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Absence of Alteration in the E.E.G. with Stilbesterol and Progesterone.

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Dusser de Barenne and Gibbs¹ in 1942 presented evidence to indicate that the E.E.G. was modified during the menstrual cycle. Gibbs and Reid² (1942) demonstrated that in the last weeks of pregnancy the electrical activity of the cortex was definitely slowed compared to postpartum E.E.G. records. Since it is well known that in both menstruation and pregnancy marked changes occur in the blood levels of follicular and corpus luteum hormones, it was decided to determine whether E.E.G. changes could be produced by the administration of stilbesterol and progesterone to women in the menopause.

In order that neither the changes during the menstrual cycle nor during pregnancy might interfere with the electrical activity of the cortex three women in the menopause were chosen for study. All three were patients in the Boston Psychopathic Hospital suffering from agitated depressions of moderate severity. None of the patients complained of menopausal symptoms.

Daily E.E.G.'s were obtained with the aid of a Grass six-channel instrument throughout the period the hormones were given. The electrodes were applied to the frontal, motor, and occipital leads bilaterally and referred to indifferent interconnected ear leads. Before the administration of a hormone preparation E.E.G.'s were obtained from each patient during a control period of 7-14 days.

Case 1 was a 53-year-old patient who passed through menopause about 12 years ago. She received increasing doses of stilbesterol by mouth varying from .25 to 10 mg daily for 53 days. During the last 10 days of this 53-day period intramuscular injections of pro-

gesterone (10 mg in 1 cc ampules) were administered daily. The administration of the hormones was discontinued because the patient began to menstruate.

Case 2 was a 49-year-old patient who had not menstruated for 7 months. She received daily injections of progesterone without stilbesterol for 39 days and then both hormones were given together for 20 days. The progesterone was given in the same dosage as in Case 1 and the stilbesterol was gradually increased to 10 mg daily. This patient menstruated for 9 days during the administration of progesterone alone.

Case 3 was a 53-year-old patient who had passed through the menopause about two years before. She received stilbesterol and progesterone for a period of 20 days in the same dosage as the above two cases. The patient stated that she menstruated though this was not definitely confirmed.

All patients had normal E.E.G.'s before medication. None of the patients showed significant changes in the E.E.G. at any time during the period the hormones were administered.

Apparently large doses of stilbesterol and progesterone hormones given alone and together to the non-pregnant, non-menstruating, menopausal woman are without effect on the cortical electroencephalogram. These hormones evidently exercised a profound influence on the endocrine balance of these women since two of the three menstruated during the course of medication. This does not exclude the possibility that the effects obtained by Gibbs, de Barenne, and Reid were due to hormonal influences but strongly suggests that factors other than endocrine should be considered.

¹ de Barenne, D., and Gibbs, F. A., *Am. J. Obs. and Gyn.*, 1942, **44**, 4-687.

² Gibbs, F. A., and Reid, D. E., *Am. J. Obs. and Gyn.*, 1942, **44**, 4-672.

* Lutocylin obtained through the courtesy of Ciba Pharmaceutical Products, Inc., from Dr. Ernst Oppenheimer.