ral artery during gradual deflation of the cuff were recorded. Bleeding occurred at a pressure below but much nearer the indirect than the direct. Thus there was a transmission of sound through the artery after the disappearance of bleeding. When shock was produced by intermittent bleeding from the carotid artery, the indirect pressure readings tended to more nearly approximate the direct readings.

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Bilateral Localization of Prospective Thyroid in the Early Chick Blastoderm, Studied in Chorio-Allantoic Grafts.

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The vascularized chorio-allantoic membrane of the chick is considered a practically neutral medium in which potencies of embryonic areas may be tested. This technique of chick embryology has been described by Willier.[1]

Histological examination of grafts of the whole pellucid area of blastoderms of the head-process stage, allowed to remain 8 or 9 days on the host membrane, shows normal or almost normal differentiation of a great many tissues: among these thyroid.[2] Embryonic organization at this stage is better revealed in grafts of definite isolated parts of the blastoderm. The study* to be reported has been made on such transplants with regard to the thyroid.

Two types of graft from the head-process stage have been analyzed with reference to differentiation of the thyroid. In the first series, the area pellucida anterior to the level of the primitive node was divided by a median cut into right and left halves: these pieces were grafted separately. In the second series, the same area was divided longitudinally into 3 parts. An attempt was made to keep the width of the median piece that of the node, or slightly greater. In this series, left, median, and right pieces were transplanted separately.

[1] Willier, B. H., *Am. J. Anat.*, 1924, **33**, 68.

[2] Willier and Rawles, *J. Exp Zool.*, in press.

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Series 1. In this series, 5 pairs of grafts, each pair consisting of a right and a left half originating from a single donor, have been examined. Of the 5 left halves, each one contains from one to 3 masses of thyroid tissue. The right halves show less uniformity in this respect. Of the 5, three unquestionably contain thyroid. There is one doubtful case; and one negative. The fact that in 3 indubitable cases out of 5 both grafts of a pair contain thyroid, is conclusive proof that there is prospective thyroid material in both halves of the blastoderm at the head-process stage.

Series 2. The separate transplantation of left, right, and median pieces of the anterior part of the area pellucida of the head-process stage was an experiment designed to give further information as to the localization of the prospective thyroid material at this stage. The results, in part inconclusive, follow:

Of 9 grafts of left pieces examined, 5 contain thyroid tissue (a sixth case is questionable). Of these 5, three may be correlated with successful grafts of median pieces obtained from the same donor. None of these median grafts contains thyroid. This is true of all median grafts examined (ten in all), although they are well-grown grafts containing many other tissues. Data for the right side of the blastoderm are inadequate. Of 5 grafts examined, none contains thyroid tissue. Only one of these grafts is at all well-grown. This lack in the material must be remedied before any conclusions can be drawn in regard to differences in potentiality between right and left sides. That there is prospective thyroid on the right side is proved without question by the results reported above (Series 1). Since no thyroid develops in grafts of median pieces, prospective material on the right side, as well as on the left, must perforce be laterally placed.

The thyroids differentiating in the above grafts show variation in size and shape as well as in histological organization . They appear as more or less compact cell masses of specific character, easily distinguishable from surrounding tissue. As has been indicated, more than one such mass may be present in a graft. The mass may be simple or lobed; flat or rounded; its length may be from 100 to 900 micra. Almost invariably, it is continuous with pharynx or oral cavity wall. It tends to be found in the vicinity of heart (with one possible exception, a constant component of grafts containing thyroid) and of liver. Ganglion cells may be associated with it. The usual appearance of such a thyroid in section is cord-like, with mesenchyme and blood-cells between the cords. Irregular or regular follicles, with walls one cell thick, are frequently seen; occasionally eosinophile colloid is present in the follicles.

The results described briefly above indicate rather clearly that the chick blastoderm contains anterior to the node at the head-process stage, 2 distinct laterally placed areas of prospective thyroid material. In view of the fact that the thyroid arises morphologically as an unpaired median organ, this dual origin is of exceeding interest. The question of whether the thyroid is segregated or determined at this stage; and of whether the right thyroid area differs from the left; cannot at present be answered.

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Effect of Histamine Upon the Salivary Flow Induced by Pilocarpine in Dogs.

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In the course of an investigation of the variations in the flow and composition of saliva secreted in response to different types of stimuli, histamine was tried among other pharmacological agents, chiefly because of reports in the literature on its effects upon the salivary glands. These reports refer to acute experiments upon anesthetized or decerebrated animals. Our experiments were made on unanesthetized dogs with permanent fistulae of one of the submaxillary glands, and, aside from obvious advantage of using such animals, it made it possible to repeat an experiment on the same dog several times under identical or different conditions. The 3 dogs used had been accustomed to being placed in a stand and having a measuring tube attached to the lower jaw.

Subcutaneous injections of 1 to 5 gm. of histamine sulphate were not followed by any secretion of saliva. To bring out the possible effect of histamine upon the salivary flow elicited by other means, the dogs were given subcutaneous injections of 1 mg. histamine sulphate, followed 20 minutes later by a subcutaneous injection of 1/3 mg. pilocarpine sulphate per kg. The quantity of saliva secreted under these conditions was compared with that elicited by a similar dose of pilocarpine, not preceded by histamine. This was repeated several times on each dog, histamine-pilocarpine alternating with pilocarpine only experiments. The results in all 3 dogs indicate that a previous injection of histamine inhibits the flow of saliva which follows the administration of pilocarpine. Thus in one dog