# • New Machines and Gadgets •

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*MAGNETIC DEVICE for demonstration and conversation has three magnets. The device consists of permanent magnets floating free in the magnetic fields of the others. The magnets are made of a mixture of barium and magnetic iron oxides. Standing about three inches high, the device can be used to hold pens and pencils too.*

Science News Letter, April 6, 1957

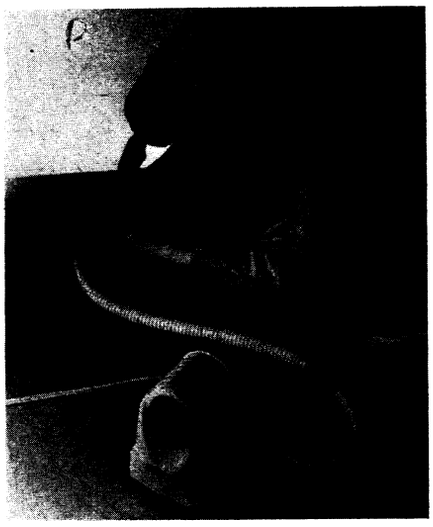
*SLIDE PROJECTOR for the 35mm camera fan is housed in an all metal case and weighs only nine pounds. Designed for 2¼ by 2¼ slides, the home projector can be converted to accept two-by-two-inch slides or the new 38mm super slides, by means of an adapter.*

Science News Letter, April 6, 1957

*WORLD GLOBE features unique mounting device that can be swung backward and forward to get a full view of either the Arctic or Antarctic regions. It is made of a high impact plastic and the surface of the globe is washable and inkproof. The globe and mounting weigh eight pounds.*

Science News Letter, April 6, 1957

*HAIR DRYER is a snug-fitting cap. The cap, shown in the photograph, is connected to a control by a length of flexible*



*tubing. Once the cap is donned, the control can be set at hot, medium, warm or cool. Heated air flows through the tube into the back of the cap. Working on any standard AC outlet, the dryer control is housed in an acetate plastic case.*

Science News Letter, April 6, 1957

*FIRE ALARM that is operated without batteries, wires or electricity, is designed to operate mechanically when the heat in a room reaches 158 degrees Fahrenheit. The self-contained detection system starts to ring loudly when set off.*

Science News Letter, April 6, 1957

*DISHWASHING AID is described as a time-saver and a hand-saver. A combination tube and handle is filled with liquid detergent. The attached sponge is wet and pressed so that the liquid detergent saturates the sponge. Each tubeful lasts for weeks, it is claimed.*

Science News Letter, April 6, 1957

*RING-CHAIN COMBINATION keeps a complete set of socket screws together and permits instant use of either end of any key without removal. Each key is fastened to its chain by a sliding ring, allowing rotation. Nine keys and the chain available in a set.*

Science News Letter, April 6, 1957

*PLASTIC MOLDING MACHINE can be used to produce almost unlimited varieties of small molded plastic products. The injection molding machine can mold any thermoplastic, and up to 30,000 pounds per square inch is possible on the material. The machine is available in various models, including air or hydraulic power with simple lever or push-button control.*

Science News Letter, April 6, 1957

# Nature Ramblings

By HORACE LOFTIN

➤ AS THE SEASON for planting new crops comes about, primitive agriculturalists the world over call on the rain god and the sun god to favor them. Even the most backward peoples have grasped the vital importance of sunlight and water in the production of food—and hence in the sustenance of life itself. But they might do well to add another pair of deities to their pantheon: the chlorophyll god and the carbon dioxide god.

All the food consumed by living creatures has its origin in green plants, where it is manufactured by the interaction of sunlight, water, chlorophyll and carbon dioxide. The most confirmed meat-eater merely dines on creatures that feed on plants. Regardless of how many steps are placed in between, green plants are the ultimate source of most of our food.

The process by which food is manufactured in green plants is called photosyn-

## Food Factory

thesis. In this process, carbon dioxide in the air enters a leaf or other green part of a plant through minute openings. Once inside, the carbon dioxide dissolves in the water lying between the cell walls of the plant. The solution now readily passes through the cell walls to small bodies within the cells which contain chlorophyll, the substance that gives plants their green color.

It is here that the "deities" perform their miracle. Sunlight provides energy for the great chemical change, and chlorophyll acts as the "switchboard" that controls the reaction. Under the influence of these two, the carbon dioxide and water now combine to create the basis of all food, a simple sugar. All the numerous fats, proteins and carbohydrates used by plants and animals must be created later from this sugar.

The quantity of sugar made by different plants varies, of course. But scientists have estimated the sugar production of an "average" plant under "normal" conditions: one gram of sugar (glucose) for each square meter of leaf surface per hour. (One gram is about 1/30th of an ounce; one meter is about 40 inches). Assuming a 10-hour day and 150 days in a growing season, this "average" plant could produce about 1,500 grams of glucose per square meter of leaves each year. To supply an "average" human's annual food needs would take an estimated 180 to 240 square meters of leaf surface working all summer long at producing food!

Science News Letter, April 6, 1957