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Method for Obtaining Curettings from Uterine Mucosa of Macacus Monkeys.

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A study of the uterine mucosa of the monkey has been facilitated by methods which permit examination of fresh samples of endometrium at intervals on the same animal with any given experimental history.

One method has been a surgical approach through the abdomen. The uterus is elevated and brought into the space made by the abdominal incision. A small soft rubber catheter is then passed around the lower uterine segment, just above the swelling of the cervix, and is tightened and clamped to form a tourniquet, effectively stopping the blood from the uterine arteries. This method is similar to that used by Dr. Squier in Hartman's laboratory, Carnegie Institute of Embryology, for operation on the pregnant monkey uterus.

After the circulation is stopped a small triangular wedge is taken from the fundus, the 2 incisions passing through the muscularis to the lumen of the uterus. The muscularis is closed by several stitches, the peritoneum drawn over and secured and the tourniquet released. The loss of blood is surprisingly slight and seepage may be stopped by sponging, or application of the piece of crushed muscle. The position of the removed section is indicated on a diagram and the operation may be repeated within a week, the wedge being taken from another portion of the fundus. This operation has been done several times on the same animal, and there has been no indication that the later sample had been adversely affected by the previous operations. Three portions have been taken from a uterus, but the method has obvious limitations.

Attention was then turned toward the possibility of obtaining scrapings adequate for study by a curettage. The first difficulty encountered was in the tortuous cervical canal in the monkey, which differs markedly from that in the human. The direct course is deflected by a projecting cervical colliculus. The cervix is relatively avascular as compared to the fundus. It has a large amount of collagenous fibers which make a relatively rigid structure in the nulliparous animal. In order to pass a curetting instrument into the fundus it is necessary to remove a portion or all of this cumulus.

A speculum was first used to distend the vagina, but this was discontinued as it was necessary to reduce the amount of unwieldy equipment in the field of work. Test tubes of graded sizes were cut off to the required length and slightly tapered on the cut end. One of these which would just fit in the pelvic outlet was inserted into the vagina, and forced into the vaginal fornices. This brings the cervical os nearly in the center of the field, and the pressure of the glass tube holds the cervix firmly, so that it is rarely necessary to grip it with forceps. For the removal of the cervical cumulus as well as for the subsequent curetting, a Spencer universal lamp was adapted. This lamp affords a spot focus, so that a bright beam of light may be focused directly on the cervical ostium. At the preparatory operation, with the animal on an inclined board in approximately a knee-chest position, a glass tube dilating the vagina and light in place, the cervical obstruction is quickly removed with a lancetlike blade. Bleeding has been stopped by sponge packing. This operation is unsatisfactory in that it must be done blindly, with only a sense of touch to direct the operation. No fatalities and, so far as is known, no perforations have resulted. A curettement may be made within a few days after this preparatory operation.

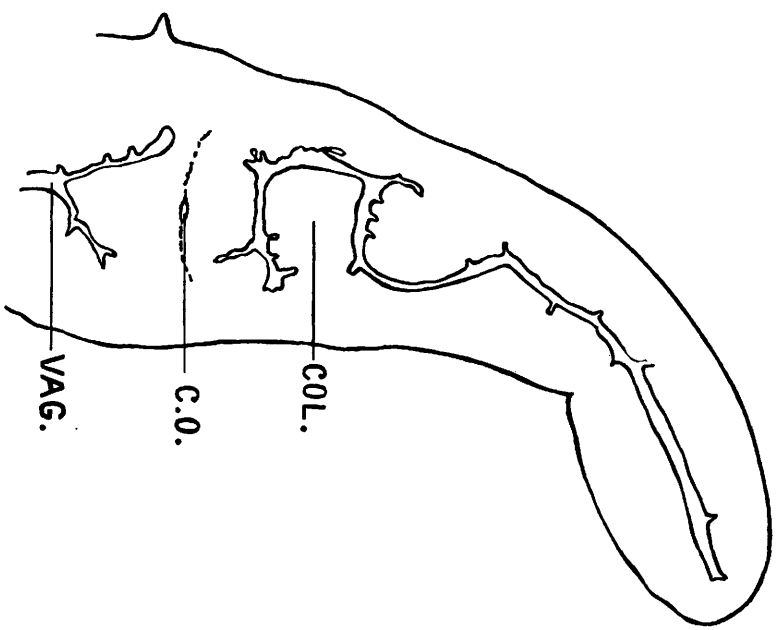
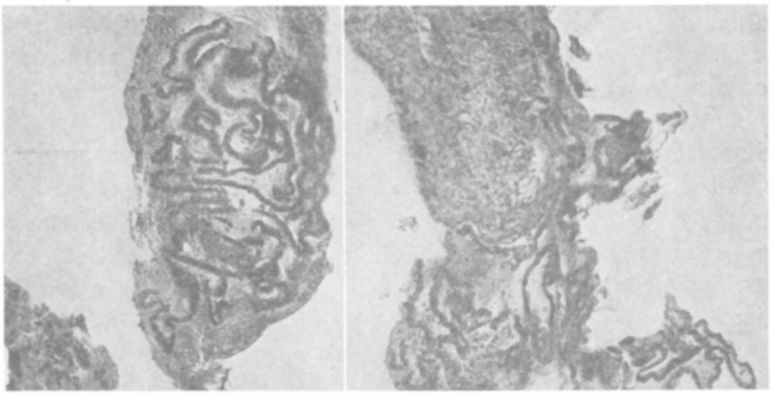


FIG. 1.
Projection tracing of uterus of immature *Macacus rhesus*. col., cervical colliculus; c.o., cervical os; vag., vagina.



FIGS. 2 AND 3.
Microphotographs of 2 samples of endometrium obtained by curettage.

In addition to the set-up described above several sharp curetting instruments are needed. The size of the instrument is limited only by the diameter of the os, as no method of dilating has been developed. Meyhoefer's eye curette has been found most satisfactory, although Buck's ear curette also has been used. The cervix must be cleaned of mucous, and the curette passed through the cervix. By placing the left hand on the abdomen of the monkey immediately cephalad of the pubis, the operator may feel the knife in the fundus and may exert slight external pressure at the time the tissue sample is being scraped from the endometrium. Unless the cervix has been cleared of mucous, the specimen will often be lost on withdrawal of the knife. Epithelium of the cervix is easily distinguishable from the endometrium.

The technique is not thoroughly satisfactory but does afford an opportunity for obtaining endometrial tissue (Figs. 2 and 3) without interfering with the continuance of an experiment.

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A Biological Method of Assay of the Adrenal Cortical Hormone.*

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Since extensive experimentation has failed to reveal a reaction of the normal animal to cortical hormone administration, it has become

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