FARM PRODUCTS SHOW EXHIBIT SHOWN BY PENNA TRUSTEES LENGTHEN STATE MISSION TO CHINA **EXCEEDS FORMER YEARS**

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REGISTRAR AT WORK ON SEMESTER REPORTS

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COAL

OUR SPECIALTY HOME-MADE Pies and Cakes

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The fifth and largest Farm Products wow, which was held in Harrisburg st week, easily surpassed all the other work, which was held in Harrisburg st week, easily surpassed all the other was compared to the state of the solid state and in the quality of earlies of the solid state and in the quality of earlies of the solid soli

HUALTH SERVICE GIVES BEPORT ON TREATMENTS

THE SUMMER SESSION

HARRISBURG ALUMNI HOLD MID-WINTER DINNER

POP LOHMAN

DUNHILL'S PIPES

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How is a Wireless Message Received?

PVERY incandescent lamp has a filament. Mount a metal plate on a wire in the lump near the filament. A current leaps the space between the filament and the plate when the

filament glows

Edison first observed this phenomenon in 1883. Hence it was called the "Edison effect"

Scientists long studied the "effect" but they could not explain it satisfactorily. Now, after years of experimenting with Crookes tubes, X-ray tubes and radium, it is known that the current that leaps across is a stream of "electrons"—exceedingly minute particles negatively charged with electricity.

These electrons play an important part in wireless communication. When a wire grid is interposed between the filament and the plate and charged positively, the plate is aided in drawing electrons across; but when the grid is charged negatively it drives back the electrons. A very small charge applied to the grid, as small as that received from a feeble wireless wave, is enough to vary the electron stream.

So, the grid in the tube enables a faint wireless impulse to control the very much greater amount of energy in the flow of electrons, and so gado signals too weak to be perceived by other means become perceptible by the effects that they produce. Just as the movement of a throttle controls a great locomotive in motion, so a wireless wave, by means of the grid, affects the powerful electron stream.

All this followed from studying the mysterious "Edison effect"—purely scientific discovery.

No one can foresee what results will follow from research in pure science. Sconer or later the world must benefit practically from the discovery of new facts.

discovery of new facts.

For this reason the Research Laboratories of the General Electric Company are concerned as much with investigations in pure science as they are with the improvement of industrial processes and products. They, too, have studied the "Edison effect" scientifically. The result has been a new form of electron tube, known as the "pliotron", a type of X-ray tube free from the vagaries of the old tube; and the "kenetron", which is called by electrical engineers a "rectifier" because it has the property of changing an alternating into a direct current.

All these improvements followed because the Research Laboratories try to discover the "how" of things. Pure science always justifies itself.

