sulphuric or sulphuric-selenious acid, gives a greenish blue color in the chloroform layer in the 1.0% and in the 0.5% solution. The acid layer, however, does not differ in color from that obtained with non-irradiated ergosterol. In the 0.25%, 0.1%, 0.025% and 0.01% solutions of irradiated ergosterol the color responses were the same as those obtained with the same concentrations of non-irradiated ergosterol.

Irradiated cholesterol and irradiated ergosterol give in 1.0% and 0.5% chloroform solutions tests different from those obtained with the same sterols non-irradiated. Lower concentrations of the irradiated sterols give the same tests as the non-irradiated substances. These facts argue for the possibility that irradiation has produced a new compound which is present in small quantities in the higher concentrations, but which is absent altogether or present in too low a dilution to give the test in the lower concentrations.

5089

Stimulating Influence of the Anterior Pituitary Upon the Squamous Epithelium of the Cervix Uteri.

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The immediate and later results upon the ovaries and the uterus of the implantation of anterior pituitary substance, or of the injection of its growth-hormone into rodents (rat, mouse), as well as in dogs, has of late been extensively described in the literature. The acceleration of both the maturation of follicles and the formation of corpora lutea, as well as the hypertrophy of the uterine musculature under these conditions have recently been established by important experimental studies. (Evans,[1] Smith and Engle,[2] Zondek and Aschheim,[3] Putnam[4]) All of these investigators agree concerning the stimulating effect of the hormonic principle on the tissues enumerated.

In the present study evidence has been obtained indicating that an overgrowth of the squamous epithelium covering the vaginal

[1] Evans, H. M., *Harvey Lectures*, 1924, xix, 212.

[2] Smith, P. E., and Engle, E. T., *Am. J. Anat.*, 1927, xl, 173.

[3] Zondek, B., and Aschheim, S., *Klin. Wochensch.*, 1927, vi, 323.

[4] Putnam, S., *Archiv. Surg.*, 1929, xviii, 1708; *Am. J. Med. Sciences*, 1930, lii, 244.

portion of the uterus can be initiated by means of either repeated intraperitoneal administration of extracts or by intramuscular transplantation of bits of the anterior lobe of the beef. Adult guinea pigs have been used in these experiments exclusively. In one series of our experiments, double ovariectomy was performed 2 weeks prior to the administration of anterior pituitary extract, for whose preparation I am under many obligations to Dr. E. M. K. Geiling.

The proliferation of the squamous epithelium on the outer surface of the cervix is shown by the development of epithelial prolongations, which in places extend deep into the connective tissue; but no epithelial pearls are found in these areas. Occasionally, the invading epithelial columns are fronted by a slight small cell infiltration. Mitotic figures are scarce. The histologic appearance is very characteristic. The ablation of the ovaries appears to promote this process of proliferation, as it is more pronounced than when the ovaries are retained.

According to the generally prevailing nomenclature it seems correct to designate the condition as *leucoplakia,* and the researches of Pemberton,[5] Hinselmann[6] and v. Franqué[7] indicate that benign leucoplakia is to be regarded as a precancerous condition. An additional point demands special consideration. Recent studies on the development of the upper part of the vagina and of the cervix in human foetuses, by Koff[8] in the Carnegie Institute of Embryology, reveal the fact that at a certain period of development (126-150 mm. in length) a sudden phase of activity occurs in the vaginal cord, when areas of proliferating epithelium develop, which form excrescences from the original smooth wall. In some areas the growth is invading the stroma so actively that at first sight it appears almost malignant. It would, accordingly, appear that an almost complete analogy exists between a certain phase of the embryonic development of the cervix on one hand, and that noted in our observations on the other. In other words, the experimental data here recorded find their counterpart in a certain phase of intrauterine life. This would indicate that in the adult the squamous epithelium covering the vaginal portion of the cervix retains its primordial character and under the influence of certain stimuli may resume its embryonic type and potentialities.

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[5] Pemberton, F. A., *Am. J. Obst. and Gynecol.*, 1929, xvii, 126.

[6] Hinselmann, H., *Z. f. Geb. und Gyn.*, 1930, xcvii, 216.

[7] Franqué, O., *Centralbl. f. Gynaec.*, 1927, lvi, 822.

[8] Koff, A., to be published in *Contributions to Embryology* and *Reports of the Carnegie Institute,* Washington.

Possibly further studies will show that the response of cervical epithelium to the pituitary stimulus is due to its being a derivative of the coelomic epithelium.

5090

Hypoglycemia in Protracted Anaphylactic and Tuberculin Shock.

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When guinea pigs die in protracted anaphylactic shock,[1] death is usually preceded by a comatose condition with intermittent forced breathing and occasional convulsions. Sometimes this condition, in which the animals are insensitive to pain, lasts for several hours. These cases are suggestive that the comatose condition is produced by factors which are not present in the milder forms of the anaphylactic intoxication or in those cases where death occurs earlier after injection. The examination of the sugar content of the blood seemed indicated as the liver plays an important rôle in the production of protracted anaphylactic shock, also it is known that anaphylactic shock has a pronounced influence on the sugar content of the blood.[2] In addition in different bacterial intoxications hypoglycemia was observed.[3]

TABLE I.
Sugar Content of the Blood of Guinea Pigs Dying in Protracted Anaphylactic and Tuberculin Shock.

Guinea Pig		Interval Between Injection and Death. Hours	Sugar in the Blood
331	Protracted Anaphylactic Shock	3	.28
334		3	.22
373		2	.20
476		3¾	.03
473		6	.035
412		9	.03
156	Tuberculin Shock	3	.15
157		6½	.095
187		22	.08
484		4½	.025
486		5	.03
127		8	.03

[1] Dienes, L., PROC. SOC. EXP. BIOL. AND MED., 1930, xxvii, 690.

[2] Zeckwer, I. T., and Nadler, J. E., *J. Exp. Med.*, 1929, xlix, 481.

[3] Menten, M. L., and Kipp, H. A., *J. Infect. Dis.*, 1930, xlvi, 267.