Parietal & Chief Cells in Stomach

Parietal cells (also called oxyntic cells) are large, eosinophilic cells with central nuclei (A or arrow heads) located peripherally along the wall of the gastric gland found in the fundic and main body of the stomach. They secrete hydrogen ions and chloride ions into lumen and are responsible for maintaining the acidic pH of the gastric lumen. They secrete bicarbonate ions into the interstitial space. These ions form a bicarbonate tide that protects the stomach wall from the effects of potential breaks in the epithelial lining. Any leaking of acid from the lumen would be quickly neutralized by the bicarbonate ions. Lastly, parietal cells synthesized and secrete intrinsic factor which aids in the absorption of vitamin B12 by the ileum. Chief cells (B or arrow) are located, in cluster, at the base of the glands. They synthesize and secret hydrolytic enzymes, which are activated at acid pH. These enzymes include gastric lipase, rennin and pepsin, which is secreted as pepsinogen and activated in the lumen. Pepsin hydrolyzes proteins. Rennin breaks down milk proteins and lipase initiates the digestion of fats. H&E stains. Top: x200. Bottom: x400.