

## LETTERS TO THE EDITORS

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### Terminology for Use in Lactational Physiology

RECENT advances in the elucidation of the physiological mechanisms of lactation, particularly those mechanisms concerned in the transfer of milk from the mammary glands to the young, have revealed inadequacies and ambiguities in the terminology in common use in relation to lactational physiology. An example of such an ambiguity is the term 'to suckle', which is at present being used to denote the activity of the lactating mammal or the young or both. In 1947, one of us<sup>1</sup> proposed a scheme, now generally adopted, which classified and defined the major physiological components of the total phenomenon which is called 'lactation', and which has done much to clarify terminology in this field. We should now like to put forward additional terms which, if generally accepted, we believe will render the above-mentioned scheme more comprehensive and will largely resolve the ambiguities still in existence.

The terminology we propose is as follows:

**Nursing.** The behaviour of the lactating mammal in promoting access of the young to the nipples or teats.

**Suckling (milking).** The activity of the young (or operation of the milking device) with the aim of obtaining milk from the mammary glands.

**Suckling (milking) stimulus.** The sum of stimuli applied to the lactating mammal by suckling (or milking).

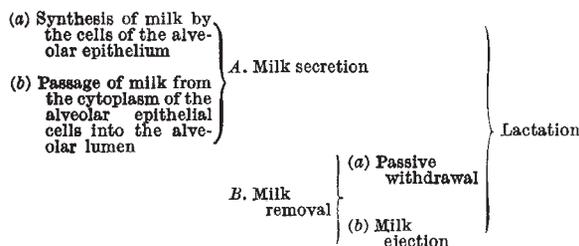
**Alveolar milk.** The milk stored in the lumina of the alveoli and ducts of fine calibre.

**Sinus milk.** The milk stored in the ducts of large calibre and lactiferous sinuses or cisterns.

**Passive withdrawal.** The removal of sinus (or cistern) milk which at low intramammary pressure can be brought about by the action of suckling or milking or by cannulation without the intervention of the special contractile tissue of the mammary glands.

**Milk ejection.** The effect of alveolar contraction elicited reflexly by the suckling or milking stimulus in mammary glands distended with secretion. It involves the movement of some alveolar secretion into the sinus or cistern (that is, alveolar discharge) thereby producing a rise in intramammary pressure (hitherto called 'let-down' or 'draught'). Milk ejection may or may not involve passage of milk to the exterior.

The scheme of Folley<sup>1</sup>, illustrating the phases of lactation may thus be extended as follows:



It is hoped that the terminology proposed will cover the phenomena formerly described by 'let-down', 'hold-up', and 'draught' in agricultural and medical circles, and that these latter terms will no longer be used, at least in scientific literature.

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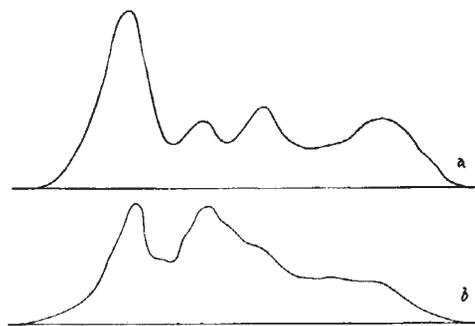
<sup>1</sup>Folley, S. J., *Brit. Med. Bull.*, 5, 142 (1947).

### Effect of Diseases on the Serum Albumin of Animals

It has been shown by a number of workers that, in the case of man, one of the effects of disease is a lowering of the albumin concentration of the serum<sup>1</sup>.

In our work on the electrophoretic composition of sera of sick animals, this finding has been confirmed. In all the conditions investigated—such as African horse sickness and equine trypanosomiasis; blue-tongue and heartwater of sheep; lumpy skin disease and east coast fever of bovines; and biliary fever and rickettsiosis of the dog—a considerable drop in the albumin concentration occurred during the acute phase of the disease. It has been noticed, further, that the faster-migrating albumin component was reduced to a much greater degree than the slower-migrating component, thus producing asymmetrical albumin peaks in the electrophoresis diagram. The electrophoretic heterogeneity of human serum albumin was shown by Hoch and Morris<sup>2</sup>. In addition, the slower-migrating albumin component in the diagram becomes much sharper. This is further evidence of the preferential reduction of the faster-migrating albumin fraction.

The influence of disease on the serum albumin in the horse is illustrated here in the case of African



Electrophoresis diagrams of the serum of the susceptible horse (a) before inoculation with horse sickness; (b) at the peak of the reaction to African horse sickness