



#### THE MIRROR END

Near the electric control of McDonald Observatory's great 82-inch telescope are Dr. Otto Struve, director (right), Dr. H. G. Gale, head of the University of Chicago's physics department (center) and Dr. C. T. Elvey, second in command (left).

reflecting or mirror type like that of McDonald Observatory. Among these large reflecting telescopes smaller than McDonald's 82-inch are: Dunlop Observatory's 74-inch near Toronto, Dominion Observatory's 72-inch at Victoria, British Columbia; Ohio Wesleyan's 69-inch at Delaware, Ohio; Harvard's 61-inch at Oak Ridge, Mass.; Harvard's 60-inch in South Africa. The largest of the refracting or lens telescopes is at McDonald's older sister institution, Yerkes Observatory, Williams Bay, Wis., which has a 40-inch instrument.

*Science News Letter, April 29, 1939*

Adding calcium salts to tomatoes is found effective in keeping the tomatoes firm and whole in canning.

## ● Earth Trembles

Information collected by Science Service from seismological observatories and relayed to the Jesuit Seismological Association resulted in the location of the following preliminary epicenter:

Tuesday, April 18, 1:22.7 a. m., EST

On coast of Chile, near the town of Copiapo. Latitude 27 degrees south, longitude 71 degrees west.

For stations cooperating with Science Service in reporting earthquakes recorded on their seismographs see SNL August 13.

#### BIOLOGY

# Sex Determination In Rats Achieved Through Diet

## When Fathers Eat Lots of Protein and Mammas Eat None, The Babies Born Include Larger Proportion of Males

IF MEN were rats, Papas wanting sons might be advised to eat all the beefsteaks and other protein foods at the family dinner table, leaving only a small bit for the mammas.

This sort of diet—high protein for the papas and low protein for the mammas—when fed to rats resulted in a sex ratio of 145 males to 100 females in the offspring, Drs. F. Hoelzel, Esther Da Costa and Prof. A. J. Carlson of the University of Chicago have just announced.

When the diets of the same rats were reversed, giving the mammas more protein than the papas, the sex ratio in the offspring was reversed to 92 males to 100 females.

"This is a striking decrease in the male ratio as the normal seasonal (spring) effect is an increase in the male ratio," the Chicago scientists comment in reporting their findings to the Society for Experimental Biology and Medicine.

"It is too early to say whether diet could be used to practical advantage to control sex in animal breeding," Dr. Hoelzel replied to a Science Service inquiry.

"Our results however may mean that the greater number of boy babies, particularly after some wars, are due to the fathers obtaining a higher proportion of protein in the diet than the mothers.

"The most significant suggestion from our results seems to be that the 30 to 40 per cent. of abortions or resorptions of fetuses that are known to occur in domestic animals and humans may be serving an important role in evolution by eliminating the least fit at this early stage of life."

The theory that the better nourished parent tends to determine the same sex in the offspring was proposed many years ago. These studies seem to confirm the theory.

The explanation given by the Chicago scientists is that the state of protein metabolism induced in the parent evidently also affects the germ cells and tends to determine the survival value of the same sex among the embryos.

"The survival of a larger percentage

representing the better nourished sex might be due to the expected transmission of sex-linked characteristics. The results would also be explained if mammalian reproduction is a modification of parthenogenesis in which each sex tends to reproduce itself with survival of the fittest."

*Science News Letter, April 29, 1939*

#### PHYSICS

## Magicians' Trick Puts Glasses on Museum Guests

AN OLD-TIME but still mystifying trick of magicians is being used to "fit" visitors with spectacles in a new exhibit at the New York Museum of Science and Industry.

In its new Hall of Optical Science, prepared especially for the World's Fair visitor, one looks into the exhibit and sees his face reflected apparently from a regular mirror. But across the bridge of his nose is superimposed any one of six pairs of spectacle frames from the old-fashioned kind of Ben Franklin's epoch to the modern streamlined style.

It's done with a mirror which is only half-silvered and semi-transparent.

Behind it is a revolving drum on which are mounted six different kinds of spectacle frames. The visitor looks at the mirror, sees the reflection of his face and at the same time sees a pair of spectacles behind the mirror so aligned that the spectacles appear to be on the observer's nose.

The spectacles can be "changed" by turning a knob.

The new exhibit, showing also basic principles of optical science and the manufacture of optical parts, were first displayed at a special luncheon (April 20) honoring the 25th anniversary of William Bausch's first experiments in making optical glass in what is now the Bausch and Lomb Optical Company plant.

*Science News Letter, April 29, 1939*

Far from being simple H<sub>2</sub>O, ordinary water contains 33 substances, an engineer points out.