

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 |

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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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to 0.24 sq. decimeter. Group B gives the area of mammary tissue from 2 animals injected for 9 days with a total of 2550 rat units of theelin. Group C shows animals injected for 9 days with 2550 rat units of theelin each and for 15 days with 1500 R.U. of corpus luteum extract each. Three animals (Group E) were injected for 44 days with a total of 9200 rat units of theelin.

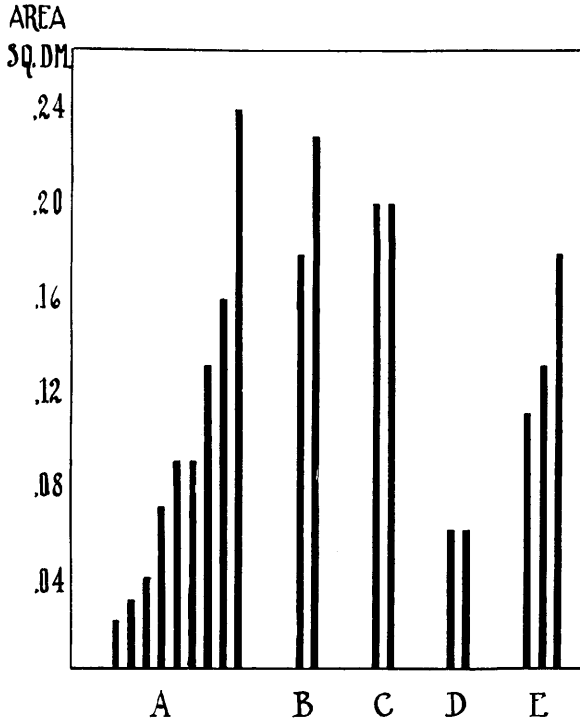


FIG. 1.

In order to discover whether follicular fluid from the monkey's own ovaries might have an effect upon the mammary gland, 2 animals (Group D) were given 4 cc. daily for 16 and 17 days of a crude alkaline extract from the anterior lobe of the pituitary gland.¹ The ovaries averaged 1.61 gm. in weight and were filled with medium sized follicles. The controls averaged 0.133 gm. in weight and showed only an occasional medium sized follicle. The area of the mammary glands was 0.06 sq. decimeter, which is within the range of the controls.

¹ The theelin and the crude alkaline extract from the anterior lobe of the pituitary gland was kindly supplied by Park Davis and Company, the corpus luteum extract by the Schering Corporation.

The buds branching from the ducts of the theelin-injected animals did not appear macroscopically to be increased in number compared with the parenchymal tissue of control animals. It is quite probable that larger doses over a longer period of time might show a marked effect.

The epithelium of the nipples in all of the injected animals was thicker than in the controls.

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Growth of Mammary Gland in the Rhesus Monkey.*

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

From the Carnegie Institution of Washington.

Thirty-one females and 3 male rhesus monkeys of a wide range of body weights were used. All were kept under observation for at least 4 months. No animal dying from a protracted illness or used for other experimental purposes was included. The area of the mammary tissue was measured and compared with the weight of the kidneys and ovaries. Since the mammary tissue in the macaque grows in length and width rather than in thickness, a measure of the area of the gland gives an index of the change in size.

In 12 animals the skin surrounding the mammary tissue was tattooed, a pattern was traced, the gland with the skin was cut along the tattoo marks, dissected free of muscle, and stretched on a flat piece of cork the exact size of the pattern. The skin from the center of the tissue was removed, leaving the gland surrounded by a frame of skin. After fixation and staining the size of the gland was compared to the size of the pattern. An average shrinkage of 7% was found. Since all glands were treated in the same way this shrinkage would not affect the comparison.

After the tissue was mounted a tracing of the gland was made. The tracing was taken as if a wheel of a half-inch diameter was run about the periphery, the pencil only marking the deeper indentations. The average difference between the areas of the right and left glands from the same animal was not significant. Where only one gland had been preserved its area was multiplied by 2. In order to determine the error in the method, 2 tracings were made from 10

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