

In addition to the diet, a mouth wash of hexylresorcinol diluted with three parts of water was used daily.

At the beginning of the experiment, the teeth were carefully examined and their condition recorded, with actual drawings of the approximate size and location of all cavities and fillings. At the end of the year, the children were examined again in the same manner, and the results of the two examinations compared.

In three groups in which fairly adequate diets were provided, active caries was almost negligible and old cavities were quite uniformly arrested. In two groups in which the diets were not carefully planned, the dental disease was very rapid and active in its course. Further similar studies are planned.

*Science News Letter, July 18, 1931*

## FORESTRY

## New Woods Sought For Lead-Pencils

THE PENCIL wood supply near large factories is practically exhausted and the industry is now investigating the possibility of utilizing Alaska red cedar, the finest-grained wood of the Northwest. Cedar wood intended for lead pencils must be soft, light yet strong, close and straight-grained and free from defects. The older the tree the better pencil wood it makes. The wood from the heart of aged logs that have lain in deep woods for years makes admirable pencil material.

*Science News Letter, July 18, 1931*

## PHYSICS

# Novel Centrifuge Whirls With Speed Triple That of Bullet

## University of Virginia Physicists Invent Device That Has Developed Force Equal to a Million Gravities

A NEW TYPE of centrifuge, whirling so rapidly that its rim travels three times as fast as the bullet leaving the muzzle of an Army rifle, has been devised at the University of Virginia by Dr. J. W. Beams and A. J. Weed. They describe their invention in *Science*.

The principle of the new centrifuge is very simple. The moving part consists of a metal box shaped like a top, with flutings placed at an angle on its underside. This rests in a conical cup, into which a stream of air is forced under pressure from beneath. The air lifts the top, thus serving as a virtually frictionless bearing, and at the same time pushes against the flutings as against the blades of a turbine, spinning it around at terrific speed.

The two physicists state that they have obtained rotational speeds as high as half a million a minute with their apparatus. With one specially constructed model they obtained speeds of such an order that the rim was moving at the rate of about 10,000 feet a second. This is approximately three times as fast as a bullet moves at the instant it leaves the

muzzle of a military rifle. Dr. Beams and Mr. Weed state that they have obtained centrifugal force equal to a million times the force of gravity.

Centrifuges are used in laboratories and factories and on farms for speeding up the separation of things so intimately mixed that they would take a long time about coming apart if left to themselves. The cream separator and the Babcock milk tester are two types of centrifuge in very common use. Devices that whirl the water out of clothes, used in laundries and in some types of home electric washers, are also centrifuges. In scientific laboratories much higher centrifuge speeds, with correspondingly higher forces, are needed for such operations as clearing fine silt out of turbid water, separating cells into their constituent parts, and getting tiny water droplets out of oil.

By means of ingenious arrangements of outlet tubes, the two Virginia scientists are able to operate their centrifuge continuously, feeding new supplies of the material to be separated in through a center opening and obtaining the parts separated out in one or more collectors mounted on top of the apparatus.

*Science News Letter, July 18, 1931*

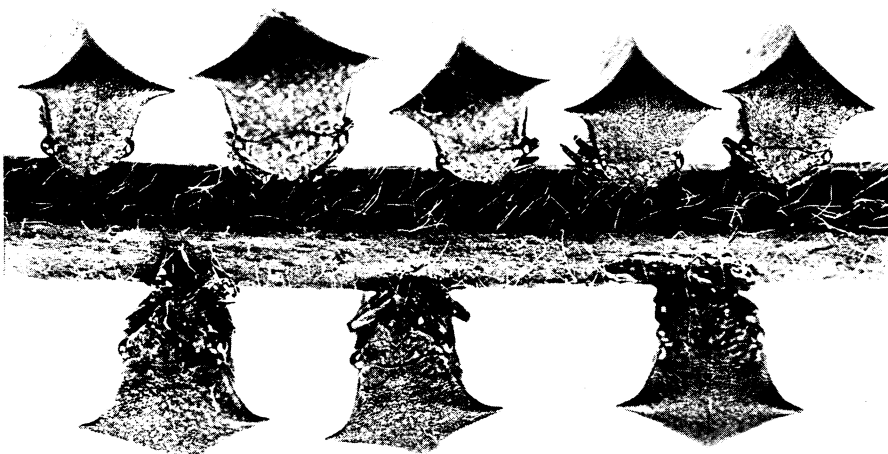
## ORNITHOLOGY

## Italy's First Bird Station Established by Prince

PRINCE CHIGI of Rome, one of the most prominent of Italian ornithologists, has provided ground and buildings upon his property, Castel Fusano, near Ostia on the west coast of Italy, for a bird station. Here bird migration will be scientifically observed. Prof. Raffaele of the University of Rome has been placed in charge.

Nets are used to capture the birds arriving from Africa between March and July. The captured birds are tabulated, banded and set free. In the fall the migrations of the thrushes will be studied.

*Science News Letter, July 18, 1931*



### IN THEIR WORLD THERE IS NO UPSIDE DOWN

*Solemn as so many capped French judges, this sociable group of buffalo tree-hoppers might be mirror people contemplating their own images, but for the fact that their numbers and positions fail to match. Motionless, for many minutes, they belie their agility. Disturb one, and he leaps away so suddenly that it seems like a magic disappearance.*