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# SCIENCE NEWS LETTER

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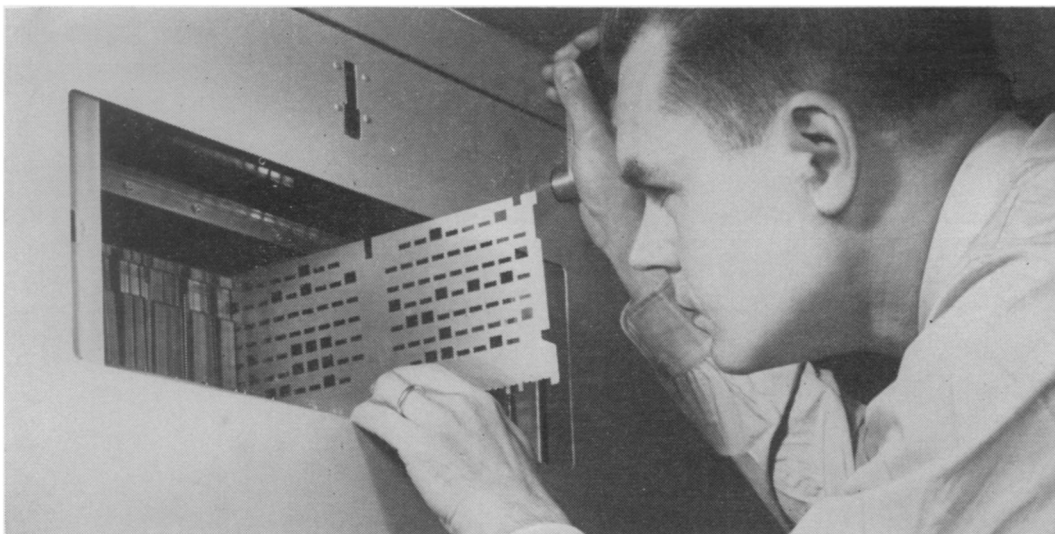
THE WEEKLY SUMMARY OF CURRENT SCIENCE



**Jets Aloft**

See Page 296

A SCIENCE SERVICE PUBLICATION



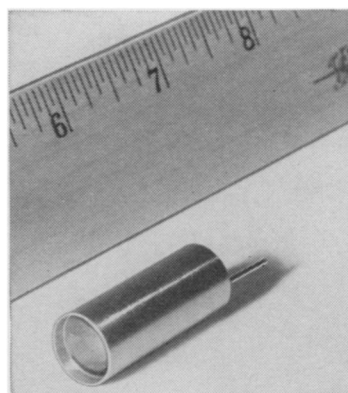
Checking perforated metal card in Bell's new "card file." If the first voice-way is in use, a "detour" is swiftly found.

## CARDS FOR CONVERSATION

To find out how to route Long Distance calls a dial system needs lots of information—fast. To provide it Bell Laboratories engineers developed a new kind of card file—one that dial systems can read.

Punched holes on metal cards tell how calls should be handled. When a call arrives the appropriate instruction card is displaced so that its pattern of holes is projected by light beams on a bank of Phototransistors, which signal switches to set up the best connection.

The "card file" will have its widest use in speeding Long Distance calls that are now dialed by a telephone operator and may one day be dialed by you personally. It is another example of how Bell Telephone Laboratories helps telephony to grow, as costs are kept down.



New Phototransistor unit. Light entering cylinder is focused by lens on germanium that responds by generating current. Like the Transistor, the Phototransistor was invented in Bell Telephone Laboratories.



### BELL TELEPHONE LABORATORIES

IMPROVING TELEPHONE SERVICE FOR AMERICA PROVIDES  
CAREERS FOR CREATIVE MEN IN SCIENTIFIC AND TECHNICAL FIELDS

# How to extend Christmas THE WHOLE YEAR THROUGH

FOR THE MOST UNUSUAL PERSON  
ON YOUR CHRISTMAS  
LIST



Wouldn't he (or she) like a gift of twelve packages, one to arrive each month in 1954?

Twelve  
Surprises  
plus  
another  
we'll add

IN EACH 1954 gift package, there will be several objects of science, and with each object, a museum-style legend card, which will tell at a glance what these THINGS of science are. Included will be the sheets of explanation, that give the interesting details of discovery, of development, of manufacture, and that tell how to perform unusual experiments with the contents of the package.

Since late in 1940, packages like these have been going forward to members of the THINGS of science group. Glance over this list, then decide whether a membership which brings monthly packages on subjects as widely varied as these, isn't just the thing for that most unusual person on your Christmas Gift list.

- |                 |                     |                        |
|-----------------|---------------------|------------------------|
| Unusual Fabrics | New Fabrics         | Steel                  |
| Rayon           | Wetter Water        | Paper Chromatography   |
| Glass Fibers    | Humidity            | Motion Picture         |
| Rubber Plant    | Licorice            | Nut Trees              |
| Cotton Boll     | 1951 Seeds          | 1953 Seeds             |
| Home & Office   | Basic Chemicals     | Titanium               |
| Ramie           | Wood Identification | Pyrethrum Insecticides |
| Lecithin        | Sea Shells          | Mathematical Curves    |
| Fungicides      | Paper Making        | Highway Safety         |
| Taste           | Fertilizer          | Carbon Black           |
| Kidskin         | 1952 Seeds          | Optical Illusions      |
| Soybean         | Polaroid            | Fiberglas-Plastic      |

You know the one who would thank you again and again for such a gift. And if you are not yourself a member, you could hint to someone that you'd like it as a gift yourself.

The 1954 THINGS of science will be unusual; every month's package will be a surprise. A Christmas Membership to THINGS of science will bring the 12 units of 1954, plus an extra unit which we will select and add to your gift with our compliments. We will make out and mail a Christmas card with your name as donor, announcing your gift. Each membership is \$5 a year, postpaid. You will find a handy order coupon below.

## Gift from

MY NAME.....

STREET ADDRESS.....

CITY AND STATE.....

Mail this order to THINGS of science, 1719 N St., N. W., Washington 6, D. C., for the 12 units of 1953

- I enclose \$5.00 for the following  
 Please bill me after Christmas

## Gift to

PLEASE PRINT.....

STREET ADDRESS.....

CITY & STATE.....

MAKE OUT Christmas Card  
TO READ from.....

## Kodak reports to laboratories on:

three recent publications on color photography, scientific photography, and industrial radiography . . . a new way to track down organic chemicals . . . the finest camera we make

### Three books



These three fellows of ours are smiling for the photographer in celebration of the publication of their book, "Principles of Color Photography." In the book they don't smile at all. Soberly and with an abundance of illustrations, Messrs. Ralph M. Evans, W. T. Hanson, Jr., and W. Lyle Brewer (pictured r. to l. in that order) present the theory behind visual and photographic sensitometry, analyze the methods of obtaining colorant images, and tell how they are combined to give color processes. It's sold by Kodak dealers for \$11, and no inventor of new systems of color photography should be without a copy.

No user, or prospective user, of the photographic emulsion as a scientific instrumentality should be without a copy of "Kodak Photographic Plates for Scientific and Technical Use." Besides giving the detailed information implied by the title, it contains just about the most concise précis of the scientific theory of photography to be found. The new edition has been extensively revised. Kodak dealers sell it for 50c.

Still lower on the price scale, namely free, is another newly revised booklet, "Kodak Materials and Accessories for Industrial Radiography." This one tells how to pick the best type of film for any non-medical job involving exposure to x-rays and describes various devices to make life more pleasant in the x-ray laboratory. You can get a copy by writing Eastman Kodak Company, X-ray Division, Rochester 4, N. Y.

### Fine needles, fine haystack . . .

Why is *o*-Benzoic Sulfinide (Eastman 38) like 2-Aminobenzothiazole (Eastman 3940)?

One of our senior chemists, who knows the Eastman catalog about as well as he knows his children's names and ages, got to brooding recently that given one of these compounds, even *he* wouldn't have been able to name the other right off as one of its nearest relatives in our list. (Both consist of a C<sub>3</sub>NS heterocycle fused to a carbocycle.) His unease about the difficulty in picking up such relationships among his own merchandise pricked him to spend a good many hours at home making up a deck of cards coded for each compound, that could be shuffled in various ways.

We now learn that another chemist, who works not for us but for Remington Rand, has done the job by punched cards. We ourselves have encoded a fair amount of chemical data on punched cards, but this chemist has done it by the new Wiswesser notation for every Eastman Organic Chemical having a known structure. Thus electromechanical brains, such as are ensconced in many large organizations, can fill in their idle moments by discovering all sorts of important relationships among the more than 3500 organic compounds available from a single, completely dependable source—namely, us.

*If you want to know more about what this man has done, or if you want to purchase our catalog in punched card form, write Remington Rand Inc., 315 Fourth Avenue, New York 10, N. Y. In its conventional book form, the catalog remains free of charge. If you need a copy, write to Distillation Products Industries, Eastman Organic Chemicals Department, Rochester 3, N. Y. (Division of Eastman Kodak Company).*



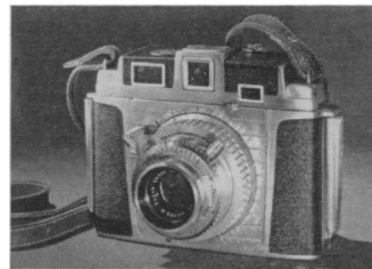
### The Chevron

The world's best known camera manufacturer has just announced its finest roll-film camera. While not surprising, this is nevertheless news.

The camera provides the size advantage of 2¼" x 2¼" negatives or

color transparencies, yet is used at the eye-level position preferred by many. It has the world's fastest between-the-lens shutter, with rotating blades for smoother, more accurate exposure. There are ten speeds from 1/800 second to one second, plus "B." Flash synchronization is continuously adjustable for top efficiency at all shutter speeds with both Class F and Class M flash bulbs and electronic flash equipment like the Kodatron Speed-lamp.

The lens is a 78mm *f*/3.5 Kodak Ektar Lens—a finer one we doubt you can buy. To provide the focusing accuracy such a lens merits, there is a split-field rangefinder operating from 3½ feet to infinity and based on such advanced design features as double V-bearings for moving its mirror, ball-bearing mount-



ing for the focusing tube, and cams almost eight inches long machined to accuracy within .0005" throughout their length. The rangefinding operation automatically applies the proper parallax correction to the adjacent viewfinder. An adapter is available to take No. 828 film for the larger 28 x 40 mm Kodachrome slides. Weight: 2½ pounds. Price: no fortune but a sensible \$215 for a piece of equipment of strictly professional calibre. (Worth keeping in mind, for example, as a retirement gift for someone who respects noble instrumentation.)

*Superlatives in print tire the eyes. If you want to see a well-built camera, go down to your Kodak dealer and ask him to show you the Kodak Chevron Camera. Since quantities are still limited, there may be a little wait for delivery.*

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**  
TRADE-MARK