

Do You Know?

Sawdust is successfully used as a mulching material by gardeners.

America's first *Diesel* streamline railroad train is now 10 years old.

Fine quality *syrups* are now made from starchy cereal grains other than corn, including sorghum grain and rye.

More than 18,000 *dogs* were enlisted in 1943 for war service with the American forces.

Magnesium, it is reported, can be used instead of zinc in any dry battery and increases the voltage considerably.

Female meadow mice have their first young when about *six weeks old*, a record among mammals.

A new type of dental burr with a *chrome finish* will outwear the present steel burrs at least 50%.

New wartime *insecticides* are carefully tested on both insects and plants, as a satisfactory insecticide must be toxic to the insect and harmless to the plant.

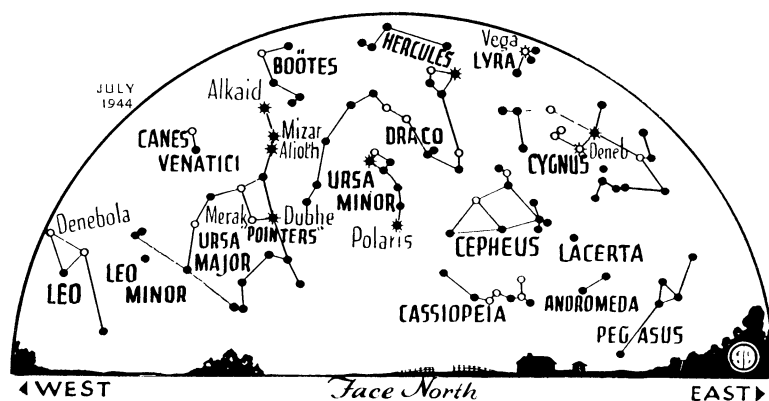
Common *salt* consumption may be used as an index of industrial activities because 97% of the total salt production is used in the industries either as salt or a chemical manufactured from salt.

The importance of *chromium* as a war metal is indicated by the present use of 87% of the available supply of chrome chemicals for military requirements.

Only about 10% of the *castor oil* produced is used medicinally, the remainder being used as a hydraulic fluid, in the manufacture of sulfonated oil, and for many industrial purposes.

The light wood of the *balsa tree* is commercially mature when the tree is from five to seven years old; about 12 years later the wood tends to solidify and becomes too heavy for its unique uses.

Seventy ugly Argentine *toads* have recently been brought by airplane to Florida to destroy insects, larvae and worms preying on the sugar cane; scientifically the toads are *Bufo paracnemis* and *B. arenarum*.



ute and a half smaller than the sun. The moon will go in front of the sun on this date, but will not entirely cover it, even when the two bodies are directly in line with us. Instead, a ring of sunlight appears around the black lunar disk, and this is called an annular eclipse.

The eclipse of July 20 will not be visible in the United States, but large numbers of our fellow citizens will see it, for the path of visibility, along which the ring of the sun will appear surrounding the moon, crosses Africa, the Indian Ocean, India, the Bay of Bengal, Burma, Thailand, the South China Sea, Mindanao and the northern coast of New Guinea. Over a larger area, in-

cluding the southern half of Asia and most of Australia, there will be a partial eclipse, with the moon crossing the sun to one side of its center.

Celestial Time Table for July

July	EWT	
3	2:00 a.m.	Earth farthest from sun, distance 94,450,000 miles.
6	12:27 a.m.	Full moon.
8	6:00 p.m.	Moon nearest, 226,600 miles.
12	4:39 p.m.	Moon in last quarter.
18	4:11 a.m.	Moon passes Saturn.
20	1:42 a.m.	New moon—annular eclipse of sun.
	3:52 p.m.	Moon passes Venus.
22	3:44 p.m.	Moon passes Jupiter.
23	5:35 a.m.	Moon passes Mars.
24	1:00 p.m.	Moon farthest, 251,900 miles.
28	early a.m.	Meteors of delta Aquarid shower.
	5:23 a.m.	Moon in first quarter.

Subtract one hour for CWT, two hours for MWT, and three for PWT.

Science News Letter, June 24, 1944

CHEMISTRY

Sugar Synthesized

➤ SUCROSE, the ordinary cane or beet sugar of our tables, has been produced synthetically for the first time, in the laboratory of the University of California at Berkeley. The work was carried out by a three-man team consisting of Dr. Michael Doudoroff, Dr. H. A. Barker and Dr. W. Z. Hassid.

Raw materials for the synthesis were the chemically simpler sugars, fructose and glucose phosphate. Acted upon by an enzyme extracted from a species of bacterium, *Pseudomonas saccharophila*, these were converted into crystals of pure sucrose indistinguishable from the natural product.

The process has no present or immediate prospective commercial value. Only about two grams of sucrose have been synthesized, and the cost of laboratory production is naturally very high. Principal value is to be found in the

advance in chemical knowledge about the formation of sugar which the research has brought about.

Science News Letter, June 24, 1944

ENGINEERING

New System of Gears For Turbine Locomotives

➤ TURBINE locomotives are brought nearer to realization by a system of gears invented by W. A. Brecht of Wilkesburg, Pa. The high speed of the turbine is reduced to the relatively low speed of the drive wheels through three steps. Side rods link all drivewheels together insuring rotation at the same speed. Rights in the patent, No. 2,351,479, are assigned to Westinghouse Electric & Manufacturing Company.

Science News Letter, June 24, 1944