TABLE II.

In 1000 cc. 37.5° C. { 20 mMols. Sugar; 500 cc. "purest" KOH
75-80 mMols. K Acetoacetate; 200 mMols. H_2O_2

	Acetoacetate consumed by one mol. of sugar*
Diose: Glycol aldehyde	1.9
Triose: Glycer aldehyde	2.2
Dihydroxy Acetone	2.2
Pentose: l-Arabinose	2.7
l-Xylose	2.7
Hexose: d-Glucose	2.4
d-Fructose	2.3
d-Mannose	2.1
Heptose: d-Glucoheptose	2.2
Mannoketoheptose	2.7
Disaccharoses: Maltose	2.0
Lactose	1.8
Sucrose	.2

* These results represent the total consumed in 12 hours minus the blank. Thus 20mMols. dihydroxy acetone consumed 54.6 mMols. acetoacetate, of which 9.9 were calculated to be due to *direct* oxidation. The amount consumed by the sugar was therefore 54.6–9.9, or 44.7.

that an opening of the ring or other transformations are necessary before reaction may occur. This open-ring, reactive form is probably the substance which condenses with aceto acetate, it is believed. That the sugar molecule as a whole, and not a fragment, participates in the condensation, is the only conclusion one may draw from the data shown in Table II.

2980

On conduction of the action potential wave through the dorsal root ganglion.

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It has been reported[1] that the action potential wave started by stimulation of the sciatic nerve arrives in the dorsal roots of that nerve somewhat later than in its ventral roots. Further experi-

[1] Erlanger, J., Bishop, G. H., and Gasser, H. S., *Am. J. Physiol.*, 1925, lxxii, 197.

mentation now makes possible the presentation of additional data bearing on this observation. In fifteen quantitative determinations in the bullfrog with the cathode ray oscillograph, the delay of the quickest sensory behind the motor potential wave ranges, with but one exception (in which, due probably to damage to the ventral root, the value was 0.02σ), between 0.09 and 0.18σ. Omitting the exception, the average delay is 0.143σ. Six determinations in the green frog range between 0.04 and 0.14σ, with an average of 0.08σ. One determination in the cat showed a delay of 0.08σ (temp. 35° C.).

We have been able to show that the delay is not due to differences in the rate of propagation of the action potential wave in sensory and motor fibers, either in the nerve trunk or in its roots. Indeed, the fastest sensory fibers conduct at least as fast as the fastest of the motor fibers. The delay must, therefore, develop in the dorsal root ganglion, but how, or in what division of the part of the neuron within the ganglion, it is at present impossible to say.

2981

The determination of the harmlessness of food colors.

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Fatal doses of certified and other food colors, for cold and warm blooded animals, compared with maximal harmless doses based on the rate of growth of young rabbits, showed no definite relation. It was inferred that harmlessness cannot be derived from fatal doses.

The *food color factor of safety* for man is defined as the quotient of the maximal harmless oral daily dose, divided by the maximal possible daily consumption in foods and beverages by man; the abbreviated formula being $\text{FCFS} = \frac{\text{MHD}}{\text{MC}}$. By the maximal harmless oral dose is meant the largest daily dose, which when given by mouth throughout the life of the most susceptible