not only the periodicity of the illumination will determine the periodicity of the dehydration of the amylose, but also to a large extent the periodicity of the transpiration. The transpiration factor has not been controlled by previous investigators.

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Alcohol and the sex ratio in mice.

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An animal heterozygous for a character produces two kinds of germ cells with respect to that character. Since these two classes of germ cells differ in their genetic potentialities, it is conceivable that they may also differ in their ability to react to varied environmental conditions. Critical tests of this question are difficult to devise, one of the best thus far being that introduced by Stockard[1] in his alcohol inhalation experiments. By use of Stockard's method evidence has been obtained which indicates that when alcohol is thus introduced into the tissue of the fowl, germ cells are differentially affected according to their general vigor,[2] as well as on the basis of some of their genetic differences.[3] In the mouse, in which the male is presumably heterozygous for the sex chromosomes, Bluhm[4] found a much higher sex ratio after administering alcohol to the male parent by subcutaneous injections. The difference was attributed to a differential effect on the two classes of sperm cells. Bluhm's work has been questioned[5, 6] because of the low sex ratio in the controls (80 males: 100 females in a total of 965 young, as compared with a ratio of 122:100 among those sired by alcohol-injected fathers). The

[1] Stockard, C. R., *Amer. Nat.*, 1913, xlvii, 641.
[2] Pearl, Raymond, *J. Exp. Zool.*, 1917, xxii, 125.
[3] Danforth, C. H., *J. Exp. Zool.*, 1919, xxviii, 385.
[4] Bluhm, Agnes, *Sitz. Ber. d. Preuss. Akad d. Wiss.*, 1921, xxxiv, 549.
[5] Pearl, Raymond, *Eug. Rev.*, 1924, xvi, 1.
[6] Hanson, Frank Blair, and Heys, Florence, *Genetics*, 1925, x, 351.

more recent data of Parkes[7] shows a wide seasonal variation in the sex ratio of mice which may help to explain the apparent discrepancy in Bluhm's results.

The present report covers three short experiments in which male mice were treated with alcohol fumes in the usual way. Cylindrical glass specimen jars of about 20 cm. diameter and 5.5 liters capacity were fitted with false bottoms of perforated paraffined wood supported on short metal legs. From 75 cc. to 100 cc. of 95 per cent ethel alcohol were poured in the jar, the false bottom inserted and the cover put in place. After some minutes, when the atmosphere had become saturated with alcohol vapor, a mouse was slipped in as quickly as possible and the cover replaced. Treatments lasted for at least an hour, except when an individual gave evidence of extreme prostration. With rare exceptions, two treatments were administered every day. In each experiment three males were used and they were allowed to begin breeding about a week after the treatments were commenced.

In the first experiment, (August, 1924), pregnant females were sacrificed during the last days of gestation so that only foetuses of 18 to 20 days were considered. This experiment had to be abandoned after 53 foetuses had been examined. Among these 34 were males and 19 females, giving a sex ratio of 178.9 males: 100 females. There were no control data, but judging from MacDowell and Lord's records[8] (2525 young) the normal ratio for this age is probably from 100 to 103.4. Even though these numbers are small they seem indicative of an effect produced by alcohol treatment.

In the second and third experiments the young were born but, both in the experiments and the controls, they were immediately killed and their sex determined by dissection. The results are summarized in the following table:

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[7] Parkes, A. S., *Brit. J. Exp. Biol.*, 1924, i, 223.

[8] MacDowell, E. Carleton, and Lord, Elizabeth M., PROC. SOC. EXP. BIOL. AND MED., 1925, xxii, 389.

	Second Experiment.			Third Experiment.			Both Experiments Combined.			
	Date	Number	Ratio	Date	Number	Ratio	Total	Males	Females	Ratio
Males treated	Jan. 17 to Mar. 14	119	153.1	May 22 to Sept. 29	225	117.9	374	210	164	128.0
Males not treated	Jan. 5 to Feb. 28	715	104.8	May 15 to Aug. 17	417	100.4	1132	575	557	103.2

In the second experiment the percentage of males is 61.34 ±3.03 among the young of alcoholized fathers, and 51.18 ±1.26

among those from untreated males. The difference is a little more than three times its probable error and might therefore be regarded as statistically significant. In the third experiment the difference is slightly less than three times its probable error (2.7) but still clearly marked. When the three experiments are combined, using MacDowell and Lord's figures as well as our own as control for the first series, the difference between the number of males produced in the experiments and in the controls is about 3.3 times its probable error. If the sex ratio of the mouse was clearly stable there would be little doubt that this mode of treatment does have a definite result in raising the proportion of males, but since the ratio is variable as shown by Parkes, it is obvious that more data should be obtained from different strains and at different seasons. It is also clear that any further experiments in this direction should provide for the best possible controls as regards strain, age, and breeding histories of both male and female parents. As the question now stands, all the available data indicate that in the mouse alcoholization of the male parent results in a slight rise of the sex ratio.

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A non-polarizable micro-electrode. Preliminary report.

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The ability to penetrate a single living cell with very little injury to it by micro-needles and micro-pipettes has proven to be very fruitful in the relatively short time since this technique has been developed by Barber, Chambers, Taylor, and Pèterfi. To be able to penetrate into the interior of a single living cell by means of electrodes that are minute enough and at the same time functional, so that direct and accurate electrical measurements can be made of the electrical conditions attending the stimulation and the normal functioning of a Protisten cell, is obviously of considerable experimental significance.