group comprises additional types, which are antigenically different from the Andrewes-Inman types, V, W, X, Y, and Z, further experiments are necessary in order to determine whether or not antigenic relations exist between *Shigella alkalescens* and the remaining types of the *Shigella paradysenteriæ* Flexner group.

In conclusion, *Shigella alkalescens* contains in addition to antigenic components in common with *Shigella paradysenteriæ* Flexner, an antigen that is not shared by the Andrewes-Inman types V, W, X, Y, and Z of *Shigella paradysenteriæ* Flexner and that apparently is characteristic of itself.

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Functional Activity of Pancreatic Ampulla in Rabbit.

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In rabbit, the pancreatic ampulla is entirely separate from the biliary ampulla and its functional activity has not been described as far as we know; moreover both ampullae may be studied at the same time. This structure is located about 15 cm distal to the bile ampulla and varies between 5 x 3 and 7 x 3 mm. After exposure under sodium barbital narcosis little or no activity is generally seen. Intravenous injection of a crude "secretin" mixture, not assayed for histamin, in 0.5 cc per kg doses brings about a series of events in the pancreatic ampulla that are similar in general to observations made on the biliary ampulla by Westphal in guinea pig, rabbit and cat[1] and by Burget and Brocklehurst in guinea pig.[2] After a latent period of 15-30 seconds, a contraction less than 0.5 mm in width appears at the junction of the pancreatic ampulla and duct. This blanched area then relaxes, but the contractions reappear with increased frequency and increased strength, often involving more of the duct, until finally a peristaltic wave of contraction beginning at the duct sweeps over the entire ampulla changing it into a grayish-white, linear, puckered mass. Such a complete contraction may persist for 1-2 seconds and then relaxation sets in. The relaxation betrays itself as a pink flush that generally proceeds from the distal

[1] Westphal, K., *Z. f. Klin. Med.*, 1923, **96**, 52.

[2] Burget, G. E., and Brocklehurst, R. J., *Am. J. Physiol.*, 1927-28, **83**, 578.

end of the ampulla to its junction with the duct; occasionally the relaxation apparently occurs at the same time throughout the contracted area. The number of separate contractions and relaxations may reach 10 per minute but only a fraction are complete. The contractions persist in decreasing number for about 10 minutes; occasionally for more than 20 minutes.

The adjacent duodenum may or may not follow an ampullar contraction with a contraction of its own. Frequently either duodenum or ampulla may contract without involving the other.

After slitting the duodenum (cautery) the pancreatic ampulla is seen as a grayish-pink knob. With a complete contraction, this knob becomes slightly more prominent, an oval slit appears in its proximal side and a small amount of clear fluid is expelled with more or less abruptness. During issue of this juice the knob pales and becomes less prominent; the opening disappears after expulsion of the secretion.

The same course of events is seen in the *bile* papilla of rabbit. Relaxation is observable with greater ease because the bile papilla is larger. The relaxation generally proceeds as a pink blush from the distal end of the papilla to the choledochoduodenal junction; in the same animal, however, the relaxation may at times begin at both ends of the papilla, or the relaxation travels, like the contraction wave, from the choledochus junction to the tip of the papilla.

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Degree of Immunological Specificity of the Nondialysable Growth Products of *Eberthella, Salmonella, Brucella,* and *Proteus.*

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Morell and Shwartzman[1] recently reported the successful use of dialysis in the preparation and purification of certain immunologically active bacterial products, particularly those of the meningococci. From their work it would appear that nondialysates of this kind carry a rather high degree of specificity. It was with the idea of improving upon the specificity of the Weil-Felix reaction that the work here reported was begun. Using their methods, we were

[1] Morell, S., and Shwartzman, G., *Science,* 1937, **86**, 130.