TABLE I.
Effect of Prontosil and Prontylin on Metabolism of Bacteria.

Bacteria	Metabolite	O_2 consumption—cmm. per hour			Inhibition, %
		Control	Prontosil	Prontylin	
Hemolytic streptococcus	Glucose	127.3	125.1		None
				117.3	7.9
B. coli	"	655.1	673.2		None
				642.1	"
"	Pyruvate	713.4	752.4		"
				732.6	"
Gonococci	Glucose	579.5	597.7		"
				609.5	"
"	Pyruvate	667.5	650.0		"
				602.0	9.8
B. Friedlander	Glucose	106.2		93.3	12.1
	Lactate	141.4		108.4	23.3

there exist in the animal body a number of oxidation-reduction systems of more negative potential, Prontosil might be easily reduced in the body. *In vitro,* however, Prontosil is not reduced by glutathione at pH 7.31 (temp., 25°).

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Assay of Progesterone by a New Method.

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Heretofore all the methods used for the assay of progesterone are based upon morphological changes in the uterine mucosa. Usually immature or mature rabbits have been employed. Suitable sensitization of the uterus has been obtained either by the injection of an oestrus-producing hormone (oestrone) or by using rabbits in spontaneous heat. The present communication, however, deals with preliminary experiments on a "physiological" method of assaying progesterone, *i. e.,* by determining the dose necessary to cause contraction of the non-pregnant cat's uterus in response to sympathetic stimulation.

Ovulation and corpus-luteum formation in the cat, as in the rabbit, take place after copulation but not spontaneously so that the ovaries of isolated non-pregnant adult cats do not contain corpora lutea. A further peculiarity of the cat's uterus is the change in its response to hypogastric stimulation or epinephrine as a result of

pregnancy. Dale[1] and Cushny[2] independently showed that sympathetic stimulation in the non-pregnant cat causes inhibition of movements and relaxation whereas in the pregnant cat similar stimulation is followed by a uterine contraction. van Dyke and Gustavson[3] demonstrated that such a pregnancy-reversal in response could be elicited in normal or ovariectomized cats receiving both oestrin and corpus luteum extract but not after the injection of oestrin alone. All subsequent work indicated that the pregnancy-response of the cat's uterus can be obtained only if the cat's ovaries contain corpora lutea or if corpus luteum hormone has been injected.

It is not known what is the importance of sensitizing the uterus by first injecting oestrus-producing hormone. However, on the assumption that it is important in facilitating and possibly opposing the pregnancy-like reversal in response due to progesterone, I have tentatively adopted the procedure here outlined. Adult normal cats, isolated long enough so that pregnancy is ruled out, receive the following course of injections:

Day 1: 0.05 mg. (500 international units) of oestradiol benzoate.
" 2: " " " " " " " "
" 4: One third of the total dose of progesterone.
" 5: " " " " " " " "
" 6: " " " " " " " "
" 7: Determination of the effect of intravenously injected epinephrine (usual minimally effective dose about 1-3γ) on the uterine movements about 30 hours after the last injection of progesterone.

The ovaries were intact in all the cats except 4 which had been ovariectomized about a week before assay was started. The hormone-preparations, dissolved in olive oil, were administered subcutaneously once daily. For the final "acute" experiment the barbiturate "Evipan Na" was found to be an extremely satisfactory anesthetic (70 mg. per kilo intraperitoneally). The preliminary results obtained are given in Table I.

A large dose[4] of oestradiol benzoate was purposely chosen so that if cats with intact ovaries are used, spontaneous secretion of follicular hormone probably does not introduce much variation in the follicular hormone phase of the assay. One experiment suggests that such a dose of oestradiol benzoate suppresses the secretion of

[1] Dale, H. H., *J. Physiol.*, 1906, **34**, 163.

[2] Cushny, A. R., *J. Physiol.*, 1906, **35**, 1.

[3] van Dyke, H. B., and Gustavson, R. G., *J. Pharm. and Exp. Therap.*, 1929, **37**, 379.

[4] **Rowlands and McPhail** (*Quart. J. Exp. Physiol.*, 1936, **26**, 109) concluded that 10,000 I.U., administered over 10 days, is a suitable sensitizing dose of *oestrone* for the adult cat.

TABLE I.
Pregnancy-Response of Normal Cat's Uterus After Injection of Oestradiol Benzoate[5] and Progesterone.[5]

Progesterone (total dose) mg.	Av. wt. of cats kg.	No. of cats	Pregnancy-response +	Pregnancy-response —
0	1.95	4	0	4
0.25	1.83	3	0	3
0.50	1.95	13	8	5*
0.50	2.29	4†	2	2
0.75	2.04	2	1	1
1.00	2.25	3	3	0

[5] I am indebted to Schering-Kahlbaum A. G., of Berlin, who supplied me with crystalline samples of both hormones.

*Including one experiment in which contraction occasionally occurred if the uterine tone was low.

†Ovariectomized cats.

the anterior pituitary hormone which maintains the corpora lutea. In one cat there was an early pregnancy discovered only at experiment. All the corpora lutea were clearly atrophic; all the embryos were undergoing necrosis. The uterus of this cat usually relaxed after the injection of epinephrine.

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Nutritive Value of Rice Bran Extract for Cultivating Microörganisms.

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Rice bran has been implicated by various investigators to contain growth-stimulants. Williams and his associates[1] claimed that pantothenic acid present in the rice-bran extract is chiefly responsible for the growth stimulation of certain strains of yeast. Salle and Dunn[2] working with *Escherichia coli* found that the extent of growth was related directly to the concentration of rice-bran extract added to meat-infusion broth. *Alcaligenes fecalis* did not behave in the same manner. They concluded that the enhancement of growth in the case of *E. coli* was due to the presence of a growth-promoting sub-

[1] Williams, R. J., and Associates, *J. Am. Chem. Soc.*, 1933, **55**, 2912; *Biochem. J.*, 1934, **28**, 1887; *Science*, 1935, **82**, 178.

[2] Salle, A. J., and Dunn, R. W., PROC. SOC. EXP. BIOL. AND MED., 1934, **32**, 168.