

Zuelzer has shown that an antagonistic action exists between the adrenal secretion and the so-called internal secretion of the pancreas. He found that when normal blood was allowed to flow through the liver of a dog whose pancreas had been extirpated the sugar in the urine increased from 50 to 70 per cent., but this percentage was decidedly increased when the liver used was from a dog in whom suprarenal diabetes has been previously induced. He thinks that the internal secretions of the pancreas and adrenals react upon each other within the liver in such a way as to maintain the normal sugar elimination. When the pancreatic secretion is wanting, as in pancreatic diabetes, the unhindered adrenalin produces an increase in the sugar. When the function of both the pancreas and the adrenals was destroyed, glycosuria failed to occur. After the pancreas was removed and the suprarenal veins were ligated there was again an absence of diabetes. Zuelzer has experimented upon a very large number of pancreatectomized animals, and, except when the suprarenal veins were also tied off, glycosuria always followed. He is convinced that one of the most important functions of adrenalin is its effect on sugar metabolism in the liver. The adrenal and pancreatic secretions seem to be antagonistic in their action so far as carbohydrate metabolism is concerned.

Lépine, in working on a method of estimating the functional activity of the pancreas, in regard to both its internal and external secretions, has made some interesting observations which have a bearing on this interaction of the internal secretion of the two glands. It has been found that a weak adrenalin solution instilled into the eye of a pancreatectomized animal causes mydriasis. Fifty-five per cent. of the eighteen diabetics into whose eyes Lépine instilled adrenalin showed dilatation of the pupil; whereas, in thirty non-diabetic persons so tested only two showed dilatation of the pupils. The inference from these results is that in over one-half of the diabetics tested there existed, in all probability, some abnormality of the internal secretion of the pancreas, and consequently the effect of the adrenalin in dilating the pupil was not hindered. The test may, therefore, prove of value in helping to determine clinically whether we are dealing with a case of pancreatic diabetes or not. If, on instilling adrenalin solution into the eye, dilatation of the pupil results, we must be strongly suspicious that the islands of Langerhans are largely destroyed or functionally inactive.

#### THE PITUITARY GLAND AND CARBOHYDRATE METABOLISM.

One of the most important contributions to our knowledge of carbohydrate metabolism has recently been furnished by the brilliant researches of Cushing and his co-workers, who have shown