

the lingual nerve, central to the origin of the chorda tympani, and the lingual nerve is divided central to the ligature. Two ligatures are passed under Wharton's duct and one is tied. The chorda tympani is stimulated with tetanizing shocks from the induction coil. Wharton's duct—the duct of the submaxillary gland—fills with saliva and a fine cannula is inserted into it. Stimulation of the nerve will cause the saliva to flow very rapidly. The gland is exposed a little behind the posterior angle of the lower jaw bone, and is closely observed before and during stimulation of the chorda. During stimulation of the chorda the gland becomes flushed because of the dilation of its blood vessels, showing the presence of vasodilator nerves in the chorda tympani.

If the cannula in the duct be attached to a mercury manometer, continued stimulation of the chorda tympani will show that the saliva is secreted from the gland with greater force than that exerted by the arterial blood pressure, as shown by the fact that the manometer attached to the duct will register a greater pressure than that shown by the arterial manometer. This experiment demonstrates the fact that saliva is not filtered from the blood into the salivary tubules.

B. Action of Secretin on Pancreatic Secretion (see p. 72).

Through an incision in the linea alba and after applying ligatures, about two feet of small intestine is removed and washed out under the tap. Open it and with a scalpel scrape off the mucous membrane. Macerate the scrapings with 200 c. c. of 0.4 per cent hydrochloric acid and some sand in a mortar. Transfer to a heater and bring to the boiling point.

While boiling, add weak caustic soda until the reaction is almost neutral, but still faintly acid. Filter through muslin. The resulting extract contains secretin. A cannula is introduced into the main pancreatic duct. This is done by pulling the duodenum out through the wound and by blunt dissection, separating the main duct from the pancreas. This duct lies in the dog about a finger's breadth above the point where the head of the pancreas leaves the duodenum. A ligature is placed under it and the duodenum is opened by an incision along its free border. The cannula is then inserted through the opening of the duct in the duodenum, this opening being marked by a papilla. It is then tied in place by means of the previously applied ligature.

The drops of the secretion, if any, are counted. 20 c. c. of the secretin is injected into the femoral vein. The effect is to produce an increase in the secretion. Also the effect of the injection on the respirations and the blood pressure and pulse should be noted. The injections, using larger amounts if necessary, are repeated.