Kodak reports to laboratories on:

how to bring somebody else's slide lecture back home . . . riding the new speed vs. sharpness curve . . . adding to an already imperfect list of reagents

Convention trophies

Bumped into a lad the other day who is director of photo services at one of the big Middle Western universities. It was at a meeting of a technical society, and he had spied us in the act of outwitting a speaker who was impressing the audience by zipping slide after slide of big, fat tables of numerical data onto the screen. There we sat in the dark with a little camera, popping away at each slide so that when we got home we could take our own sweet time deciding just how impressed to be.

We thought we would have a chance to expound to the fellow a little on film, aperture, and shutter speed involved in this photographic feat, but it turned out this type of cagey operation is straight routine with him and we couldn't tell him a thing he didn't know already. One of the regular duties of his office is to supply staff members with cameras to catch the slides at meetings.

With any luck and a steady hand, a camera no more elaborate than the Kodak Pony 135, Model C, *which comes with an f/3.5 lens for $33.75, should pick up readable copies of slides on* Kodak Tri-X Film *when shot wide open at 1/25 sec. from a point in the room where the screen image just fills the finder. It could provide something more definite to bring home from a meeting than a feeling of solidarity with one's discipline. (Caution: copying a man's slides without his permission could conceivably earn one a punch in the nose.)*

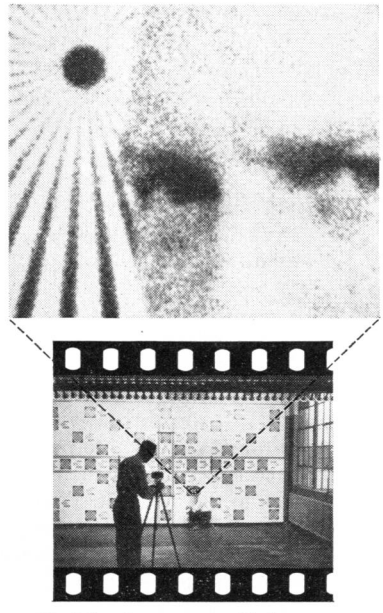
Enlarging the breakthrough

Looked back at now, the film emulsion-making practices of, say 1953, seem unsophisticated. We shall have to let the remark stand at that. The fact is that there has been an abrupt rise in a quasi-quantitative quantity, the product of film speed and sharpness.

About measuring speed there is a lot to be said, but we won't say it here, except that the *Kodak Tri-X Film* which we introduced a year or so ago has significantly expanded the scope of photography.

Sharpness, a subjective impression, has now likewise had a metric imposed on it. There is a mathematical statement—termed acutance—of the density variation across the photographic image of a knife edge. It is quite different from resolving power, a quantity related to the smallest repetitive detail distinguishably reproducible, whether the detail looks sharp or not.

Riding the new speed *vs.* sharpness curve, we here announce reactivation of the name *Kodak Panatomic-X Film* to apply now to our sharpest roll film, 35mm and other sizes, for general photography. Its Exposure Indexes are 25 for daylight and 20 for tungsten. Its emulsion is less than half as thick as usual in negative film. This shortening of the path along which light can scatter on its way down is part of the reason for the greater sharpness, but only part. The thinness also speeds processing. As for resolving power, witness the following demonstration, as filtered through the press that printed this page:



Kodak Panatomic-X is an extreme, as is *Kodak Tri-X*. For those who have been getting along just fine with the speed of *Kodak Super-XX*, but want the sharpness benefit of the 1954 breakthrough, we recommend a new 35mm and 70mm film we are calling by the old name *Kodak Plus-X*. The noble old name *Super-XX* is being retired, except for sheet and aerial film.

Already both of these new films are among the most widely distributed manufactured products in the United States.

Yet another reagent for Cu

The world, it would appear, has need for yet another reagent for copper, so now we give you *Dicyclohexanone Oxalyldihydrazone* (Eastman 7175). The 14 Cu reagents already listed in our catalog are not enough. Each has its own shortcomings.

Diethyldithiocarbamic Acid Sodium Salt (Eastman 2596) for example, forms interfering colors with iron, cobalt, nickel, and bismuth and calls for solicitude over monochromatism in applying Beer's Law to measure the yellow complex it forms with copper. *Diphenylthiocarbazone* (Eastman 3092) demands close watch on pH to keep a reasonable specificity, besides being confusingly colored itself. *2,2′-Biquinoline* (Eastman 6183) has the Cu specificity, but with a molar absorbancy index of only 5900, it is a little low on sensitivity.

Compare this figure with the 16,000 molar absorbancy index of the cupric complex of dicyclohexanone oxalyldihydrazone, which one Scandinavian chemist first prepared by reacting oxalyl dihydrazide with cyclohexanone and two other Scandinavian chemists put to work measuring copper in paper pulp. The sensitivity works out to about 0.03 ppm. Of 48 other common ions tested, not one gave an interfering color. Lead, zinc, nickel, and particularly cyanide did interfere, but forthrightly, by preventing or delaying color formation, not by dissemblance.

Beyond a doubt, even this negative interference will someday exasperate some analytical chemist into devising yet another reagent for copper. We hope to sell that one, too.

Will you accept a gift, meanwhile, of a procedural abstract for dicyclohexanone oxalyldihydrazone in the determination of copper in serum? If you also want the chemical, we're afraid we have to charge $2.50 for 5 grams of it as Eastman 7175. 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*

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