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Correlative Differentiation of the Amphibian Epithelial Hypophysis.

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In a previous paper¹ experiments were described which were designed to test the developmental capacity of the *pars buccalis* of the amphibian pituitary body, when prevented from making contact with the infundibular region of the brain. The experiments consisted in shifting the presumptive infundibular region of the late gastrula of *Hyla regilla* to a position posterior to that of the normal, thus forcing it out of reach of the *pars buccalis*, when the latter migrates inward to assume its definitive position at the anterior end of the notochord. At the time of operation, the anlagen of the two components of the pituitary body were separated by a distance equivalent to a quarter of the length of the embryo and it may be supposed that they exerted no influence over each other. This condition, however, does not prevail in post-neurula stages.

Tadpoles derived from gastrulae upon which the operation had been performed exhibited the silvery-white condition which results from deficiency of secretion of the *pars intermedia* of the pituitary body. Histological examination of the "albino" specimens revealed that the infundibular recess had formed from the floor of the myelencephalon instead of from that of the diencephalon; the *pars buccalis* was situated in its normal position at the anterior end of the notochord and remained as a compact, darkly staining and comparatively undifferentiated body of cells, showing no trace of *pars intermedia* tissue.

From data available at the time, it was not possible to determine whether or not the isolated *partes buccales* of these "albino" larvae represented functional anterior lobes. Subsequent work, however, has illuminated this point.

The operation mentioned above was performed upon 52 gastrulae of *Hyla regilla*. Of these, 47 developed into albino larvae which were cultured in sterilized spring water, fed upon boiled egg yolk, and maintained alive until the present time. For each of the experimental larvae, 4 control larvae from the same egg mass were kept under conditions identical with those of the experimental animals.

At 7 weeks after the operation, all of control specimens have com-

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pletely metamorphosed and have assumed the coloration and pigment pattern of the adult type. The experimental animals, however, remain as large silvery-white tadpoles, in which the limb buds are present as small translucent papillae, showing no differentiation of toes or other parts. Although no histological examinations have as yet been made, there can be no doubt but that the anterior lobe of the pituitary body, if present as such, failed to perform its normal thyrotropic activity.

Concerning the question of somatotropic activity of the "pituitary body" in these experimental animals, the data are only slightly less consistent. Most of the experimental larvae approximate their controls in size, and are larger than the control specimens when the latter have made any considerable progress toward metamorphosis. A few of the "albino" tadpoles are smaller than their control tadpoles but this seems attributable to effects of the operation other than the prevention of contact between the *pars buccalis* and *pars neuralis*. The lack of disparity in growth rate between the normal and experimental animals, however, is not considered as evidence of differentiation or even partial differentiation of the anterior lobe of the pituitary body, for similar lack of disparity in size between totally hypophysectomized tadpoles and their control specimens has been found to be the rule. No data are available as yet regarding the adrenocorticotropic activity of the isolated *pars buccalis*.

We may conclude that the *pars buccalis* is correlatively differentiating, being dependent for its development and function upon the inductive effect of contact with the infundibular region of the brain. A more detailed account of this work will be published later.

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Effect of Adrenalectomy and of NaCl on Intestinal Absorption of Dextrose.*

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Wilbrandt and Lengyel¹ in Verzar's laboratory found that adrenalectomy decreased the absorption of dextrose and of olive oil, and

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¹ Wilbrandt, W., and Lengyel, L., *Bioch. Z.*, 1933, **204**, 267.