grafts in addition to their probable relation to the normal growth of the animal as a whole may also be related to the loss of one of the spleen's functions in early life, through that function being assumed by another tissue.

The ease with which the spleen of young rabbits can be autotransplanted into the subcutaneous tissues might be utilized in the study of its reactions or in chemical examinations, where multiple or control spleens in accessible locations are needed.

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Chemical evidence for the presence of glycogen-like polysaccharide in the liver blood of diabetic animals.

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Histological evidence for the presence in the hepatic capillaries of diabetic animals of material which stains by Best's carmine method in the same manner as the glycogen present in the liver cells (Huber and Macleod) has led us to investigate whether a polysaccharide could be separated by chemical means from the blood of the vena cava. In the first experiments of this nature (with G. E. Simpson), the blood of the vena cava was collected in excess of alcohol and the resulting precipitate treated with KOH in the usual manner. From the hydrolysis mixture a small amount of alcohol-precipitable material was secured, which after purification gave a violet color with iodine and exhibited reducing properties on hydrolysis. This material was sometimes isolated from the blood of normal animals (etherized), as well as from that of diabetic animals. In all cases, however, the yields were very small and uncertain, so that I have recently changed the method of isolation. Instead of precipitating with alcohol as the first step, the blood is now received directly into saturated alkali. On account of the high cost of KOH, a series of preliminary experiments were performed to see whether, after hydrolysis of the protein and heating with NaOH, a solution would be obtained from which the glycogen could be quantitatively precipitated by alcohol.

After heating solutions consisting of equal volumes of a relatively pure glycogen solution and of saturated NaOH (purified by alcohol) on the boiling water bath for periods exceeding three hours, it was found that the glycogen could not be precipitated by the addition of an excess of alcohol, unless the solution was almost neutralized with HCl and therefore contained an excess of sodium chloride. In the above manner it was found that a very high percentage all of added glycogen could be recovered.

When blood that had been removed from the carotid artery or portal vein of normal animals was treated in the above manner, a small amount of highly colored precipitate separated out on the addition of alcohol, but by redissolving this in boiling water after thorough washing with alcohol, a solution was obtained which gave only a faint opalescence on the addition of excess of alcohol and of NaCl. In one or two instances it was possible to collect this faint precipitate on a filter paper, but it was found to give no coloration with iodine, and after hydrolysis to yield a solution having no reducing properties. It probably consisted largely of inorganic material. On the other hand, when the blood was taken from the vena cava, opposite the point of entrance of the hepatic veins, of sugar-fed dogs, rendered hyperglycemic either by the injection of adrenin or by splanchnic stimulation, or from the carotid artery of piqûre rabbits, a much larger amount of precipitate was thrown down by alcohol (and NaCl), and after repeated reprecipitation, and in one case after a second digestion of the precipitate with half saturated NaOH, a pure white precipitate, amounting in one case to 0.0447 gm. after drying, was secured. This precipitate still contained a considerable quantity of alkali, etc., but when it was dissolved in water and the resulting solution neutralized, a deep red violet color was obtained with iodine (disappearing on heating and returning on cooling), and the solution rotated polarized light to the right. On hydrolysis, a solution was obtained that reduced Fehling's solution strongly, and gave abundant osazone crystals, which, however, even after recrystallization were mixed with so much amorphous material as to make melting-point determinations useless. Larger quantities of this polysaccharide are being collected for a more exact study of its chemical relationships.