diminishes. Obviously the external temperature would play a rôle in this mechanism.

The appended graph illustrates the close coincidence with alterations in the barometric pressure. The pressor determinations were made in a young woman whose only abnormality is a moderate albuminuria. Studies were made that cover 3 menstrual periods (January 1 to March 13) and the menstrual periods are indicated by 3 cross hatched areas of the chart and marked M. A is the barograph (heavy line). Temperature is indicated by the dotted line. B indicates the systolic blood pressure, and C indicates the diastolic blood pressure. The pulse rate is indicated by the double white line. Arrows have been subtended from low barometric levels to the pressure curves below.

It will be noted that each barometric decline is associated with a systolic pressure increase, the only exception being that of the unusually high pressure recorded on February 9 (unusual cold and psychic effect of a major scholastic examination).

In addition to the meteorological effects which are obvious, the pressor level is of course influenced by the endocrine tide of the sex rhythm. This becomes apparent in this individual in the premenstrual diminution of the diastolic level (January 28 and March 1) and reflects the premenstrual period of stimulation.

6829

Oxidation-Reduction Studies on the 2, 3-Butylene Glycol-Acetyl-Methyl-Carbinol System in a Fermentation.

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Dissimilation of glucose is brought about by bacteria of the genus *Aerobacter* and among the products of fermentation are acetyl-methyl-carbinol and its reduction product, 2, 3-butylene glycol. It has been suggested that these substances form a reversible oxidation-reduction system. In this case the methylene blue may replace the acetyl-methyl-carbinol as a hydrogen acceptor providing its redox potential lies above that of the carbinol-glycol system. The substances acting as hydrogen donators include the reduced constituents of all the reversible systems present in fermentations whose

electrode values lie below that of methylene blue. In 2, 3-butylene glycol fermentations, lactic acid might be expected to donate hydrogen and form pyruvic acid. If 2, 3-butylene glycol is involved in a reversible system whose electrode potential value is below that of methylene blue, the addition of methylene blue to the fermenting mixture will reduce the concentration of 2, 3-butylene glycol and increase concentration of acetyl-methyl-carbinol.

The medium used was 0.2 molar glucose solution containing 1 gm. of ammonium chloride and 1 gm. of dipotassium phosphate per liter. The pH was held constant by the addition of 10 gm. of calcium carbonate to each liter of fermenting medium. The fermentation took place under anaerobic conditions produced by a continuous stream of CO_2 bubbling through the medium. The organisms used were *Aerobacter indologenes, A. salicinovorum* and *A. decolorans.*

When ⅔ of the glucose was fermented, a known quantity of methylene blue was added to the fermentation. Samples were withdrawn after the addition of various amounts of methylene blue and the 2, 3-butylene glycol, acetyl-methyl-carbinol and glucose were determined. The results of these analyses are shown in Table I.

TABLE I.
Fermentation of Glucose by *Aerobacter salicinovorum.*

Time, hr.	Molarity Glucose[1]	Molarity Glucose (detd)	Moles Glucose Used[2]	Molarity Acetyl-methyl-carbinol	% Yield Acetyl-methyl-carbinol (molar basis)	Molarity 2, 3-Butylene Glycol	% Yield 2, 3-Butylene Glycol	Normality Methylene Blue	cc. 1N Methylene Blue per cc. 1M Glucose Used
0	.195	.195	.000	——	——	——	——	——	——
93¾	.193	.063	.130	.0015	1.2	——	——	.0014	——
94¾	.193	.061	.132	.0012	0.9	——	——	.0014	——
95¾	.193	.060	.133	.0004	0.3	.0781	58.4	.0014	.0105
103¼	.191	.041	.150	.0022	1.5	——	——	.0026	.0173
116¼	.190	.007	.183	.0025	1.2	.1009	55.1	.0037	.0202
144¾	.180	——	.180	.0017	1.0	——	——	.0118	.0655
244	.155	——	.155	.00185	1.2	.0869	56.3	.0323	.2084
312	.139	——	.139	.0019	1.4	.0808	56.4	.0438	.3151

[1] Corrected for dilution due to addition of methylene blue solution.
[2] Difference, columns 2 and 3.

The results seem to show that the 2, 3-butylene glycol does not act as a hydrogen donator to methylene blue under the conditions of this experiment and hence cannot be included in a reversible system.

However, it may be that the electrode potential for the 2, 3-butylene glycol-acetyl-methyl-carbinol system lies above that of the methylene blue-methylene white system. At the pH of these experiments the electrode potential of this methylene blue-methylene white system is 0.039 volts. There is a possibility that this potential might lie below that of the 2, 3-butylene glycol-acetyl-methyl-carbinol system. Consequently, this experiment was repeated substituting for the methylene blue, o-chlorolphenol-indophenol, the electrode value of which is 0.288 volts. The results of this experiment confirmed the results obtained with methylene blue.

It appears, therefore, under the conditions of our experiments that 2, 3-butylene glycol and acetyl-methyl-carbinol do not constitute a reversible oxidation-reduction system.

6830

Differentiation of Gonad Primordia in Kidney of Adult Rat.

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Transplantation of mammalian embryonic tissues to an adult environment has been more or less successful in the hands of several workers. Sites within the abdomen of the rat have not proven very successful as reported by Nicholas.[1] Nicholas has, however, obtained differentiation in 80% of grafts of 8 and 9 day rat embryos transplanted to the adult mammary gland. In the rabbit, Waterman[2] has demonstrated that the omentum of an adult animal serves as a suitable site for the differentiation of embryonic primordia.

In the present work various abdominal sites were tried with poor success. The kidney, however, as a site for the transplantation of embryonic primordia offers a number of advantages. Growth is unrestricted, the capsule interfering little with the graft, which is clearly visible and sharply differentiated from the host tissue. Rapid vascularization insures ready incorporation of the transplanted tissue. These advantages are demonstrated by the transplantation, in a subcapsular position, of a series of grafts of posterior halves of 11 day rat embryos, or the mesonephroi and gonad primordia of 12, 13

[1] Nicholas, J. S., PROC. SOC. EXP. BIOL. AND MED., 1931, **29**, 188.

[2] Waterman, A. J., *Am. J. Anat.*, 1932, **50**, 451.