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SCIENCE NEWS LETTER

®

THE WEEKLY SUMMARY OF CURRENT SCIENCE

Titanium Mountain

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A SCIENCE SERVICE PUBLICATION

Radio Relay station on route between Chicago, Ill., and Des Moines, Iowa. Every fifth or sixth relaying tower is a control station, where high-speed switching equipment enables a TV picture to skip out of a troubled channel and into a stand-by protection channel faster than the eye can wink.

There's no way to stop atmospheric changes that threaten television with "fade." But, for TV that travels over Bell's Radio Relay System, Bell Laboratories engineers have devised a way to sidestep Nature's interference.

When a fade threatens—usually before the viewer is aware—an electronic watchman sends a warning signal back by wire to a control station perhaps 200 miles away. An automatic switching mechanism promptly transfers the picture to a clear channel. The entire operation takes 1/500 of a second. When the fade ends, the picture is switched back to the original channel.

This is an important addition to the automatic alarm and maintenance system that guards Bell's Long Distance network for television and telephone calls. It marks a new advance in Bell Telephone Laboratories' microwave art, developed to make your Long Distance telephone service, and your TV pictures, better each year.

BELL TELEPHONE LABORATORIES

Improving telephone service for America provides careers for creative men in scientific and technical fields.

Kodak reports to laboratories on:

a push button notetaker (in color)... picking out potassium ions at will

Close up

You are leading a troop of scouts on a hike through the deep woods, and the youngest of them spots a strange reddish blotch on the trunk of an old hemlock. Is it an old paint dab or a new fungal blight? Jot it down on *Kodachrome Film* for checking.

You are studying the allergenic properties of various substances and don't want to depend on verbal descriptions of your observations. Jot them down on *Kodachrome Film.*

You are investigating erratic behavior of an extrusion press and discover an alarming crack on the hidden side of the base casting. Jot it down on film so that the manufacturer will know exactly what you are talking about.

"Jot it down" brings a wistful little smile to the lips of those who recognize in that pat term a wee oversimplification of certain problems in lighting, focusing, framing, and camera support that they have encountered in such situations. These skeptics we now confound with this device:

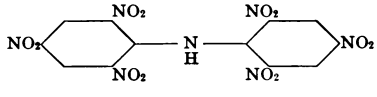
We are not going to suggest that you knock such a simple instrument together yourself because a) you probably won't get around to it and will therefore miss out on a good idea for broadening the usefulness of photography in your activities; b) if you *did* make it a project, you'd find it takes π times as many hours as you had figured on and then you would discover the first time out that there was an important design point you had overlooked.

Instead we suggest a visit to your Kodak dealer for a look at the new *Kodak Technical Close-Up Outfit.* Heft of it. Note that all you do is put it up to your subject, squeeze, and you get a picture of whatever ear of wheat, aneurysm, or lump of carnotite is in the rectangle. (To avoid distracting shadows, two of its sides have been omitted but your eye easily imagines them. The two sides that are there are just out of the picture.)

The light comes from a walnut-sized flash bulb inside the bag. Since that close it overwhelms even sunlight, exposure, like focus and composition, requires no decision, no onerous cerebration. This always augurs well for the non-professional in photography who nonetheless appreciates good photographs. To use the outfit at 3 feet or at 15 feet or with black-and-white film demands but one or two procedure changes, unambiguously stated on the flash holder. The outfit includes the excellent *Kodak Pony 828 Camera,* the *Kodak B-C Flasholder,* and several other items better seen than read about. The camera is also yours to use without the hardware, of course.

You press the button; it does the rest. $62.75.

Potassium trap



The ominously nitro-begirt aspect of this molecule should not be allowed to divert attention from its useful and unusual ability to precipitate potassium selectively from solution. Its "trivial" name of dipicrylamine suggests a sensitive nature like that of picric acid and the even more sensitive ammonium salt of that acid. Dipicrylamine may not be quite so ready to yield up its potential energy with violent rapidity. All the same, our man who prepares it by further nitrating dinitrodiphenylamine (and anyone who uses it) is well advised to keep his mind on his work. When he has finished purifying it to analytical grade, he labels it *2,2′,4,4′,6,6′-Hexanitrodiphenylamine* and numbers it Eastman 4402.

All this is brought to mind by a recent editorial in a British industrial magazine, captioned "Winning potash from the sea." It is about the use of this very compound on a large industrial scale. The calcium salt is added to sea water in an amount almost equivalent to the potassium content of the water. Potassium dipicrylaminate is thereby precipitated and then treated with acid to liberate the dipicrylamine for reuse.

Such a process hardly needs the purity that brings the price of Eastman 4402 up to $1.75 for 10 grams, but the editorial set us to wondering whether all the biologists and physiologists interested in the potassium balance of life know it is that easy to pick out potassium ions at will.

There is an abstract we give away on gravimetric, acidimetric, and colorimetric procedures with this reagent in the determination of potassium. We also give away our Eastman Organic Chemicals List No. 39 to those who want a handy source for some 3500 highly purified organics. For either abstract or catalog, write to Distillation Products Industries, Eastman Organic Chemicals Department, Rochester 3, N. Y. (Division of Eastman Kodak Company).

Prices include Federal Tax where applicable and are subject to change without notice.

This is one of a series of reports on the many products and services with which the Eastman Kodak Company and its divisions are... *serving laboratories everywhere*

Kodak
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