

PHYSIOLOGY

Transplanted Glands Make Giants in Later Generations

SEXUAL precocity and startlingly speeded-up growth is visited upon the great-grandchildren of rats if the four generations involved have implanted into them a succession of thymus glands.

Two years ago Dr. Leonard G. Rowntree of the Philadelphia Institute of Medical Research excited the medical world by announcing his discovery that injections of extract from the thymus gland, then one of the most mysterious parts of the body, in successive rat generations produced rat giants of increasing magnitude. A seventh generation thymus-treated rat seven days old was three times the weight of a normal one eight days old, and it was otherwise old before its time. (*See SNL*, April 7, 1934, May 12, 1934, Oct. 13, 1934, Dec. 15, 1934.)

Now Dr. Rowntree, with an associate, Dr. N. H. Einhorn, has made a similar experiment, using weekly implants of whole thymus glands from other rats, instead of the injections of gland extract. The glands produced an acceleration of growth rate and development, although the effect was not quite so large as when daily injections of extract

were used. The new experiments are reported in *Science* (July 3), and the scientists consider them important confirmation of their previously reported evidence as to the biological effect of thymus extract.

Translated from rats to human terms, thymus treatment means that girls or boys might become sexually mature at the age of 8 or 10 years, if they, their parents, grandparents and great-grandparents had been thymus treated.

The thymus gland is closest to the heart of any endocrine or hormone-producing organ. All animals from primitive fishes up to and including man have thymus glands. Sweetbreads of the dinner table are the thymus glands of calves and it was from them that Dr. Adolph M. Hanson, physician of Fairbault, Minn., obtained the extract used by Dr. Rowntree in his early experiments.

Before the Rowntree experiments, the thymus interested physicians because it sometimes chokes little babies to death. It is a pinkish mass, one ounce in weight, in the upper chest of children, which dwindles to seeming insignificance at sexual maturity.

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cules of all good fibers—whether natural like cotton and silk, or artificial like rayon—are long and slender; miniature fibers themselves. The molecules of casein are short and lumpy, and simply do not pull together.

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ASTRONOMY

Nova Cephei With Second Outburst Has Speed Record

WITH a new and second outer shell expanding and rushing outward at the record rate of 2,100 miles per second, the "new" star or nova now visible in the sky is unusually interesting to astronomers at the Carnegie Institution's Mt. Wilson Observatory.

A gigantic outburst of gases in the form of a shell is usual with such novae, but two days after its discovery on June 18, Nova Cephei (or Nova Lacertae as it is also called, since it is on the border of the two stellar constellations) developed a second outburst which achieved the largest velocity thus far measured in any nova.

Now dimmer than it was at the peak of its outburst, the star at its best is estimated to have been 100,000 times as luminous as the sun. Its distance from earth is estimated at 2800 light years.

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AGRICULTURE

Winter Wheat Harvest Won Race With Drought

A DRAMATIC race for the nation's bread was won in the great central grain belt, as farmers harvested their winter wheat while the drought grew worse day by day.

The devastated wheatfields of the Northwest represent the bulk of the nation's spring-wheat crop. Because it is planted in the same season that it is harvested, it got a late start and had relatively little use of the snow-water left in the soil. Winter wheat, grown predominantly in regions farther south and east, was well covered with snow last winter, used the thaw-water in spring to complete its growth, and came on through to harvest in good shape.

The wheat harvest of the Pacific Northwest—Oregon and Washington—has given no concern, except locally on light soils. Throughout most of this important cereal-growing area, the condition of the crop is reported as "good to excellent."

Small-grain crops other than wheat,

CHEMISTRY

Wool From Italian Milk Failure in German Test

SYNTHETIC wool made in Italy from casein, the cheese protein, has failed under German laboratory tests for strength and elasticity, reported by Dr. K. Graefe. (*Zeitschrift für angewandte Chemie*).

Single fibers of the widely hailed Italian artificial wool were compared with fibers of natural merino wool. When dry, natural wool fibers could carry a load of 7.5 grams before breaking, while fibers of the "cheese wool" broke under a load of only 3.7 grams. There was an even greater discrepancy in the strength of the two kinds of fibers when wet. Then the natural wool required a load of 5.2 grams to break

it, and the synthetic fibers only 1.7 grams.

"Cheese wool" fibers made an especially poor showing under the stretch test. They could be stretched to only 9.3 per cent more than their original length before they broke, whereas natural wool fibers would stretch 39 per cent when dry, and 55 per cent when wet. They also failed signally under the bending test: a "cheese wool" fiber could be broken by 80 bendings back and forth, whereas a natural wool fiber withstands from 500 to 1000 bendings.

Dr. Graefe thinks that the failure of casein wool may be traced to the shape of its individual molecules. The mole-