

AERONAUTICS

Targets for Bombers Pin-Pointed by Lead Plane

► TARGETS for formations of conventional bombers were pin-pointed through fog, darkness and bad weather during past months by a new Lockheed P-38 Lightning Pathfinder with special equipment, it is now revealed. The exact equipment carried by this modified Lockheed fighter is still not releasable, but its effectiveness in locating invisible enemy targets is no longer a secret.

The Lightning Pathfinder has an elongated metal and plastic pilot's nacelle that is cylindrical and blunt. Its instruments are advanced over those of the "droop-snoot" Lightning which contained all the standard bombing and navigational equipment of a heavy bomber. Like its predecessor, the Pathfinder is a two-man plane, a pilot and a bombing operator carried in its specially-constructed nose.

Science News Letter, July 28, 1945

NUTRITION

Favorite Drinks of the Ancients Include Lemonade

► SIPPING your frosted beverage on a hot day, it might refresh you to know of others, centuries ago, who enjoyed these same thirst quenchers.

Lemonade was the favorite beverage of the Mongol emperors in China, a special official of high rank being charged with keeping enough on hand. The emperor even gave Mars Sergius, the Lord High Lemonade Mixer or whatever his thirteenth-century title was, a gold-tablet diploma because of his talent for preparing cool drinks known as sherbets, particularly lemonade.

"Cold chocolate and lots of it," the Aztec emperor Montezuma probably demanded each summer in the Mexican palace which he enjoyed before America was discovered. Cortez found chocolate the national drink of Mexico—rich and poor alike enjoyed it.

Montezuma, who drank fifty pitchers of chocolate a day, preferred his with a thick froth, delicately flavored with vanilla and spices, and sweetened with sugar or honey.

No one knows when Chinamen started drinking tea, but the scholarly emperor Chen Nung praised the drink more than 4,500 years ago.

"Tea is better than wine," Chen Nung is reported to have said, "for it leadeth

not to intoxication, neither does it cause a man to say foolish things and repent thereof in his sober moments."

England began its Age of Tea not long before the Boston Tea Party, a century or so earlier a two-pound package of tea being considered a worthy present for the King.

Coffee was first enjoyed in Ethiopia, but the natives tried to keep their coffee-bean drink to themselves. Arabians borrowed coffee from the Abyssinians about the twelfth century A. D., and several centuries later England had its famous coffee houses and "speakeasies" where coffee was black marketed.

To make iced coffee to take the sizzle out of summer, place in the coffee-maker your usual supply of coffee, but use only half as much water. Poured hot over ice, the double strength of the coffee makes up for the melting ice. Serve with sugar and cream.

The Greeks became acquainted with bananas, according to historians, when Alexander the Great returned from an East Indian expedition. Oranges, which you may enjoy in orangeade, spread from their Oriental home through Europe during the Mohammedan conquests. American Indians get credit for giving maple sugar to the world.

Science News Letter, July 28, 1945

STATISTICS

One Line Admiral in Seven Is Under 50 Years

► TODAY one line Admiral in every seven is under 50 years of age; five years ago none were under 50. The average age of Admirals in our Navy's line of command was lowered by 2.2 years between May 1, 1940, just before the vast expansion program was launched, and May 1, 1945, according to statisticians of the Metropolitan Life Insurance Company.

The present average age of Admirals who would take command is 56.4 years whereas five years ago it was 58.6 years. During the last war it was slightly higher, being 58.7 years. This reduction has occurred despite the recall to active duty of a large number of retired officers, who comprise almost one-fifth of the total number of Admirals on active duty.

The average age of the three Fleet Admirals is 65 years; for Admirals, it is 63.6 years; for Vice Admirals, 59.6 years; and for Rear Admirals, 55 years. Rear Admirals range in age from 42 to 75 years, the difference in ages being greatest for this group.

Science News Letter, July 28, 1945

IN SCIEN

CHEMISTRY

Light Intensity Affects Vitamin C in Tomatoes

► THE AMOUNT of ascorbic acid, or vitamin C, in tomatoes—the most important vitamin of this fruit—varies directly with the light intensity in the growing areas, studies in the U. S. Plant, Soil and Nutrition Laboratory at Cornell University indicate.

Of this discovery, Dr. L. A. Maynard, director of the laboratory and head of Cornell's School of Nutrition, said, "investigators believe that it will be worth while to chart areas where commercial production will yield the highest vitamin content in this important food."

In the tomato research, studies by Dr. W. L. Nelson showed first of all that tomatoes as marketed vary widely in their content of ascorbic acid. Dr. Karl C. Hamner and Dr. G. F. Somers then found that most variations resulted from differences in light intensity prior to harvest.

For three years, the scientists at Cornell have shifted tomatoes around, indoors to outdoors, from sun to shade and back. They also studied vitamin content as grown commercially in different areas. In a recently completed study, the tomatoes grown in one area had one-third more ascorbic acid than the same variety grown in another nearby area. A light-measuring device showed that those grown in the first section were subject to one-third greater light intensity.

Science News Letter, July 28, 1945

ASTRONOMY

Calcium-Gas Envelope Surrounds Sun-Like Star

► THE YELLOW, solar-type member of the two-star team, RZ Eridani, in the constellation of the river Eridanus, is surrounded by an envelope of calcium gas, Carlos U. Cesco and Jorge Sahade of the Yerkes and McDonald Observatories of the Universities of Chicago and Texas report in the *Astrophysical Journal*. The light of the variable star drops noticeably about once in 39 days when the subgiant, calcium-encased star comes between its brighter calcium companion and the earth.

Science News Letter, July 28, 1945

CE FIELDS

NUTRITION

Vitamin A Consumption Should Be Increased

► INCREASING the family's vitamin A consumption is good for young and old, it appears from studies of rats reported by Dr. H. C. Sherman and Dr. H. L. Campbell, of Columbia University, to the National Academy of Sciences.

Liberal intakes of this vitamin, found in such foods as butter, liver, egg yolk, carrots and green leafy vegetables, tends to postpone aging and increase length of life, Dr. Sherman and colleagues have previously reported.

Now they find that the offspring in rat families on the liberal vitamin A intake grow somewhat more rapidly and with less individual variability. This indicates, the scientists point out, that liberal vitamin A has both a favorable and a stabilizing influence on growth.

This favorable, stabilizing effect on rat growth was observed with vitamin A intakes two and four times higher than the intake considered fully enough to meet the rat's nutritional needs.

Science News Letter, July 28, 1945

ENGINEERING

Desert Air Coolers For Use in Middle East

► HOME air-cooling systems of the evaporating type, now used extensively in Oklahoma, Kansas, Nebraska and other states of the Southwest in semi-arid America, so interested the Prince Regent and heir apparent to the throne of Iraq in a recent visit to the United States that he probably will recommend their wide use in his country and other areas of the Middle East.

Since the climate in biblical lands and neighboring countries is much like that in these American states, coolers operating on the evaporation principle should prove successful.

In them, warm dry air is pulled by an electric fan through a moist blanket of excelsior, hay, burlap or other porous material. The wetted material and the fan are placed in a simple homemade box which is fitted into the lower sash of one window. This furnishes direct relief from heat to a single room, or, by a system of wall ducts, will distribute

cool air throughout the entire house.

The seasoned outdoors enthusiast has found the same principle effective in constructing a kind of desert cooler for foods when camping.

A frame of the size desired is covered with burlap or other porous cloth, which is kept wet, allowing evaporation to take place. The wind replaces the electric fan. The air inside the burlap enclosure is cooled enough so that perishables, even meat, can be stored safely for a number of days. In the days before electrification, western farmers found the system indispensable.

The principle is used successfully by the Army in arid countries for outdoor water-cooling purposes. It has developed a porous water bag through the walls of which water percolates very slowly and evaporates.

This cooling method is not new. It originated hundreds of years ago in warm countries when potters found that water in their crude earthen storage jugs was cooled by seepage through the porous material and subsequent evaporation.

Science News Letter, July 28, 1945

CHEMISTRY

Natural Gas Is Used In Making Calcium Carbide

► A NEW method for making calcium carbide, in which crushed limestone is combined with natural gas instead of with crushed coke as in present practice, is offered by two chemists of Dallas, Texas, Dr. A. J. Abrams and Dr. L. B. Cook, for patent 2,380,008. Calcium carbide is one of the most important of present-day industrial materials, being the most convenient source of acetylene used in welding torches, portable lamps, etc.

In the new method, crushed limestone is heated in an electrical induction furnace to a temperature of about 1000 degrees Centigrade, while natural gas containing a high percentage of methane is flowed through it. A second heating at a higher temperature, in the neighborhood of 1700 degrees Centigrade, completes the conversion into calcium carbide.

The new method, the inventors point out, permits the manufacture of calcium carbide in regions where coke is not cheaply available, and also provides a good economic use for methane, which has long been a chemical waif among the more easily utilizable, larger hydrocarbon molecules that make up the mixture known as natural gas.

Science News Letter, July 28, 1945

AERONAUTICS

Conveyor Belt in Planes Hastens Dropping Packages

► CONVEYOR belt systems in Army cargo airplanes, for unloading packages to be dropped by parachutes to ground troops, it is now revealed, decrease the time required for discharging the cargo from 40 minutes to a few seconds, and promotes safety to plane and crew by greatly lessening the time the plane was formerly required to remain exposed to enemy gunfire.

These belts, similar to the carrier belts used in industries, are endless chain-driven conveyors operated by electric motors of less than four horsepower. Power is derived from the plane's 24-volt system. The belts extend from behind the pilot's compartment to the rear door of the plane, and run at about six feet per second. They terminate at roller-bearing platforms mounted at the cargo doors, which launch the containers from the airplanes.

Each package has a closed parachute attached to it. When the package drops, a static line attached to it automatically opens the chute.

The rapidity with which packages are shot out of the plane, one closely following another, means that they land relatively near each other, making their recovery on the ground much quicker and easier.

Another important advantage of the belt system is safety to crew members, particularly to the doormen who are required to throw the packages out in planes not equipped with the conveyor belt system. A sudden lurch of a plane may throw them out along with the package.

Present installations of the conveyor belt system are in Douglas C-47 cargo-carrying aircraft.

Science News Letter, July 28, 1945

CHEMISTRY

Simple Method Prepares Transparent Plastic

► EDWIN H. Land, head of the Polaroid Corporation, together with Robert P. Blake, both of Cambridge, Mass., have received patent 2,380,363 on a method for preparing light-polarizing sheets of transparent plastic by simply rubbing their surfaces with brushes, rotating disks, rapidly moving bands or other friction-creating means, thereby lining up their surface molecules so that their long axes will be parallel.

Science News Letter, July 28, 1945