used as internal standards. The working curves were plotted using a known solution of aluminum as the abscissa and the logarithm intensity ratio of the internal standards and the aluminum as the ordinate. The curves obtained by the standard densitometer and our instrument were naturally different owing to the greater deflecting of the galvanometer. However, the results were very comparable and were as shown in Table I.

TABLE I.

	Standard densitometer	"Micro"-densitometer
	Plate A. Aluminum.	
	g	g
Known solution (4)	.0042	.0042
" " (5)	.0082	.0082
Unknown solution	.0068	.0068
	Plate B.	
Known solution (3)	.0042	.0042
" " (4)	.0074	.0074
Unknown solution (1)	.0083	.0082
" " (2)	.0067	.0067
" " (3)	.0067	.0067
	Plate C.	
Known solution (3)	.0042	.0042
" " (4)	.0074	.0074
Unknown A	.0070	.0071
" B	.0066	.0066

10571 P

Effect of Testosterone Propionate on Sex Differentiation in Pouch Young of Opossum.

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The young of the opossum *(Didelphys virginiana)* at birth are sexually almost undifferentiated. Histological differentiation in the gonads has just begun, wolffian ducts are present but müllerian ducts do not appear until several days after birth and are not fully formed until a head length of 9 mm is attained. At about 10 days sex may first be recognized externally by the development of the folds of the marsupium in females and scrotal sacs in males.[1, 2] On

[1] Baxter, J. S., 1935, *Cont. to Embryol.*, No. 145, Carnegie Institution, Washington.

[2] McCrady, Edw., 1938, *American Anatomical Memoirs*, No. 16, Wistar Institute, Philadelphia.

the first or second day after birth injections of testosterone propionate were begun and repeated at intervals of a few days. Prominent changes in the form of the phallus at 10-14 days were the first visible results of treatment.

Three litters received testosterone propionate* for periods of 20, 40, and 50 days in amounts to average 50, 75, and 100 gamma per day. In general, homologous parts in both sexes responded similarly, but not to the same degree. The response was roughly proportional to dosage and duration of treatment. The various parts of the embryonic reproductive system will be taken up in order.

The gonads are affected but little. Testes do not descend (although the gubernacular apparatus is complete) for a reason which will appear. They are somewhat smaller than control testes but appear normal histologically. The interstitial tissue has not yet been studied quantitatively. Ovaries are modified in many ways but are essentially ovaries. Large rete canals, often expanded, are directly connected to the epididymides. Full histological description is impossible within the limits of this report.

Wolffian ducts. Normal vasa deferentia are typically present in experimental animals of both sexes, with well developed epididymides. In older female controls wolffian ducts and epididymides are almost completely degenerate. Occasionally in experimental females small segments of wolffian duct may lack a clear lumen. In younger stages (20 days) the connection of the wolffian duct to the urinogenital sinus via the "sinus cord" is usually non-patent in controls of both sexes and experimental females, but is patent in treated males. In older animals the duct is complete and patent as far as the "sinus cord", which is solid at this stage of development.

Müllerian ducts. The well-known "unorthodox" action of many androgens appears in the case of müllerian duct derivatives, which are enormously enlarged, except for the vaginal region in experimental males. This portion is absent—perhaps because it is first to disappear in normal male development. Uterine and tubal development in males is so great at higher dosages as to prevent descent of the testes.

Urinogenital sinus. This structure is greatly hypertrophied and cornified in both sexes. Prostatic outgrowths are very numerous from the anterior half of the sinus and the adjacent urethra, and are greatly proliferated, especially in males. The bulbo-vestibular and bulbo-urethral glands, arising near the junction of sinus and the urethral groove of the phallus are also proliferated. The "sinus cord", which normally forms the terminal portion of the lateral vagina, is typically enlarged in treated females.

* By the courtesy of Dr. Erwin Schwenk, of the Schering Corporation.

Phallus. This organ responds phenomenally to the androgen in both sexes, but is more reactive in males. Glans, corpus and crural structures are all enlarged, the organ is turgid and the posture erect. The best developed female phalli are as large as the average male, and almost indistinguishable from them.

Scrotum and pouch. These parts, to gross examination, are unmodified. The pouch in females, and the scrotal sacs in males have the same size and appearance as control specimens. The saccus vaginalis is fully formed in males and the gubernaculum properly attached, but testes are undescended, as already noted.

Summary. The administration of testosterone propionate to the pouch young of the opossum induces development of a strange medley of the characters of both sexes. On the male side the phallus, wolffian duct, epididymis, rete, and the glands of the urinogenital sinus are all stimulated, and the effect is commonly greater in males than in females. Müllerian duct derivatives are also stimulated, however, but more so in the female. Differentiation of the gonads is not profoundly affected, and scrotum and pouch are entirely unresponsive. For most structures a sex factor apparently affects the degree of the response.

10572

Demonstration of Streptococcal Fibrinolysin in Exudates. The Action of Sulfanilamide upon It.

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In a preliminary note[1] it was reported that exudates of streptococcal and staphylococcal origin may exhibit fibrinolytic activity. Subsequently, a more detailed study on the occurrence *in vivo* of staphylococcal fibrinolysin was presented.[2] Recently, Tillett[3] described the presence of fibrinolysin in empyema-fluids from which *beta* hemolytic streptococci were recovered. In the following communication, observations are presented dealing with the demonstra-

[1] Neter, E., PROC. SOC. EXP. BIOL. AND MED., 1936, **34**, 735.

[2] Neter, E., *J. Bact.*, 1937, **34**, 243.

[3] Tillett, W. S., *Bact. Rev.*, 1938, **2**, 161.