males joined in parabiosis to *A. tigrinum* females. Although in younger age groups the expected proportion of such pairs may be readily identified, pairs consisting of *punctatum* male and *tigrinum* female are almost completely lacking in older age groups, due to the tranformation of the testes of the *punctatum* cotwin into ovaries. In older grafted animals, as in older parabiotic twins, reversal of the testis is found to be completed, but in these the known male sex of the donor may afford conclusive evidence that reversal of the sex potentialities of the transplant has been induced by the female host.

It is concluded that reversal of sex type in gonads derived from *A. punctatum* males is the general rule when these gonads develop in axolotl females, only an occasional graft testis proving capable of attaining a dominance over the ovary of the host and continuing its normal development.

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Pelvic Changes Occurring in Male Mice Receiving Large Amounts of Folliculin Benzoate.

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The resorption of the pubic bones of the male pocket gopher has been induced experimentally by the administration of estrogenic hormone (Hisaw[1]). In the guinea pig 2 hormones, one of follicular origin and one present in the blood of pregnant rabbits or in the corpus luteum, were necessary to induce a relaxation of the pelvic ligaments (Hisaw[2]). In these species sexual dimorphism in the structure of the pelvis of matured animals exists. Males have the pubic bones well united by cartilage while the pubic bones of mature females have a ligamentous attachment.

This sexual dimorphism of the pubic symphysis was not noted in rats (Todd[3]). The pubic bones were well and firmly attached at the symphysis on both males and females. Observations to be reported here indicate that large amounts of estrogenic hormone are effective in inducing changes in the symphysis of the mouse in which a sexual dimorphism of the pelvis also occurs.

1 Hisaw, F. L., *J. Exp. Zool.*, 1925, **42**, 411.

2 Hisaw, F. L., *Physiol. Zool.*, 1929, **2**, 59.

3 Todd, T. W., *Am. J. Anat.*, 1923, **31**, 345.

Six male mice were given weekly subcutaneous injections of 500 international units of folliculin benzoate.* The injections were started at the time of weaning (28 days of age). The mice developed scrotal hernias after 6 to 8 weeks of treatment. One mouse was killed after 14 weeks of treatment and no change was noted in the pelvis. Five mice were removed after 19 to 28 weeks. At autopsy all presented greatly distended bladders, and 2 showed marked hydronephrosis and hydroureter. The urethras were greatly distended down to the region of the pubic symphysis. The region of the pubic symphysis was completely decalcified and ligamentous. The ligamentous band separated the pubic bones from 2 to 3 mm. The pelvis was easily movable as in the guinea pig at parturition. X-ray photographs of the pelvis verified the autopsy observations. The pubes, instead of coming to an apex at the symphyses, were widely separated. The symphyses of control male mice from 24 to over 200 days of age were broad and firmly united the pubic bones.

Two male mice of another strain (C_3H), which had received similar treatment from the time of birth for a period of 15 weeks also showed an absence of a pubic symphysis and the separation of the pubic bones by a ligamentous band. The testes did not descend and the scrota or hernias did not develop in these mice treated from birth. A similar separation of the pubic bones was observed in 4 other mice in the same series by palpation of the pelves.

It is suggested that the disarrangement of muscle attachments resulting from such changes in the pelvic architecture may influence the appearance of the scrotal hernias which have been previously observed by Burrows.[4] Also the factor causing retention of urine did not appear to be the prostatic hypertrophy induced as pointed out by Burrows,[5] as a constriction of the prostatic urethra has not been observed in mice with marked hydronephrosis and distended bladders, but due to a constriction of the urethra in the region of the pubic symphysis.

Further studies on these problems and on the nature of the pelvic change, whether decalcification and bone reabsorption or ligamentous proliferation, are being undertaken.

* The folliculin benzoate was obtained from Professor Girard (Paris) through the courtesy of Dr. G. M. Smith. The preparation contained 10,000 international units of folliculin benzoate per cc. The mice used in this investigation were kindly supplied by Dr. L. C. Strong and were from two strains (A and C_3H) in his colony.

4 Burrows, H., *Brit. J. Surg.*, 1934, **21**, 507.

5 Burrows, H., *Am. J. Cancer*, 1935, **23**, 490.