

penetrates. A special syringe, with a screw piston and a needle with a rounded point and about two inches in length, containing $2\frac{1}{2}$ c.cm. of double strength antitoxin, is inserted through the hole and straight into the brain substance as far as it will go. The piston is screwed down very slowly, so that the fluid enters the brain substance drop by drop, to avoid breaking up any brain tissue. About ten minutes is required for the injection. The needle is withdrawn slowly, the edges of the wound drawn together by two or three stitches, and sealed with collodion and cotton wool. The same operation is repeated on the other side.

[The needle with a rounded end would not transfix a vessel; a sharp-pointed one might.]

HEPATIC INSUFFICIENCY.

M. G. Carrière, Professor in the Medical Faculty of Lille discusses at length the above subject in the *Gazette des Hôpitaux* for January 7th, 1899. He states that the functions of the liver are the formation of urea, sugar, bile, the arrest of poisons, the arrest of microbes, a blood-making power, and an unknown function in the form of an internal secretion.

Hepatic insufficiency may follow two different modes. It is quite certain that the diseased hepatic cells lose their functions wholly or in part, as in atrophic cirrhosis. In the second place the work imposed upon the hepatic cells may be greater than their powers. In this case there is a relative insufficiency, as when there is more sugar taken than the liver cells can fix, there results a glycosuria.

Clinically, one can recognize three forms of hepatic insufficiency: (1) Latent hepatic insufficiency; (2) Minor hepatic insufficiency, or minor hepatitis; (3) Grand hepatic insufficiency.

1. In a great number of cases of latent hepatic insufficiency the person is not in the least degree aware of its existence. It is only on the occasion of some passing intoxication, as a medicine or alcohol, or on the occasion of some infection that the disturbance becomes manifest. It is only by a thorough study of the urine that we can find out these derangements of the liver in its ureagenic, biligenic, glycogenic, and poison-arresting functions. In this way these latent insufficiencies can readily be revealed, as has been so well shown by Hanot.

2. The minor hepatic insufficiencies often reveal themselves to thorough interrogation, especially by an assemblage of little signs. Comparing these signs to those of Bright's disease, we may speak of them as the little signs of hepatic insufficiency. There is an anorexia, sometimes complete, sometimes only