

Verstraeten and Vanderlinden regard this poison as of gastro-intestinal origin, and both they and McCallum, of Johns Hopkins, diminished or abolished tetany by giving a milk or bread and water diet to parathyroidectomized dogs. Kishi, after carefully studying the blood of animals after thyroidectomy, found marked leucocytosis—38,000. He concluded that there was a toxic substance in the blood, probably a nucleo-proteid, which was taken up by the thyroid and destroyed. This toxic substance he believed to arise from the nuclei of meat cells taken into the body as food. The thyroid decomposes this substance into bodies harmless to the animal economy. The neutralization is performed, however, by the parathyroids, and not by the thyroids, as Kishi supposes. Nor does there seem to be any ground for supposing that the parathyroids assume the function of the thyroids. The lesson of modern experiments shows that these glands are quite distinct in function. Graves' disease, then, so far from being caused by enlargement of the thyroid, and this hypertrophied gland charging the blood with an excess of its own secretion, appears rather to be caused by a diminution or atrophy of the parathyroids. In a word, to remove the thyroid alone is to produce myxedema, to remove the parathyroids is to induce a condition similar to Graves' disease, and the very opposite of myxedema.

We may now consider the *pancreas* one of the most important glands as regards external and internal secretion. It has been but twenty years since Bouchardt noted the frequency of pancreatic lesions in persons dying from diabetes. Some four years later the experimental production of diabetes was instituted by von Mering and Minchowski, and followed later by many other investigators. The structures to which such vital changes are due, when diseased, are described by P. Langerhans. These peculiar bodies embedded in the pancreas, are composed of polygonal cells arranged in irregular columns, between which are wide, tortuous, anastomosing capillaries. The cells are epithelial in type, and of same origin as ducts and acini, with which in an early period of development they are in continuity. The lumen of the ducts does not penetrate among the cells, and these, therefore, are not concerned in elaboration of pancreatic juice. These resemble the architecture of other ductless glands, as parathyroids, carotid and coecygeal glands, and less closely the pituitary and suprarenal. The intimate relation of the columns of epithelium to rich capillary network has suggested that they furnish some substance to the blood—the hypothetical internal secre-