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.

A micro-electrode of that nature that is non-polarizable has been perfected and tried out by the writer with satisfactory results. Small quartz glass pipettes (about 0.5 mm. in diameter) are drawn out over an oxygen flame to minute points with openings of about 1-2 microns. These pipettes are filled with dialyzed and filtered agar that has been impregnated with M/10 KCl. The agar is dialyzed electrically for the removal of inorganic impurities. The current (D. C.) is sent in both directions for equal periods of time to remove both the anions and cations. It may be stated that the dialyzed agar even after impregnation with KCl, at room temperature is in liquid form (like milk) due probably to the loss of water by the agar because of the complete removal of some anion that is necessary for gelation. The pipettes are sealed into a glass tube (pipette shank) that is filled with the same agar and in which is immersed from the opposite opening a C. P. silver wire coil that has been coated with AgCl by electrolysis. The entire system is made air tight with dental cement and is then suited for mounting on a micro-manipulator. Because of the minuteness of the pipette point, the resistance of the electrodes is very great, but with a sensitive galvanometer extremely small differences of potential can be measured.

The writer began to work on the perfection of a non-polarizable micro-electrode about a year ago with Dr. C. V. Taylor. The use of AgCl and agar impregnated with KCl for a non-polarizable system was originally suggested by him, and although we succeeded in making up a pair of electrodes they proved to be too unstable to function. In the detailed account of the technique that is to follow shortly, it will be seen that the work was done with extreme accuracy, and that all precautions were taken to make the electrodes stable and give comparable results. The writer has demonstrated that with one of the most sensitive galvanometers no potential difference between the two electrodes thus constructed can be detected.