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## Metamorphosis of the Colorado Axolotl by Injection of Inorganic Iodine.

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Experiments with the Colorado Axolotl, to be properly controlled, must be performed with hypophysectomized and thyroidectomized individuals, since this variety of axolotl metamorphoses spontaneously when removed from its native habitat. Individuals submitted to such treatment have been considered never to metamorphose except under the influence of a glandular replacement therapy or upon the administration of organic iodine compounds. Jensen,<sup>1</sup> Huxley and Hogben,<sup>2</sup> Huxley,<sup>3</sup> and Uhlenhuth,<sup>4</sup> in view of their experiments maintain that the transformation of urodeles cannot be accelerated by feeding inorganic iodine. However, Hirschler<sup>3</sup> was successful in bringing about the metamorphosis of one European Axolotl by injection of Lugol's solution. This type of axolotl never metamorphoses spontaneously. Blacher and Belkin<sup>6</sup> reported normal and hypophysectomized European axolotls brought to the adult condition by intraperitoneal implantations of small crystals of inorganic iodine.

The writer has conducted somewhat similar experiments with the Colorado Axolotl, and, following the subcutaneous implantation of powdered iodine crystals, hypophysectomized and thyroidectomized individuals rapidly passed through the transformation stages to the adult. The experimental animals were either kept long enough after operation to preclude the possibility of small bits of glandular tissue remaining, or were killed following metamorphosis and the gland sites carefully examined. The controls all metamorphosed spontaneously within a month after arrival at the laboratory.

These results confirm the observations of Blacher and Belkin upon the European Axolotl. Although most investigators have considered inorganic iodine to have negligible influence upon the metamorphosis of urodeles, it now appears that large amounts of this element administered subcutaneously or intraperitoneally do markedly accelerate differentiation in neotenic forms.

<sup>&</sup>lt;sup>1</sup> Jensen, C. O., C. R. Soc. Biol., 1921, lxxv, 391.

<sup>&</sup>lt;sup>2</sup> Huxley, J. S., and Hogben, L., Proc. Boy. Soc., B. 1922, xciii, 36.

<sup>&</sup>lt;sup>3</sup> Huxley, J. S., Proc. Roy. Soc., B. 1925, xeviii, 113.

<sup>4</sup> Uhlenhuth, E., Biol. Bull., 1922, xlii, 143; ibid., 1923, xliv-xlv, 303.

<sup>&</sup>lt;sup>5</sup> Hirschler, J., Arch. Entw. Organ., 1922, 51, 482.

<sup>&</sup>lt;sup>6</sup> Blacher, L. J., and Belkin, R. I., Trans. Lab. Exp. Biol, of Zoopark of Moscow, 1927, iii, 97.