diol-benzoate* (Progynon-B). The total dosage varied from 450,000 to 900,000 I.U. given intramuscularly in divided doses over a period of 10 days. At the end of the course of estrogen injections, recordings of tubal contractions were again obtained. In each case the preliminary control recording revealed a complete absence of tubal contractions and, after the estrogen administration, regular rhythmic fluctuations appeared.

Immediately following the last recording of tubal contractions, the patients were given 20 mg of progesterone* (Proluton) intramuscularly in 4 cc of sesame oil. The patients were then again insufflated 2 hours later. The recording taken 2 hours after the administration of the progesterone revealed a complete absence of pressure fluctuations, indicating inhibition of tubal contractions. The kymographic recordings of a typical case are presented in Fig. 1.

It would appear from the results of these experiments that the Fallopian tube contractions which are induced by estrogenic hormone can be inhibited by progesterone.

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Assay of a Vitamin K Preparation for Vitamin D.

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Vitamin K preparations have been used as therapeutic measures in the treatment of the bleeding tendency in patients with jaundice.[1, 2, 3] McNealy, Shapiro, and Melnick[4] demonstrated that the administration of Vitamin D (Viosterol) to patients with jaundice leads to a marked decrease in the "venostasis bleeding time."[5] This

* For the Progynon-B and Proluton used in these experiments, we are indebted to Drs. Gregory Stragnell and Erwin Schwenk of the Schering Corporation, Bloomfield, N. J.

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2 Snell, A. M., *Proc. Staff Meetings Mayo Clinic*, 1938, **13**, 65.

3 Butt, H. R., Snell, A. M., Osterberg, A. E., *Proc. Staff Meetings Mayo Clinic*, 1938, **13**, 74.

4 McNealy, R. W., Shapiro, P. F., and Melnick, P., *Surg. Gynec. and Obst.*, 1935, **60**, 785.

5 Ivy, A. C., Shapiro, P. F., and Melnick, P., *Surg. Gynec. and Obst.*, 1935, **60**, 781.

work has been confirmed by Boys.[6] Both these vitamins are fat soluble, and bile or bile salts are administered with them, when given to jaundiced patients, because bile salts appear to be essential for the absorption of both.[1-3, 7, 8] Regardless of the method of preparation of the Vitamin K being used clinically, we thought it advisable to assay the preparation for Vitamin D content to ascertain if the clinical results might be attributed to Vitamin D. Accordingly, a sample of a Vitamin K preparation prepared by Dr. Dann of the Abbott Laboratories was obtained. This preparation of Vitamin K would protect chicks from developing avitaminosis K when fed at a level of 0.01% of the diet. This preparation was then subjected to the U. S. P. XI biological test for Vitamin D.

Twenty-four rats, 28 days of age, were divided into 3 groups and placed in individual cages on a rachitogenic diet. One animal from each group was sacrificed at the end of the depletion period (25 days) to demonstrate the degree of the rickets—4+ in each group.

Group 1 received 5 mg (1/40th of the human dose) of the Vitamin K concentrate in 0.1 cc of peanut oil daily for 8 days. Group 2 received 0.5 international units of Vitamin D as Viosterol for 4 days, then 1 unit daily for the succeeding 4 days. This was administered in 0.1 cc peanut oil daily also. Group 3 received 0.1 cc oil daily for 8 days. All groups were removed from medication on the ninth and tenth days, and were killed on the eleventh day following the beginning of treatment.

Group 1 (Vitamin K treated) showed no healing at the end of the period. Group 2 (Vitamin D treated) showed 3 rats with 3+ healing and 4 rats with 4+ healing at the end of the period. Group 3 (peanut oil treated) showed no improvement at the end of the period; all were rachitic.

Summary. It is evident, then, that, in the doses given, this preparation of Vitamin K known to be potent in the treatment of the hemorrhagic diathesis of chicks does not contain enough Vitamin D to cause healing in rachitic rats.

6 Boys, F., *Surgery*, 1937, **2**, 817.

7 Greaves, J. D., and Schmidt, C. L. A., *Am. J. Physiol.*, 1935, **111**, 492.

8 Greaves, J. D., and Schmidt, C. L. A., *Univ. Calif. Pub. Physiol.*, 1934, **8**, 43.