On the reproductive capacity of mice after hypophyseal implants

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The attempts for fecundating infantile animals, precociously matured after hypophyseal implants, have resulted in a failure (SMITH and ENGLE, ZONDEK and ASCHHEIM; see our former papers).

The infantile animals precociously matured in this way, have the essential conditions for reproduction, that is to say: complete ovulation, as may be seen by the presence of tubal ova; histologic alterations of the uterus and vagina, identical to the estral condition of adult animals. Adult males can mate these infantile females, as is proved by the presence of vaginal plugs with sperma; but a pregnancy has never been reported in such cases.

The ovarian alterations after hypophyseal implants are marked to such an extent, that one might doubt of the ulterior reproductive capacity of the organ.

EXPERIMENT.

Female mice, three weeks old, weighing 6,5 grams. One animal was implanted with two anterior lobes of hypophysis from adult female rabbits, with an interval of three days. We observed opening of the introitus and full estrus during about four days. Laparotomy showed a great hypertrophy of both ovaries and uterus. On the surface of the ovaries, many corpora lutea were seen. The abdominal cavity was closed again and the animal kept alive.

The mous remained in diestrus for a period of about six weeks afterwards, when the normal puberty appeared; the body weight was then of about 13 grams. When it reached the weight of 19 grams, it was put together with a normal adult male mous and one female of the same litter. Both the female mice became pregnant. Parturition of the control occurred one day after that of the implanted animal. The litters were as follows:

Implanted animal:—four females and three males;

Control:—four males, one female.

All the young animals were apparently normal.

When 23 days old, the weights were as follows: 5 to 5,5 grams for those of the implanted litter; 7 to 7,5 for the control litter.

There is, consequently, a marked difference in weights, but not seldom, we find in our mice colony normal animals, about three weeks old, with such a weight as 5,5 grams.

To conclude, this experiment demonstrates that the precocious sexual maturity induced by hypophyseal implants, at least to a certain extent, involves no impossibility of future fecundation and normal pregnancy and parturition, when the animal reaches the normal adult condition.