

their planet in one direction while others go the opposite way.

Though seven irregular satellites are now known for Jupiter, they may actually represent only two recaptures. Two moons may have split into several parts to form the tiny satellites seen circling that giant planet today.

### Some May Be Asteroids

Some of the other satellites Jupiter shed in its youth may never have been recaptured, Dr. Kuiper states. They may still circle the sun as the outermost asteroids. A dozen such bodies move around the sun as far away from it as Jupiter. One peculiar object, Hidalgo, the most distant of the asteroids, travels between the orbits of Jupiter and Saturn.

Only one satellite has ever been known to move around the earth, but some day the earth may have a second moon, created by scientists. The possibility of sending a satellite missile some 600 miles or so above the earth's surface to swing continually around our planet has been considered seriously.

Such a missile would carry scientific instruments needed to collect data about the rarefied atmosphere surrounding the earth. Once started, no fuel would be needed to keep it circling around our planet.

Life as we know it is considered impossible on any of the 31 moons. Only one of them, Saturn's Titan, is known to have an atmosphere and that is composed of methane.

Our moon is the sun's nearest granddaughter because no satellites have ever been found moving around Mercury and Venus, the two planets nearest the sun. This is because tidal friction by the sun kept them from acquiring the necessary rapid motion, Dr. Kuiper's work on the origin of the solar system shows.

Mars, our near-neighbor in space, has two tiny satellites. One is ten miles across, the other about five. The one nearer the planet skims around keeping within 4,000 miles of the surface of Mars. It travels around Mars several times each day, and thus rises in the west and sets in the east. The other moon keeps almost 15,000 miles away from Mars and travels so slowly two Martian days pass between its rising in the east and setting in the west.

Jupiter has more satellites, gigantic and tiny, than any other planet. Seven of the full dozen now known were spotted on photographs within the last 50 years.

Saturn also has a large number of moons. It has nine in all. Its inner five move in nearly circular orbits and travel almost in the same plane as its rings.

### Five Moons for Uranus

The planet Uranus was discovered in 1781 by William Herschel, and within ten years he spotted two of its moons. One is about 1,000 miles across and the other 800 miles in diameter. Two other satellites for Uranus, smaller and nearer the planet, were found some 65 years later. A fifth was discovered by Dr. Kuiper about three years ago.

Neptune was located in 1846 because Uranus seemed to be pulled by an invisible object out of its calculated path around the sun. In less than a month after the planet had been discovered, W. Lassell, an English astronomer, found its large satellite, probably as large as our moon. Another satellite was spotted by Dr. Kuiper in May, 1949.

Pluto, itself not known until two decades ago, has no known moon in spite of recent searches with large telescopes.

It is not impossible, however, that one or two very faint satellites may still be added to the 31 known moons of our solar family.

Science News Letter, February 9, 1952

## GENETICS

# Rabbit Egg Transplants

► MORE KNOWLEDGE of factors affecting cancer and other kinds of growth is expected from a rabbit egg transplantation method developed at the Jackson Memorial Laboratory, Bar Harbor, Me.

The method makes it possible for the first time to transplant fertilized eggs from one female rabbit to another without sacrificing the donor animal. It was worked out by Frederick R. Avis, director of the secondary training school program of the Jackson Laboratory and head of the science department at St. Marks School, and Dr. Paul B. Sawin, research associate at Jackson Laboratory.

Because the rabbits are all inbred to produce certain inherited characteristics, it will be easier to determine what changes occur in the uterus during the embryo's development. In addition, scientists will be able to

tell how factors in the uterus, apart from inherited factors, affect the animal. Whether cancer susceptibility results from a trait in the fertilized egg or whether it comes from factors in the uterus during the embryo's development, for example, might be determined through this new technique.

The method, as reported to fellow scientists in the *JOURNAL OF HEREDITY* (Sept.-Oct., 1951), is to perform a Caesarian operation on the pregnant rabbit, remove the fertilized eggs and transfer them to a doe which has been prepared for proper reception of the eggs by a previous dose of gonado-trophic hormone which produces ovulation. The transplanted eggs develop in the host uterus. Normal rabbits develop from 81.3% of the transplants. The donor does can be saved for further study.

Science News Letter, February 9, 1952

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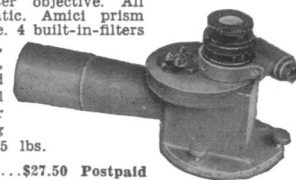
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