

CHEMISTRY

Photo Film Base Changing

Revolution in kind of material used for transparent base of photographic film expected from trials with polyester chemical related to Dacron.

► A REVOLUTION in the kind of material that is used for the transparent base of photographic film is on the way.

One of the newest plastics, a polyester chemical, is the film base of the future. It is related to the newest of synthetic textile fibers, Dacron, as it is now called after an early stage when it was known as Fiber V. Thus the same chemical material will be used in the future for men's shirts and ladies' underthings as well as film.

Very limited quantities of the new polyester film base are being produced at Du Pont's photographic film factory at Parlin, N. J. These are being sent to the motion picture industry and the armed forces for extensive trials.

The new film is likely eventually to out-mode both the older cellulose nitrate and the newer cellulose acetate safety film. But now production is limited to experimental quantities.

The polyester film has better or equal transparency than nitrate. It is dimensionally stable to a greater extent. Air Force experiments are reported to find that the polyester film keeps its proper dimensions

at as low as 20 degrees below zero, making it suitable for arctic use in reconnaissance photographs. First practical use is likely to be in this field. Keeping exact dimensions is also very important in film used for lithographic and other printing negatives.

The new film is also tougher than either nitrate or acetate, which is important in withstanding the wear of motion picture projection. It is less flammable than even the acetate.

Nitrate film, despite the fire and explosion risk, has been long used in commercial motion pictures because it produces better quality images than the safety acetate film standard for all 16 mm. home and amateur movies.

A cellulose triacetate film, now in production by Eastman, has begun to supplant the nitrate film in commercial movie use. The triacetate, made by carrying out the acetylation a little farther, has better qualities than the monoacetate or the diacetate which compose the usual safety film.

The polyester plastic or resin, of which both Dacron and the new film base are made, is a different kind of chemical. It

is made by polymerizing ethylene glycol (used in permanent type antifreeze) and dimethylterephthalate.

Science News Letter, December 29, 1951

MEDICINE

Blood Difference in Sclerosis Clue to Cause

► SIGNIFICANT CHEMICAL differences in blood and in kidney secretions of multiple sclerosis patients from normal patients have been discovered by Dr. Harold H. Jones, director of the H. L. Snyder Memorial Research Foundation at Winfield, Kans.

Blood of multiple sclerosis patients also clots more slowly in most cases, Dr. Jones found. These patients have more cholesterol in their blood serum but the fatty phosphorus compounds in the blood serum are not proportionately increased.

These studies, designed to learn more about the nerve crippling disease in the hope of finding how to stop it, were reported by Dr. Jones at the meeting in New York of the medical advisory board of the National Multiple Sclerosis Society which has supported the work since last April.

The effects of ACTH, famous anti-arthritis hormone, in multiple sclerosis, are being studied by Dr. Jones and other scientists under grants from the society.

But the studies have only just started and no results have yet been obtained.

Search for a possible virus cause of the disease has now also started, but so far none has been found.

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AGRICULTURE

Exploding Phosphorus Atoms Tell Where to Put Fertilizer

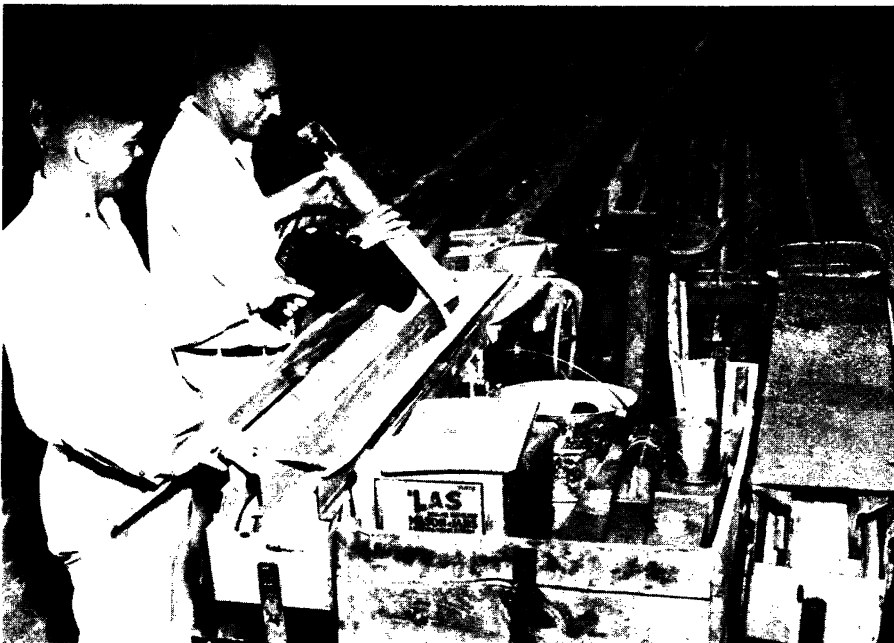
► EXPLODING ATOMS of phosphorus are helping scientists to know just where to place fertilizer so that crops can get the most out of it.

Scientists from the U. S. Department of Agriculture and State Experiment Stations gathered at Beltsville, Md., to report on the use of radiophosphorus and other similar atomic-reactor manufactured isotopes (atomic varieties) in fertilizer studies.

Instead of spreading the fertilizers broadcast over the fields and gardens, agriculturists learned some years ago to place the added plant food closer to the seeds and roots in rows and small patches.

Radiophosphorus, which by its radioactivity can be traced in the plants, is now telling what methods of application are most efficient, Dr. R. Q. Parks, head of the U. S. Department of Agriculture soil management and irrigation division, explained in opening the conference. It is possible to trace how much of the plant's phosphorus comes from the soil and how much from the fertilizer.

Science News Letter, December 29, 1951



FERTILIZER USE—The best way to place fertilizer is being learned through studies such as this, where radioactively tagged fertilizer, loaded on an endless belt of hoppers, is distributed to a field. One scientist is checking the radioactivity hazard as the "hot" material is poured out through the metal tube.