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**Menstruation-Like Bleeding with Constant Estrogen Dosage
in an Ovariectomized Woman.***

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Corner¹ and Zuckerman² have reported recently that daily injection of a small amount of estrogen (*ca.* 30-60 units) into ovariectomized *Macacus rhesus* monkeys is associated with periodic menstruation-like bleeding which occurs during the period of treatment. Until then, the view was held generally that such bleeding depended upon estrogen-, or progesterone-withdrawal. There is no mention in the literature, however, of a result obtained in women comparable to that in the work of Corner and Zuckerman. The present note records such an observation.

This case is that of a woman, 38 years of age, who underwent bilateral ovariectomy and salpingectomy for cystic ovaries and meno-metrorrhagia. There was no infection, and the uterus was conserved *in toto*. The operation was performed on December 27, 1939, following a period of amenorrhea lasting for two years. This condition was terminated by persistent and excessive uterine bleeding following a course of injections of estrone and Antuitrin-S, in another clinic.

The patient came to the clinic at Greenpoint Hospital on February 21, 1940, for treatment of menopausal flushes. Five milligrams of estradiol-dipropionate (Di-Ovocylin, Ciba) were given twice weekly for 2 weeks, then once a week for 3 weeks. After this, 2 weeks elapsed between injections, and at the end of this time, on April 15, a period of uterine bleeding lasting 4 days took place. Pelvic examination showed the uterus to be normal in size, shape and consistency. At this point, a regular routine and constant dose of estrogen was instituted. It consisted of 2 mg of Di-Ovocylin given subcutaneously at intervals of 2 weeks, supplemented with one

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¹ Corner, G. W., *Am. J. Physiol.*, 1935, **113**, 238.

² Zuckerman, S., *Proc. Royal Society of London, Series B*, 1937, **123**, 441.

tablet (0.5 mg) of estradiol (Ovocylin, Ciba) per day. This routine was maintained without variation until September 14, 1940. In the 5 months spanned by this period, menstruation-like bleeding occurred 3 more times, on May 2, May 29, and on August 4. Pelvic examination again showed the uterus to be normal. There was no further show of blood up to September 14, at which time the dose of estrogen was unavoidably altered.

Three periods of uterine bleeding were observed, therefore, the intervals between which (after the first induced period) were 18, 28, and 68 days, plus 31 days without bleeding until the observations were terminated. Thus this patient bled 3 times on constant estrogen-dosage, although the "cycles" were not regular. This is equally apt to be so in monkeys (see Corner's My. No. 102, in which the cycles were 26, 25, 15, and 44 days (¹, page 247); see also Zuckerman's My. No. OM78 (², page 453) in which the cycles were 48, 43, 35, 46, 31, 40, and 41 days). Even so, the present case would appear to offer sufficient similarity to the monkey data to render it certain that in woman, too, menstruation-like bleeding may occur under suitable circumstances on constant dosage of estrogen. There is, accordingly, no known difference between the monkey and woman in the methods by which menstruation may be experimentally induced.

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Inhibition of Respiration of Dysentery Bacilli by Sulfapyridine.*

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In a previous paper from this laboratory it has been shown that nicotinamide and some of its derivatives serve as essential growth factors for many dysentery bacilli.¹ More recently evidence has been presented which indicates that nicotinamide acts in some way other than, or in addition to, serving as a building block for one or both of the known phosphopyridine nucleotides.²

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