

## GENERAL SCIENCE

# Top 1954 Science Events

► **THE TOP** important advances in science and technology during 1954 as picked by Watson Davis, director of SCIENCE SERVICE, are:

1. Conversion of atomic energy radiation directly into electricity, and the development and application of solar batteries turning sunlight into electricity.

2. Demonstration of photosynthesis by non-living green grains extracted from plant cells, and the elucidation of the role of complex sugars and phosphorus in the photosynthetic process.

3. Mass trials of a polio vaccine on one and a half million school children.

4. "Pogo" fighter plane that takes off straight up and lands tail-first.

5. Use of naturally-radioactive tritium to trace age of water in rain and elsewhere.

6. Structure of the center of the Milky

Way, our own stellar galaxy, revealed by radio waves generated by the hydrogen gas filling space between the stars.

7. Rising apprehension that radioactive material from atomic and H-bombs will poison the earth's atmosphere and affect the continuance of human life.

8. Discovery that corn is at least 60,000 years old and native to the Western Hemisphere.

9. Revoking of the security clearance of Dr. J. Robert Oppenheimer and similar cases which affected adversely the relationships of scientists to government.

10. The successful use of the international language, Interlingua, for abstracts at world medical meetings and in scientific journals.

Science News Letter, December 18, 1954

## • RADIO

Saturday, Dec. 25, 1954, 5:00-5:15 p.m., EST

"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Watson Davis will discuss "Traditions of Christmas."

## AERONAUTICS

## Controlled Thrust Of New Rocket Engine

► **THE FIRST** rocket engine in the United States that a pilot can speed up or slow down at will has been completed.

The thrust of the new engine, developed by Curtiss-Wright Corporation, Wood-Ridge, N. J., is varied by proportioning and controlling the fuel. The engine can also be stopped or started from the cockpit. Its thrust power was not revealed.

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## PHYSIOLOGY

## Spot Brain Area Influencing Behavior

► **DISCOVERY THAT** regulation of blood circulation and expression of feelings through behavior are influenced if not controlled by a finger-tip sized structure on each side of the brain, has been announced by a Harvard Medical School research team.

They are trying to control assaultive behavior of three very sick epileptics by electrically coagulating this brain area to destroy it.

The brain structure is called the amygdaloid nucleus. It is located in the temporal lobe on the side of the brain. Because the findings were made with electrodes in the brains of living patients, the scientists could not be sure the brain cells they stimulated were exactly those making up the amygdaloid nucleus. So they give the location as the amygdaloid nuclear region.

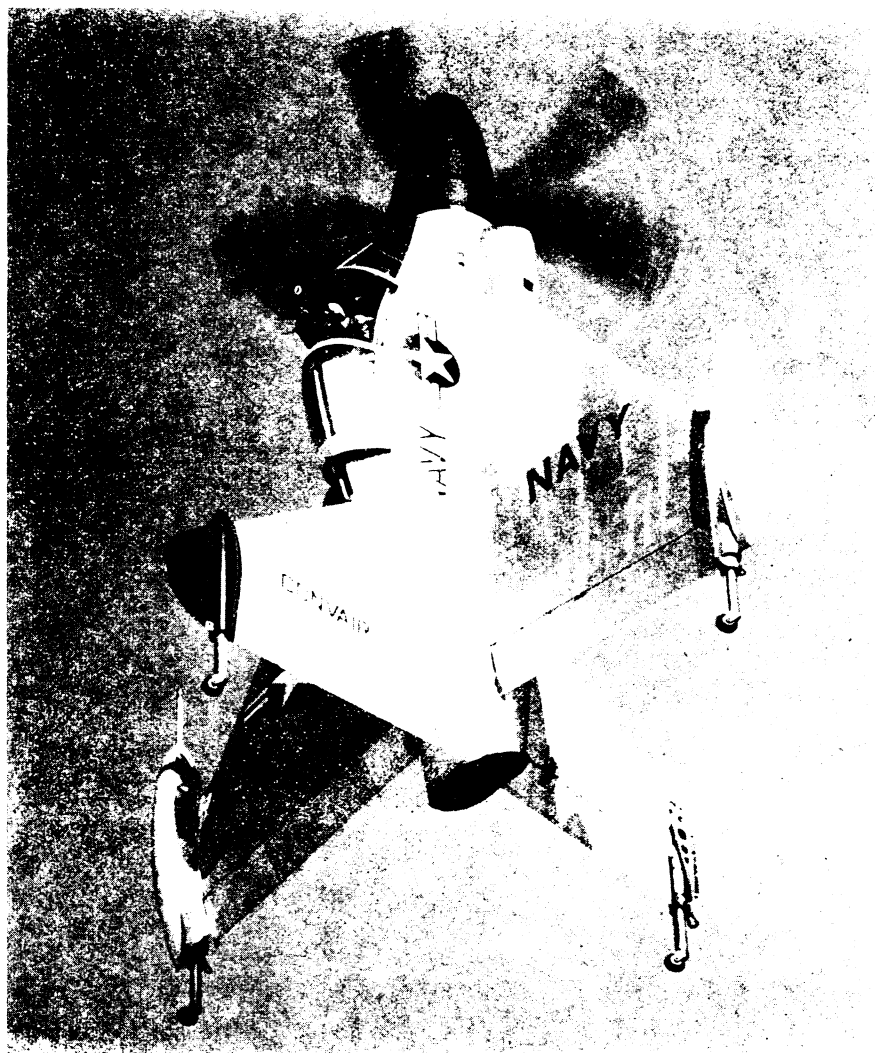
Electric stimulation of this region had the following effects: In four patients feelings of fear, anxiety and, at times, a "weird" or "terrific" feeling were produced. With slightly more intense or longer stimulation, patients were momentarily confused and unresponsive. They had trouble counting and performing skilled acts such as winding a string around a pencil.

In three patients, both eye pupils were dilated and heart rate was increased 20% to 100%. In two, there was considerable rise in blood pressure.

Results of the electrocoagulation of this area are not yet ready for reporting because it is too soon to tell how much the treatment has done for the patients.

The studies are reported in *Science* (Dec. 3) by Drs. William P. Chapman, Heinz R. Schroeder, Georg Geyer, Mary A. B. Brazier, Charles Fager, James L. Poppen, Harry C. Solomon and Paul I. Yakovlev.

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**POGO TAKES OFF** — Here is Convair's XFV-1 Navy fighter taking off straight up. When this "Pogo" lands, it comes down tail first on the four casters set into the tips of the delta wing and fins.