RESULTS

I - First group :

*** Histological picture (After Haematoxylin and Eosin staining):**

(1) Control :

a) Fundus:

The stomach wall was formed of mucosa which was thick due to presence of a mass of gastric glands, (Figs 1 & 2) extending deeply to the muscularis mucosa and between them was the lamina propria which was difficult to recognize as a separate entity because it was split up to occupy the spaces between the glands. The glands were simple, branched tubular, narrow, straight and perpendicular to the surface epithelium (Fig.2). As the stomach surface and pits of glands were lined by mucous secreting simple columnar epithelium, mucous neck cells of gastric glands were also present and tended to be irregular in shape as they were deformed by parietal cells (Fig.2). Zymogenic cells were pyramidal cells with basal basophilia and pale apical cytoplasm, with their nuclei nearer to the base. Parietal cells were ovoid and triangular cells with acidophilic cytoplasm and rounded central nuclei (Fig.2). However, the enteroendocrine cells couldn't be identified by Hx, E stain. Submucosa (Fig.1); was a loose connective tissue layer containing blood vessels, lymphatics and nerves. Musculosa was formed of an inner oblique, middle circular and outer longitudinal muscle layers (Fig.1). Serosa was the outer most layer covering a subserous layer of loose connective tissue containing blood vessels, lymphatics and nerves.

b) Pylorus

Pyloric mucosa showed deep pits was tortuous glands rarely sectioned along their length (Figs 3 & 3 A). Numerous mucous neck cells with pale cytoplasm, were observed.

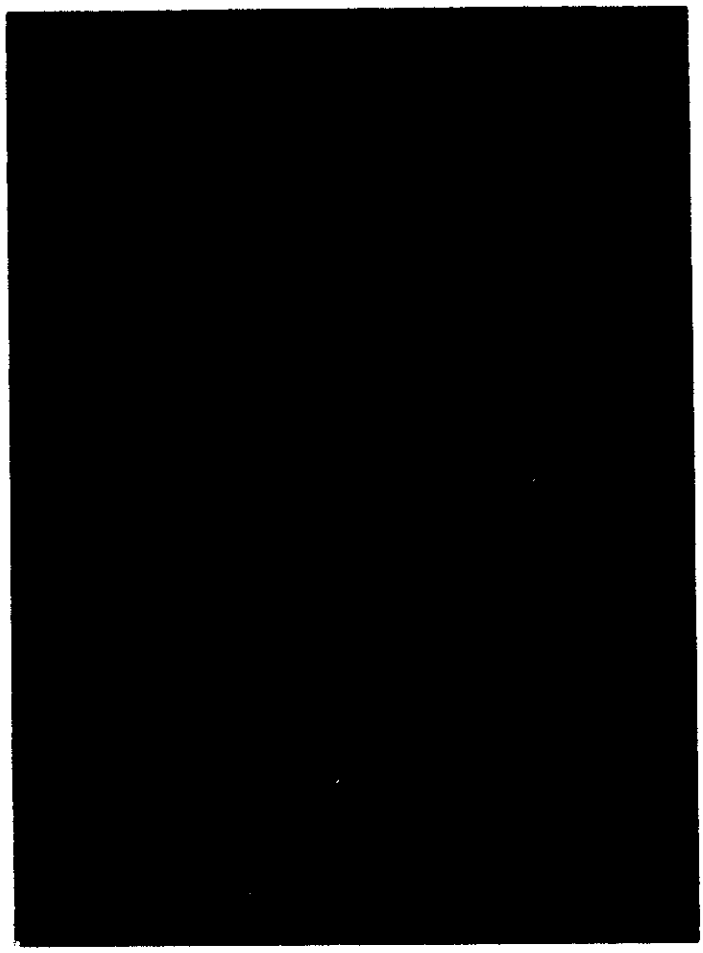

Fig. (1) : *A photomicrograph of a section in the fundus of the stomach of a control rabbit showing gastric glands (g), muscularis mucosa (B), submucosa (S) and Musculosa (M) with its 3 layers : inner oblique (0)Middle circular (C) and outer Longitudinal (L). (HX, E Proj..:10 Obj. :10).*

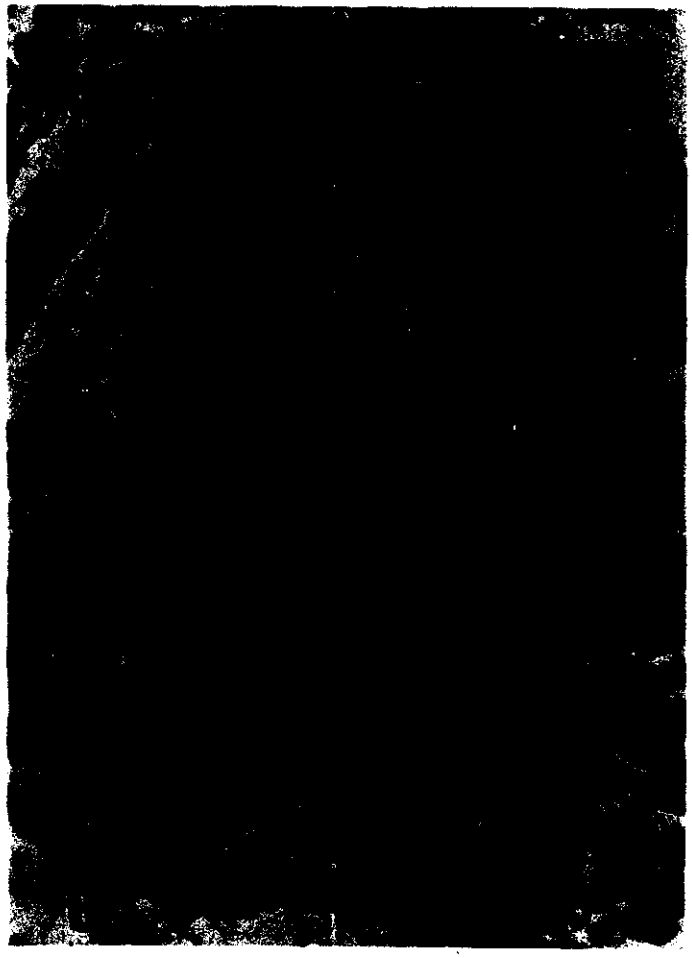

Fig. (2) : *A photomicrograph of a high Power magnification of the previous section showing gastric glands (g) Mucous neck cells (N), zymogenic cells (Z) and parietal cells (P) the muscularis mucosa (B). (HX, E Proj. : 10 Obj. : 40).*

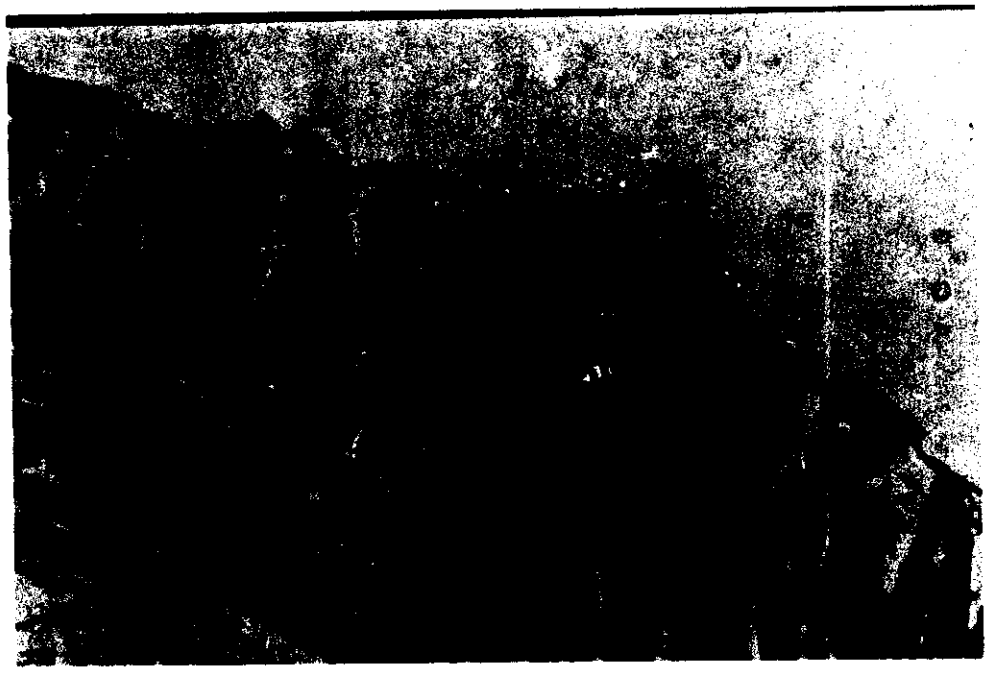

Fig. (3): *A photomicrograph of a section in the pylorus of a control rabbit showing pyloric glands (g) and ,apparently, numerous mucous neck cells with pale cytoplasm (m)*
(HX, E Proj : 10 Obj : 20).

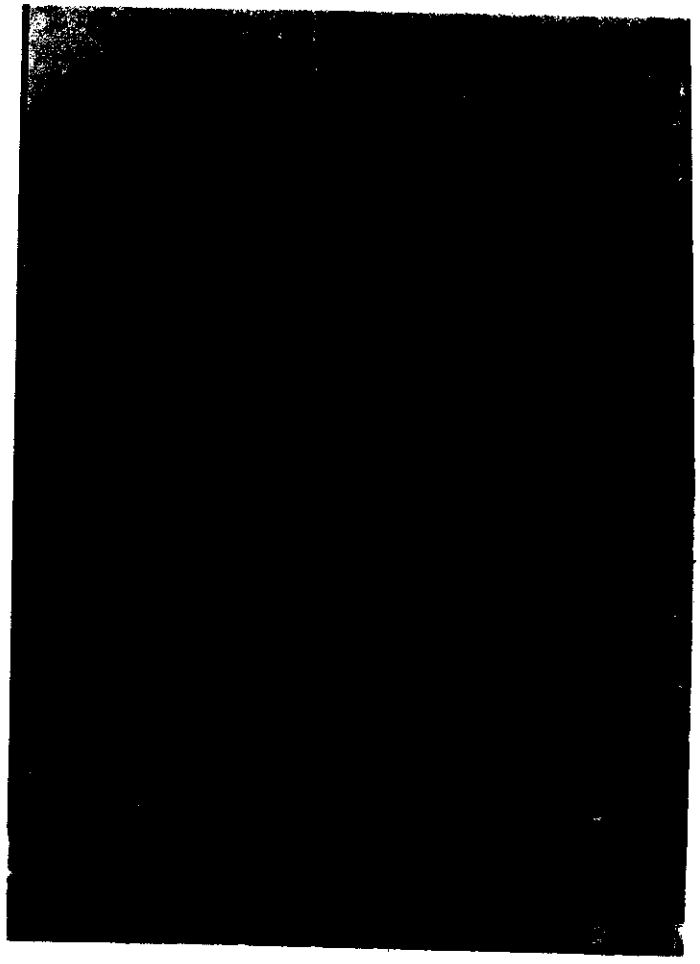

Fig. (3 A): *A photomicrograph of a high power magnification of the previous section showing pyloric glands (g) and mucous neck cells with pale cytoplasm (m).*
(H x, E. Proj. : 10 Obj. : 40)

c) Duodenum :

The mucosa was thrown into finger like projections called villi which were broad and leaf-like. Each had a core of connective tissue continuos with the corium and a central lymphatic capillary called central lacteal (Figs. 4&5). The covering epithelium was formed of columnar absorbing cells and goblet cells. Enteroendocrine cells were not easily identified in a heamatoxylin and eosin stained sections. Goblet cells had a clear vacuolated cytoplasm with expanded apex (Fig. 4). Crypts of Leiberkuhn appeared as simple tubular glands occupying the thickness of the corium (Fig.5). These appeared lined by columnar absorbing epithelium at their tops, goblet cells (Fig.5) & paneth cells at their bottoms which appeared as pyramidal cells with basophilic cytoplasm. Undifferentiated columnar cells and oligomucous cells were present in the crypts, with the first squeesed at their bottoms. Brunner's glands were lined by tall cubical cells with dark flattened basal nuclei and clear vacuolated cytoplasm & were present in the submucosa. Musculosa and serosa are the outer most layers.

d) Jejunum:

The villi were long and slender and goblet cells were more frequent (Fig 6).

e) Ileum :

It was provided with long slender villi with numerous goblet cells Each villus had a central lacteal (Fig.7).

f) Appendix :

The wall was thickened by an extensive lymphocytic infiltration. The crypts were short and few in number (Fig.8). They were lined by occasional paneth cells and many enteroendocrine cells. Goblet cells were few.

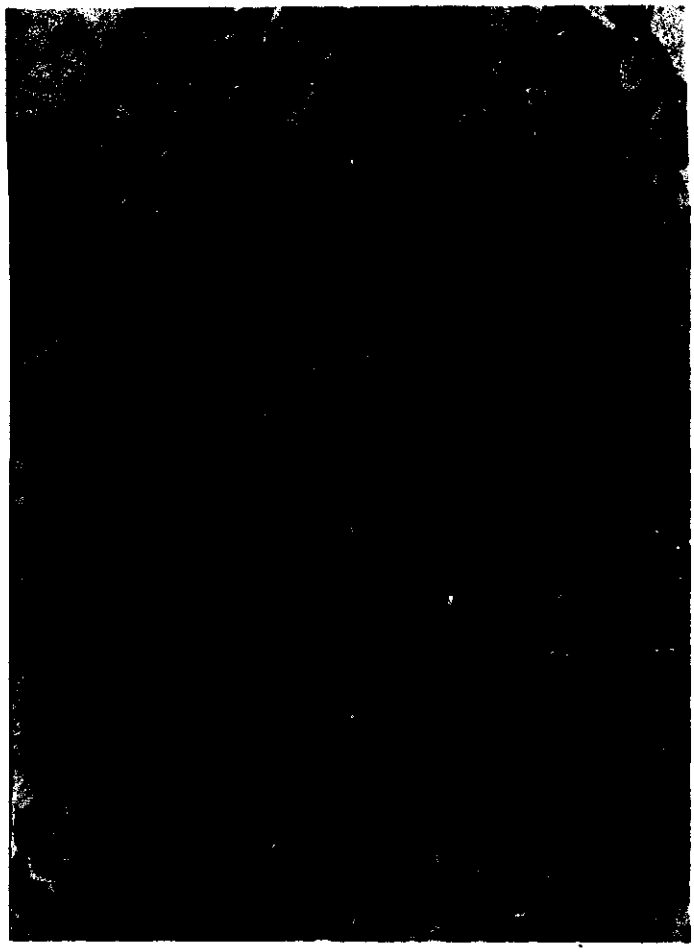

Fig. (4): *A photomicrograph of a section in the duodenum of a control rabbit showing surface columnar absorbing epithelium (e) with brush border, goblet cells (G), paneth cells (N) and central lacteal (C).*
(Hx, E Proj : 10 Obj : 40).

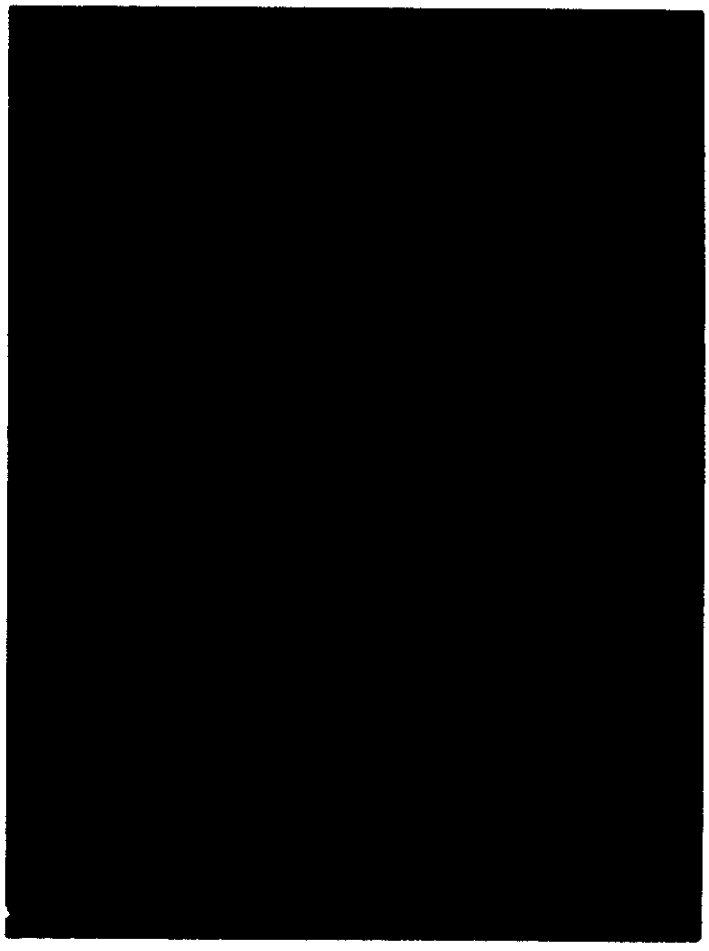

Fig. (5) : *A photomicrograph of a section in the duodenum of a control rabbit showing a crypt (R), Undifferentiated columnar and oligomucous cells (U) and Brunner's glands (g).*
(HX, E Proj : 10 Obj :40).

Fig. (6): *A photomicrograph of a section in the jejunum of a control rabbit showing villi (arrows), a crypt (R), surface columnar epithelium (e) and goblet cells (G).*

(HX, E Proj : 10 Obj : 40).

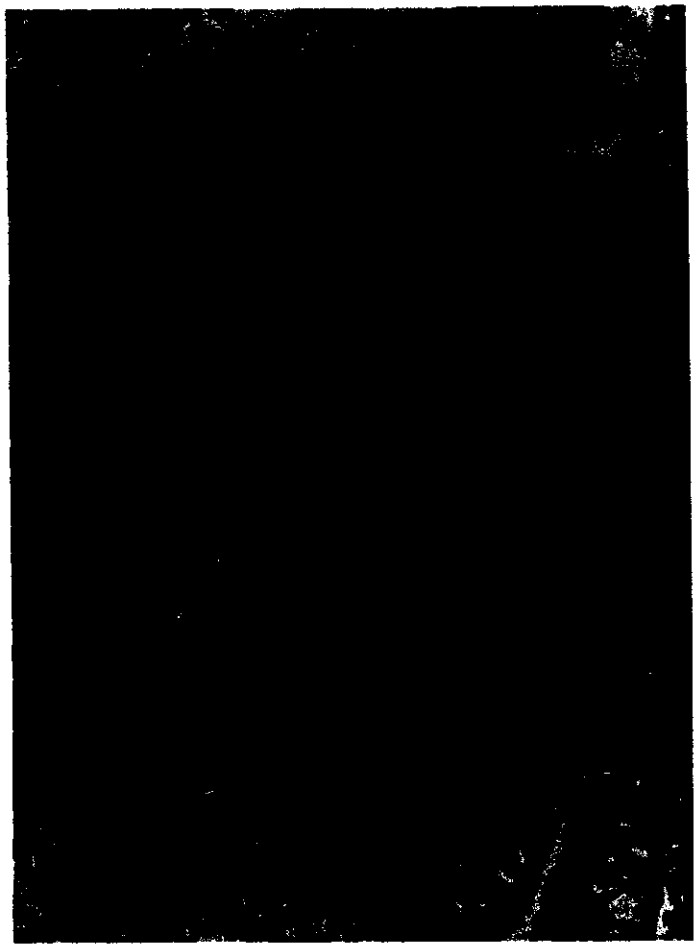

Fig. (7): *A photomicrograph of a section in the ileum of a control rabbit showing villi (arrows) with covering simple columnar absorbing epithelium (e) and goblet cells (G).*
(HX,E Proj : 10 Obj : 40).

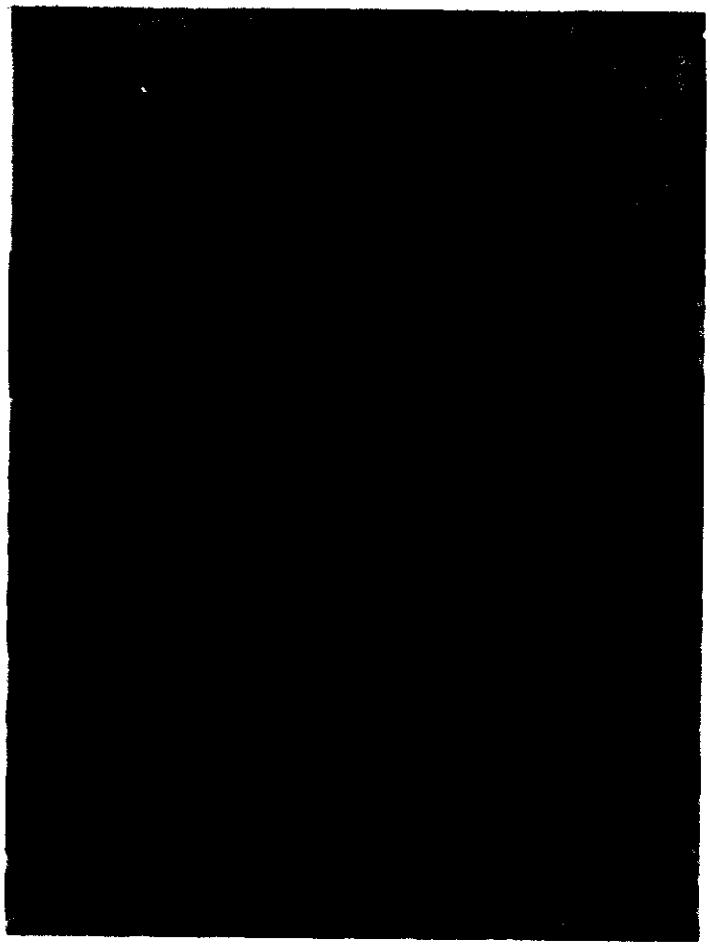

Fig. (8): *A photomicrograph of a section in the appendix of a control rabbit showing surface and crypt epithelium (e), goblet cells (G) and a crypt (R).*

(HX, E Proj : 10 Obj :40).

g) Colon :

The mucosa was folded and contained crypts only (No villi). The epithelial lining was a single layer of simple columnar epithelium with goblet cells (Fig.9). The crypts were lined by the same cells as in the small intestine except that there was no paneth cells. The corium was greately reduced by the numerous crypts.

h) Rectum :

The mucosa was similar to that of the colon but its crypts were longer (Fig. 10). The lining epithelium was a single layer of simple columnar cells with numerous goblet cells.

(2) Experimental (After 2 months of daily oral administration of Larodopa):

a) Stomach (Fundus & pylorus) :

The gastic mucosa became more thicker with widely dilated blood vessels (Figs.11&12). The gastric glands became more numerous, more tortuous with ,apparent, increase in number of the surface and lining epithelium.

b) Small intestine :

The mucosa showed folding of the villi. The covering epithelium and the enlarged goblet cells showed ,apperent, increase in number (Figs. 13&14).

c) Appendix :

The crypts were folded and became packed, with dilated vessels in between. The lining epithelium and the expanded goblet cells were ,apparently, numerous.

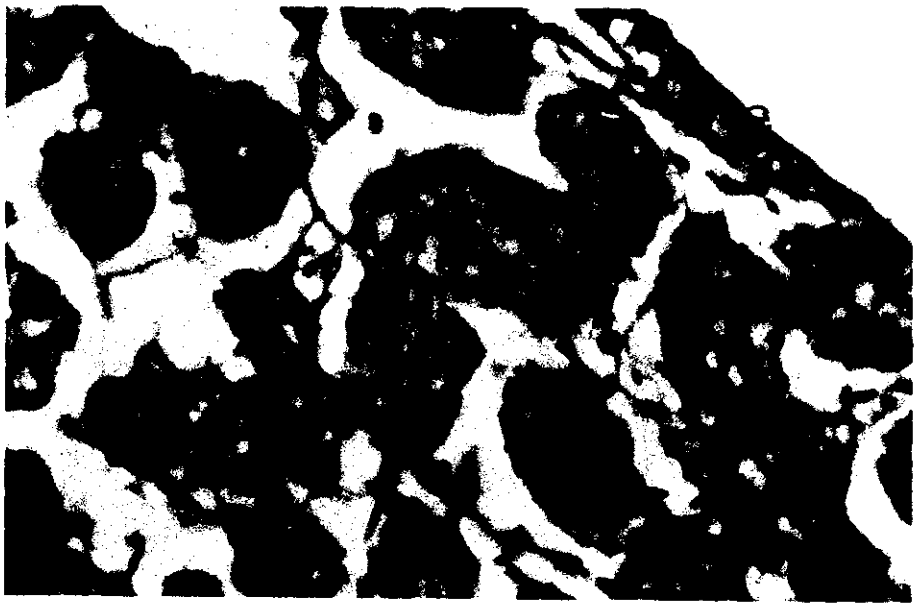

***Fig. (9)** : A photomicrograph of a section in the colon of a control rabbit showing surface epithelium (e) & crypts (R).*
(HX, E Proj : 10 Obj : 40).

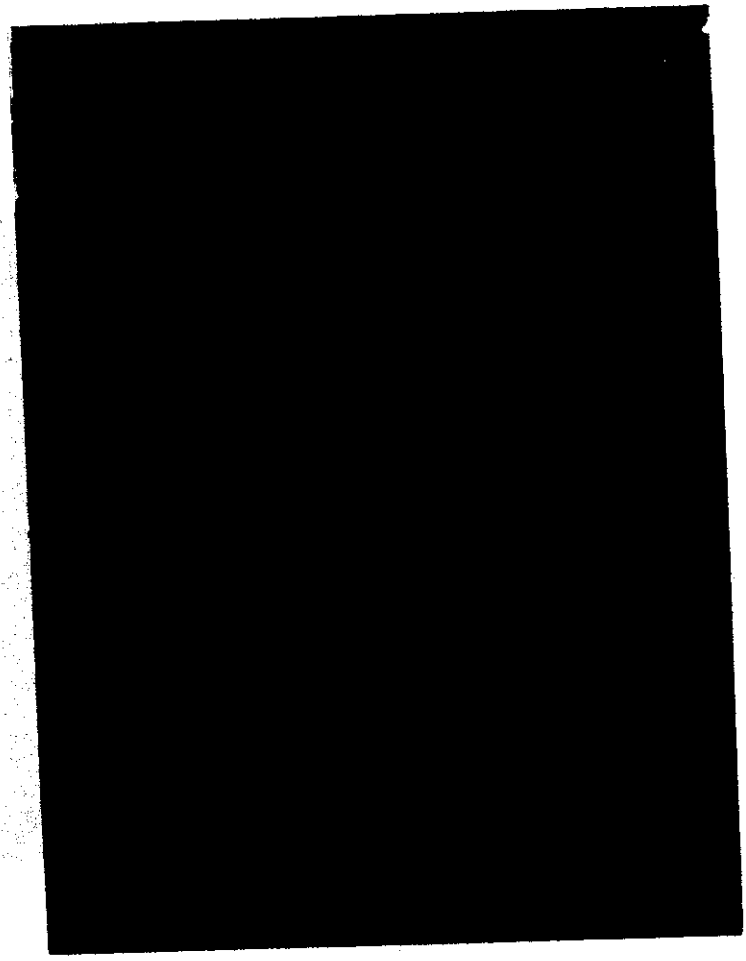

Fig. (10): *A photomicrograph of a section in the rectum of a control rabbit showing surface columnar epithelium (e) and crypts (R) (HX, E Proj : 10 Obj : 40).*

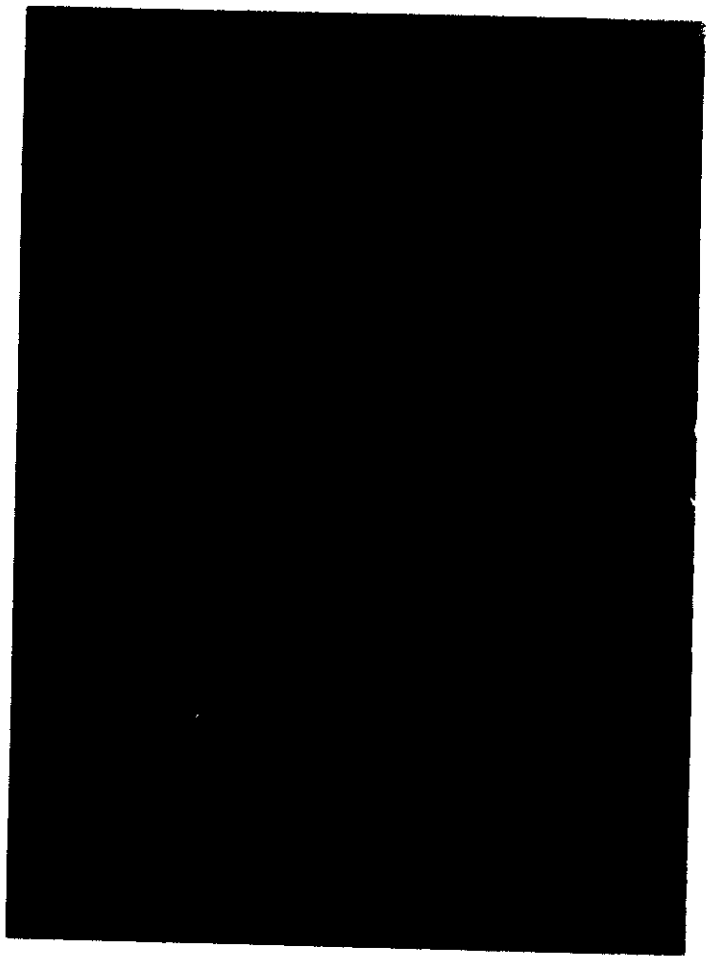

Fig. (12) : *A photomicrograph of a section in the pylorus of a rabbit after 2 months of daily oral administration of Larodopa showing that pyloric glands were more numerous and more tortuous (g), with ,apparent, increase in number of the surface and lining epithelium (e).*

(HX, E Proj : 10 Obj : 20).

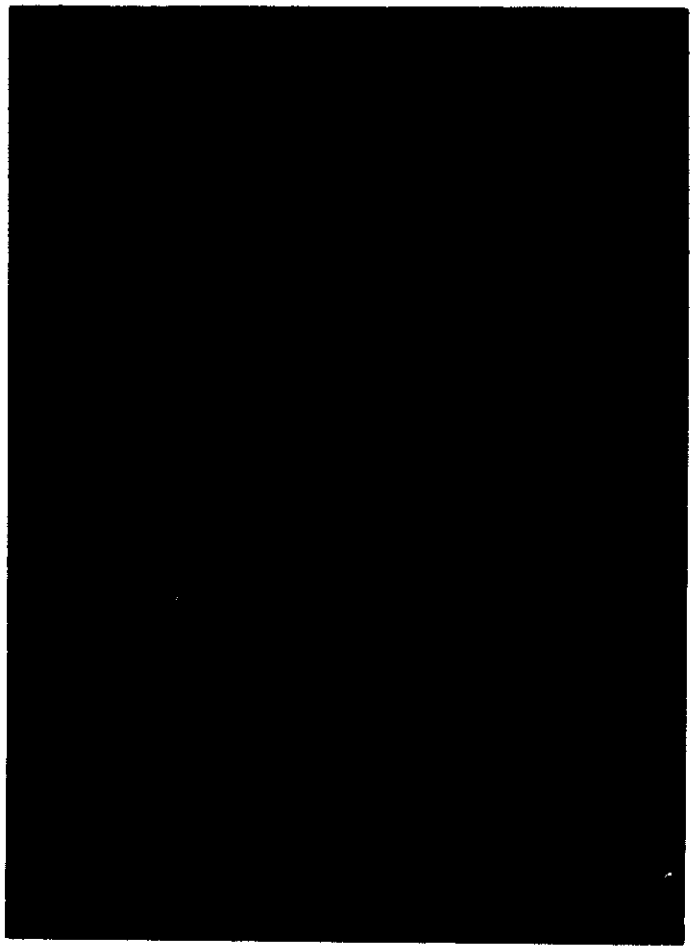

Fig. (13): *A photomicrograph of a section in the duodenum of a rabbit after 2 months of daily oral administration of Larodopa showing crowded villi (arrows) with ,apparent, increase in number of the covering epithelium(e).*

(HX, E Proj : 10 Obj : 40).

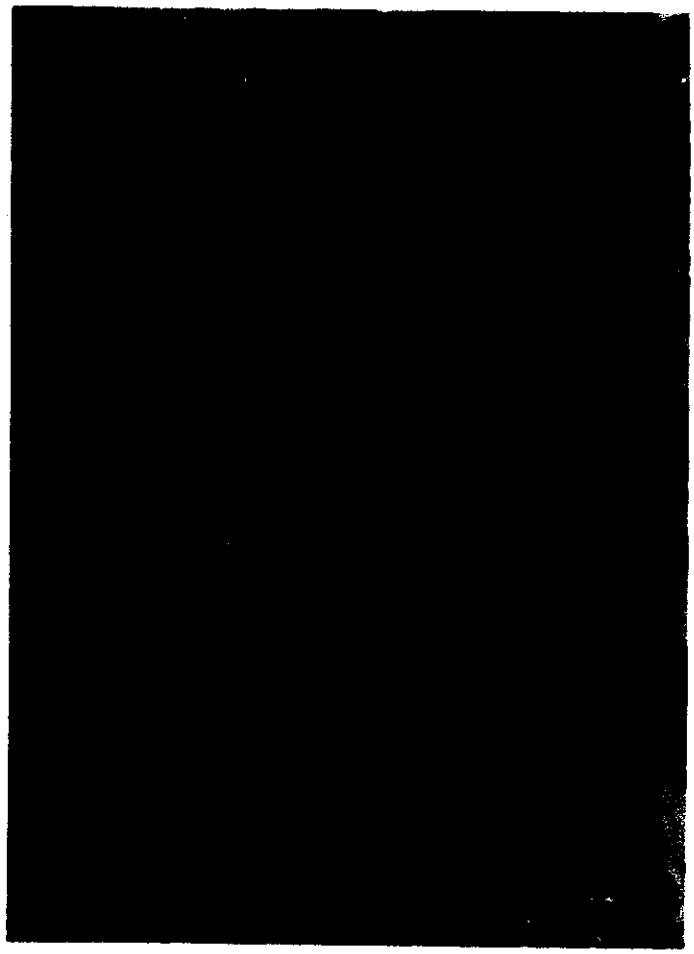

Fig. (14): *A photomicrograph of a section in the ileum of a rabbit after 2 months of daily oral administration of Larodopa showing ,apparent, increase in number of the epithelial cells (e) over the villi (arrows) and in the crypts (R).*

(HX, E Proj :10 Obj :40).

d) Colon & Rectum :

The crypts were folded and the epithelium showed expanded and ,apparently, numerous goblet cells (Fig. 15).

* Histochemical picture :

** Periodic acid-Schiff's reaction :

(1) Control :

a) Stomach :

The mucous cells in the gastric glands and some surface epithelial cells aquired a weak magenta red colour (Figs. 16 & 17).

b) Small intestine :

The goblet cells had a faint magenta red colour at the sides of the villi and in the crypts (Fig. 18).

c) Appendix:

Few goblet cells in the crypts had a weak magenta red colour (Fig.19).

d) Colon and Rectum:

Goblet cells were ,apparently, numerous in the crypts and had a weak magenta red colour (Figs. 20 & 21) at the surface epithelium and crypts.

(2) Experimental :

a) Stomach :

The surface epithelial cells and the mucous cells in the gastric glands acquired a moderate reaction as compared to the control picture (Figs. 22 & 23).

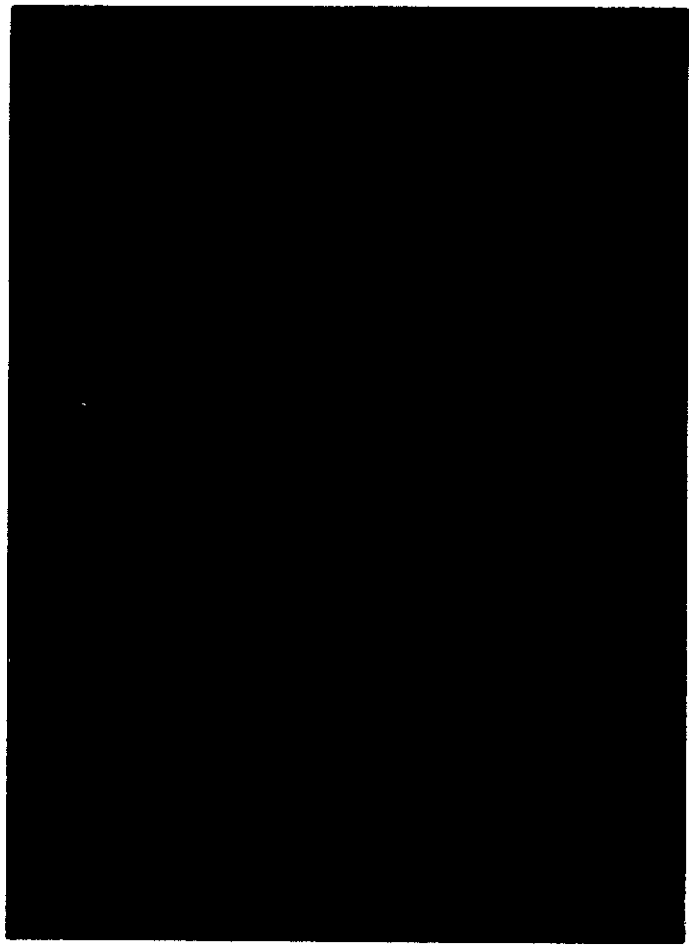

Fig. (17): *A photomicrograph of a section in the pylorus of a control rabbit showing a weak PAS reaction in the surface epithelial cells lining the foveolea of pyloric glands (e) and mucous secreting cells of pyloric glands.*

(PAs Proj : 10 Obj : 40).