RESULTS

A. HISTOLOGICAL RESULTS :

I- After Haematoxylin and Eosin stain :

The islets appeared at all age groups more or less as pale stained spheroidal masses arranged in the form of irregular anastomosing cords of epithelial cells. Nuclei of some cells were markedly vesicular and their chromatin contents was poor. Other nuclei were less vesicular and contained richer amounts of chromatin.

No granules could be detected in the cytoplasm of the cells.

Numerous blood sinusoids were closely applied to the cords of epithelial cells.

The islets were closely surrounded by pancreatic acini (Fig. 1).

II- After modified Aldehyde-Fuchsin stain :

The following types of cells could be identified :

Fig. (1) :

A photomicrograph of a section in the pancreas of an albino rat (two weeks old) showing an islet of Langerhans with the cord-like groups of islet cells separated by blood sinusoids (Hx and E stains, x proj. : 10 x obj. : 40).

A-cells :

The nucleus was rounded or elliptical and usually eccentric in position.

The nucleus was markedly vesicular and its chromatin content was poor and distributed into few small spherical masses (Fig. 2).

At birth, the A-cells were few and they increased gradually with increasing age but still ranged next to B-cells. They were present usually at the periphery of the islets (Figs.3, 4 and 5).

B-cells :

The nucleus was rounded and centerally placed inside the cytoplasm.

It was less vesicular than the nucleus of the A-cells and it contained a richer amount of chromatin. The chromatin was usually seen in the form of fine strands forming a network. At birth, the islets were formed mainly of B-cells (Fig. 3).

Fig. (2) :

A photomicrograph of a section in the pancreas of an albino rat (one week old) showing A-, B- and D-cells of islet of Langerhans.
(modified Aldehyde-Fuchsin, x proj. : 10 x obj.: 100).

Fig. (3) :

A photomicrograph of a section in the pancreas of an albino rat (one day old) showing an islet of Langerhans formed mainly of B-cells. (modified Aldehyde-Fuchsin, x proj. : 10 x obj. : 40).

Fig. (4) :

A photomicrograph of a section in the pancreas of an albino rat (one month old) showing A-,B- and D-cells of an islet of Langerhans.

Note : that the A-cells are increased in number than in one day old.

(modified Aldehyde-Fuchsin, x proj. : 10 x obj. : 40).

Fig. (5) :

A photomicrograph of a section in the pancreas of an albino rat (one year old) showing A-,B- and D-cells of an islet of Langerhans. The A-cells usually found toward the periphery of the islet.

Note : that the A-cells are increased in number than in one month old.

(modified Aldehyde-Fuchsin, x proj. : 10 x obj. : 40).

The B-cells decreased gradually with increasing age. They were usually located in the center of the islet.

D-cells :

These were the least numerous type of the cells of the islet.

They were characterized by their small size. The nucleus was deeply stained and occupied almost the whole cell body (Fig. 2).

III- After Gomori's Reticulin :

Groups 1, 2 and 3 :

The islets of Langerhans were covered by thick layers of reticular fibers sparating them completely from surrounding acini. Some reticular fibers were found inside the islets (Fig. 6).

Groups 4, 5 and 6 :

The reticular fibers formed well defined capsule completely surrounding the islets of Langerhans but its thick-

Fig. (6) :

A photomicrograph of a section in the pancreas of an albino rat (one day old) showing a thick complete capsule of R.F. around an islet.
Note : that some R.F. are present inside the islet around its blood vessels (arrows).
(Gomori's Reticulin, x proj.: 10 x obj.: 40).

ness was less than previous ages. Some reticular fibers were scattering inside the islets (Fig. 7).

Groups 7 and 8 :

The thickness of the reticular fibers was markedly reduced than the previous ages to form a very thin layer around the islets (Fig. 8).