bron were the same:

$$\underset{\text{Phrenosin}}{C_{41}H_{79}NO_8} + 2H_2O = \underset{\text{Neurostearic acid}}{C_{18}H_{36}O_2} + \underset{\text{Sphingosin}}{C_{17}H_{35}NO_2} + \underset{\text{Galactose}}{C_6H_{12}O_6}$$

$$\underset{\text{Cerebron}}{C_{49}H_{93}NO_9} + 2H_2O = \underset{\text{Cerebronic acid}}{C_{25}H_{50}O_3} + \underset{\text{Sphingosin}}{C_{17}H_{35}NO_2} + \underset{\text{Galactose}}{C_6H_{12}O}$$

50 (142). "**A simple electrical annunciator for use in metabolism experiments, and in connection with filtration, distillation and similar operations,**" with demonstrations: **WILLIAM H. WELKER.** (Communicated by **WILLIAM J. GIES.**)

In the paper describing his cage for metabolism experiments the writer[1] referred to the advantages of the "sliding shelf" devised as a holder for the urine receiver, and, in that connection, made the following remark: "The shelf also favors the use of electrical apparatus to ring out the time of elimination of urine-fractions, in experiments in which fractions of the urine must be examined separately and immediately after their natural excretion" (page 407). This remark alludes to one of the several additional devices the writer had intended to perfect for use with the cage described.

In order that an annunciater might be of the greatest service in metabolism work in the way already indicated, and also to insure its usefulness for filtration, distillation and other operations in which the weight of a product above a certain maximum amount could be relied upon to close an electrical circuit and announce the delivery of the material, it was necessary that it should be delicately responsive to the weight of several grams and yet be readily adjustable within relatively wide limits in that respect; that it should be light in weight, of small compass but durable, and resistant to derangement from any cause; also that it should hold, without risk of loss or modification of the contents, any suitable vessel placed upon it.

At the writer's request, Mr. Welker, who has exhibited in this laboratory unusual proficiency in handling electrical apparatus, devised an annunciator to meet these requirements and has perfected an apparatus that is eminently satisfactory for all the purposes contemplated.

The annunciator shown to the Society consists of two square boards ($4\frac{1}{2} \times 4\frac{1}{2} \times \frac{3}{8}$ inch) securely fastened together with a piano hinge on one side, and kept apart, by a spring perpendicularly

[1] Gies: *American Journal of Physiology*, 1905, xiv, p. 403.

arranged at the opposite side, in such a way as to permit a definite pressure to force the surface of the boards together. The spring can be adjusted so as to increase or decrease, within considerable limits of weight, the amount of force (weight) required to bring the board surfaces in contact. In the opposed surfaces of the boards platinum electrodes (plate and points) are so placed that perfect contact between them is effected when the boards are brought together and the circuit is closed. The electrodes connect with binding posts on the hinged side. A small dry cell is used. The entire apparatus, including bell attachment, may be placed on a surface 5 x 8¼ inches. The bell employed directly with the apparatus is a small one with delicate musical sound. Its ringing under a cage during a metabolism experiment does not disturb the animal. It is obvious, of course, that the apparatus can be connected with a bell in a distant room.

In the demonstration it was shown that the apparatus announced the deposit, in an ordinary urinary receiver placed on it, of volumes of water less than 5 c.c. The apparatus may be adjusted to announce a volume as small as 1 c.c. and may be made, in larger sizes, to announce the deposit of masses of any desired weight.

Various details of description that would show the particular value of the apparatus in other respects will be given in the paper soon to be published by Mr. Welker.

51 (143). "Some observations on the presence of albumin in the bile": WILLIAM SALANT.

The presence of albumin in the bile under pathological conditions has been noticed by several observers. Thus, Lehmann,[1] who examined post-mortem bile from the gall bladder in 100 cases, found albumin in nutmeg liver, fatty liver, and parenchymatous hepatitis. Pouchet[2] found albumin in the bile of six patients that died of cholera. Among recent observers may be mentioned Brauer[3] who has reported similar findings in typhus and parenchymatous nephritis. Hallauer[4] analyzed the bile in a number of

[1] Lehmann: *Centralblatt für die medicinischen Wissenschaften*, 1867, v, p. 172.

[2] Pouchet: *Comptes Rendus*, 1884, xcix, p. 847, also 1885, c, p. 220.

[3] Brauer: *Zeitschrift für physiologische Chemie*, 1903–'04, xl, p. 182.

[4] Hallauer: *Verhandlungen der medicinisch-physikalischen Gesellschaft*, Würzburg, 1904, p. 186.