

of little scientific worth and is regarded more as a pleasing spectacle.

Now being constructed at McDonald Observatory, however, is a new instrument for observing the invisible "infra-red" radiation emitted by the rim of the sun during the ring eclipse. During such an eclipse the much stronger radiation from the center of the sun's disk is blocked out and permits scientists to measure the radiation coming from the rim, or "limb" as it is called. Dr. Struve reports that it is only during a partial

or annular (ring) eclipse that this rim radiation can be measured.

McDonald Observatory will be in the zone where the ring eclipse can be seen, but is about 50 miles from best observing position. A special expedition will be sent out to make the infra-red measurements. At the Observatory itself will be mounted the television apparatus invented by Dr. A. M. Skellett of the Bell Telephone Laboratories for observing the corona of the sun during the eclipse.

*Science News Letter, March 16, 1940*

GENETICS—MEDICINE

## Obtain Effects Like Heredity By Transplanting Unborn Mice

"Pseudo-Hybrids" React in Part Like Foster-Mothers, In Part Like Real Mothers, to Tumor-Causing Stimuli

**T**HE POSSIBILITY that some of the effects now attributed to heredity are due to prenatal environmental influence has arisen from cancer experiments in the Roscoe B. Jackson Memorial Laboratory at Bar Harbor, Me., soon to be reported.

Unborn mice that are given foster mothers by transplanting fertilized eggs from one female to another are found to be "pseudo-hybrids" in that they react to transplanted tumors in part as their foster mothers do and in part as their real mothers do. Earlier experiments showed that in the process of nursing, whether the milk is supplied by

the real mother or a foster mother, some sort of influence affecting the likelihood of developing breast cancer is transferred. Dr. Arthur M. Cloudman, who conducted the transplantation experiments as a part of a broad investigation of cancer's heredity directed by Dr. C. C. Little, is now planning to conduct experiments to differentiate between the effects transferred during nursing from those acquired during the period before birth.

First announcement of the experiments was made through the American Society for the Control of Cancer.

*Science News Letter, March 16, 1940*

POPULATION

## Million Workers Will Reach Retirement Age by 1950

Even Without Broadening of Present Plan, 1985 Will See Seven Million Included, as Compared With 300,000 Now

**T**HE NUMBER of retired men and women who receive their first crisp old-age Social Security checks during 1940 is only a very small fraction of those who will become eligible for such benefits in the next 45 years. Even if the Act is not broadened in future, probably more than 7,000,000 would be included in the plan as compared with something like 300,000 this year.

Those who earned wage credits in 1937, the first year of the Social Security Act, are relatively few in the older age groups. If you should draw a bar diagram in which the length of each bar represents the percentage of men with 1937 wage credits at a certain age level, you would find it looking like the under side of a stairway with the longest bars at the ages of 20 to 34 and with steadily

decreasing steps from there down to the 60 to 64 group where only 27% earned credits. A much smaller percentage of women in the older age groups earned wage credits in that year.

This means that although 1940 will see relatively few persons with wage credits at the retirement age, by forty or forty-five years from now the large group of present young men workers representing from 61% to nearly 64% of the total population at those ages will have reached 65 and the age to apply for old-age benefits. However, all who had 1937 wage credits will not necessarily be eligible for monthly benefits.

No one can estimate exactly just how many will be at the old-age benefit age in 1985, because the actuarial tables on which such predictions are based vary widely. The insurance statisticians who figure such tables like to lean over backwards so as to avoid expensive errors in estimates. Thus, those figuring on survivors to collect annuities conservatively figure on a much smaller future death rate than do those who estimate what must be paid in death benefits.

Robert J. Myers, actuarial mathematician for the Social Security Board, recommends in the "Social Security Bulletin" that the conservative person in figuring costs of such a benefit plan use more than one estimate and plan for costs in a rather wide range.

Using the survival table known to statisticians as the "U. S. White Table," based on experience among the total U. S. population during 1920-29, he estimates that 7,338,000 of those earning 1937 wage credits will be 65 or over in 1985. Using the "Standard Annuity Tables," the number is figured at 10,417,000.

With either table as the basis of calculation, the million mark will be passed by 1950.

*Science News Letter, March 16, 1940*

The post oak, canoe birch and lodge pole pine received their names from their uses.

## ● RADIO ●

Dr. W. L. Semon of B. F. Goodrich Company and Dr. J. C. Patrick of Thiokol Corp., will discuss the new rubber-like materials created by chemistry as guest scientists on "Adventures in Science" with Watson Davis, director of Science Service, over the coast to coast network of the Columbia Broadcasting System, Thursday, March 21, 4:15 p. m., EST, 3:15 CST, 2:15 MST, 1:15 PST.

Listen in on your local station. Listen in each Thursday.