

Sections of a cat's aorta placed in the carotid of a dog, showed at the end of twenty days a very slight loss of elastic tissue, with the beginning of a break down of the individual muscle fibers, and proliferation of new fibrous connective tissue.

These observations of the behavior of the elastic tissue add weight to the general proposition that the cells of vessels transplanted from one animal to another of a different species do not actually survive, but are gradually broken down and absorbed, this process usually being slow enough to allow of sufficient new fibrous connective tissue formation (probably by the tissues of the host) to permit the function of the vessel to be maintained for a considerable period of time at least. The ultimate fate of such transplanted segments can be determined only by more protracted experiments.

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**Note upon the supposed presence of a gastric hormon
in the salivary glands.**

By **A. S. LOEVENHART** and **D. R. HOOKER.**

[*From the Physiological Laboratory of Johns Hopkins University.*]

There was published in the Proceedings of this Society in June of last year¹ a statement of the results of clinical and experimental observations upon the influence of the salivary glands on the secretion of normal gastric juice. It was stated that in four cases of Mikulicz's disease, uncomplicated, no gastric juice was secreted during the disease. The experimentally analogous condition brought about by removal of all the salivary glands in dogs also gave the same result, namely, a permanent stoppage of the normal gastric secretion. It was stated that when food, insalivated by other healthy dogs, was given to such animals no flow of gastric juice followed. If, however, extracts made of salivary glands from normal dogs, were injected, either intravenously or intraperitoneally, a temporary resumption of gastric secretion occurred after, as well as before, section of all extrinsic nerves to the stomach. The author, as the result of these observations, concluded that the normal gastric secretion depends in part upon an internal secretion of the salivary glands.

¹ Hemmeter: This Journal, 1907, iv, p. 153.

In view of the importance both of the results and of the conclusions presented in this communication, any attempt at confirmation of them would seem worthy of brief notice. An opportunity to make this attempt was given us through the kindness of Dr. Cushing who furnished us with two dogs with simple gastric fistulæ.

It was therefore decided to make a few experiments with the idea of testing directly whether or not extracts of the salivary glands are capable of stimulating a flow of gastric juice. If Hemmeter's main contention be correct, it would be supposed that the gastric hormon obtained by extracting the salivary glands should produce a decided effect upon the secretion of gastric juice, when introduced directly into the blood of a living animal. It is to be noted that in our experiments extracts were made only of the submaxillary gland, and that these extracts were injected intravenously only into normal animals, not into animals with the salivary glands removed.

It may be stated at once that the results of these experiments were entirely negative, and, so far as they go, they fail to corroborate Hemmeter's view of the presence of a gastric hormon in the salivary glands. The details of the experiments are as follows:

Dog 1. *Operation.* Simple gastric fistula. Wound healed *per primum*.

Extract. Two submaxillary glands from a healthy dog which died during the first operation under morphin-ether anesthesia, the glands being removed immediately after death. Glands at once (5.30 P. M., Nov. 9) macerated with sand in 0.7 per cent. NaCl, boiled and filtered. Put sterile in ice-box. Again filtered and sterilized before injection.

November 11, 1907. Animal appeared to have distemper; feverish with slight discharge from eyes and nose. Was thin and janitor said had little appetite. Last food twelve hours previously. 3.45 P. M. Stomach catheterized and found empty. Dog allowed to run about room. 4.00. Catheterized. About 15 c.c. clear juice with a few fine flocculi. 4.15. Catheter continuously in stomach. Dog quiet and contented. Ear vein exposed by slight skin incision. 4.30. About 15-20 c.c. salivary extract injected intravenously. No juice. 4.50. Dog allowed to smell cracker. Gush of a few drops of fluid from catheter coincident with act.

Flow did not continue. 5.00. Dog allowed to smell meat. About 10 c.c. clear juice with a few fine floculi. 5.15. Dog allowed to eat meat. Rate of secretion apparently not increased.

The animal stood whole procedure well and showed no ill effects afterwards. Died Nov. 13, 1907.

Dog 2. *Operation.* Simple gastric fistula. Wound healed *per primum*.

April 6, 1908. Dog fasted for past thirty-six hours. 11.15 A. M. Stomach catheterized; 0.9 c.c. of fluid removed. 11.45. Left external jugular vein exposed under light chloroform anesthesia and 5 c.c. of 0.7 per cent. NaCl injected intravenously. 11.50. Stomach catheterized; 3.3 c.c. of fluid removed. Dog allowed to run about. Not uncomfortable from the chloroform. 12 M. Stomach catheterized. No fluid removed. Showed and allowed to smell raw meat for 10 minutes. 12.10 P. M. Stomach catheterized; 4.3 c.c. of fluid removed. 12.15. Dog given full meal.

April 8, 1908. Dog fasted for past thirty-six hours. 2.45 P. M. Stomach catheterized; 3 c.c. of fluid removed (*specimen C*). 3.00. Stomach flushed with tap water. 3.10. Left external jugular vein exposed under light chloroform anesthesia and 8 c.c. submaxillary extract injected intravenously. (The glandular extract was prepared as follows: The two submaxillary glands were excised from a perfectly healthy dog under morphin-ether anesthesia, macerated with sterile sand in sterile 0.7 per cent. NaCl, and filtered through cloth.) 3.35. Catheterized; 9 c.c. of fluid removed (*specimen B*). 3.40. Showed and allowed to smell raw meat for ten minutes. 3.50. Catheterized; 9 c.c. of fluid removed (*specimen A*).

The three specimens of gastric fluid thus obtained were analyzed by one of us without knowledge of the foregoing procedure. *The results of this analysis were as follows:*

April 8, 1908. Analysis of gastric juice from dog with gastric fistula. 1 c.c. of the unfiltered juice was titrated with N/20 NaOH for the total acidity (phenolphthalein) and free HCl (dimethyl-amidoazobenzol).

Specimen A.	Total acidity = 1.95 c.c. N/20 NaOH
	Free HCl = 1.30 c.c. “

Specimen B. Total acidity = 0.90 c.c. N/20NaOH.
 Free HCl = 0.20 c.c. “
 Specimen C. Total acidity = 1.26 c.c. “
 Free HCl = 0.20 c.c. “

Digestive power (Metz tubes); twelve hours at 39° C.

A (with addition of acid).....good digestion.
 B (with “ “ “).....good “
 C (with “ “ “).....good “
 A (without “ “ “).....good “
 B (without “ “ “).....no “
 C (without “ “ “).....no “

C = material found in stomach after fasting.

Conclusion; B and C are identical.

April 10, 1908. Dog fasted for past thirty-six hours. 3.00 P. M. Catheterized; 8.6 c.c. of fluid removed containing much dark mucus (*specimen A*). 3.01. Deep chloroform anesthesia. Right external jugular vein exposed. 3.15. Catheterized; 3.4 c.c. of fluid removed (*specimen B*). 3.20; 5 c.c. of submaxillary extract injected intravenously. (The glandular extract was prepared as before.) 3.25. Catheterized; 8.8 c.c. of fluid removed (*specimen C*). 3.26. Showed and allowed to smell raw meat. 3.30. Catheterized; 5.3 c.c. of fluid removed (*specimen D*).

The results of chemical analysis, under the conditions as before, were as follows:

April 10, 1908. Four samples of gastric juice from dog with fistula. The titrations were done with N/20 NaOH, with phenolphthalein for total acidity, with dimethylamidoazobenzol for free HCl.

Specimen A. 1 c.c., total acidity = 2.15 c.c. N/20 NaOH.
 1 c.c., free HCl = 0.1 c.c. “
 Specimen B. 1 c.c., total acidity = 1.4 c.c. “
 1 c.c., free HCl = 0.1 c.c. “
 Specimen C. 1 c.c., total acidity = 0.7 c.c. “
 No free HCl
 Specimen D. 1 c.c., total acidity = 1.1 c.c. “
 1 c.c., free HCl = 0.45 c.c. “

Digestive power (Metz tubes); twelve hours at 39° C.

Without addition of acid.	With addition of HCl up to 2 per cent.
A — doubtful.	A — digestion.
B — “	B — very doubtful.
C — no digestion.	C — digestion.
D — digestion.	D — good digestion.