comparing the fusion point of the crystals with that of a known standard, in this case fumaric acid (M. P. 287° C.).

Several attempts were made to determine the pattern of the crystals by means of x-rays, the "scatter" method being used. Three early attempts were entirely negative. A fourth test, made with some 15,000 amoebae massed into a clump the size of a pin-head and exposed for fifty hours, resulted in a series of vague lines which are of doubtful value. An attempt to produce a single large crystal for such analysis failed.

Certain chemical tests have been carried out and are being continued. At present, taking into consideration the physical constants of the crystals and the results of the chemical tests already performed, it seems possible that these crystals may be composed of calcium chlorophosphate. We shall report further upon the subject.

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PLANT PIGMENTS AND REPRODUCTION[1]

THE suggestion of Murneek[2] that the amounts of carotinoid pigments in the plant may bear a significant relation to reproduction recalled to mind some unpublished measurements of the pigments in apple leaves in 1933 at the time of blossom bud differentiation which were given a different interpretation. A second series of samples were collected in October, 1934, from Wealthy trees. The results follow (Method of Schertz[3]):

TABLE I

PIGMENTS IN WEALTHY APPLE LEAVES, 1934

Vegetative condition	Fruiting condition	Milligrams per 100 sq. in. leaves		
		Chlorophyll	Carotene	Xanthophyll
"Under-vegetative"	Non-fruitful	6.08	0.225	0.545
Moderately vegetative	Fruitful	12.30	0.483	0.396
Same, girdled	Very fruitful	4.21	0.355	0.426
Strongly vegetative	Slightly fruitful	38.56	1.388	0.896
Same, girdled	Very fruitful	17.19	0.868	0.817
"Over-vegetative"	Non-fruitful	34.55	1.451	0.962

These data are similar to those of 1933 in that the presence of the three pigments measured is in general directly proportional. Also the carotinoid content is not related to fruitfulness, unless it be the intermediate contents. The samples were not collected at the period of blossom bud formation, but the relative colors in the early season remained the same in the fall except in the case of girdled branches.

The pigment content of leaves of beet, Datura and Maryland Mammoth tobacco plants in which fruitfulness was regulated by photoperiod treatments is given in Table II. These data further fail to indicate a correlation between the carotinoid pigments and fruitfulness.

TABLE II

PIGMENT CONTENT OF FRUITING AND NON-FRUITING PLANTS, APRIL, 1935

Plant	Condition	Milligrams per 100 sq. in. leaf area		
		Chlorophyll	Carotene	Xanthophyll
Tobacco (in sand)	Fruiting	18.4	0.55	1.29
	Vegetative	25.3	0.81	1.41
Tobacco (in soil)	Fruiting	31.8	1.03	2.14
	Vegetative	32.5	1.19	1.85
Beet	Fruiting	27.4	0.78	2.50
	Vegetative	31.5	0.82	...
Datura	Fruiting	21.5	0.78	1.41
	Vegetative	22.9	0.80	1.71

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THE CULTIVATION OF THE VIRUS OF ST. LOUIS ENCEPHALITIS

RECENT experimental work[1,2,4] has established a specific filterable virus as the etiological agent responsible for human epidemic encephalitis of the type encountered in St. Louis during 1933. Further, the susceptibility of the white mouse to the virus following its introduction by intracerebral or intranasal routes has been demonstrated.[2,3,4]

The object of this communication is to present evidence of successful *in vitro* propagation of the virus in the presence of living cells.

The brains of mice, dead or moribund following the intranasal instillation of the "Daily" strain of St. Louis encephalitis virus,[5] were used as a source of

[1] Published with the permission of the director of the Agricultural Experiment Station.

[2] A. E. Murneek, SCIENCE, 79: 528, 1934.

[3] F. M. Schertz, *Plant Phys.*, 3: 211–216, 1928.

[1] R. S. Muckenfuss, C. Armstrong and H. A. McCordock, Pub. Health Repts., U. S. P. H. S., 48: 1341, 1933.

[2] L. T. Webster and G. L. Fite, SCIENCE, 78: 463, 1933.

[3] C. Armstrong, Pub. Health Rept., U. S. P. H. S., 49: 959, 1934.

[4] L. T. Webster and G. L. Fite, *Jour. Exp. Med.*, 61: 103, 1935.

[5] We are indebted to Dr. Ralph S. Muckenfuss, Washington University School of Medicine, St. Louis, for the "Daily" strain of virus. Dr. Muckenfuss has written us that he obtained this strain originally in 1933 by inoculating brain tissue from a patient into *Macacus rhesus* monkeys. After 3 monkey passages, he carried the virus in mice, sending it to us in glycerolated mouse brain suspension. We transferred the virus serially by intracerebral and intranasal inoculations into Swiss mice through 9 generations before undertaking the cultivation experiments.