To 100 cc. of water containing from 5 to 20 cc. of a 0.1 N solution of formic, acetic or butyric acid, 70 grams of magnesium sulphate was added, 2 cc. of 50 per cent solution of sulphuric acid, to assure strong acidity. Steam was passed through the salt mixture at such a rate that ten to fifteen minutes were required to collect each 100 cc. fraction of distillate. Six 100 cc. samples of distillate were collected. The volume of the salt solution was kept rigidly constant. Phenolphthalein was used as an indicator in titrating distillates. The rates of distillation of formic, acetic and butyric acids are as follows:

TABLE I. *Distillation of Volatile Fatty Acids.*

	100 cc.	200 cc.	300 cc.	600 cc.
	Per cent.	Per cent.	Per cent.	Per cent.
Formic	29	52	66	90
Acetic	63	86	93	98
Butyric	92	96	97	98

Mixtures of these acids when distilled under the above conditions showed rates in proportion to their concentration and their specific rates of distillation.

The advantages of the method are, that the acids are more rapidly distilled; that the solutions of acids contaminated by inorganic salts may be distilled, and that the difference in rate of distillation between formic and acetic acids is greatly increased.

This is a preliminary report.

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Effect of Cyclic Changes in Female Guinea Pig on Cell Proliferation in Epidermis.

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It occurred to us that the epidermis may be a tissue in which cell proliferation can be readily determined in a quantitative manner and that in this way a method might be worked out which would allow us to determine the effect of various conditions and substances on cell growth in general. We have therefore determined quantitatively the number of mitoses occurring in the epidermis of several species of animals and also the number of cells in the lower and upper layers of the squamous epithelium.

In this report we shall limit ourselves to a statement concerning the differences which we found in the mitotic proliferation of the epidermis of the guinea-pig in normal adult males on the one hand, and in females in various stages of sexual activity, on the other hand. We found that in adult female guinea pigs during the sexual cycle the mitotic cell proliferation is distinctly less active than in adult males otherwise living under the same conditions. It seems to be weakest at the time of oestrous and then rises very slowly towards the end of the cycle, without, however, reaching the average of the mitotic activity in the male even as late as 15 to 16 days following heat. In castrated female guinea pigs cell proliferation is low; we must assume that castration as such lowers the proliferative activity of the epidermis. On the other hand in pregnant guinea pigs it is definitely higher than in animals during the ordinary cycle, although it does not reach the average of adult male guinea pigs. This rise which takes place during pregnancy, to some extent is maintained during the period of nursing, although it is then not quite so high as during the former period.

We see thus that the changes taking place in female guinea pigs during the sexual cycle and even in pregnancy have a depressing effect on the proliferative activity of the epidermis. This effect is not caused by the sex constitution as such; this is shown by the fact that young, sexually immature female guinea pigs show at least as great a proliferative activity as males of similar age and perhaps an even greater activity.

This is a preliminary report.

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Notes on the Development of Lymphocytes.

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The author has noticed that fully matured lymphocytes, polymorphonuclear leucocytes and many other mononuclear cells will not grow in a tissue culture. Other reactions of these cells when compared with those of fixed tissues indicate that they have suffered decided changes from the mother cells from which they arise.

The migration of fixed tissue cells, including the mother cells of