

THE ACTION OF THE SEVERAL "FEMALE REMEDIES" ON STRIPS OF THE EXCISED HUMAN UTERUS*

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In a recent paper¹ were presented the actions on the excised uterus of the guinea-pig of a long list of drugs that have been reputed to possess certain rather indefinite actions on the uterus. Since then there has been an opportunity to investigate the actions of a few of the same drugs on strips of the human uterus in the same manner. The number of experiments in this series is rather limited, but as the results agree qualitatively with those on the guinea-pig uterus and as a large percentage of the strips from the human uterus do not contract at all, the number was thought to be sufficient to warrant conclusions for this work. The experiments were made on strips from four nonpregnant uteri and from one fallopian tube. The uteri were obtained from the surgical services of the Omaha hospitals² and were used on the same day; one specimen was used on the second day also. Four specimens were from patients past the menopause and the fifth from a patient 28 years of age; the results were similar in each case.

Character of the Movements of Strips from the Human Uterus: Gunn³ has previously noted that strips from the human uterus contract similarly to those from the guinea-pig; his tracings, however, agree with mine that the movements are of much less magnitude as a rule, occasionally being no more than wavy lines. Very frequently strips showed no contractions at all. Possibly the pregnant human uterus would give a larger percentage of active strips, as is the case with the guinea-pig uterus.

The following drugs were examined: *Pulsatilla pratensis* (pulsatilla), *Aletris farinosa* (unicorn root), *Caulophyllum thalictroides* (blue cohosh), *Cnicus benedictus* (blessed thistle), *Viburnum prunifolium* (black haw) and oil of valerian. It was found that pulsatilla, aletris and oil of valerian (Fig. 1) lowered the amplitude of the excursions or completely inhibited them; but the action was not so prompt or so great as on the guinea-pig uterus in the same concentration. Caulo-

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1. Pilcher, Burman and Delzell: THE ARCHIVES INT. MED., 1916, **18**, 557.

2. From the services of Drs. Findley, Jonas, Waters and Mosher.

3. Gunn, J. A.: Proceedings of the Royal Society, 1914, **87**, 551.

phyllum (Fig. 2) put the strips into tonic contraction, but again the action was less than on the guinea-pig; the tone was not increased above the maximum, as was frequently the case with the guinea-pig. *Cnicus benedictus* and viburnum were inactive. The latter was tried in but a single experiment, however.

The Experimental Data: With the pulsatilla there was a gradual lowering of the excursions with the 1 to 1,000 solution in one case, and from the 1 to 500 and the 1 to 250 solution in a second. A third strip was practically unaffected by the 1 to 1,000 solution.

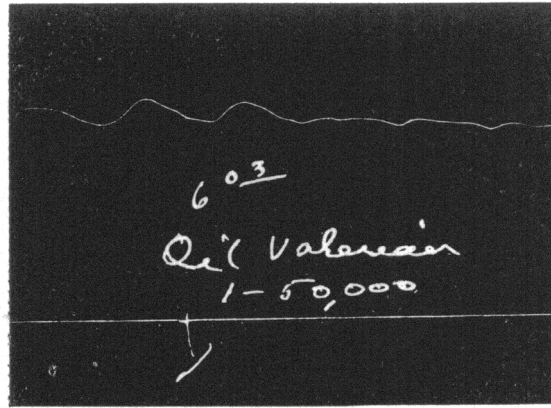


Fig. 1.—Oil of valerian on a strip of human uterus; at 1 it was applied to make a 1 to 50,000 solution.

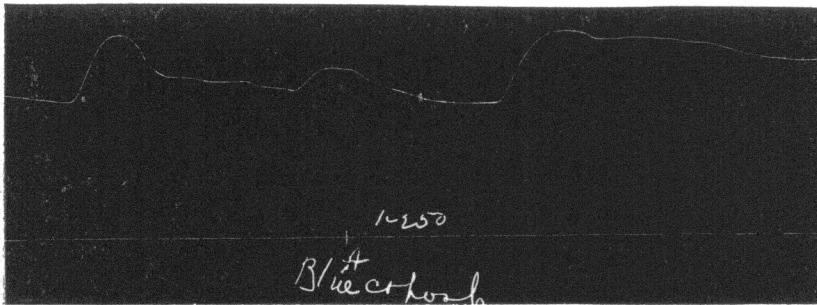


Fig. 2.—Cauliophyllum thalictroides (blue cohosh) on a strip of human uterus; applied at .1 to make a 1 to 250 solution.

With alettris a single strip gradually ceased to contract when placed in a 1 to 500 and 1 to 250 solution.

With oil of valerian the contractions of five strips promptly ceased when placed in a 1 to 25,000 solution, and the inhibition was permanent; there was considerable depression from a 1 to 100,000, and a 1 to 50,000 concentration in one case. Stronger solutions were correspondingly more active. Three experiments were on strips from the fallopian tube, which were also depressed. These were the only experiments made on the tube. The larger number of

experiments were made with the oil of valerian as it was used to insure the accuracy of the method in connection with other work.

The typical action of *caulophyllum* was exhibited in four experiments with a 1 to 500 concentration and in a single case with a 1 to 250 solution of the evaporated fluidextract.

Cnicus benedictus was inactive in three cases with the 1 to 500 solution and in a single case with the 1 to 100 solution of the evaporated fluidextract.

Viburnum prunifolium was inactive in but a single experiment with a 1 to 500 concentration.

COMMENT

The results show that the drugs examined act on strips from the human uterus in the same direction as on the guinea-pig uterus; but that more concentrated solutions are required to produce the same effect. They thus strengthen the argument of the previous paper that it is highly improbable that these drugs could exhibit a similar action on the intact uterus in doses that could be tolerated by the patient. But a limited number of drugs of this group, the so-called uterine tonics and sedatives, have been examined. But as the results agree qualitatively with those of the previous work on the guinea-pig, it seems safe to conclude that the others would have the same action on strips of the human uterus as from the guinea-pig uterus, but probably to a lesser degree.

CONCLUSIONS

The drugs examined act on strips of the isolated human uterus in the same direction as on the guinea-pig uterus, but to a much less degree. *Aletris farinosa*, *pulsatilla pratensis* and oil of valerian depress the activity of the strips; *Caulophyllum thalictroides* throws the strips into tonic contraction; *Cnicus benedictus* and *Viburnum prunifolium* are inactive.