standing at right angles to the *muscularis mucosæ,* which they do not perforate. The neck of these glands shows mucus cells.

The plexus of Auerbach at the neck of the spindle discloses thicker and apparently more numerous ganglion cell-aggregates than are generally found in the transverse and ascending colon.

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Continuation of secretion of the ovarian follicular hormone by the human corpus luteum.

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Our studies have demonstrated the presence of a hormone in the ovarian follicles of hens, swine, cattle, sheep and women.[1,2,3,4] These tests seem sufficient to indicate the expected non-specificity of this substance among different species. Repeated tests of similarly prepared extracts of *corpora lutea* of both oestrous and pregnancy from swine and cattle have shown that this hormone is not present in appreciable amounts in the fully formed corpora of these animals. These data seemed to warrant the general conclusion that the ovarian follicle produces the stimulus which periodically causes growth and secretion in the tissues of the genital tract, and that this function wanes rapidly or is lost after ovulation.

Since our earlier interpretations were made we have had an opportunity to extend our work to tests of human ovarian tissues, chiefly through the interest and co-operation of Doctor J. P. Pratt of the Henry Ford Hospital, Detroit. The results of these experiments, which are tabulated below, seem to indicate that the human *corpus luteum,* unlike that of the sow and the cow, continues the secretion of the follicular hormone for an appreciable period.

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[1] *Am. J. Anat.*, 1924, xxxiv, 133.

[2] *J. Biol. Chem.*, 1924, lxi, 711.

[3] *Am. J. Physiol.*, 1924, lxix, 577.

[4] PROC. SOC. EXP. BIOL. AND MED., 1924, xxi, 500.

TABLE 1.

Tests of human ovarian tissues for the presence of the follicular hormone.

Extract	Specimen	History	Volume	Results
IL	Liquor folliculi	Normal follicles (medium sized)	3.0 cc.	+
XL	Liquor folliculi (6 different samples)	Cystic follicles	5-30 cc.	+ (10 tests)
5C	Corpus luteum	2 wks. post menstrum	1.4 cc.	+
6C	Corpus luteum	3 wks. post menstrum	5.0 cc.	+
7C	Corpus luteum	3 wks. post menstrum	2.6 cc.	+
8C	Several corpora	(one corpus, after recent ovulation)	5.0– cc.	+
9C	Corpus luteum	25 dys. post menstrum	2.0 cc.	—
10C	Corpus luteum	No history	2.0 cc.	+
11C	Corpus luteum	1st month of pregnancy[5]		+
13C	Corpus luteum	2nd month of pregnancy	1.0 cc.	±
14C	Corpus luteum	3rd month of pregnancy	1.6 cc.	+

The material tested includes fluid aspirated from medium sized normal follicles and large follicular cysts,[6] and *corpora lutea* enucleated from the ovary at known intervals after the preceding menstrual period (three of these were corpora of early pregnancy). All tissues tested were removed at operation. The corpora were enucleated with very little adherent stroma, and after extraction sections were made for histological study. The liquor folliculi does not contain the total amount of hormone present in the follicle, for additional amounts may be extracted from the follicle cells lining the walls which are not removed by aspiration of the other follicular contents.

Extracts were made with lipoid solvents according to the method described for the preparation of the follicular hormone.[2, 4] It will be noted that in some cases the tissue extracted was less than 2 cc. in volume.

These extracts were tested (in some cases quantitatively) by injections into ovariectomized rats, as previously described.[1] A positive test means the induction of maximum oestrous growth

[5] Lipoid extracts of placenta (3 and 7 months and full term) and of two chorionic vesicles (6 weeks and 2 months) have also returned positive results.

[6] For three of these specimens we are indebted to Doctors Q. U. Newell and F. P. McNally of Washington University School of Medicine, St. Louis, Mo.

in the vaginal epithelium, which amounts to the addition of from 10 to 16 new layers of cells in 48 hours, and results in a cornification process in this tissue. This rapid growth in the vagina is correlated with a corresponding growth and secretion in the uterus.

Therefore, an active extract substitutes for this ovarian secretion instead of merely influencing the growth and secretion of the intact ovaries. This is the point we wished to make in attempting a distinction between this hormone as the "causative" mechanism and other possible "regulatory" factors in the growth changes in the female genital tract.[7]

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Observations on intravitam staining of centrifuged marine eggs.

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That living protoplasm cannot be stained has long been known but is not as yet generally appreciated. Because of the numerous cellular inclusions (granules, globules and vacuoles of various kinds) which do take up the dye, a cell stained *intravitam* may appear stained as a whole, but upon separating the inclusions from the protoplasmic matrix the latter will be found free from the dye. The relatively large eggs of certain marine invertebrates furnish excellent objects for demonstrating this fact, since by centrifugation the formed elements may be separated from the protoplasmic ground substance. If *Arbacia* eggs are centrifuged, the cell contents separate into four well-defined zones; the lipoid globules are massed at one pole, the pigment granules at the opposite pole; adjoining the pigment zone is a layer of granules of varying sizes, and between this and the mass of lipoid globules, a band of optically empty, homogenous cytoplasm. The width of these four zones depends, to a certain extent, upon the

[7] *Am. J. Anat.*, 1924, xxxiv, 161, 164.