5641

Effects of Heteroplastic Transplantation of the Ear in Amblystoma.*

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When the otic plate is exchanged between early embryos of *Amblystoma punctatum* and *A. tigrinum,* the results agree essentially with similar transplantations of the limb, eye, and nasal placode, but are modified due to the location of the ear in the head. (Harrison,[1] Twitty,[2, 3] Schwind,[3] Stone,[4] Burr.[5])

The grafted auditory vesicle develops normally and becomes functional in both species, judging by the equilibratory reactions. The relative size of the normal and transplanted ears was estimated by weighing paper models of the labyrinth. The weights indicate that the tigrinum graft on the punctatum host, though larger than the normal punctatum ear, becomes greatly retarded in its growth, as compared with its own species control, while the punctatum ear on tigrinum, though smaller than the normal tigrinum, exceeds the normal punctatum ear in size.

The cartilaginous capsule, measured in the same way, shows some response to the presence of the transplant, but the capsule around the tigrinum graft is proportionately smaller than that surrounding the normal tigrinum ear. Conversely, the capsule around the punctatum graft on tigrinum is larger than the normal capsule in the punctatum donor. This may possibly be due to a difference in the amount of cartilage-forming material available in the 2 species. None of the other adjacent cartilages is affected, with the exception of the columella, which shows corresponding deviations in size.

Models of the muscles which originate on the ear capsule demonstrate no growth responses, but their position on the larger or

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[1] Harrison, R. G., *Proc. Nat. Acad. Sci.*, 1924, **10**, 69; *Anat. Rec.*, 1925, **31**, 299; *Proc. X Internat. Cong.*, Budapest, 1929, 642; *Arch. f. Entwmech.*, 1929, **120**, 1.

[2] Twitty, V. C., *Diss.*, Yale Univ., 1929; *J. Exp. Zool.*, 1930, **55**, 43.

[3] Twitty, V. C., and Schwind, J. L., PROC. SOC. EXP. BIOL. AND MED., 1928, **25**, 686.

[4] Stone, L. S., *J. Exp. Zool.*, 1930, **55**, 193.

[5] Burr, H. S., *J. Exp. Zool.*, 1930, **55**, 171.

smaller capsules is shifted. In Twitty's study of the eye muscles after heteroplastic transplantation of the eye, hypertrophy or atrophy was marked.[2]

The studies of Detwiler,[6] Burr,[7] Twitty,[2] Schwind,[3] and others have established the fact that hyperplasia in nerve centers occurs when the peripheral sensory load is increased, and that hypoplasia results when it is diminished. Cell counts of the acoustico-facial ganglion, which probably arises from the graft, show it to be larger on the side of the tigrinum transplant, and smaller with the reciprocal graft from punctatum. In the gray matter of the area acoustica of the medulla in the punctatum host, there is a 15 to 20% increase in the number of cells on the side of the operation, and a decrease of approximately 10% in the corresponding region on tigrinum.

Mauthner's cell is not obviously altered as to the arrangement of its dendrites by the entrance of a larger or smaller nerve. No response can be detected in the cerebellum, to which a few of the eighth nerve fibres probably run.[8, 9] The effects produced in the area acoustica, however, are in agreement with conclusions from morphological studies that it is the chief center in the brain of urodeles for the endings of the acoustico-lateralis system of nerves.[9]

5642

A Method for Demonstrating Prepituitary Maturity Hormone in the Blood of Non-Pregnant Women.

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Since the prepituitary maturity hormone has been shown to produce puberty, follicle ripening and corpus luteum formation[1, 2] and since this hormone has been demonstrated in the blood serum and urine of pregnant women and female castrates,[2, 3, 4] it ap-

[6] Detwiler, S. R., *Proc. Nat. Acad. Sci.*, 1920, **6**, 96; *J. Exp. Zool.*, 1926, **45**, 399; *Quar. Rev. Biol.*, 1926, **1**, 61.

[7] Burr, H. S., *J. Exp. Zool.*, 1916, **20**, 27; *J. Comp. Neur.*, 1924, **37**, 455.

[8] Larsell, O., *J. Comp. Neur.*, 1920, **31**, 259.

[9] Herrick, C. J., *J. Comp. Neur.*, 1914, **24**, 343.

[1] Smith, P. E., *Am. J. Physiol.*, 1927, **80**, 114.

[2] Zondek, B., and Aschheim, S., *Arch. f. Gynäk.*, 1927, **130**, 1.

[3] Aschheim, S., and Zondek, B., *Klin. Wchnschr.*, 1928, **7**, 1401.

[4] Fluhmann, C. F., *J. Am. Med. Assn.*, 1929, **93**, 672.