fluorine. She believes that the condition is in addition caused by unfavorable nutrition. Dr. Smith, assisted by Miss Edith Lantz, research assistant in nutrition at the university, received accurate results in working with animals and secured mottled teeth in animals given the water with fluorine content.

Recent experiments conducted in other parts of the United States reveal that fluorine is also present in other districts where mottled teeth are prevalent.

Science News Letter, May 16, 1931

PSYCHOLOGY

Temperament and Health Possibly Correlated

CERTAIN physical makeups are associated with certain types of temperament, it is indicated by a report made last week to the Association of Consulting Psychologists by Drs. L. P. Herrington and W. R. Miles.

Of a group of 550 Stanford University men, it was found that those classed by psychologists as introverts, or having a self-centered personality, had less athletic ability, had required more medical service, and had undergone more major surgical operations.

The investigation was made by Dr. Herrington at Stanford, under the direction of Dr. Miles, who was then at Stanford, but now spending his sabbatical leave at Yale's Institute of Human Relations.

Science News Letter, May 16, 1931

PHYSICS

Michelson's Last Experiment To be Finished by Associates

While on Death Bed Famous Scientist Dictates Outline of Paper to Announce Most Precise Value of Speed of Light

DR. ALBERT A. MICHELSON'S last and most accurate measurement of the velocity of light, interrupted by his death, will be completed. His associates, Dr. Francis G. Pease of Mt. Wilson Observatory and Dr. Fred Pearson, who was Dr. Michelson's assistant for twenty years, will finish the experiment, still in progress, as originally planned by Dr. Michelson. But the world's most precise determination of the speed of light had progressed sufficiently far before Dr. Michelson's death to allow him and his associates to arrive at a tentative value.

"The tentative value for the velocity of light resulting from this experiment is about the same as that obtained by Dr. Michelson's experiment on Mt. Wilson," Dr. Pease has informed Science Service.

Just four days before his death, Dr. Michelson dictated from his sickbed the outline of the scientific paper which will eventually announce to the scientific world the most precise value of light's velocity, one of the most fundamental values in physics.

The mile-long tube in which the present light experiments are performed is located on Irvine Ranch, near Santa Ana, south of Pasadena. In erecting this unique laboratory, Dr. Michelson had the cooperation and support of the Mt. Wilson Observatory of the Carnegie Institution.

The long tube in which the tests are made cost $50,000 and took two years to complete. Its length was accurately measured by experts of the U. S. Coast and Geodetic Survey with an accuracy of one part in a million. It is three feet in diameter and its welded construction made it possible to exhaust practically all of the air within it. To exhaust the thousands of cubic feet of air in the pipe, vacuum pumps are run day and night. Only 125 cubic feet of air, measured on the basis of ordinary atmospheric pressure, are left in the tube during the tests.

The Michelson tube gives science's first opportunity here on earth for measuring light's velocity in vacuo, approximately the condition to which it is subjected as it speeds through outer space. Dr. Michelson's previous light velocity measurements were made by sending a beam of light from a distant mountain peak to a revolving mirror on Mt. Wilson, where the famous Carnegie Institution observatory and world's largest telescope are located.

The 1926 experiments on light traveling twenty-two miles from Mt. San Antonio to Mt. Wilson gave a light velocity of 299,796 kilometers per second, or 186,290 miles per second. This is believed to be accurate to within 4 kilometers per second or about three miles per second. So precisely will the velocity of light be known when the present experiments are completed that it will be possible to use the speed of light as a measuring stick in precise surveying.

Dr. Michelson made his first experiments on the velocity of light shortly after he finished his studies at Annapolis and while he was still in the Navy.

Science News Letter, May 16, 1931

ATTACKING THE AIR WITH PICK AND SHOVEL

The 250 tons of urea shown in this picture, the largest store in the world, at Oppau, Germany, is made in part from the nitrogen of the air. The huge mass suggests the great scale of modern industrial chemical operations. Unbreakable porcelain will shortly be made from a compound of urea and formaldehyde. A plastic material is first formed by the action of formaldehyde on urea, and this can be pressed hot into any desired form.