescues Children From Dwarfism

SIX CHILDREN and one young man of 18 years, doomed to be dwarfs, were rescued from this fate by treatment with a growth-stimulating hormone from the pituitary gland. Results of the successful treatment are reported by Drs. William Engelbach, R. L. Schaefer and W. L. Brosius of Detroit in *Endocrinology*. Only one other human subject is reported to have received this treatment, a patient of Dr. Engelbach who showed a favorable response.

The young people of the present report ranged in age from 7 to 18 years. They were from about two inches to more than a foot shorter than the shortest height normal for children of their ages. One seven-year-old girl was only one inch taller than her three-year-old sister.

Examinations showed that the growth deficiency was due to deficient functioning of the pituitary gland. Some of