rotation rate was determined to be 58.6 days.

The discovery of the antideuteron during the year gave new strength to the intriguing idea of an antimatter world, the particles of which are opposite in charge to those in our own part of the universe. The two kinds of matter would annihilate each other. The antideuteron is the largest known particle of antimatter and the first known entity of this sort that is made up of more than one antinucleon.

Scientists continued to be intrigued at the idea that some of the phenomena causing the gigantic disasters on the earth may have been caused by chunks of antimatter smashing into our atmosphere causing such explosions as the one in Siberia in 1908.

The location of the 200 billion electron volt particle accelerator, projected to cost \$350 million over a period of years, was not decided during the year. Competition between various parts of the country are complicating its location. The physicists believe that this gigantic instrument will give new information about the constitution of matter and possibly reveal new ways to tap the energy of the atom.

New artificial "metals," made by applying very high pressures to non-metals, were produced in laboratory experiments, leading the way to production of improved metalliclike substances and giving great promise of better understanding of how and why materials react as they do.

Drought Causes Apprehension

The drought of the northeastern United States area continued to cause apprehension that water shortages for large cities like New York will become even more serious, requiring desalination plants and major changes in utilization of rivers. This may be a climatic cycle that will continue for a decade or two.

Scientists are exploring the sea in various ways more intensively than in the past. Dwelling places beneath the ocean have been developed. New depths of the sea have been reached in craft withstanding the pressures encountered. Even astronauts whose primary interest has been outer space are joining in the deep sea exploration. Many more oceanographic vessels are cruising the waters around the North American continent to obtain new information and possible sources of materials for food utilization by an expanding population.

Publication of a map that was drawn in 1440 by Viking explorers reinforced the idea that Columbus was not the first white man to reach America, but that Scandinavian explorers preceded the first settlements which are credited in our history books.

By assembling panels of experts, the National Academy of Sciences, the elite body advising the Government and the nation on science and research, issued reports on pollution of water and atmosphere, chemistry, botany, use of computers, the search for life on Mars and other planets, and 10 years' progress studying the solid earth.

• Science News Letter, 88:387 December 18, 1965

GENERAL SCIENCE

10 Top Science Advances Chosen by Science Service

➤ THE TEN TOP science, medicine and technology advances in 1965 as selected by Dr. Watson Davis, director of Science Service, are:

- 1. Photographs of Mars obtained by Mariner 4, indicating the improbability of life there.
- 2. Space walks by Russian and United States astronauts.
- 3. Advances in transplantation, including transfer of brains of dogs from one animal to another and implantation of an artificial heart into a calf, techniques foreshadowing possible use in humans.

4. Passing of Federal legislation for Medicare, as well as a new heart, cancer and stroke program.

- 5. Discovery of the antideuteron, sustaining theories that an antimatter, or negative type, exists in the universe.
- 6. Comet Ikeya-Seki, most brilliant in the
- 7. Advances in learning the structure of nucleic acid that may bring science closer to knowledge of the secret of life.
- 8. Discovery of the most distant and most ancient object in the universe, the immense astronomical explosion of quasar 3C-9.
- 9. Discoveries during continued exploration for traces of early man in Africa indicating that human beings existed two million years ago.
- 10. Recovery of a map drawn in 1440 A.D. showing that America was visited by Norsemen before Columbus landed.
 - Science News Letter, 88:388 December 18, 1965

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SCIENCE NEWS LETTER

DECEMBER 18, 1965 NO. 25 **VOL. 88**

Edited by WATSON DAVIS

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N.W., Washington, D. C. 20036. NOrth 7-2255. Cable Address: SCIENSERVC.

7-2255. Cable Address: SCIENSERVC.

Subscription rates: 1 yr. \$5.50; 2 yrs., \$10.00; 3 yrs., \$14.50; ten or more copies in one package to one address, 71/2 cents per copy per week; single copy, 15 cents, more than six months old, 25 cents. No charge for foreign postage. Change of address Three weeks notice is required. Please state exactly how magazine is addressed. Include zip code.

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