TABLE II.
Urinary Findings After a Single Intraperitoneal Injection of 0.5 g/kg Sodium Sulfamethylthiazole in Rats.
(Pronounced hematuria, albuminuria, polyuria and hypostenuria.)

Days after injection	No. of rats	Urine ml per rat	Sp.Gr.	Alb.	Sediment	Drug excretion	
						mg per rat	% acetyl.
0*	5	6	1045	neg.	Amorph. precip.		
1†	5	18	1014	++++	r.b.c. 100§	22	28
2	4	35	1012	+	r.b.c. 50-100	6.5	32
3	4	16	1028	trace	r.b.c. 20-30	1.5	30
4‡	3	10	1038	neg.	single r.b.c.	0.3	

*Control—day before injection.
†1 died: precipitation in renal papillæ, kidney and liver damage.
‡1 died: precipitation in renal papillæ, kidney and liver damage.
§r.b.c.—red blood cells per high power field.

In all other experiments, which will be reported elsewhere in detail, the findings were essentially the same.

Conclusions. Degenerative lesions of liver and kidneys following administration of sulfamethylthiazole are explained as a consequence of the damaging effect of high concentrations of the compound in the body. The accumulation of these toxic concentrations is believed to be due to severe impairment of the renal excretory function caused by precipitation of the acetyl sulfamethylthiazole in the collecting tubules of the kidneys.

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Nasogenital Relationship: III, Some Aspects of Sexual Function in Female Rats Deprived of Sphenopalatine Ganglia.

M. C. SHELESNYAK, S. ROSEN AND L. R. ZACHARIAS.
(Introduced by R. T. Frank.)
From the Laboratories of The Mount Sinai Hospital, New York City.

The study of the nasogenital relationship has revealed the production of pseudopregnancy in the female rat following silver nitrate applications to the nasal mucosa[1] and following local anesthetization of the nasal mucosa.[2] The bilateral removal of the sphenopalatine ganglia in adult female rats is followed by pseudopregnancy. This condition is characterized by the persistence of leucocyte cell smears

1 Rosen, S., and Shelesnyak, M. C., PROC. SOC. EXP. BIOL. AND MED., 1937, **38**, 832.

2 Shelesnyak, M. C., and Rosen, S., *Endocrinology*, 1938, **23**, 58.

of the vaginal contents, by persistent corpora lutea in the ovary, and by decidual cell reactions to traumatizing of the uterine mucosa. The duration of this state ranges from 8 to 24 days, after which time the regularity of the 4-5 day cycle is resumed.[3]

The present report embodies findings from the study of certain sexual functions in female rats which have been deprived of their sphenopalatine ganglia. Series I: The time of vaginal opening in immature rats from which the sphenopalatine ganglia had been removed, was studied in 30 animals. The ganglia were removed from rats ranging in age from 23 to 40 days. This is considerably before the normal time for establishment of the vaginal orifice. Fifty-six littermate controls were given the same care and handling as were the experimental animals, except for the surgical removal of the ganglia. The findings relative to the age and weight of the rats at the time of establishment of the vaginal opening reveal no significant difference in time of vaginal opening between normal and operated animals; mean age and body weight of experimental animals was 54.2 ± 7.8 days and 99.7 ± 14.8 g, and for the control animals the mean age and body weight was 51.8 ± 6.1 days and 98.9 ± 8.2 g.

Series II: The reproductive capacity of rats without sphenopalatine ganglia was tested in 17 cases by matings with virile males. At varying intervals after the removal of the ganglia, ranging from 21 to 189 days post-operative, rats were placed in cages with potent males. Sperm were found in the smears of the vaginal contents of all but 2 cases. In these 2 instances the animals became pseudopregnant; all the remaining animals had litters. The absence of the sphenopalatine ganglia did not interfere with the reproductive behavior of the rat.

Series III: The response of ganglionectomized rats to mechanical stimulation of the os cervix was studied in a group of 253 operated rats. The control group was composed of 190 unoperated animals. Glass rods were used for the mechanical stimulation of the os cervix.[4] (The electrical method of stimulation[5] was not used because the electrical spread may, in the locally anesthetized cervix, move beyond the anesthetized areas.) The animals were stimulated during the proestrous stage of the estrous cycle. One group of animals, and its unoperated control group, were stimulated under deep ether anesthesia; a second group and its control group, under local

[3] Rosen, S., Shelesnyak, M. C., and Zacharias, L. R., *Endocrinology*, 1940, **27**, 463.

[4] Long, J. A., and Evans, H. M., *Univ. Calif. Mem.*, 1922, **6**, 1.

[5] Shelesnyak, M. C., *Anat. Rec.*, 1931, **49**, 179.

TABLE I.
Cervical Stimulation of Rats from Which Sphenopalatine Ganglia Are Removed.

Status during cerival stimulation	Non-anesthetized		Topical nupercaine anesthesia (cervix)		Generalized ether anesthesia (deep)	
Type of animal	Control, ganglia intact	Experimental, ganglia absent	Control, ganglia intact	Experimental, ganglia absent	Control, ganglia intact	Experimental, ganglia absent
No. of cases	90	124	50	64	50	65
No. of stimulations (trials)	99	176	100	200	100	203
Ratio C(ases):T(rials)	1:1.1	1:1.4	1:2.0	1:3.5	1:2.0	1:3.1
Pseudo-pregnancy reaction						
No.	73	115	15	30	1	10
% of cases	81	93	30	47	2	15
% of trials	74	65	15	15	1	5

cervical anesthesia (2% nupercaine-Ciba); and a third group without anesthesia. The results and treatments are presented in Table I. The experimental and control animals showed the same reactions to cervical stimulation; and the effectiveness of anesthesia in reducing the number of pseudopregnant responses[6] was comparable in operated and normal animals.

The findings in this study demonstrate that: the establishment of the vaginal orifice, the reproducing capacity, and the pseudopregnancy reaction to cervical stimulation, remain normal in the absence of sphenopalatine ganglia. This suggests that the pseudopregnancy reaction which follows directly after the removal of the sphenopalatine ganglia[3] is related to the immediate effects of ganglion deprivation rather than the absence of the ganglia, and therefore of a transitory nature.

[6] Meyer, R. K., Leonard, S. L., and Hisaw, F. L., PROC. SOC. EXP. BIOL. AND MED., 1929, **27**, 340.