On a new method for demonstrating glycogen in the liver, and studying its distribution in lobules and cells / Sheriden Delépine.

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SHERIDAN DELÉPINE:—2. *On a New Method for demonstrating Glycogen in the Liver, and studying its distribution in Lobules and Cells.*

Every one knows that Glycogen being soluble in water, some uncertainty attaches to all the methods in which watery solutions of iodine are used for the demonstration of this material or for the hardening of the specimens. (For this last reason the Osmic acid method is objectionable, however valuable it is for other purposes[1].)

Owing to the great conflict of opinions regarding the form under which the glycogen is deposited in liver cells, it seemed to me that it would be advantageous to improve the methods now in use. I therefore hardened small portions of liver in large quantities of absolute alcohol, embedded them in celloidin[2], then treated them with solutions of iodine, in glycerine, alcohol, chloroform and oil of cloves. I soon found that the preparations kept in Iodised glycerine although good at first soon faded unless the volatilisation of iodine were entirely prevented, and that those treated by solutions of iodine in alcohol, chloroform or oil of cloves retained but little trace of the reaction after they had been mounted in any solution of Canada Balsam.

I therefore prepared a solution of iodine in Chloroform—Canada Balsam, and found that very clear and permanent results could then be obtained by simply placing the preparations after dehydration in that fluid and only after a time covering. Better results still are obtained by washing the preparations with a solution of iodine in chloroform, after dehydrating with alcohol and clearing with oil of cloves. In such a case, it is important not to let the iodine solution evaporate before adding the Canada Balsam. The distribution of glycogen granules in the cells and of cells laden with glycogen in the lobules can be studied with much greater accuracy in preparations obtained by this method than in any other I am acquainted with. (Results obtained by means of this method will be found in a communication which will be soon brought forward by Dr Lauder Brunton and myself.) I need hardly say that the same method is applicable to the demonstration of Lardacein in tissues.

[1] This remark applies only to the solution in water. The use of Osmic acid vapours I have found so limited that I have abandoned it whenever the distribution of any structural element is in question.

[2] Paraffin can be used instead of celloidin, but celloidin is not so liable to alter the cellular structure as paraffin is.