The Measurement of the Renal Blood-Flow in the Fowl.

—By Owen S. Gibbs, Pharmacology Dept., Dalhousie University, Halifax, N. S.

(Read 14 February 1927)

The method adopted consists of diverting the renal venous out-flow into the corresponding femoral vein. This is accomplished by compressing the superior, and inferior, veins of the kidney, thus leaving but one outlet for the renal blood. The blood issuing from the canularized femoral vein is passed through a recording instrument and re-enters the circulation by means of the jugular vein.

The recording instrument is essentially a double acting engine, with a separate reversing valve, both being of somewhat special design, partly in order to avoid metallic contact with the blood, and partly for ease in construction.

The recorder itself consists of two small glass funnels, the wide ends covered with thin rubber and clamped opposite each other. Between them is a light hollow drum which acts as a piston. As fluid enters one funnel the rubber expands and pushes the piston into the opposing funnel, thus emptying it. The piston movement is controlled by the contact which activates the valve that reverses the flow to the recorder. The contact is adjustable, but the instrument is set for a 2 cc. stroke.

At present this work is in an early stage, and still presents some difficulties, the greatest being that of clamping the renal veins without damaging the kidney. This is especially difficult since the blood is rendered abnormally incoagulable by means of heparin, and thus even a slight injury leads to marked bleeding.

A few records have however already been obtained and these present some interesting features. Under the conditions of the experiment great variations of the flow have been obtained, varying from 400 cc to over 3000 cc per hour for one kidney. The explanation of these changes is at present under consideration.

Summary.—A method is described whereby continuous records may be made of the blood-flow through the fowl's kidney.