



IR SYSTEM

To take this picture, a new system of lighting control, invented by Dr. Alfred N. Goldsmith, Harry R. Mennefee, William Mayer and Fritz Kastilan, of New York City, was used. Instead of lighting the entire set continuously, first the foreground is illuminated, then the middle distance, and then the background. By means of a series of compensating plates that revolve behind the camera lens, the focus is kept in step with the lighting, so that whichever part is lit is in focus. For each picture of the movie film, the entire set is lighted. The illumination may be divided into four or even more areas if necessary, while in some cases two might suffice. With this system, in the hands of an expert director, it is expected that many dramatic effects can be introduced into the movies.

CHEMISTRY

Mystery Explosive Plant May Be Effort To Avoid Bottleneck

Any Carbon-Containing Compound To Which Extra Atoms Of Nitrogen Can Be Attached May Replace Toluene

THE NAVY'S plans for a \$70,000,000 "mystery" plant for producing a new explosive may represent an effort to get away from a bottleneck in production of TNT in the unprecedented quantities that will be necessary when the great fleets of super-bombers now building are ready to receive their loads of deadly "eggs"—some of them weighing as much as two tons each.

Toluene, or toluol, basis of TNT, is normally produced from a light oil distilled out of coal tar. But a ton of tar will yield only about six pounds of toluene—and when toluene is demanded in thousands of tons, a bottleneck can very easily develop.

Recently several new methods have been announced for the production of toluene, or other substances "just as good" for high-explosive manufacture, out of petroleum and natural gas. It is within the field of legitimate conjecture that the proposed new plant described by Rear Admiral W. H. P. Blandy before the House Naval Committee might be for the production and processing of toluene or its equivalent from such fluid fuels.

The exact nature of the explosive is simply impossible to guess. In any case, such guessing might not be in the best interests of national defense. Any carbon-containing compound to which

extra atoms (usually three) of nitrogen can be attached is capable of becoming a high explosive. Toluene became the favorite about a generation ago because it is a solid at ordinary temperatures, is easy to handle, and yields a stable, "safe" explosive that doesn't go off until it is told to. But with literally thousands of other carbon-containing compounds available, a wholly new, perhaps more desirable explosive could be worked out and kept safely under wraps of military secrecy until ready for large-scale use.

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MEDICINE

Epilepsy and Migraine Are Related Diseases

A GREAT many people, even in this day of free popular discussion of medical topics, illnesses and symptoms, have a prejudice against epilepsy which makes them go far to avoid persons suffering from this disorder and even, perhaps, to hesitate about using the word. These same people, however, are likely to have considerable interest in and sympathy for persons with migraine and the word itself has long had an aristocratic sound. It may surprise such people as well as many migraine and epilepsy sufferers themselves to learn that the two ailments are kin—some sort of cousins, according to Dr. William G. Lennox, of Harvard Medical School. He explains the relationship in his book, *Science and Seizures* (Reviewed, SNL, this issue), as follows:

"Epilepsy and migraine are both disorders of the nervous system, but epilepsy involves primarily the brain, and migraine the vegetative (or autonomic) nervous system, that part of the nervous system which is not under the conscious control of the individual. Therefore, if the superficial nature of names is remembered, migraine may be spoken of as an epilepsy of the vegetative nervous system or epilepsy may be called a migraine of the brain."

The same person may have both epilepsy and migraine, as did Julius Caesar. In a study of more than 2,000 patients, more than nine out of every 100 had had attacks of both epilepsy and migraine. Neither epilepsy nor migraine occurred so frequently in 1,000 medical students, nurses and other patients selected for comparison as being representative of the general population. Family histories of patients with epilepsy and migraine also