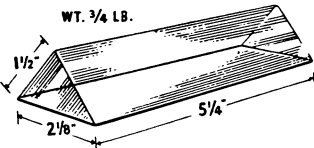


PRISMS \$1.50

Made for U. S. govt. for tank periscopes. Fine optically ground, big precision prisms with silvered base. Terrific for all types of spectrographic work, in homemade telescopes & other optical systems for bending rays. Makes unusual paper weight (paint your name on it) or conversation piece for mantel. You'll find many other uses. **NEW, PERFECT!** Cost U. S. govt. \$25 ea. **NOW—\$1.50 ea. ppd. or 4 for \$5.00**
VOLUME SALES CO.
 War Assets Div., Dept. L-3
 3930 Sunset Blvd. Los Angeles 29, Calif.

GIANT 6 FOOTERS 59c

Great Fun for Kids and Adults at Beach, Playground or Water Sport. Inflate to Giant 6 ft., 21 ft. Round, with air or Gas. Flying Advt. visible for miles. Terrific for attracting crowds at Openings, Fairs, Roadside Stands, Gas Stations, Sport Events. Use as Water Markers and Buoys. Made of genuine Neoprene Rubber for extra durability. Surplus, Never Used. Sold at fraction of

cost. Add 10¢ handling cost per order. 59¢ ea., 2 for \$1.5 for \$2.12 for \$5. Huge 10 ft., \$1 ea. Colossal 30 ft., \$5.00 ea. No C.O.D.'s.
NOVEL MFG. 33 2nd Ave., Dept. G-2456
 New York 3, New York

BIND and SAVE Your SNL's

All 52 issues of SNL, for a full year, can be permanently filed in these sturdy, buff-colored, buckram binders.

Each issue snaps into the cover with a metal strip. Only \$4.00 complete, ppd. Order now, from

SCIENCE NEWS LETTER
 1719 N St., N.W., Washington 6, D. C.

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).

SNL, 1719 N St., N.W., Washington 6, D. C.

BOOKS AND MAGAZINES

CUT GEMS, MAKE JEWELRY—FOR PROFIT or fun. 100 page magazine tells how; where to get supplies. Sample 25¢ or request free literature. Lapidary Journal, Del Mar 1, Calif.

CHEMICALS AND APPARATUS

CHEMICALS IN SMALL QUANTITIES (one to eight ounces). Everything for your laboratory. Catalog 25¢. 26th year. John H. Winn Co., Inc., 124 West 23rd Street, Dept. 200, New York 11, N. Y.

OPTICAL EQUIPMENT

SPECIALISTS USED MICROSCOPES AND ACCESSORIES. Prepared slides. Microscopy supplies. Biological kits. Scientific oddities. Meteorites, minerals, sea shells. Insects in alcohol. Telescopes. Our fully illustrated catalog free. Research Scientific Supplies, Inc., 126 West 23rd Street, New York 11, N. Y.

MISCELLANEOUS

BINDERS FOR SNL—BUFF-COLORED BUCKRAM. Snap-in metal strips hold 52 copies. \$4.00 pp. Send order with remittance to Science News Letter, 1719 N Street, N.W., Washington 6, D. C.

PLANT PHYSIOLOGY**Plant Has "Heart Attack"**

► **PLANTS** such as bananas, tomatoes and peas can suffer "strokes" and "heart attacks" caused by clots in their veins just as humans suffer attacks due to clots in their blood vessels.

Two University of Wisconsin scientists identified the causes of several widespread and economically important plant wilts and reported a method of developing plants that are resistant to the diseases.

Death-dealing wilts of many vegetables as well as cotton plants, oak and elm trees were blamed on a soil fungus by Drs. Mark A. Stahmann, department of biochemistry, and J. C. Walker, department of plant pathology. They reported their research to a meeting of the American Chemical Society in San Francisco.

Fusarium fungus, a simple plant having no root, stem or leaf system and similar to molds, toadstools, bacteria and yeast, may penetrate a plant's vascular system, Dr. Stahmann said.

Once inside the plant's veins, or "blood vessels," the fungi produce a substance, an enzyme, that attacks some of the pectin in the vessel walls.

Pectin fragments then break off into the vascular stream where they form gelatinous masses of clots that plug the vessels. This action is similar to blood clots clogging

human blood vessels to cause strokes or heart attacks.

Fortunately, Dr. Stahmann said, some varieties of the plants investigated are not susceptible to wilt diseases and it is possible to develop resistant plant strains.

Using their new understanding of wilt disease causes, the scientists then began the difficult task of finding out exactly what enables certain plant strains to resist wilt.

Although they have not completely identified the resistance mechanism, they reported the resistant plants seem to produce a substance toxic to the invading fungi. Also, the disease-resistant plants apparently fail to produce normal amounts of another enzyme essential to the formation of the fatal pectin plugs.

Science News Letter, May 3, 1958

TECHNOLOGY**Automatic Machine Designed for Post Offices**

► **LETTERS** may in the future enter and leave U.S. post offices much faster, thanks to an automatic high-speed sorting machine.

A laboratory prototype machine, developed by the Rabinow Engineering Co., is designed to sort 36,000 letters per hour. Sorting can be directed either by a built-in electronic control, by human operators, or a combination of the two.

Two problems had to be solved in machine-sorting letters: translating the address information and controlling the computer-like device that directs the mail sort is one problem. The other has to do with the physical handling of the letters in all their various sizes and shapes.

Letters mechanically placed in a reading-and-coding position are read by a human operator. The important parts of the address are abbreviated and typed by means of a special printer on the envelope back. The operator then sends the letter through its first sort by pushing one of four buttons—local, outgoing, airmail or miscellaneous. Altogether, it takes a few seconds to accomplish these steps.

The National Bureau of Standards, which arranged and supervised the engineering contract in behalf of the U.S. Post Office Department, reports this may ultimately be the only human operation in the entire sorting process.

An electro-mechanical-optical device serves as an electronic directory, "looking up" the sorting destination for each address and controlling the delivery of the letter to its destination receptacle. This takes about one-tenth of a second.

The basic units of the automatic sorting machine can be arranged in various ways to suit the size and special problems of different post offices.

It is expected these machines will be an important help to post office personnel in keeping up with the continuing rapid growth of letter mail.

Science News Letter, May 3, 1958

Questions

CHEMISTRY—How much berkelium has been isolated? p. 280.

MEDICINE—When can the usual method of detecting fetal heartbeat, by means of the stethoscope, be used successfully? p. 279.

PLANT PHYSIOLOGY—What is one way scientists believe clots form in plants' veins? p. 286.

TECHNOLOGY—What are diffraction gratings used for? p. 281.

Photographs: Cover, Westinghouse; p. 275, Bendix Aviation Corporation; p. 277, Bell Telephone Laboratories; p. 278, New York Academy of Sciences; p. 279, Dow Corning Corporation; p. 282, The Martin Company; p. 288, Park Plastic Co.

Do You Know?

In most large cities in the northeast U.S., *population* either has grown slowly, less than one percent a year, or has actually decreased since 1950.

More than \$17,000,000 are to be spent on the World Health Organization's campaign for *malaria* eradication throughout the world this year, compared with \$8,000,000 in 1957.

The *South Pole* receives more sun than any place on earth during December, its midsummer, but most of this energy is reflected by the ice cover.