

- 49 (141). "Some facts showing that the brain educts termed phrenosin (1874) and cerebron (1900) were practically the same": WILLIAM J. GIES.

In a discussion of the chemical heterogeneity of protagon, the author previously alluded to the probability that phrenosin and cerebron were identical.<sup>1</sup> Thierfelder recently published in rejoinder some opinions to the contrary.<sup>2</sup> Reëxamination of the facts in the case have convinced the writer that Thudichum's phrenosin, Gamgee's pseudocerebrin, Parcus's cerebrin, Kossel and Freytag's cerebrin, Thierfelder's cerebron and Koch's cerebrin were practically the same. The slight discrepancies among the figures for percentage elementary composition were probably due to slight proportions of inevitable impurities in each preparation.

Of the products referred to, phrenosin and cerebron have been subjected to the most thorough study. The descriptions of each are in close harmony. Each has been found to yield, on hydrolysis with dilute sulfuric acid, apparently the same proportions of a sugar (galactose), a nitrogenous base (sphingosin) and a peculiar organic acid. The following data were obtained on direct analysis of the latter product:

	C.	H.
Neurostearic acid.....	75.94	12.64
(obtained by Thudichum from phrenosin).		
Cerebronic acid.....	75.33	12.50
(obtained by Thierfelder from cerebron).		

If the inevitable impurities in each product are disregarded it seems obvious that the names refer to the same substance.

The following formulas were assigned to it:

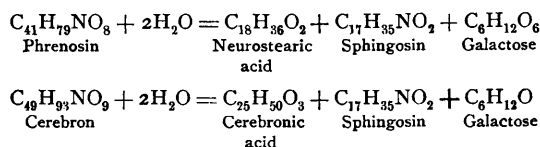
Thudichum's product (Neurostearic acid).....	$C_{18}H_{36}O_2$
Thierfelder's product (Cerebronic acid).....	$C_{28}H_{50}O_3$

It is apparent, however, that the formulas are practically interchangeable. Each is empirically an approximate multiple of  $C_8H_{17}O$ . With this fact in mind the following equations that were given to represents the relations of the cleavage products to the mother substance, emphasize the opinion that phrenosin and cere-

<sup>1</sup> Posner and Gies: *Journal of Biological Chemistry*, 1905, i, p. 59.

<sup>2</sup> Thierfelder: *Zeitschrift für physiologische Chemie*, 1906, xlii, p. 518.

bron were the same :



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<sup>1</sup> 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 annunciator 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

<sup>1</sup> Gies : *American Journal of Physiology*, 1905, xiv, p. 403.