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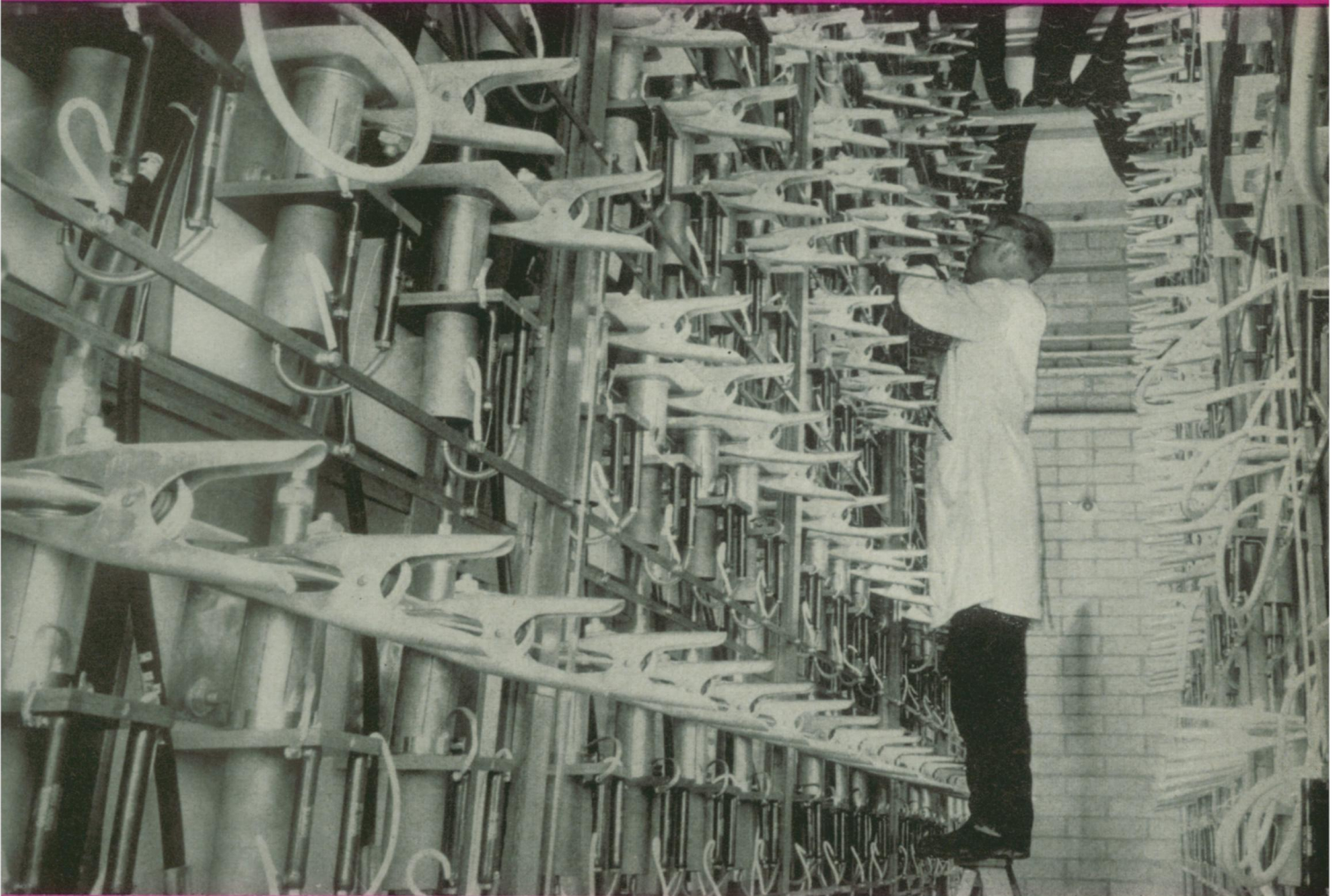
July 9, 1960

VOL 78 NO. 2 PAGES 17-32

# SCIENCE NEWS LETTER

®

THE WEEKLY SUMMARY OF CURRENT SCIENCE



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See Page 23

A SCIENCE SERVICE PUBLICATION



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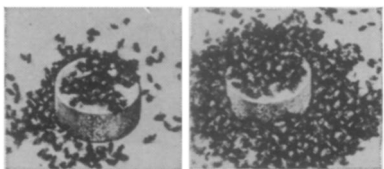
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## AERONAUTICS

### Aircraft Position Found From Pilot's Voice

A METHOD by which the position of an aircraft can be pinpointed with "near perfect" accuracy has been demonstrated at the British Exhibition in New York. Use is made of the source of the pilot's voice communications with the ground which are picked up by three stations on the ground. These stations determine the direction from which the voice is coming with high accuracy, and fix the plane's position by triangulation.

Science News Letter, July 9, 1960

## Do You Know

There are more than 200 *planetariums* throughout the world; one of the newest ones is in Astrakhan, Russia.

Of the 37,800 Americans killed in *auto accidents* during 1959, nearly one-fifth were killed on a Saturday.

The *planet Uranus* is 1,783,000,000 miles from the sun and has a temperature of about 310 degrees below zero Fahrenheit.

The *weaver bird*, a small creature with red beak, black collar and beige feathers, is an ancient plague of Africa, as destructive to grain crops as the locust.

Among *overweight women*, the heart disease death rate is 50% above that for women of standard weight; cancer, diabetes, pneumonia and influenza, and diseases of the digestive system also have much higher death rates among overweight women.

More than 90% of the *basic research* in universities and colleges is now being supported by Federal Government funds.

## MICRO-ADS

Equipment, supplies and services of special interest to scientists, science teachers and students, science-minded laymen and hobbyists. 25¢ per word, payable in advance. Closing date 3 weeks prior to publication (Saturday).

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# Kodak reports on:

a commercially interesting four-membered ring . . . increasing the peak value of informational sensitivity . . . photography for biologists . . . color lore that might have bored Goethe to death

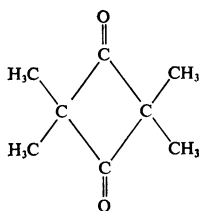
## Smells like menthol

Our pilot plant for *Tetramethyl-1,3-cyclobutanedione* from dimerized ketene has gone on stream.

It is a promising organic intermediate. This is a colorless way of saying that even if we knew the route by which Joe Public eventually buys it, it would be too long a story to tell. If Fortune smiles, some chemical descendant of this dione, a remote descendant very likely, will have a part in pleasing Joe. It may wash cars, kill weeds, scare sharks, shed rain, smell good, fight fires, heal the sick, or die on the vine.

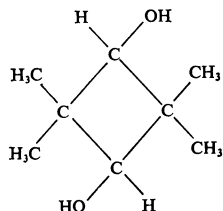
Such language is unsuitably direct. At this stage, sales talk must be kept scholarly. Our chemists proceed like a chef with a fresh, fat partridge and an armory of herbs and spices for sauce.

We offer



the first four-membered ring at a price we believe commercially interesting. It can be left a ring or be split open in interesting ways. It reacts with the usual carbonyl group reagents, but the reaction can proceed further to yield heterocyclics. It resembles menthol and camphor in odor and volatility.

We also offer the ring hydrogenated to the secondary glycol, *2,2,4,4-Tetramethyl-1,3-cyclobutanediol*,



which forms very stable diesters, as for plasticizers and lubricants. It forms both saturated and unsaturated polyesters. Not the least of its charms is the white, translucent, waxy polymer in which silicon atoms can link it.

To get a line on price, one writes Eastman Chemical Products, Inc., Kingsport, Tenn. (Subsidiary of Eastman Kodak Company) and thus gives us an opportunity to send the scholarly details complete.

**This is another advertisement where Eastman Kodak Company probes at random for mutual interests and occasionally a little revenue from those whose work has something to do with science**

## Nice sharp pictures

We must not lose our sense of proportion. We must recognize that some people take so little technical interest in photography that they have never even heard of *Kodak Tri-X Pan Film*. Others who do use it have noticed that since that "Improved Type" has appeared on the carton, results have somehow improved. Most of these folk will be content with a bland assertion that the recently added notation signifies a major advance in reduction of graininess and improvement in picture sharpness. A single congenial luncheon table could probably accommodate all who would press us to explain that what we have really done is to increase the peak value of the informational sensitivity *I* of *Kodak Tri-X Pan Film* from .0016 to .0036

$$\text{where } I = \frac{g}{a_s} \cdot \frac{1}{\sigma_s(D)}$$

*g* = gradient of the linearized characteristic curve  
*a<sub>s</sub>* = area of the spread function

*σ<sub>s</sub>(D)* = standard deviation of the granularity trace for a scanning aperture having the size of the spread function.

If you want to talk like that you should first consult *Journal of the Optical Society of America*, 48, 926, but if you just want very sharp pictures from very fast film, ask the Kodak dealer for *Kodak Tri-X Pan Film, Improved Type*.

## Four of us at Woods Hole

Four of us expect to put in a rugged week on Cape Cod beginning early on the morning of August 1. It's not exactly an exhibit or symposium or anything as formal as that. It's just that the management of the Marine Biological Laboratory at Woods Hole has given us to understand that if we want to hang around for five days dispensing free advice on how to use photography to communicate results of biological investigation, they will probably refrain from calling the cops to throw us off the premises.

One of us will be there to hold court on problems encountered in photomicrography and photomacrography of marine life—movies or stills, color or black-and-white. Another of us will

take over when questions come up of photographing living small specimens at natural size or less, with or without flash. The third man knows a lot about photographic materials for electron micrography, autoradiography, and microradiography. The fourth, a biochemist, will make himself generally pleasant and helpful.

We figure any time spent feasting on *Homarus americanus* is time lost from showing our movie of *Homarus americanus* hatching in glorious Eastman color.

## Gelatin responsibly dyed

A rich legacy of heuristic nonsense has been accumulating for generations in the next region of the electromagnetic spectrum over from the infrared, where the eye reigns supreme as the receptor and has qualified every seeing, thinking man to hold opinions. Even the mighty Johann Wolfgang Goethe, author not only of "Faust" but also of "Die Farbenlehre," put in his *zweipfennig* worth.

Amid rampant intellectuality, it has behooved us to tread lightly and confine our thinking to such *farbenlehre* as will fit us the better to flood the earth with color photography, myriad-colored Tenite plastics, color-locked Chromspun fibers, and Eastman textile dyes. Plus another field of dye art, tiny in economic comparison and disproportionately demanding in technical patience but important to those who, whatever their theories or purposes, wish to modify spectral distribution or overall intensity of light in systematic, quantitative, reproducible, simple, and inexpensive fashion. We refer to the celebrated little marvel of precision dye chemistry, the *Kodak Wratten Filter* of uniform gelatin, with or without glass mounting.

The reason we refer to it is that the new 20th edition of "Kodak Wratten Filters for Scientific and Technical Use," containing 81 pages of curves, data, and other useful information, is now obtainable from well-stocked photographic stores for 75¢ or from Eastman Kodak Company, Sales Service Division, Rochester 4, N. Y.

Price quoted is subject to change without notice.

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