ASTRONOMY

Pluto Less than Earth

Pluto's diameter has been found to be 3,600 miles, much less than previously anticipated. The observation was made with the Hale telescope by Dr. Gerard P. Kuiper.

➤ DISCOVERY that the diameter of the farthermost planet of the solar system, Pluto, is 3,600 miles, much less than previously estimated, has been made by Dr. Gerard P. Kuiper, of the University of Chicago's Yerkes Observatory in Williams Bay, Wisc., while a guest using the world's largest, 200-inch Hale telescope of Palomar Observatory in California.

In an extraordinary use of this great telescope, Dr. Kuiper made his observation visually, seeing for the first time the disk of the far-distant planet that was discovered only 20 years ago.

"None but the Hale telescope is sufficiently powerful to show a measurable disk on Pluto," Dr. Kuiper told Science Service. "The result obtained was successful because of the very fine optical qualities of the 200-inch, which is not just another instrument, but occupies a special position in astronomy. My use of this great instrument was through the courtesy of Dr. I. S. Bowen and Milton A. Humason of Palomar Observatory."

Pluto's newly determined diameter is 46% of that of the earth. This is twenty-three hundredths second of arc. The uncertainty in the measurement is one-twentieth of the 3,600 mile diameter.

Dr. Kuiper concluded that Pluto's mass must be about one-tenth of the earth's mass, or ten times smaller than hitherto supposed on the basis of the motion of the planet Neptune. Dr. Kuiper assumes a normal density for Pluto. A body with a mass less than that of the earth would not be expected to be composed of degenerate matter, that is, crushed atoms that would result in the planet being abnormally heavy.

The new measure makes Pluto's size intermediate between that of Mars and Mercury. The reflectivity or albedo of Pluto was found to be 17% compared with 15% for Mars.

The observation by Dr. Kuiper was made on March 21 with a disk meter mounted on the prime focus of the Hale telescope. The seeing that night was extraordinarily good.

Previous estimates of Pluto's size were based on changes in the motion of the neighboring planet Neptune thought to be due to the gravitational attraction of Pluto. Dr. Kuiper explained that the true nature of Neptune's deviations are now not clear but may be partly due to small errors in stellar positions.

Science News Letter, June 10, 1950

MEDICINE

New Venereal Disease?

A new venereal disease, PPLO for short, may exist. Mistaken for gonorrhea in the past, it can be cured with streptomycin if it really exists.

➤ THE possible existence of a new venereal disease appeared in a report to the American Urological Association meeting in Washington.

The disease so far has no name. It is caused by very small germs, just above the larger viruses. These germs are called pleuropneumonia-like organisms, or PPLO for short. They have nothing to do with pneumonia but for some years have been implicated in some cases of arthritis.

A method of growing these germs on a special culture medium outside the body was reported at the meeting by Dr. Paul R. Leberman, Mr. Paul F. Smith and Dr. Harry E. Morton of the University of Pennsylvania School of Medicine. With this new medium, the scientists hope more can be learned about the germs and their role in causing what is believed to be a new venereal disease.

These PPLO germs, the Pennsylvania group believes, are often the cause of infections involving the eyes, the lower urogenital tract, the joints and any combination of these. Such infections in the past have been called "nonspecific" because doctors could not find any particular germs in the cases.

During his service with armed forces during the war, Dr. Leberman said, he and other military medical men saw many cases of what seemed to be gonorrhea, but in which the gonococcus, cause of gonorrhea, could not be found. These cases, he now thinks, may have been due to PPLO.

PPLO, only discovered in 1937, has been found in women more often than in men and most reports, Mr. Smith said, indicate that they are passed from women to men. But he thinks they may be transmitted the other way too and that the difficulty in isolating the germs from males is what has kept scientists from recognizing that men can give the germs to women.

The new venereal disease, if it proves to be one, can be cured by streptomycin. No other antibiotic drug, including penicillin and more recent ones, is effective against PPLO infection, Mr. Smith said.

The infection is not fatal, even without streptomycin.

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AGRICULTURE

Meat after Deep Freeze Determined by Wraps

➤ WHAT happens to hamburger in deep freeze? A lot less can come out than went in, a four-year study has shown.

It all depends upon the paper wrapped around it, reports a Michigan State College scientist, L. J. Bratzler of the Department of Animal Husbandry.

One-pound samples of ground beef covered with ordinary brown wrapping paper shrank nearly 40% during 14 months at zero temperature. The same thing happened to samples kept 23 months in waxed "locker paper."

Yet other wrappings, notably cellophane and aluminum foil, resulted even in a slight increase in the weight of the meat—there was no dehydration at all.

In experiments thus far completed, 21 different wrappings were used. Eight or 10 samples were used with each type of wrapper.

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HOW BIG?—The average size squash, from 70 to 125 pounds, was grown in the fertile fields near Santiago, Chile, and it is a family meal for 10 for a week. Eaten either raw or cooked, it is the staple basis for many tasty Chilean dishes.