pigs for 2 months. The animals were killed at various times during the oestrus cycle. The height of the epithelium was determined by averaging 10 cell-counts taken from sections near the center of the nipple.

In the rat the difference of the cell-count at oestrus and dioestrus is slight, but the shape of the epithelial cells changes. At dioestrum the cell is flat and the nucleus occupies most of the cell. During oestrum the cell is oblong. The change in shape increases the distance from the basement membrane to the periphery, while the nucleus appears to occupy a smaller part of the cell.

In the guinea pig the change in the shape of the superficial epithelial cells of the nipple is marked and there is an increase in number. The epithelium of the nipple of the guinea pig has rete pegs. During dioestrum the epithelium averages 10.5 cells for the height of the papilla and 4.2 cells for the intervening epithelium. The proliferation begins on the first day of the oestrus cycle. It then averages 16.1 cells for the height of the rete pegs and 7.3 cells for the height of the lower epithelium. It remains high until the fifth day after the onset of oestrum.

The epithelium from the nipples of 2 adult males, counting the lowest and highest part of the epithelium averaged 5.6 and 6.0 cells respectively. Females spayed for periods of 28, 33, and 46 days have a low nipple epithelium, averaging 9 and 3 cells in height, for rete pegs and lower epithelium respectively.

The ovaries, then, produce cyclic changes in the nipple epithelium of rats and guinea pigs; as can be seen by the change in size and number of cells during the oestrus cycle.

7632 C

Comparison of Mammary Glands of Normal and Ovariectomized Rhesus Monkeys.*

S. B. D. ABERLE. (Introduced by E. K. Marshall, Jr.)

From the Carnegie Institution of Washington.

Four monkeys were ovariectomized for periods ranging from 7 days to 6 months before autopsy. The ovaries were sectioned and found complete. The mammary glands were carefully dissected at

* This investigation was partially subsidized by a grant from the Committee for Research in Problems of Sex, Division of Medical Sciences, National Research Council.

autopsy, fixed, stained, mounted, and compared with a group of 5 unspayed controls of the same average body weight. The gland-areas from the spayed animals were not determinably different from the gland-areas of the controls. One gland from a subject spayed 6 months before death contained almost no bud tissue. Although there was a wide variation in the amount of bud-tissue present, the ducts of these ovariectomized animals did not retrogress.

TABLE I.
Comparison of Mammary Gland Area from Normal and Ovariectomized Monkeys.

	Body wt. at castration gm.	Body wt. at autopsy gm.	Period of castration (days)	Area of mammary gland sq. dm.
		Ovariectomized		
9	5050	5050	7	.83
4	5175	5320	56	.77
1	4500	5305	181	.82
11	4825	4550	198	.84
Average	4888	5056		.82
		Control		
209		3600		.65
3		4625		.43
15		5655		.98
29		5655		.95
216		4115		.40
Average		4730		.68

7633 C

Size of Mammary Glands of Normal Rhesus Monkeys and Those Injected with Theelin, Corpus Luteum Extract, and Anterior Pituitary Extract.*

S. B. D. ABERLE. (Introduced by E. K. Marshall, Jr.)

From Carnegie Institution of Washington.

Eighteen female monkeys were used. Nine, averaging 2685 gm. in weight, were injected with various hormones; and 9, averaging 2732 gm., were kept as controls. The mammary gland of the monkey grows as a flat sheet of tissue in the connective tissue beneath the skin. The area of the gland increases from puberty to maturity. It serves as an indicator of size. Group A in Fig. 1 shows the area of the mammary tissue in the controls. The size varies from 0.02

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