17 (949)

The action of pituitrin on the secretion of the mammary gland.

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The administration of pituitary (posterior lobe) extract to a lactating animal by subcutaneous, intramuscular or intravenous injection causes an increased flow of milk from the mammary gland. In view of the fact that the response is so rapid (the latent period is usually from 20 to 30 seconds) it would not be unreasonable to suppose that the extract acts on the non-striped muscle of the gland, causing an expulsion of the milk already there, rather than on the secretory mechanism, leading to an increased production of milk.

Pituitary extract is known to contain a substance which excites non-striped muscle generally. The ducts and lactiferous sinuses of the mammary gland contain non-striped muscle and it is claimed by some that this tissue is also represented in the alveoli.

To determine whether the flow of milk which follows the intravenous injection of pituitrin is due to stimulation of plain muscle the following experiment was performed. A lactating female dog was anesthetized, cannulæ were introduced into the carotid artery and femoral vein, and the milk-flow recorded on a revolving drum by the exudation method of Schäfer and Mackenzie,[1] a blood pressure tracing being taken at the same time. One c.c. of a 1 per cent. solution of barium chloride was injected into the femoral vein; this was sufficient to produce a marked rise in blood pressure and a slowing of the heart, but there was no increase in the rate of milk flow. Shortly afterwards 1 c.c. of Parke, Davis & Co.'s pituitrin was injected into the vein; this was followed by a rise in blood pressure and at the same time a copious flow of milk.

This simple experiment would seem to prove that the action of pituitrin on the mammary gland is secretory rather than muscular.

[1] Schäfer and Mackenzie, *Proc. Roy. Soc.*, B, Vol. 84, 1911, p. 16.