analytical data of some representative fractions correspond to the following new compounds: dodeka-glycine ethyl ester (solvent: xylene at room temperature); trideka-glycine ethyl ester (solvent: xylene at boiling temperature); heptadeka-glycine ethyl ester (solvent: benzene at boiling temperature).

(2) On passing oxygen or hydrogen through free glycine ethyl ester, the liquid gradually solidifies. After standing several weeks, there were isolated hexadeka-glycine ethyl ester from the oxygen-treated ester and eikosi-glycine ethyl ester from the hydrogen-treated ester.

It appears that, under suitable conditions, glycine ethyl ester can be condensed into linear chains of considerable length. The products are hornlike and practically insoluble even in hot water.

As in the case of other high-condensation products, it should be borne in mind that, although the analytical data and the chemical properties found are in agreement with the formulæ given, they might correspond also to mixtures of hitherto unknown peptide ester homologues of high chain length.

(3) The ability to form linear chains is not confined to glycine ethyl ester; thus alanine ethyl ester (of which the only direct condensation product hitherto known was alanine anhydride) yields under suitable conditions, *inter alia*, condensation products which give a strong biuret reaction and seem to be alanine polypeptide esters.

Systematic experiments on the behaviour of various esters of the different representative amino-acids and their peptides are in progress.

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A Chromatographic Study of Lignite

WE find that the Tswett technique is appropriate for the accumulation and isolation of some interesting compounds occurring in lignites. Thus, light petroleum was allowed to percolate through 100 kgm. of lignite (coming from Várpalota, Hungary); the petroleum was sucked through a calcium hydroxide column. In this way the solvent is eliminated and the adsorbent shows different layers, especially under a quartz lamp.

After having eluted the upper half of the column by using alcohol – light petroleum mixtures, we kept the liquid at 0° and observed the formation of water-soluble needles or prisms (15 mgm.). This sample, a potassium salt, is a powerful reducing agent which apparently belongs to the ascorbic – reducing acid – reductone group. Dichlorphenol-indophenol, silver nitrate and selenic acid are instantly reduced at room temperature, but Fehling's solution is reduced only when heated. Iodine is decolourized rapidly in the cold. Ferric chloride produces a dark violet tint on the surface of the crystals.

If the filtrate of the salt mentioned above is washed free of alcohol and repeatedly chromatographed, a second, well crystallized but water-insoluble compound appears (150–300 mgm.) which seems to belong to the triterpene class. It gives the usual sterol reactions but is not precipitated by digitonine. Colourless prisms (from acetone), m.p. 244–247° (decomp., uncorr.); lævorotatory; molecular weight in camphor, close to 400.

The chromatographic investigation of raw extracts of lignite was facilitated by a broad pink zone in the column, which deepens and becomes dark wine red, by elutriation with alcohol. Furthermore, it slowly becomes light yellow when kept in an open flask; this change is rapid, however, if carbon dioxide is introduced. So far we have not succeeded in crystallizing the compound responsible for these phenomena, possibly because it is accompanied by abundant quantities of resin.

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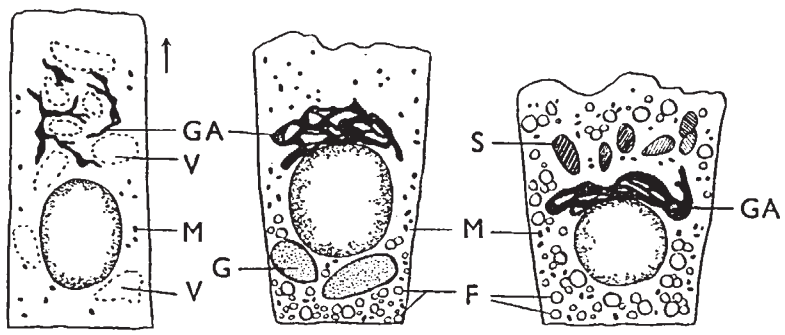
Cytology of the Human Uterine Gland Cell

ONLY one type of cell is to be found in the uterine glands. Some of these cells may be ciliated, but are otherwise like the non-ciliated cells. In the proliferative and premenstrual phases (*b*), the normal constituents of these cells are mitochondria (*M*), Golgi apparatus (*GA*), fat (*F*) and glycogen (*G*). No formed secretions otherwise are found. Throughout the entire intermenstrual period, the Golgi apparatus remains juxta-nuclear and confined, but at menstruation (*a*), in the deeper parts of the glands, which are not broken down, a diffuse apparently secretory phase begins (*V*), closely resembling the secretion phases of such glands as those of the epididymis or pancreas islet cells. The surviving postmenstrual uterine gland cells have a clear cytoplasm and small juxta-nuclear Golgi apparatus. Thus, except just at menstruation, no satisfactory evidence for secretion by uterine glands during the normal intermenstrual phases could be found. There is, as has been mentioned, extensive storage of fat (premenstrual) and glycogen, and the lumen of the gland often shows a material which stains well in muchæmatein and mucicarmine, whatever value can be attached to these methods.



But it is at pregnancy (*c*) that a true secretion (*S*) appears in the outer parts of the cells, in front of each Golgi apparatus. This is found in considerable quantities, and is in the form of droplets stainable in iron alum hæmatoxylin, and faintly in osmium tetroxide solution.