

acidified solution of the product, the iodine occurring in animal tissues may be quantitatively converted into iodic acid. After the excess chlorine has been removed, addition of potassium iodide leads to the liberation of exactly six times the original amount of iodine. The iodine thus set free may be titrated directly with a sodium thiosulphate solution of suitable strength. It is claimed for the method that it excels the various forms of the Baumann method, not only in cleanliness, convenience, and rapidity, but also in accuracy. Details will be published as soon as a larger series of control analyses is completed.

7 (417)

Relations between the thyroid and pituitary glands.By **SUTHERLAND SIMPSON** and **ANDREW HUNTER**.

[*From the Department of Physiology, Biochemistry and Pharmacology of the Cornell University Medical College, Ithaca, N. Y.*]

Recent work by Herring¹ has shown that complete removal of the thyroid in rabbits, cats and dogs is followed by definite histological changes in the pituitary body. A greatly increased production of colloid material by the cells of the pars intermedia was indicated. Accumulations of colloid were observed in the nervous portion of the posterior lobe and in the laminae forming the floor of the third ventricle whence it appeared to find its way between the ependyma cells into the infundibular recess and brain ventricles.

It is believed by many that the iodine-containing substance — the so-called iodothyron or thyroiodin — is the active substance of the thyroid gland. Reid Hunt states that the physiological activity of the thyroid varies directly with the percentage of iodine which it contains. According to Baumann, Halliburton² and others the pituitary yields no iodine. Gideon Wells,³ from an analysis of fourteen normal human pituitaries, found an average amount of 0.0036 milligram of iodine for each gland — about one fiftieth of the quantity found in the thyroid. Ox pituitary obtained from Armour and Co. tested by Hunter's method gave no

¹ *Quart. Jour. of Exper. Physiol.*, 1908, i, 281.

² *Quart. Jour. of Exper. Physiol.*, 1909, ii, 229.

³ *Jour. of the American Med. Assoc.*, 1897, xxix, 897, 954, 1007.

iodine and sheep's pituitary from the Ithaca slaughter house yielded only a trace.

Our experiment was performed at the suggestion of Professor Schäfer with the view of determining whether iodine appears in the pituitary after thyroidectomy. We removed the thyroid glands completely from ten sheep. Each was weighed at the time of removal and again when dried, and the iodine estimated. Great variation was found in the ratio of thyroid to body weight in different individuals, but the iodine corresponded pretty closely to the weight of the gland.

Five of the sheep were infected by a parasite and died at intervals of from six to thirty-two days after the operation. The remaining five showed no symptoms and were killed from forty-seven to fifty-six days after thyroidectomy. After death the pituitary was removed, weighed, dried and put aside until all had been collected and then on account of the small size of the individual glands, they were examined for iodine collectively by Hunter's method. None was found. The weight of the substance available for examination was 1.02 grams. In this amount 0.005 milligram could have been detected with certainty.

8 (418)

Parabiosis as a test for circulating antibodies in cancer.

By **PEYTON ROUS.**

[From the Laboratories of the Rockefeller Institute for Medical Research, New York.]

Sauerbruch and Heyde have united animals side by side, with an opening between the peritoneal cavities and suture of the apposed skin and connective tissue. They find that healing between two individuals thus joined brings with it a considerable physiological intimacy. Ranzi and Ehrlich, following them, have demonstrated that circulating antibodies pass with ease from one of such a pair to the other. On this evidence it seems possible to utilize the condition (parabiosis) for experiments on the question of the existence or non-existence of circulating antibodies for cancer. Accordingly, I have united white rats with a growing tumor, the result of transplantation, to others which had proved themselves resistant to the same type of neoplasm. Careful watch