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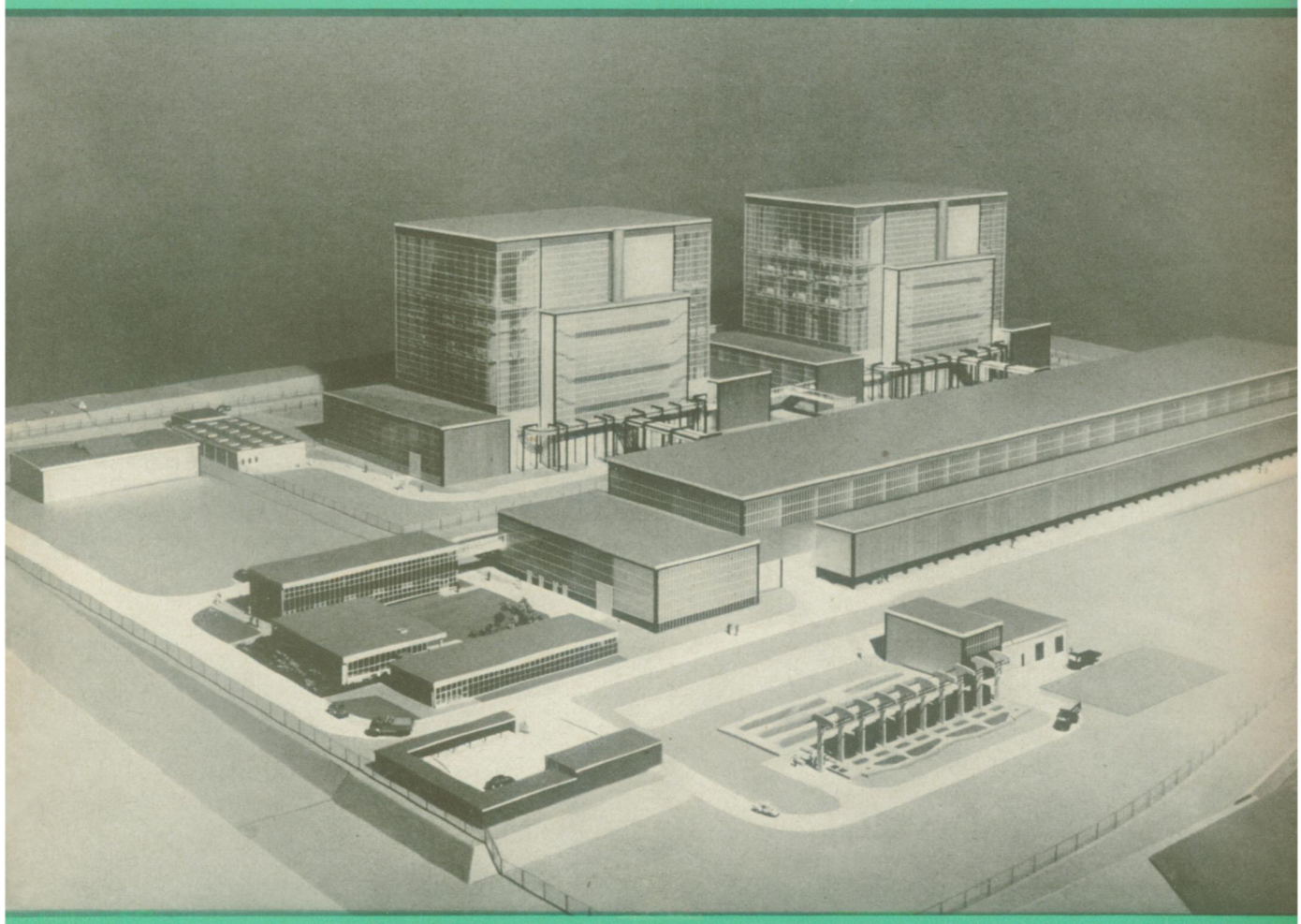
SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE



British Atomic Power

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A SCIENCE SERVICE PUBLICATION

Kodak reports on:

cellulose acetate phthalate in the tummy . . . photographic materials for looking up

17 years have gone by

The great Ivan Pavlov—he of the salivating dogs that you learned about in Psychology 1—did more than found behaviorism. By shedding illumination into the dark workings of the alimentary canal, the old boy lit the light that set off a chain of more than 100 patents on preparations that would get medicines safely through the stomach and on into the intestine. Each shines forth, lives out its allotted legal span of 17 years with more or less success, expires, and becomes part of the art that anyone skilled in the art of pharmacy may freely practice.

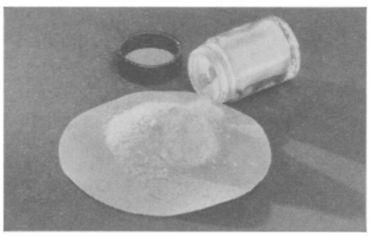
This year expiration befell U. S. 2,196,768, one of the more successful of them. It belonged to us, of all people.

In the dull monotone affected by the patent bar, this document drones on and on about "a medicament surrounded by an enteric film or layer of a cellulose derivative which contains a dicarboxylic acid radicle [*sic*] and which contains free carboxyl groups . . . " etc., etc., etc. In Examples VII and VIII and Claim 10 appears cellulose acetate-phthalate. That was it. That is our baby.

Reports in the pharmaceutical journals over the years on experiments to compare the properties of available enteric coating materials usually wind up reading like testimonials for CAP. Well over a billion doses of medicine coated with CAP have been swallowed. That may not be so many for 17 years, but it isn't bad either.

The reason CAP has been able to do mankind a little good is that it's just extremely resistant to gastric action, most susceptible to the hydrolytic influence of intestinal esterases, and quite independent of the assumption that the contents of the human upper intestine are reliably alkaline. Also, of the controversial assumption that the stomach empties at a reliable rate. Tablets coated with CAP have shown no signs of disintegration after seven days in a continuously agitated artificial gastric juice. In the same investigation in simulated intestinal juice at pH 6.9, rupture took place in 70 to 75 minutes, while at pH 8.5 all tablets disintegrated within 50 minutes.

The bill for the cellulose ester research that led to CAP has been paid. Now if you want to make an enteric-coated medicament with it, your lawyers can forget about our lawyers. All we can do is hope you will buy Eastman *Cellulose Acetate Phthalate, wherein about half of the original glucose hydroxyl groups are acetylated and about a quarter are phthalylated with one of the two carboxyls of phthalic acid. It is sold by Distillation Products Industries, Rochester 3, N. Y. (Division of Eastman Kodak Company) and looks like this:*



A hobby for clear nights

The following proposal offers little prospect for fame, advancement, or even succor to suffering humanity. All it offers is a chance to add a few grains to the mortar in the edifice of science. Here and there are a few happy people who enjoy that sort of thing.

Why not celebrate the International Geophysical Year by gathering some data for the IGY Auroral Data Center, Rockefeller Hall, Cornell University, Ithaca, N. Y. (or, if you are Canadian, for the IGY Auroral Centre, National Research Council, Ottawa)? Write them for instructions.

The sun is now at the stormy stage of its cycle. It sends forth bursts of electrons and ions which set the night sky ablaze with the rayed arcs, homogeneous arcs, pulsating arcs, pulsating spots, glows, rays, coronas, and flames of the aurora. On clear, moonless nights when the show is on, in places without overwhelming competition from smog-scattered illumination emitted by certain atmospheric gases when they are excited in glass tubes for the greater glory of hot dogs and horsepower, it is worth looking up in the sky for.

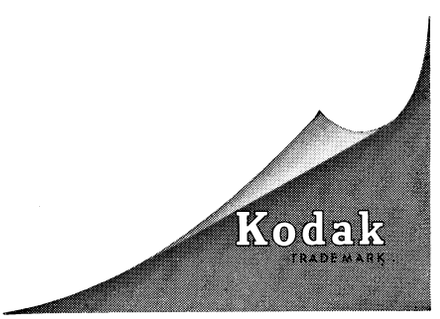
Looking is all you need do. Either the Center or the Centre supplies free report forms carrying a printed protractor for measuring angles in the sky.

Photographic records, however, are also wanted. To make them one needs a camera lens faster than *f*/4.5. (The *Cine-Kodak K-100 Cameras* of the U. S. and Canadian official observing programs have *f*/1.4 lenses.) With *Kodak Royal Pan Film* or *Kodak Tri-X Film* at *f*/3.5, reasonable exposure times for medium to bright auroras run from 18 to 60 seconds. Much faster and better for the purpose is the phenomenal new *Kodak Royal-X Pan Film*, but it must be processed according to the packaged instructions rather than through usual commercial channels.

All auroral photographs should be labeled with the observer's location, the double date (e.g. October 17-18), the exact time and time zone, the azimuth and elevation of the center of the photograph as close as you can (ideally by identifying any bright stars in your picture), and the usual photographic data. Aim along the meridian and start on the first minute of each five, first the southernmost part of the display because that is the most interesting scientifically, then the northernmost part, then anything else on the meridian, then prominent forms in the east, and finally toward the end of the five-minute interval, prominent forms in the west. That way there is hope for simultaneous coverage from widely spaced points. South of 40° N. in the eastern U. S. and south of 45° in the west, any aurora is worth photographing immediately, schedule or no schedule. A red one is worth photographing at once, anywhere.

At Cornell, if necessary, they'll put the graduate students' wives to work reading the flood of photos and reports that ought to come in.

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



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Clubs can be small or large; size ranges from 3 to 700 members; average is about 25. Your club can be for boys and girls of any age, in or out of school.

Sponsors and members plan their programs together to suit the age and science interests of the group. SCA gives you many suggestions on what to do and how to do it.

TWO NATIONAL EVENTS are held each year especially for members of SCA. Your club can take part in both of them now or when your members are old enough.

The Annual National Science Fair (started in 1950) is held each spring in a different city. The NSF has been to Philadelphia, St. Louis, Washington, D. C., Oak Ridge, Tenn., Lafayette, Ind., Cleveland, Ohio, Oklahoma City, Okla., and Los Angeles, Calif. The boys and girls who show the best science exhibits in cooperating local science fairs get three-day all-expenses-paid trips to the National Science Fair, and a chance to compete there for honors and awards. Only sophomores, juniors and seniors in high school are eligible to go to the NSF but in most local science fairs boys and girls of all ages can compete for local honors. The host city for the NSF in 1958 is Flint, Mich. In 1959 it is scheduled for Hartford, Conn.

The Annual National Science Talent Search (started in 1942) is held each year for seniors in high school who want to compete for $34,250 in Westinghouse Science Scholarships and Awards for their college education. Annually 300 are honored. Of these, 40 boys and girls, chosen as winners, also receive a five-day all-expenses-paid trip to Washington, D. C., to attend the Science Talent Institute; the 17th will be held in 1958. Experience in science clubs and participation in science fairs is great practice for those who are planning to compete in the STS when they are old enough.

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Parents are Invited to Give This Page to Teachers