GENERAL SCIENCE

Top 1953 Science Stories

➤ THE TOP important advances in science and technology during 1953 as picked by Watson Davis, director of SCIENCE SERVICE, are:

1. Suggested formula for essential chemical (DNA) in living cell that allows duplication of hereditary characteristics, a major chemical and biological mystery.
2. Development of a vaccine against all three types of polio and plans for mass use in 1954.
3. Isolation and identification of polio virus, shown by electron microscope to be a sphere-shaped particle a millionth of an inch in diameter.
4. First synthesis of a pituitary gland hormone, oxytocin.
5. Successful climbing of Mt. Everest.
6. Discovery of bones of most ancient true man in South Africa and finding that Piltdown Man jaw was a hoax.
7. Successful tape recording of television programs in color as well as black and white.
8. Model testing of a new airplane wing resembling Venetian blinds that allows transport planes to take off vertically.
9. Numerical weather prediction by means of high-speed electronic computers, with the first prediction of development of an extra-tropical cyclonic storm.
10. Evidence of the greater extent and complexity of the astronomical universe, as shown both by a doubling of astronomical radio wave sources and by the realization that the visible universe is twice as big, linearly, and twice as old as supposed.

Science News Letter, December 19, 1953

CONSERVATION

Biologist Saves Valley

➤ THE ACHIEVEMENT of a Venezuelan biologist who used his scientific knowledge and persuasive diplomacy to save a valley has won the acclaim of soil conservationists throughout the hemisphere.

Prof. Francisco Tamayo was asked by the Venezuelan government in 1946 to attempt the reclamation of the Valley of Tacagua, a barren waste of rock and sand at that time. The transformation of the valley has been so complete that visitors who have not seen it since 1946 can hardly believe it.

In the United States, Dr. Hugh Bennett, one of the founders of soil conservation, commented that Prof. Tamayo "accomplished the impossible" in reclaiming the valley. Recently Prof. Tamayo was awarded a $2,000 prize by the Pan American Union.

The mountains surrounding the valley were once lush with vegetation, but goats raised by farmers killed off the soil-holding growth and erosion quickly ruined the valley.

When Prof. Tamayo started his work in 1947, he was faced with a scientific and diplomatic problem. First he had to persuade the farmers to sell or pen their goats, and then he had to start a planting program which would restore the growth.

A part of the human population of the valley was resettled, selected native crops were introduced so that the remaining farmers would have a source of income, and in five years approximately 30,000 sheep and goats left the valley.

Soil erosion as a result of the feeding habits of goats and sheep is a problem wherever there are mountains in Latin America. The poor people keep the goats for milk and believe that the more goats a person has the better off he is. The result is often a devastation of natural land resources.

Prof. Tamayo's scientific re-planting has brought results that astound conservationists. He first made a study of native vegetation, then planting and re-forestation was started. His experiment was so successful that the Venezuelan government has begun similar work in other parts of the country.

Science News Letter, December 19, 1953

• RADIO

Saturday, Dec. 26, 1953, 3:15-3:30 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 list the outstanding science events of the year and discuss the highlights of technological and scientific progress.

TECHNOLOGY

Rudderless Tugboat Puts on Good Show

➤ A RUDDERLESS Army tugboat, despite its apparent physical handicap, can get where it is going.

"Sinusoidal vertical-axis propellers" replace usual screw-type propellers on the 150-foot Transportation Corps craft. No rudder is needed with this type of propeller since it can generate thrust in any direction.

The propellers consist of large horizontal rotating disks upon which plate-like paddles are fixed. The pitch of the paddles is controlled by steering wheels to produce thrust in the desired direction. The paddles, or blades, fit into two 11-foot diameter rotors that revolve as the blades oscillate. Blades in this type of propeller can be changed without drydocking the boat.

The tug has a beam of 32 feet and a normal draft of seven feet. It operates nonstop for 1,200 miles—going upstream for 600 miles against a five-mile-an-hour current, then returning 600 miles downstream.

Science News Letter, December 19, 1953

VERTICAL AXIS PROPELLERS—"Business ends" of the vertical axis propellers on the rudderless tugboat are these blades, each four and a half feet long, that project downward from the stern.