

nomenon was first observed by Simici, Guirea and Dimitriu⁴ for man. Templeton and Quigley,⁵ however, found that intravenous injections of insulin do not affect the main part of the stomach, but do depress a Heidenhain pouch of that organ.

Conclusions. (1) The response of the stomach to insulin hypoglycemia by hypermotility is dependent upon the presence in the diet of a sufficient amount of a yeast or vegetable factor, probably vitamin B. (2) A diet lacking this factor increases the resistance of the animal to the hypoglycemic effects of insulin, and to the convulsive effects of hypoglycemia. (3) The observation of Simici, Guirea and Dimitriu,⁴ that insulin injected intravenously depresses the stomach of man, is confirmed for the dog.

5401

Further Note on the Enumeration of Blood Platelets and Red Blood Cells.

ALBERT E. CASEY. (Introduced by L. Pearce.)

From the Laboratories of the Rockefeller Institute for Medical Research.

In a previous communication,¹ a new method of blood platelet and red cell enumeration was proposed in which Ringer-Heparin solution was substituted for Hayem's solution as the diluent. In order to test the preliminary contention that the red blood cells may be counted in the Ringer-Heparin solution as accurately as with Hayem's solution, 75 parallel counts have since been made within 6 hours after the blood was taken. These included 24 counts upon 8 normal and pathological rabbits, 6 counts upon 1 normal and 2 anemic dogs, and 45 counts upon 31 normal and diseased humans, no material being omitted. The means of these parallel determinations are as follows: (1) Hayem's solution: 5,109,700 red blood cells per cmm. (2) Ringer-Heparin solution: 5,116,200 red blood cells per cmm. The standard error of the mean for the 75 counts was approximately the same in each case, that is, 175,000 cells. It may be concluded, therefore, that both methods gave identical results. Hemolysis or fading of the red blood cells with the use of

⁴ Simici, Guirea and Dimitriu, *Arch. Malad. Appar. Digest et Malad. Nutrition*, 1927, **17**, 17.

⁵ Templeton and Quigley, *Am. J. Physiol.*, 1930, **91**, 467.

¹ Casey, A. E., and Helmer, O. M., *Proc. Soc. Exp. Biol. and Med.*, 1930, **27**, 655.

the Ringer-Heparin solution did not occur in any instance either in the pipette or on the counting chamber.

Other useful points of technique noted since the first report include: (1) autoclaving of the stock Ringer's solution; (2) reduction of the NaHCO_3 in the standard Ringer's solution from 0.10 gm. to 0.05 gm. per 1000 cc.; (3) refrigeration of pipettes of diluted blood for delayed counting; (4) reduction of the amount of heparin used for blood counted within 3 hours after taking; (5) the necessity of a thorough mixture through vigorous shaking of the pipettes by hand or machine. It should be pointed out that Hayem's and other fixative solutions should not be used in pipettes employed for Ringer-Heparin solution since hemolysis may occur even after several thorough washings. However, if only Ringer-Heparin solution is used in pipettes, no difficulties with hemolysis will be encountered. Facility in counting is best secured with a fairly strong artificial light, using the low power lens, and keeping the substage shutter closed. The haemocytometer should be so placed that the entire fine ruling may be seen as one field. After standing for at least 15 minutes, to and fro movement of the fine adjustment of the microscope reveals the blood platelets as minute black refractile particles, discrete and distinct. No difficulty in their enumeration has been encountered.

Continued use of the method reaffirms its practicability, speed, and accuracy in the counting of both red blood cells and blood platelets.

5402

A Delimitation of the Central Nervous Mechanism Involved in Reflex Hyperglycemia.

OHANDLER M. BROOKS. (Introduced by E. N. Harvey.)

From the Department of Biology, Princeton University.

Claude Bernard's sugar puncture experiments furnished some evidence of the existence of a bulbar control of carbohydrate mobilization, but efforts to locate a specific center responsible for the *piqûre* diabetes have been rather inconclusive. Furthermore, temporary hyperglycemia and glycosuria often follow *any* injury to the brain. On the other hand, numerous investigators have shown that specific centers within the diencephalon may play some part in