

ENGINEERING

Lightning Arrester Gives Zig-Zag Ride to Ground

See Front Cover

► THE WORLD'S three largest lightning arresters, which zig-zag lightning harmlessly into the ground, are protecting costly laboratory equipment on the new 500,000-volt experimental transmission line put into operation by the American Gas and Electric Service Corporation in Brilliant, Ohio.

Engineers hope to learn economical methods of sending greater blocks of electricity from generating plants into the industrial and residential centers where it is needed with the aid of this mammoth outdoor laboratory.

"Greased skids" for lightning are the three 29-foot-high legs of the gigantic tripod—actually the world's largest lightning arrester—appearing on the cover of this week's SCIENCE NEWS LETTER. The large metal rings surrounding the apparatus equalize the electrical pressure, preventing one segment from becoming overloaded while others are idling.

Science News Letter, November 22, 1947

ASTRONOMY

Bester's Comet Will Blaze In Heavens Early in 1948

► A COMET will blaze in the heavens early in 1948, giving an astronomical show in the sky that will remind old-timers of Halley's and other famous naked-eye comets.

At present the comet that astronomers hope will become prominently visible to unaided eyes is a faint blotch in the southern heavens. It was discovered late in September by M. J. Bester of the Harvard South African station.

Bester's comet, which you will be hearing much more about, is scheduled to move northward toward the Pole Star. Here it can easily be seen by observers in the United States and Canada.

Northern observers may possibly pick up the comet late in February, but the chances are slim that it will be spotted that soon. Although comet Bester will be brightest then, it will be so near the sun that it will probably be lost in the blaze of sunlight.

The comet will more probably be picked up early in March, calculates Dr. Leland E. Cunningham of Students' Observatory, University of California. Then it will have pulled farther away from

the vicinity of the sun, toward which it is now speeding.

Moving rapidly northward, the bright comet will probably just suddenly appear. When found, it may rival in brilliance many of the well-known landmarks of the heavens. In brightness it may be between second and third magnitude (stars as faint as the sixth magnitude can be seen with the unaided eye), Dr. Cunningham estimates. This will make it an easy object to spot as it makes its way across the night sky.

This comet is only one of four bearing the name of Bester and now visible in the sky. One has the double name Rondanini-Bester as two people are credited with spotting it. Three of these comets were discovered this year, one last year. Right now they are all too faint to be seen without the aid of a good telescope.

Mr. Bester's find of last year is still easily visible with a good telescope, and is likely to remain so for several months more. His first comet of this year, the Rondanini-Bester comet, is now exceedingly faint, but will probably be followed by astronomers for another month or so. Mr. Bester's second comet of 1947 was followed until early August, at which time it was very faint. It is still in observing position and may be picked up again.

Science News Letter, November 22, 1947

ENGINEERING

Wartime Landing Ships May Open Up New Waterways

► WORLD WAR II's ugliest ships, the awkward but important landing craft, may be used to open up commercial shipping in some of the world's undeveloped waterways.

This peacetime use for some of the surplus landing ships and craft left over from the war is proposed in the industrial bulletin of Arthur D. Little, Inc., Cambridge, Mass. LST's (Landing Ship, Tanks), LSM's (Landing Ship, Medium) and the other members of the Navy's wartime amphibious family could be used in such places as the Amazon River where they might open up new commerce.

Attempts to use the surplus ships in American waters have met stiff opposition from established transportation systems but in places where there are no docks and loading facilities for other ships, the landing ships might make new, peaceful commercial "invasions."

*Science News Letter, November 22, 1947***IN SCIENCE**

ASTRONOMY

Sun's Life Is Limited to Ten Billion More Years

► THE sun will probably finish its life in about 10,000,000,000 years by becoming fainter and fainter until no longer able to support life on earth and other planets, Prof. George Gamow of George Washington University stated at the Cooper Union forum, in New York.

He based his prediction on the present rate of burning of the fuel supply in the sun. "The detailed study of possible reactions (in the sun)," he said, "leads to the conclusion that in the case of the sun, nuclear process represents the steady transformation of hydrogen into helium helped by catalytic action of carbon and nitrogen."

At the interior temperature of the sun, which is 20,000,000 degrees, only the comparatively light elements are subject to nuclear transformations. To get the energy from heavier elements, the temperatures of billions of degrees would be necessary.

"Most of the stars use the same energy-producing process, but do so at different rates," Prof. Gamow added. "Such brilliant stars as Sirius are apt to use up the hydrogen fuel much sooner, and are expected to collapse in a process resembling a terrific explosion."

Science News Letter, November 22, 1947

PHOTOGRAPHY

Large Television Pictures Made with Correcting Lens

► THEATER-SIZE television pictures are now obtained by use of a large spherical mirror and a large correcting lens, Radio Corporation of America has revealed. The screen image may be 18 by 24 feet.

The new projector, yet in experimental stage, will be publicly demonstrated in the near future. It employs a 15-inch cathode-ray picture tube, a 42-inch spherical mirror, and a 36-inch aspherical correcting lens of the Schmidt type. The lens is said to be the largest Schmidt type system in the world except for the 72-inch Schmidt telescope on Mt. Wilson, Calif., which is not yet in operation.

Science News Letter, November 22, 1947

E FIELDS

GENERAL SCIENCE

Psychiatrists Unprepared To Advise WHO or UNESCO

➤ PSYCHIATRISTS, social scientists, social workers and educators are unprepared to advise the World Health Organization and UNESCO, Dr. Harry Stack Sullivan of Washington, D. C., declared at the meeting of the National Committee for Mental Hygiene. He expressed doubt that many scientists are ready to generalize their work on a world scale or open their minds to scientific study of living where people have quite different standards.

World citizens who are not already outstanding community citizens will be few, Dr. Sullivan declared. Prime contribution to the coming of world citizenship is integration of communities and broadening them into greater communities of likeminded people of good will. WHO's constitution, which covers mental and social well being as well as prevention of disease, can be credited, Dr. Sullivan said, to the efforts in the preparatory meeting at Geneva of Dr. Brock Chisholm, Canadian psychiatrist who is now executive secretary of WHO's interim commission.

Science News Letter, November 22, 1947

GENERAL SCIENCE

Nine States Enter Search For Youthful Scientists

➤ HIGH SCHOOL seniors in nine states will be getting two-for-one service when they enter the Seventh Annual Science Talent Search for the Westinghouse Science Scholarships this fall.

Boys and girls in nine states planning to be scientists will be entering a state competition when they comply with the rigid requirements of the national competition ending midnight, Dec. 26. (*See SNL*, Oct. 4). Cooperating states are Alabama, Georgia, Illinois, Iowa, Louisiana, Montana, Pennsylvania, Tennessee and Virginia.

Through a special arrangement with Science Clubs of America, administered by Science Service, which conducts the national Search annually, nine states will have state science talent searches concurrently with the national.

Budgets, ranging from a few hundred dollars to \$9,000, have been set up by organizations of scientists, educators and industrialists to award scholarships or other financial assistance to talented high school students of science in their respective states.

Widespread interest on the part of State Academies of Science, educator groups and scientific industries makes possible the state science talent searches. The number of students honored in a state may range from three to 42 and the awards vary from small savings bonds to four-year scholarships in state schools of the winners choosing.

Persons in charge of state science talent searches are as follows:

Alabama: Dr. James L. Kassner, Sec., General Gorgas Scholarship Committee, P. O. Box H, University, Ala.

Georgia: Alvin L. McLendon, Jr., Chm. Jr. Acad. Com., Ga. Acad. of Science, Principal, Box 171 Statesboro High School, Statesboro, Ga.

Illinois: Dr. Lyell J. Thomas, Chm., Ill. State Science Talent Search, University of Illinois, Champaign, Ill.

Iowa: Dr. F. E. Brown, Chm., High School Relations Com. of Iowa Acad. of Science, Professor of Chemistry, Iowa State College, Ames, Iowa.

Louisiana: Bert B. Boyd, Dir., La. Jr. Acad. of Science, Science Dept., Northwestern State College, Natchitoches, La.

Montana: Adrien L. Hess, Dept. of Mathematics, Montana State College, Bozeman, Montana.

Pennsylvania: Sophia M. Moiles, Chm., Dept. of Physics, Johnstown Central High School, Johnstown, Pa.

Tennessee: Jacob H. Shapiro, Columbia High School, Columbia, Tenn.

Virginia: Dr. James W. Cole, Jr., Cobb Chemical Laboratory, University of Virginia, Charlottesville, Va.

Science News Letter, November 22, 1947

GEOLOGY

Publicity Effort Blamed For New Volcano Report

➤ INVESTIGATION by an American geologist, Dr. Ivan Wilson, of the American embassy in Mexico City, has dashed hopes that a new volcano is being born in Mexico.

A few weeks ago, reports intimated that another Paricutin was appearing near Rio Blanco in Vera Cruz state, a region known to contain hot springs. Inspection showed no real volcano. The eruption report was publicity intended to attract tourists.

A veteran Mexican volcano scientist, Dr. Ezequiel Ordóñez, called the phenomenon a fumarole, a hole from which gases or fumes issue.

Science News Letter, November 22, 1947

MEDICINE

War Gas Chemical Used To Treat Skin Disease

➤ Nitrogen mustard, war gas chemical which has become one of medicine's new weapons against disease, has now been used with apparently good results in treatment of a rare but usually fatal skin disease.

The case is reported by Drs. O. S. Philpott, A. R. Woodburne and G. A. Waldriff, of the University of Colorado School of Medicine and Hospitals, in the *Journal of the American Medical Association* (Nov. 8).

The skin disease they treated is called mycosis fungoides. It is not, as its name might suggest, a fungus infection. Its cause is unknown. It is believed related to leukemia and Hodgkin's disease. Hard reddish tumors of the skin which tend to spread and ulcerate are its characteristic symptoms.

The patient reported by the Denver physicians was a 79-year-old man who had had the skin trouble for four years. He left the hospital against the doctors' advice and died several weeks later, so whether he would have been cured is not known.

The war gas chemical seemed "extremely effective," the doctors reported, in stopping the itching caused by the disease. The tumors rapidly disappeared, leaving the dark spots on the skin. The nitrogen mustard was given by injection into the patient's vein. Four doses, one each day, had been planned, but the fourth dose could not be given because the patient had nausea, loss of appetite and drop in blood platelets.

Somewhat smaller doses of nitrogen mustard, the doctors believe, might be safer and equally effective.

Science News Letter, November 22, 1947

WILD LIFE

Tiny Beavers Thrown Away In Wide Search for Them

➤ FOUR tiny beavers, only five days old, were almost thrown away in a hunt for them by a motion picture enthusiast, T. J. Courtney of Halifax, Nova Scotia. Hidden in a ball of grass, the squeaks of the young led to their discovery.

The baby beavers, only five inches long and fully furred, were finally located in a mass of meadow grass which the guide removed from the beaver house during his search, Mr. Courtney states in the *Journal of Mammalogy*.

Science News Letter, November 22, 1947