Coprostenol (allocholesterol), which reacts under these conditions like esterified cholesterol rather than free cholesterol, apparently is not present in unbound form or exists in serum in concentrations too low to interfere with the application of the differential reaction.

Known mixtures of cholesteryl oleate and cholesterol have been analyzed correctly by the procedure described. Cholesteryl oleate added to alcohol-ether extracts of serum can be recovered with reasonable accuracy. Several comparisons of determinations of cholesterol and cholesterol esters by the new method and by a gravimetric digitonin procedure[3] indicate that the results agree closely.

7787 C

Diuresis of Hyperthyroidism.

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During the course of investigations on diabetic animals it was observed that thyroid administration or injection of anterior pituitary extracts did not produce diuresis in pancreatectomized dogs. In a previous report[1] it was shown that an extract from the anterior pituitary, which caused marked diuresis failed to produce such an effect in thyroidectomized animals. The results indicated that the induced hyperthyroidism was responsible for the polyuria. This work was confirmed by Biasotti.[2] It was also observed[3] that if the pituitary and pancreas were previously removed, thyroid administration failed to cause the usual diuresis.

Hyperthyroidism was induced by feeding desiccated thyroid (Armour's), in doses of 1 gm. per kilo body weight per day or by injecting the anterior lobe extract previously described[1] for 7-10 days. In some cases both methods were used in the same animal, considerable time elapsing between each experiment. Twelve dogs were used, in which the following operations were performed:

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[3] Ewert, B., *Biochem. Z.*, 1933, **263**, 149.

* Aided by a grant from the Commodore Beaumont Foundation.

[1] Barnes, B. O., Regan, J. F., and Bueno, J. G., *Am. J. Physiol.*, 1933, **105**, 559.

[2] Biasotti, A., *Rev. Soc. Argentina Biol.*, 1933, **9**, 499.

[3] Barnes, B. O., *Am. J. Physiol.*, 1934, **109**, 5.

(a) 1, hypophysectomy.
(b) 3, hypophysectomy and pancreatectomy.
(c) 3, pancreatectomy.
(d) 1, bilateral suppression of epinephrine secretion.
(e) 1, pancreatectomy and unilateral suppression of epinephrine secretion.
(f) 3, pancreatectomy and bilateral suppression of epinephrine secretion.

The 24-hour urine specimens were collected in ordinary metabolism cages.

TABLE I. Showing the Daily Urine Output (cc.) of
A. Hypophysectomized dog; thyroid feeding.
B. Normal dog; injection of anterior lobe extract.
C. Pancreatectomized dog with bilateral suppression of epinephrine secretion; thyroid feeding.
The first 3 observations on dogs A and C are controls.

A	B	C
500	—	580
320	—	570
630	—	340
400	300	290
530	200	560
700	780	450
1330	1010	470
1360	1020	210
700	1080	740
1400	1340	470
1180	1350	740
1170	1120	600

Some typical results are illustrated in Table I. In hypophysectomized dogs (A), as in normal animals, thyroid administration causes diuresis. This polyuria is similar to that observed after the injection of anterior lobe extracts into normal dogs (B), as previously reported. The remaining animal (C) illustrated in Table I was operated as described in group (f). It is obvious that the urine output was not increased during the period of thyroid administration. More than 5 months prior to the thyroid administration experiment, this animal was given a series of daily injections of anterior pituitary extract. Diuresis did not result from these injections. In all of the 10 pancreatectomized dogs, diuresis failed to occur following administration of either desiccated thyroid or anterior lobe extract. In another animal (d), subjected to bilateral suppression of epinephrine secretion but not to pancreatectomy, thyroid administration was followed by polyuria.

Since some polyuria develops after pancreatectomy, the question might arise whether this masks any increase due to thyroid

feeding. We feel that this is not the explanation of our negative results. In some of our pancreatectomized dogs the urine output was not more than in normal dogs of similar weight. Further, the polyuria observed after thyroid feeding is much greater than that in any of the diabetic dogs in the above series.

In some of the pancreatectomized animals the B.M.R. and heart rate were observed during thyroid administration or anterior pituitary injections. In each case a typical rise occurred, which suggests that the diuresis is not the result of accelerated metabolism. Further work will be necessary to explain the polyuria of hyperthyroidism and its absence in pancreatectomized animals.

Summary. The diuresis produced in normal animals by thyroid administration fails to occur in pancreatectomized dogs although the metabolic rate is increased.

7788 C

Van den Bergh Reaction of Bilirubin in Xanthochromic Cerebrospinal Fluid.

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It is well recognized that in blood serum normal bilirubin within certain limits of concentration gives a delayed reaction in the Van den Bergh test (diazo reaction). This type of reaction differs from the prompt reaction obtained with isolated bilirubin and that encountered in a variety of pathological states. In attempting to explain this difference numerous factors have been considered. The most thoroughly studied of these concern changes in chemical constitution of the bilirubin molecule, changes in adsorption of the bilirubin by blood colloids and bilirubin concentration. None of the explanations has been universally accepted.

An important reason for the lack of conclusive experiments which would solve this problem is that much of the work has been done on blood where it is practically impossible to control all of the factors properly. Not only are the colloids in relatively high concentration, but also the influence of the liver can not be excluded entirely even in dehepatized animals.

It would seem that much information could be gained from a study of the phenomena under less complicated conditions. Such conditions are found in the cerebrospinal fluid. Influence of the