

Do You Know?

The *chemical industry* is sometimes divided into heavy, fine and organic chemicals; a heavy chemical, as the term is used applying to an industry, is one that is made and used in large quantities.

Cottonwood, balsam poplar and basswood are light-colored woods with which *aspen* lumber is often confused; the heartwood of aspen is white, while that of the others varies from a pale gray to a grayish brown.

Not many *airplanes* are designed to carry a load greater than their own weight; the Northrop Flying Wing, now under test, will be able to carry 120,000 pounds, it is claimed, in addition to its own 89,000 pounds.

A large manufacturing plant near Pittsburgh is drilling for *natural gas* on its own grounds in hopes of getting supplementary fuel in case of future fuel shortages.

Automobile engines, not perfect in combustion, produce from 1% to 13% carbon monoxide in their exhaust gases, recent tests show.

PHOTOGRAPHY

Speed up Movie Shots

Five million pictures a second can be snapped with a new perfected motion picture camera. This is claimed to be ten times as fast as any produced before.

➤ FIVE million pictures a second is the speed of a new motion picture camera. This is claimed to be 10 times faster than any high-speed camera produced before. When its picture of a rifle bullet is thrown on a screen at ordinary speed it takes a minute for the bullet to move one inch.

The new camera, developed at the University of Rochester's Institute of Optics, was revealed in New York to a group of scientists by Dr. Brian O'Brien and Gordon G. Milne, who are responsible for its development. An earlier version was used at the Bikini atomic bomb test, but it was a type that produced a continuous streak instead of an interrupted series of pictures.

The methods used to get this exceedingly high speed limit the quality of the pictures produced. They are far below ordinary motion picture standards, but serve for research and industry.

A film in a conventional type camera would have to travel 20 to 50 times the

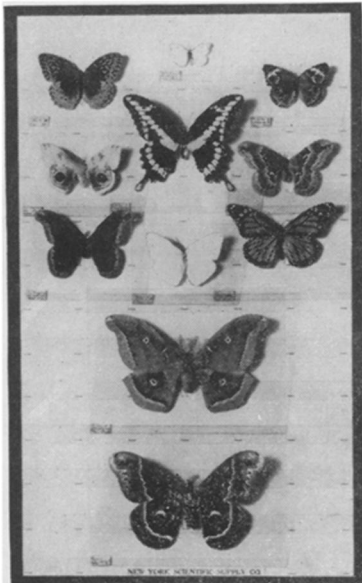
velocity of a bullet to get several million frames a second. If the film is stationary and the image caused to move by rotating mirrors, the total number of frames, and thus the total duration of the motion picture, is quite limited. These difficulties are overcome in the new camera by a device which dissects the image, which later has to be reassembled.

The dissecting device breaks up the image of the rectangular picture into a series of very narrow strips which are drawn out by the film, which travels at a rate of 400 feet per second, into a streak. The variations in the photographic density at any particular place across this streak contain all the elements of a complete rectangular picture.

After processing, the negative is reconstructed into the original rectangular picture by projection back through an optical system similar to that which formed it.

Science News Letter, November 1, 1947

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