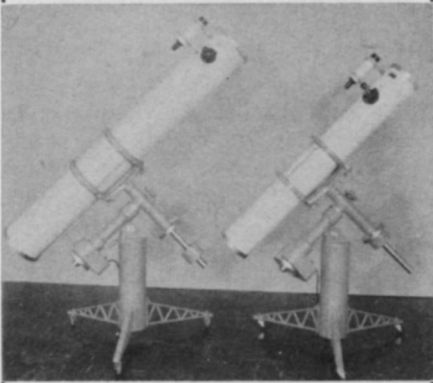


**ASTRONOMICAL TELESCOPES  
FOR EDUCATIONAL USE**



Cave Astrola Reflecting Telescopes are manufactured in all sizes 6" to 24" aperture, in both Newtonian and Cassegrainian types. In constant use by hundreds of schools and colleges and leading amateur astronomers throughout the world.

6" Reflecting Telescope from \$200 up.  
Send for our Free Color Catalog.

**CAVE OPTICAL CO.**

Since 1952

Dept. SN10, 4137 East Anaheim Street  
Long Beach, Calif. 90804  
Phone (213) 434-2613

**IT'S EASY . . . . to send  
a gift subscription to  
SCIENCE NEWS  
simply fill out and mail  
this coupon**

**SCIENCE NEWS**

1719 N Street, N.W.  
Washington, D.C. 20036

Please send a gift subscrip-  
tion in my name to:

Name.....  
Address.....  
Occupation.....  
City.....  
State..... Zip Code.....

— Check One —

1 year \$7.50  2 years \$13.50  3 years \$19.50

— Check One —

Check or money order herewith  Bill Me

Name.....  
Address.....  
City.....  
State..... Zip Code.....

**ARTIFICIAL SWEETENERS**

# Safety challenged

**FDA may act on claims that excessive use of sugar substitutes threatens health**

by Barbara J. Culliton

Americans consume 8,000 tons of artificial sweeteners every year—in pop, coffee, dietary foods, candy and the like—confident that the chemical sweeteners are safe. Manufacturers insist that they are; the sugar industry—watching a \$300 million inroad into its market—insists they are not. Each side presents evidence to support its claim; both sides' arguments purport to be scientific, and conclusive.

As recently as 1965, manufacturers of the nonnutritive, noncaloric sweeteners chemically known as cyclamates, had the Food and Drug Administration on their side. "There is no evidence," FDA stated then, "that cyclamates, at present use levels, are a hazard to health." But that position rested largely on old data, submitted when cyclamates were first approved as food additives in the early 1950's, when common use was a drop or two to sweeten coffee and only one company sold diet cola.

**On another look**, last year FDA noted the boom in diet drinks, saw that cyclamates were added to innumerable foods and quietly modified its stand. "There is no evidence, yet," it hedged.

Then both camps swamped FDA with detailed evidence pro and con, and now there are indications that within a few months FDA, armed with its own data, will change its tune again.

At present there is no law or regulation about labeling cyclamates. There are cautionary warnings, in fine print on many products, that artificial sweeteners are for persons who "must restrict" their dietary intake of sugar. Although they appear to apply to cyclamates, they technically are required only for the saccharin in common cyclamate-saccharin combinations.

Both cyclamate, which is 30 times as sweet as sugar, and saccharin, which is 300 times as sweet, leave a bitter taste if used singly. Together, in a mixture of 10 parts cyclamate and one part saccharin, they leave no bitter aftertaste. Cyclamates, chemical salts, are produced from cyclohexylamine, a material also used in the manufacture of corrosion inhibitors and rubber chemicals.

**The major issue** in what both cyclamate manufacturers and sugar people



*The warning is only in fine print.*

see as potentially a billion-dollar battle rests on the quantity consumed. There is no doubt that in large doses cyclamates cause softening of the stools, sometimes diarrhea. Pediatricians reportedly prescribe diet colas as laxatives.

Scientists for Abbott Laboratories, Chicago, the largest cyclamate producer, claim that people simply do not consume enough of the chemical to cause any trouble. Five grams (that contained in eight 16-ounce bottles of pop) is considered a large dose. Their statistics show that even among teenagers, who consume more than any other group, three and a half grams a day is unusual. Researchers supported by sugar interests dispute this.

**They cite evidence of** more serious cyclamate-induced effects. In studies on rats, Drs. Paul Nees and Philip Dersé of the Wisconsin Alumni Research Foundation, found tissue changes in the testes, kidneys, adrenals and pancreas. Their work is supported by the Sugar Research Foundation, New York.

French researchers report structural changes in the intestines of animals ingesting cyclamates. In April, a team of Austrian scientists showed liver changes in four guinea pigs fed cyclamates and impaired coagulation of the blood in rabbits.

To respond to these challenges to the safety of their product, Abbott scientists recently called a press conference "to set the record straight." They charged



## CLASSIFIED

Classified advertisements are accepted for the following classifications: Books, Business Opportunities, Camps, Colleges, Micro Ads, Personals, Positions Wanted, Schools, Services, Travel. All advertisements must be consonant with the character of Science News.

Rates . . . single insertion 30¢ a word. Minimum charge is \$6.00. For multiple insertions, write for rate card. Classified advertising is payable in advance. Closing date 4 weeks prior to publication (Saturday).

Employment opportunities are accepted at regular display rates, subject to agency commission. Minimum size 1 inch. Minimum charge \$23.80 per inch. Rate cards available upon request.

To speed up insertion, address classified advertising . . . Classified Ads, Science News, 1719 N Street, N.W., Washington, D. C. 20036.

## BOOKS

**PAPERBACK CATALOGUE**, 270 pages, 15,000 titles, subject indexed. Send \$2.00, credited toward first order. VISIT Substantial Savings, PAPERBACKS, HARDBOUNDS, RECORDS. New York Book, 45 West 43rd Street, New York, N.Y. 10036.

**LICHENS, FERNS, MOSSES**, Liverworts. Comprehensive lists. LEW's, 2510 Van Ness Avenue, San Francisco, Calif. 94109.

## MICRO ADS

**FAIRCHILD SEQUENCE CAMERA** \$75.00. Cost government \$650.00. Send 25¢ for our surplus optics-electronics 82 page catalog. Meshna, Nahant, Mass. 01908.

**SCIENCE FAIR SPECIAL**—Grow, study world's most amazing plant. Insect-eating Venus's Fly Traps lure, catch, eat live insects. Science Fair set has 6 big bulbs, lanting moss 5¼" x 5¼" x 3¼" plastic greenhouse, culture directions—\$4 ppd. 6 Venus's bulbs \$3, 3 bulbs \$2. Illustrated brochure describes many Plant Oddities Experiment Sets 25¢. Introductory Collection has 3 Venus's bulbs, 1 Huntsman's Horn, 1 Purpurea Pitcher Plant, directions, \$4 ppd. Germination guaranteed. Armstrong Associates, Box 127, Basking Ridge, N.J. 07920.

## PERSONALS

**THE FUTURIST**, published bimonthly by World Future Society, reports scientists' forecasts for coming decades. Subscription: \$5 yearly, Box 19285-S, Twentieth Street Station, Washington, D. C. 20036.

### BOOK ORDER SERVICE

For the convenient purchase of any U.S. book in print you may avail yourself of Science News Book Order Service, 1719 N St., N.W., Washington, D.C. 20036. We pay postage. 25¢ handling charge if price is less than \$2.00. Regular retail prices on all books.

**BRONZE**  
3 Pairs of  
**BABY SHOES**  
for only  
**\$2.95**



Do-it-yourself, bargain metallizing kit bronzes up to three pairs of baby shoes. Professional job, easy, complete with leather hardener, instructions. Only \$2.95, we pay postage.

**MEREDITH's**  
Dept. YSN-10, 310 West 9th St.,  
Kansas City, Mo. 64105

## . . . sweeteners

excessive cyclamate levels, "far out of line with any possible human consumption," as a cause of adverse experimental effects, and said, "over the past 18 years, millions of persons have used cyclamate without ill effects." The Wisconsin researchers admittedly tested very large doses.

**But the argument does not end there.** When cyclamates were first approved, scientists believed they were excreted unchanged from the body. But testing within the last four years indicates that some individuals do metabolize the chemical, breaking it down into its original cyclohexylamine.

Dr. Derse recently found four others in animal urine but does not know yet if they are toxic.

Abbott scientists claim only about 10 percent of individuals metabolize cyclamates. Others put the figure closer to 50 percent.

Within the last three months, two groups of researchers studying cyclohexylamine have shown that in animals it increases blood pressure and speeds heart rates. One team was headed by Dr. Robert L. Dixon of the University of Washington, Seattle; the other by Dr. Frederick Coulston of Albany Medical College in New York. (Dr. Dixon's research is supported by the SRF. He hopes soon to get a grant from FDA to investigate the action of cyclamates on drugs. Dr. Coulston has funds from Abbott, the SRF and a \$46,000 grant from the FDA.) "Cyclohexylamine, injected directly into an animal, acts like amphetamine," Dr. Dixon says, "but it has a much milder effect on the sympathetic nervous system."

Abbott scientists, studying this effect in humans in whom the metabolite occurs only as a by-product, found no such response.

**A more serious threat** may exist for diabetics, who must avoid sugar. Unpublished, preliminary evidence exists that cyclamates may interfere with the pharmacologic action of a class of diabetic drugs called hypoglycemics. These drugs are prescribed for adult diabetics to facilitate their release of insulin.

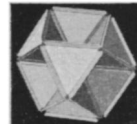
Last March Dr. James L. Goddard, then FDA commissioner, asked the National Academy of Sciences to take on the role of arbiter among the interests by forming a committee to evaluate the data. Originally, the judges' decision was expected to reach FDA by Oct. 1, but the time has been extended to Thanksgiving. An FDA spokesman pegs St. Valentine's Day as the time it will be released to the public.

Meanwhile, NAS committee members and FDA spokesmen are hinting that the cyclamate manufacturers will not be pleased with the decision.

## Math-Science-Art Projects

MAKE BEAUTIFUL  
POLYHEDRAL  
SHAPES WITH

**PolyO Labs**



Hinged panels — triangles, squares, pentagons, hexagons lock together with rubber bands for quick construction of polyhedral shapes. Make all five regular solid shapes, 9 of the 13 semi-regular solid shapes, including the rhombicuboctahedron, icosidodecahedron, and lots more. Includes 48-page book, 135 illustrations, with mathematical explanations that children will understand.

#3042 Polyhedral Shapes Lab A  
(Book and panel assortment) \$4.50

#3043 Polyhedral Shapes Lab B  
(Book; 200 panels, 1000  
special rubber bands) \$11.00

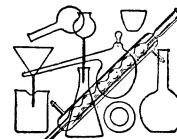


Postpaid if cash or check is included.  
Charge accounts only for institutions.

DEPT. SN20 - BOOK-LAB, INC.,  
1449 37th St., Brooklyn, N.Y. 11218

## IS THERE A CHEMIST IN THE HOUSE???

Only \$4.00 Plus \$1.00 p.p. Will bring 49 "PLUS" individual, assorted, items of standard quality laboratory apparatus: glassware, porcelain, rubber, plastic, etc., etc. Value? 2 to 3 times our offer. None dangerous. No junk. One surprise item.



2nd assortment. Stock limited. Products Bulletin 50c.

**HARRY ROSS**

Scientific & Lab. Projects  
61-L Reade St. N.Y. 7, N.Y.



## SEE MIRACLE OF BIRTH

**\$4.98** POST PAID WITH  
**SIX QUAIL EGGS**  
(\$3.25 Without Eggs.)

You get the new clear plastic dome CHICK-BATOR with 6 Bobwhite Quail Eggs (available year-round) and Egg Hatching Guide Book. Complete — nothing else to buy. Send check or Money Order today.

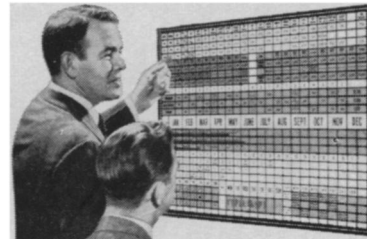
G.G.F. MFG. CO., DEPT. CL, BOX 152, SAVANNAH, GA.

## FITNESS GIMMICK

Simply strengthening your skeletal muscles enables them to do more work with less demands on your heart muscle. It only takes a minute . . . Get trimmer . . . Feel great again. Results guaranteed.

Free information. Write ISOMETRIC NEWS,  
37 Centuck Station, Yonkers, N.Y. 10710

## GRAPHIC VISUAL CONTROL



**You Get Things Done Better And Faster**

The BOARDMASTER saves time, cuts costs and prevents errors. You see what is happening. Shows facts at eye level. For Production, Scheduling, Inventory, Sales, Traffic, Etc.

Simple to operate. Write on cards, post on board. Fully flexible. Million in use. Price \$49.50 with cards.

**FREE** 24 Page BOOKLET No. V-10  
Mailed Without Obligation

GRAPHIC SYSTEMS, Box 398, Yanceyville, N.C.