WASHINGTON GOSSIP

Nothing Beyond the Milky Way but Empty Space

WASHINGTON.—The boundaries of the universe have been discovered, according to a report received at the National Observatory from Prof. R. T. A. Innes, director of the Union Observatroy at Johannesburg, South Africa. The announcement is regarded with interest by astronomers all over the world.

The universe, Prof. Innes asserts, is contained within the space girdled by the Milky Way, and he figures that the most distant star in that wonderful girdle is 540 light years distant from the earth. Inasmuch as the planetary system, of which the earth is a member, is commonly supposed by astronomers to be close to the centers of the arena embraced within the Milky Way, and inasmuch as light travels 186,000 miles a second, or over five and three-quarters quadrillion miles a year, the diameter of the universe, by Prof. Innes's calculation is 6,234,951,000,000 miles. This is the distance light would travel in 1,080 years. A ray of light takes sixteen minutes and thirty-six seconds to traverse the diameter of the earth's orbit.

The so-called "helium stars," the Johannesburg astronomer avers, are the most distant of all stars from the earth. The helium stars are peculiar to the Milky Way.

Is there anything outside the universe? On this point Prof. Innes does not venture a positive opinion, but he says that the most powerful telescopes penetrate far into space, beyond the boundaries of the universe—revealing nothing. In particular, he says, there is absolutely no sign of other universe of similarly constituted systems.

He looked out beyond the universe—the air in South Africa is very clear—but his telescope discovered in those far-away clouds called "nebulae," which some astronomers suppose to be star-systems in process of formation. Many of these nebulae are spiral-looking, and the conjecture is that they are whirling around and around, condensing themselves into solid globes, on which life may later appear.

The number of stars, according to Prof. Innes, is limited, falling far short of the number of people on the earth. He estimates the mass of the universe as equal to 441,000 times the mass of the sun. That is to say, the combined mass of all the globes, big and little, in the universe is as heavy as 441,000 suns. Of stars 100 times as massive as the sun there are 300; of stars ten times as massive as the sun there are 5,000; of stars equal in mass to the sun there are 200,000; and of stars smaller than the sun there are 16,000,000, 1,000,000 of which are one-tenth the mass of the sun, 5,000,000 are one one-hundredth of the sun's mass, and 10,000,000 are one one-thousandth of the sun's mass. There are besides small stars in scattered clusters, equal in the aggregate to 1,000 times the sun's mass.

It is probable that a majority of the stars, he adds, have a greater surface brilliancy than the sun. Thus, as in the solar system, nearly all the mass is contained in a few bodies, the large majority contributing but slightly to the total. The stars are well mixed as to sizes, small stars occurring where there are large ones and large stars being found where small stars are numerous.

Prof. Innes' other conclusions are that there is no serious absorption of light in space, that it is unproved that the sun and stars radiate into empty space, and that the existence of "dark" suns is quite without demonstration, not one being certainly known.

Popcorn Can Be Profitably Raised on the Farm

THIRTY dollars' worth of popped corn in the form of 5-cent packages for the market represents an outlay of only about $1 or $1.50 for raw material, according to a farmers' bulletin (No. 553) just issued by the department of agriculture, entitled "Popcorn for the Home." Sufficient popcorn to ...

Gilded Horse on Weather Vane Not Yet Extinct

Labor Department Clerks Have to Do Real Work

NEWS NOTES OF GENERAL INTEREST

KERNELS CULLED FROM THE MOST IMPORTANT EVENTS.

STORIES FROM OVER GLOBE

Items From Happenings of World Arranged In Their Briefest and Most Succinct Form for the Busy Reader.

Washington

Domestic

Mexican Revolt

Foreign

Personal

TERRIFIC STORMS

NEPTUNE SHOWS NO FAVORS—PRIDE OF LAKES WRECKED AS BARGES GO DOWN.

Death Roll is Estimated at From 148 to 200—Wind Blows From All Directions.

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DAMAGES WERE AWARDED.

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Was Scarcely a Desirable Recruit.

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To Indorse Tuberculosis Day.

More So.

Toasted to a Golden Brown!

Sounds "smacking good," doesn't it?

That's

Post Toasties

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Wholesome

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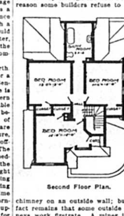
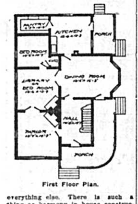
Sold by Grocers everywhere

THE AMERICAN HOME

WILLIAM A. RADFORD EDITOR



Second Floor Plan.



First Floor Plan.

Metal Soles for Farm Shoes.

Their Money's Worth.

THE KITCHEN CABINET

THANKSGIVING DESSERTS.

MORE APPLE RECIPES.

Nellie Maxwell

Bound to Be Busy.

Poor Father!

Ahem!

Beneficent Nature.

A Good Growth of Sweet Clover Where Raw Phosphate Rock Was Used.

RAW GROUND PHOSPHATE ROCK NOW IN VERY EXTENSIVE USE

Necessary in Improvement of Kentucky Soils Deficient in Phosphorous--Gives Profitable Returns and Good Practice to Apply Raw Phosphate in Connection With Fertilizers

(By Geo. Roberts, Agronomist Kentucky Agricultural Experiment Station.)

Within the last few years raw ground phosphate rock has come into use, more or less extensively, in some sections of the country in the improvement of soils deficient in phosphorus. Formerly it was thought to be useless as a material for direct application to the soil. It was thought that the only means for making it available was to convert it into acid phosphate or superphosphate by treating it with sulfuric acid. This belief arose from ... that potash might not be a limiting factor, but other experiments on the same soil showed that its use was unnecessary. Eight hundred pounds of acid phosphate and 2000 pounds rock phosphate per acre (equal money values) are used once in a four-year rotation.

The following yields will show how poor the ground was, and will show how clover will take hold of rock phosphate and how the land improves as organic matter and nitrogen are ...

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ERUPTION ON CHILD'S BODY

Quelching the Assessor.

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The Knockers.

Home Activities.

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Where There's a Will

BY

Mary Roberts Rinehart

WILL BE OUR

Next Serial

o—o—o—o

THIS particular will bequeaths a prosperous sanitarium with all the accompanying property to the grandson of the testator, provided the young man, somewhat of a scapegrace, can run the place profitably for a period of sixty days. The grandson fails to show up on time and an impecunious stranger is persuaded to take his place. The plots, intrigues, the humors of the fractious patients will make you laugh from the first to the last installment. It's just a Delightful Comedy with complications enough to satisfy the most exa ting. The author brings in love affairs, jealousies, ambitions and farce is fast and furious.

o—o—o—o

Watch For It

Where There's a Will

It's the cleverest kind of a farce which you will thoroughly enjoy.