

## ASTRONOMY

**Weather Cycles  
Revealed on Planets**

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white and the southern belts reddish. These color changes and their period of about twelve years had already been observed by Stanley Williams. It is significant, Dr. Becker remarks, that the famous great red spot of Jupiter that appeared in the southern belts in 1878, occurred at a brightness minimum.

Saturn presents a different spectacle. At every second minimum, white spots appear in the equatorial zone, and have been observed at no other times. Since 1850, this phenomenon has occurred four times, the last occasion being Aug. 3, 1933, when a large white spot suddenly appeared. This was also a time of minimum brightness.

How are these phenomena to be explained? Dr. Becker asks. Since the planets do not shine by their own light but reflected sunlight, the changes in brightness can only be caused, he says, by changes in the reflecting power of the planet's surface. The visible surface in all of the planets considered, except Mars, consists of a blanket of clouds. He believes that what occurs can be described somewhat as follows. He says:

"At a maximum that planet begins to cover itself over with a thin veil of clouds, whose reflecting power is less than that of the underlying surface. This cloud-veil becomes gradually thicker and its reflecting power less, until the brightness-minimum is reached. During a minimum the veil may be torn in places, so that parts of the

brighter surface below show through and appear as white spots, as seen on Saturn. The rise to the next brightness maximum is then caused by a gradual dissolution of the cloud-veil. . ."

"The matter is somewhat different with Mars. Since the solid surface of this planet has in contrast with the others a very low reflecting power (like that of river sand), a covering over with a cloud-veil, which has in fact often been observed, can only result in an increase in brightness. For that reason the light changes of Mars are the mirror image of those of Jupiter; for the same event in the former produces an increase in brightness, in the latter a decrease."

The brightness changes of all the planets considered are thus reduced to substantially the same process, but a process whose details vary with each planet, and whose underlying causes must therefore reside in the planet itself. What these underlying causes are, is a question, Dr. Becker remarks, which must be left, like many other astronomical questions, for the present unanswered.

He points out, however, that the earth too, as seen for example from the moon, shows variations in brightness. This we can ourselves indirectly observe. When the moon is crescent, the rest of the disk can be faintly seen. This is due to sunlight reflected by the earth to the moon, for there is earthlight on the moon just as there is moonlight on the earth. Variations in this earthlight on the moon have often been observed, showing that the brightness of the earth varies, probably with the degree of cloudiness and the amount of snow or of vegetation.

*Science News Letter, April 7, 1934*

## ENDOCRINOLOGY

**Thymus Gland Speeds  
Maturity and Growth**

**T**HE MYSTERY of the thymus gland has apparently at last been solved by researches at the Philadelphia Institute for Medical Research of the Philadelphia General Hospital.

The thymus is capable of causing enormous precocity, Dr. L. G. Rowntree reported at the meeting of the American Physiological Society. Growth, development, maturity and fertility were speeded up at a tremendous rate in rats by doses of thymus gland extract, Dr. Rowntree and associates, Drs. J. H. Clark and A. M. Hanson, found. These effects of thymus treatment were transmitted to the offspring and were much more marked in the third generation than in the first.

The thymus gland is located in the chest. It is very large in infants but gradually shrinks as the children grow up. Its exact function has never before been known, though scientists have suspected that it had some relation to growth. Sometimes the gland is so large that it causes death in infants by interfering with the supply of oxygen to the lungs, thus choking the luckless babies. Such deaths are frighteningly sudden and mysterious, and the cause generally not known until examination of the baby's body after death shows the thymus to be enormous.

*Science News Letter, April 7, 1934*

## PHARMACOLOGY

**Highest Pharmacy Award  
To Sir Henry Wellcome**

**T**HE REMINGTON Honor Medal for 1934, highest honor of American pharmacy, has just been awarded to Sir Henry Wellcome of London, founder of the Wellcome Physiological and Chemical Research Laboratories among many other scientific institutions.

Sir Henry was born in Wisconsin and received his pharmaceutical education in this country. His report on conditions in Panama in 1910 led to increased support by the U. S. Government of the work and methods of General Gorgas at a time when these important sanitary operations were in danger of serious handicap through decreased appropriations.

Sir Henry has contributed to the knowledge of the prehistory of Ethiopia and the upper Nile regions.

*Science News Letter, April 7, 1934***SUBSCRIPTION ORDER COUPON**

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