

generally to human bile in concentration of major constituents. Its hydroxyl-ion concentration, however, is much greater.

*Summary.* The pH of guinea pig's bile has been determined and an analysis of the principal constituents has been made.

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#### Inhibition of Oestrus and of the Vaginal Response to Oestrone by Testosterone.

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Mature mice showing regular oestrous cycles were injected with 0.1 mg. of testosterone in 0.1 cc. oil twice daily. (I am indebted to Messrs. Ciba, Limited, for the supply of testosterone.) During the period of injections extending over 2 weeks or more oestrus was abolished. Following cessation of injections oestrous cycles were reestablished. Injected mice were placed with males for a week; no mating was observed and no vaginal plugs were found. Normal cycles were continued in control mice injected with oil alone.

Mature ovariectomized mice were injected with oestrone in doses sufficient to produce cornification, together with testosterone. The simultaneous administration of testosterone inhibited the oestrous reaction of the vagina. The oestrogenic effect of 0.0001 mg. of oestrone (a dose which produces cornification in 50% of our mice) was inhibited by 0.4 mg. of testosterone.

These findings show that there may be a direct antagonism between the female and the male hormones in their actions on the vagina of the female mouse, and are the more remarkable in that testosterone in large doses has been shown to produce oestrogenic effects in the infantile rat (Butenandt and Kudzus<sup>1</sup>).

Further experiments are now in progress to investigate quantitatively the relation between the actions of oestrone and testosterone on the vagina, and to determine whether other compounds with male hormone properties have effects similar to testosterone.

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<sup>1</sup> Butenandt, A., and Kudzus, H., *Hoppe-Seyler's Zeit.*, 1935, **237**, 75.