

PHYSIOLOGY

# Gland Extract Checks Growth But Speeds Growing-Up

## Extracts From Pineal "Seat of the Soul" Makes Rats Become Adult Early But Fail to Reach Full Size

**A** GLAND extract that has the somewhat paradoxical effect of checking growth at the same time that it speeds the growing-up process, is reported by Drs. L. G. Rowntree, J. H. Clark, and Arthur Steinberg of Philadelphia and Dr. A. M. Hanson of Fari-bault, Minn. (*Science*, Feb. 14)

The extract is from the pineal gland, the tiny, cone-shaped structure in the head, which the French philosopher, Descartes, once called the "seat of the soul." The extract was prepared by Dr. Hanson. Its strange effect was discovered in studies made on rats by the Philadelphia scientists at the Philadelphia Institute for Medical Research and at research laboratories at the Philadelphia General Hospital.

The extract was given to five generations of rats. Its effect was to retard the rate of growth, at the same time speeding up development and hastening the onset of adolescence in the offspring of treated parents. The great-great-grandchildren of treated rats weighed less than half as much as untreated animals of the same age. However, their teeth erupted when they were between 3 and 5 days old, instead of the usual 8 or 10 days; their eyes opened within five days instead of about 15 days after birth.

The end result, the scientists report, is dwarfism with precocious development and over-sized sex organs.

### Unsolved Mystery

The function of the pineal gland and its purpose or use in the body has always been one of the unsolved mysteries of medical science. The studies on rats treated with pineal gland extract cannot be taken offhand to mean that the normal function of the pineal gland is to check growth and speed sexual development, Dr. Rowntree cautions in his report. If that were the case, it would imply that removal of the pineal gland would result in faster growth and slowed development. Operations already performed on a small number of

rats for removal of the pineal gland have not brought about such results. Further study will be needed to clear up the mystery of the pineal and to translate the facts now known into practical knowledge useful for treating humans.

In the first generation of rats treated with pineal extract "no effect is apparent other than moderate loss of weight and phenomena suggestive of sex excitation and early breeding," the scientists' report reads. "In the second generation there is definite retardation in growth, with mild precocity in gonadal development. In subsequent generations, the third to the fifth, there is accruing retardation in growth with accruing acceleration in gonadal and bodily development. Precocious 'dwarfism' with relative macrogenitalism are the outstanding result. In addition eye anomalies, ocular diseases and blindness are extremely common."

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GENETICS

## Pea Plant Grown by Mendel Given to University

**O**NE of the most treasured mementoes of the modern science of genetics, a pressed specimen of a pea plant grown by Gregor Mendel himself, became the property of the University of Pennsylvania at a special ceremony during the mid-year convocation.

The specimen is the gift of the monastery at Brno, Czechoslovakia, formerly called Brünn, where Mendel as teacher performed the experiments that laid the foundations of all modern plant and animal breeding and where he later ruled as abbot. It is one which he preserved and mounted himself. As arranged for presentation to the University, it is under glass, with the coat-of-arms of the monastery stamped over the inscription beneath it. Accompanying the specimen is one of Mendel's autograph signatures, which are now very rare.

The specimen itself, well preserved in spite of its seventy years of age, is



FAMOUS PEA PLANT

*This pressed plant, well-preserved for its age, is one of those originally used by Mendel in his basic experiment on genetics. It has now been sent to the United States. The inset shows the autograph of Mendel which accompanied the specimen as a gift from the monastery at Brno, Czechoslovakia, to the University of Pennsylvania.*

about eight inches high and consists of a stem with several leaves and flowers. Only certain duplicate specimens which Mendel thus preserved were available as gifts to other institutions. There were originally six such specimens; there now remain in his monastery only two.

While on a tour of Europe last summer Dr. Samuel W. Fernberger, professor of psychology at the University of Pennsylvania, visited Brno and told Eduard Urban, a resident of that city, of his great interest in the Mendel relics there. Prof. Urban, in turn, informed the monastery authorities of Dr. Fernberger's enthusiasm for the collection.

At the same time, also, the attention of the monastery authorities was called to the fact that, through his research in chromosomes, Dr. Clarence E. McClung, professor of zoology at the University of Pennsylvania, had done much toward explaining the mechanism underlying Mendel's Laws.

As a result, the monastery authorities expressed a desire to give to the University one of the duplicate specimens.

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