PHYSIOLOGY

Parenthood Seems to Depend On Inorganic Manganese

Male Rats Bereft of Manganese Become Sterile While Females Have Litters But do Not Show Maternal Solicitude

STUDIES indicating that the formation of a hormone by the pituitary gland is in some way related to the manganese of our daily diet were described by Dr. E. V. McCollum of the Johns Hopkins School of Hygiene and Public Health at the meeting of the National Academy of Sciences in Washington last week.

Dr. McCollum pointed out the relation of iodine to the thyroid gland, of calcium to the parathyroid glands, and said that apparently another glandular system had been linked with an inorganic element which is essential to the diet.

Rats which are deprived of manganese exhibit strange behavior and bodily changes, Dr. McCollum and his associate, Dr. Elsa Orent, found. The sex glands of the male rats degenerate until complete sterility results. The females, however, continue to have litters of living young but do not show any sign of ordinary maternal solicitude.

"The mothers do not build a nest or collect their young or hover over them, and the stomachs of day-old young never contain any milk, and the young die from neglect," Dr. McCollum reported. "These mothers not only decline to nurse their own young but will not care for foster young from the stock colony."

"The normal mothers also seemed to detect something wrong with the young of manganese-free mothers and abandoned them, although normal rats will ordinarily care for each other's young when the litters are exchanged.

"The addition to the manganese-free diet of as little as five thousandths of one per cent. of manganese results in correcting the behavior of the female rats toward their young," Dr. McCollum said.

Other workers have reported that male sterility in middle life is related to deficiency of the pituitary hormone, and that the pituitary gland stimulates milk secretion. Dr. McCollum suggested that since manganese deprivation had the same effect, the dietary manganese may be related in some way to hormone formation by the pituitary gland.

However, there is no need to worry over possible lack of manganese, as you worry over lack of vitamins, it appears; for Dr. McCollum reported that at the beginning of the experiments great difficulty was encountered in removing manganese completely from the diet.

Science News Letter, May 9, 1931

INSATIABLE CURIOSITY

An outstanding characteristic of the original wearers of all 'coonskin coats, but not always found—so the humorists tell us—in those who fall heir to them. This raccoon in the Bear Mountain State Park, N. Y., was photographed by M. Peter Keane of the American Museum of Natural History

ASTROPHYSICS

Earth's Magnets Quiver Day After Outburst on Sun

IF ASTRONOMERS peering through their telescopes see bright clouds of hydrogen on the surface of the sun today, they can tell you that tomorrow the sensitive magnetic needles of their observatories will quiver and move from the true position.

This prediction, now possible as the result of a discovery by Dr. G. E. Hale of the Mount Wilson Observatory, Pasadena, Calif., was announced to the meeting of the American Geophysical Union in Washington last week, by Dr. Seth B. Nicholson, of the same observatory.

Dr. Hale has found that exceptional magnetic storms on the earth occur a little over one day later than the flaring of the hydrogen. He has collected accounts of several extraordinary outbursts of this nature which were followed by exceptional magnetic disturbances on the earth.

Science News Letter, May 9, 1931

GENERAL SCIENCE

California Astronomer Chosen National Academy President

DR. WILLIAM WALLACE CAMPBELL, director of the Lick Observatory and former president of the University of California, was elected president of the National Academy of Sciences at its closing session in Washington. He succeeds another noted California scientist, Dr. Thomas Hunt Morgan of the California Institute of Technology, Pasadena.

Dr. Campbell established his place in American science principally through his work in astronomy, particularly in the study of various types of heavenly bodies with the light-analyzing instrument, the spectroscope. He has also done notable work in solar eclipse problems.

Born in Ohio in 1862, he has been a Californian since 1891, when he went to Mt. Hamilton as a Lick Observatory astronomer. In 1901 he was made director of the observatory, and in 1923 president of the University of California. He retired from the latter post recently, to return to active astronomical work.

For vice-president the Academy elected Dr. David White of the U. S. Geological Survey, former home sec-

retary. Dr. Fred E. Wright of the Carnegie Institution, of Washington, former vice-president, became home secretary. Dr. W. B. Cannon of Harvard Medical School was re-elected to the Council of the Academy, and Dr. Roger Adams of the University of Illinois was chosen as his associate on the Council.

One Foreign Associate was elected by the Academy: Dr. Peter Debye, experimental physicist of the University of Leipzig, Germany.

New members were elected as follows: Henry Bryant Bigelow, Museum of Comparative Zoology, Cambridge, Mass., oceanography; Edwin Broun Fred, University of Wisconsin, Madison, Wis., bacteriology; Edwin Crawford Kemble, Harvard University, Cambridge, Mass., physics; Adolph Knopf, Yale University, New Haven, Conn., geology; Robert Harry Lowie, University of California, Berkeley, Calif., anthropology; Joseph Haines Moore, Lick Observatory, Mt. Hamilton, Calif., astronomy; Robert Lee Moore, Austin, Texas, mathematics; Hermann Joseph Muller, University of Texas, Austin, Texas, genetics; George Linius Streeter, Department of Embryology, Carnegie Institution, Baltimore, Md., embryology; Margaret Floy Washburn, Vassar College, Poughkeepsie, N. Y., psychology.

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ZOOLOGY

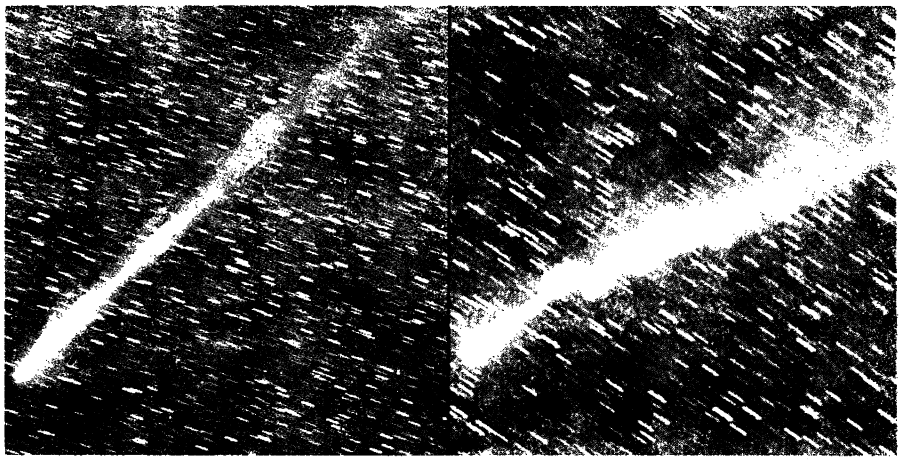
Python Likes New Home; Lays Clutch of Eggs

ONE OF the big pythons in the U. S. Zoological Park recently celebrated her transfer to the more comfortable and homelike quarters of the new reptile house there by laying a clutch of twenty eggs.

The picture on the cover of this issue of the SCIENCE NEWS LETTER shows her exercising the serpentine version of maternal care: most of the time, as a matter of fact, the eggs are kept quite invisible beneath her coils. The eggs, like many reptile eggs, have tough, parchment-like shells rather than the hard limy coverings characteristic of bird eggs.

Science News Letter, May 9, 1931

The cost of accidents in the United States is in the end paid by the ultimate consumer, and amounts to $20 a year for each person in the country, declares the president of the National Safety Council.



HOW A COMET BREAKS UP

The comet 1908c on successive days, October 14 and 15, showed this mysterious and rapid change in its appearance through the ten-inch telescope of the Yerkes Observatory. Now for the first time an explanation has been given. In agreement with Maris' new theory, a great magnetic storm occurred on the earth at the same time.. Surges of ultraviolet light from the sun are believed to cause both effects.

ASTROPHYSICS

Pressure of Sunlight Strong Enough to Break Comet in Two

GREAT outbursts of ultraviolet light from the sun may press so hard on the tail of a comet as to break it in two. This is the theory presented in Washington before the American Geophysical Union by Dr. H. B. Maris of the U. S. Naval Research Laboratory.

The curious fact that sunlight can cause such huge pressures as this is at the basis of Dr. Maris' new theory of the irregular variations of brightness observed in comets. During periods when many sunspots are visible, the ultraviolet light streaming out from the sun may increase as much as a thousand times.

The atmosphere of a comet is transparent to visible light but strongly absorbs ultraviolet light which, because of this absorption, exerts a pressure on it. The effect on the comet is to create a strong wind in its atmosphere moving away from the sun. Thus that part of a comet that feels the pressure most may get a violent jolt when a new whirlpool appears in the sun.

Magnetic storms, those great fluctuations of the earth's magnetic forces, often accompany or anticipate the unusual changes in comet activity. Since the magnetic effects are known to be due to the ultraviolet surges associated with bright spots on the sun, this forms additional support for the new theory of comet behavior.

Comet activity shows itself by changes in the brightness of the atmosphere of the comet, similar to those observed on the earth during a display of the aurora or northern lights. The aurora is caused by increased ultraviolet light from the sun, said Dr. Maris. It occurs at the same times as the magnetic storms.

Dr. Maris studied records of the great comets of last century. He found that the splitting of a comet was accompanied or preceded in nearly every case by a great magnetic disturbance on the earth.

The great comet of 1882 met a tremendous solar disturbance at the time of its approach to the sun. Dr. Maris believes that this was the cause of its subsequent disruption.

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PHOTOGRAPHY-MEDICINE

New Camera Photographs Disease in Ear

THE INTERIOR of the human ear can now be photographed with a new camera developed by Dr. Richard Millar, director of the photography division of the Methodist Hospital of Indianapolis.

The ear camera is hailed by the medical world as a distinct step forward in the treatment of ear diseases. For the