

animal than acetanilid would be if injected alone, for in case of the more slowly acting combination the animal has a longer period of time for the excretion of the poison. The author does not at all presume to offer these experiments as a complete explanation of the above-described synergism, but it is thought that the present findings are at least a little tangible contribution towards the explanation of the peculiar phenomenon.

EXPERIMENT, OCTOBER 28, 1919.

Stimulation of Gastrocnemii Muscles of Rana Clamata.

Time.	Left Side.		Right Side.	
	Stimulation of Muscle. Position of Secondary Coil.	Stimulation of Nerve. Position of Secondary Coil.	Stimulation of Muscle. Position of Secondary Coil.	Stimulation of Nerve. Position of Secondary Coil.
	Immersed in physiological NaCl Sol.		Immersed in physiological NaCl Sol.	
2:45 p.m.	23.0 cm.	37.0 cm.	24.5 cm.	47.0 cm.
2:50 "	23.0 "	37.0 "	24.5 "	43.0 "
3:05 "	23.0 "	39.0 "	24.5 "	44.0 "
3:07 "	Immersed in physiological NaCl Sol. containing acetanilid 1:500 and sodium bicarbonate 1:1,000		Immersed in physiological NaCl Sol. containing acetanilid 1:5000	
3:21 "	20.1 cm.	27.0 cm.	22.5 cm.	23.5 cm.
3:26 "	19.5 "	25.0 "	22.5 "	22.5 "
3:33 "	19.0 "	25.0 "	22.0 "	22.0 "
3:43 "	19.0 "	30.0 "	22.0 "	22.0 "
3:46 "	18.0 "	29.0 "	20.0 "	20.0 "
4:03 "	18.0 "	30.0 "	18.0 "	18.0 "
4:20 "	17.0 "	30.0 "	10.0 "	10.0 "
4:25 "	16.5 "	29.0 "	9.5 "	9.5 "
4:40 "	11.0 "	27.0 "	8.5 "	8.5 "
5:10 "	10.5 "	10.5 "	8.0 "	8.0 "

25 (1485)

A note on the carbohydrates of the root of the cat-tail (*Typha latifolia*).

By **ZALIA JENCKS** (by invitation).

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In a recent communication¹ the root of the cat-tail has been recommended as a valuable food product for man. An analysis is recorded to indicate that the material contains 81 per cent. of carbohydrates. No evidence is presented however, as to the

¹ P. W. Claasen, *The Scientific Monthly*, 1919, Vol. 9, No. 2.

precise identity of the latter. In view of the fact that various roots are known to contain carbohydrates, like inulin, which are by no means identical in physiological value with starch although they have various reactions in common with it, I have separated the most abundant carbohydrate of the cat-tail root for identification.

It gives a blue color with iodine, forms a characteristic paste with hot water, is readily digested (in contrast with inulin) by saliva, and yields on hydrolysis a dextro-rotatory solution from which an osazone, identical with glucosazone, was prepared. The carbohydrate thus corresponds with starch. Our "flour" indicated a carbohydrate content of 56.8 per cent., estimated in the conventional way from the reducing sugar formed by hydrolysis with acid.

To test the innocuousness of the cat-tail root as a food mice were fed for a week on otherwise adequate diets containing 30 per cent. of the "flour" without evident untoward results. The animals gained in weight upon the ration.

26 (1486)

Do fruits contain water-soluble vitamine?

By **THOMAS B. OSBORNE** and **LAFAYETTE B. MENDEL.**

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Although fresh fruits have long been classed as valuable anti-scorbutic foods there are comparatively few recorded scientifically planned tests of their potency aside from the familiar studies of the juice of oranges and lemons. With respect to the possible presence, in fruit, of water-soluble vitamine (water-soluble B) comparable to this essential factor in yeast, scarcely anything has been published. We have begun experiments on rats in the otherwise adequate diet of which fruits and fruit juices furnish the the sole source of the water-soluble vitamine. When larger portions (more than 5 grams per day) of fresh apples and pears are fed the characteristic decline in weight observed where vita-