TABLE I.

	Total Chloride	Organic Chloride
Fundus	.65— .75	.29—.31
Pylorus	.50— .65	.18—.21
Intestine	.45— .55	.14—.18
Liver	.30— .35	.15—.16
Blood	.9—1.0	.09—.13

(5) A comparative study of the distribution of different types of chloride in the tissues of fed and starved dogs showed no significant variations.

(6) These results, it is thought, furnish strong support for the theory that the hydrolysis of organic chlorides plays an important rôle in gastric acidity production.

This is a preliminary report.

[1] Hanke, Martin E., *J. Biol. Chem.*, 1926, lxvii, 11-13.

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Postural Apnea in the Duck.

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Aside from the apnea which is produced in the duck by submergence or by pouring water over its nostrils, one can also obtain a complete cessation of respiration when the duck is held in the air in certain definite positions. This applies especially to the position of the head in space. We fully confirmed Huxley[1, 2, 3] and Paton[4] in that whenever the vertex of the head is directed downward, whether the body is in the prone or supine position, apnea ensues. Like Huxley, we observed a very marked slowing of the heart accompanying apnea.

If the duck is placed on its back, the neck will be curved so that the head is held in the air in normal position with the beak directed towards the tail (labyrinthine righting reflexes on the head). Under these conditions respiration is normal. When the head is bent backward so that the vertex is directed downward, respiration stops and the apnea continues as long as the forced position of the head is maintained. Occasionally the animal struggles for a moment or two and it appeared as if it might make some respiratory movements during the struggle. By connecting the head of the duck with the

Benedict portable respiration apparatus, we convinced ourselves that these movements usually do not involve any respiration. Occasionally they are accompanied by expiratory movements, and more rarely by inspiratory movements. Whenever there is a respiratory movement, it is always followed by a temporary acceleration of the slowed heart. These occasional respirations apparently suffice to keep the duck alive under these circumstances and some animals were subjected to incomplete postural apnea of as long as 30 minutes' duration. However, 2 of our animals succumbed to postural apnea, death being preceded by a few terminal expiratory movements. We consider this phenomenon of importance, in that it shows that reflex inhibition of respiration may be stronger than the chemical stimulation by the venous blood.

Huxley considered postural apnea as a reinforcement of apnea produced by submergence. In our experiments in submerging a duck in the prone and supine position in a large glass aquarium, we never saw the head assume the position required for postural apnea (vertex downward). On the contrary, the head was always held in the normal position and the apnea which was produced can only be due to the wetting of the nostrils. We conclude, therefore, that postural apnea is phenomenon *sui generis*, independent of diving.

Some ducks are refractive as regards the elicitation of postural apnea. That is not the result of the conditions of the experiment. If a duck shows postural apnea it shows it at all times. We are now studying various breeds of ducks, because we have some evidence that this reflex apnea is characteristic of certain breeds only. This is a preliminary report.

[1] Huxley, F. M., *Quar. J. Exp. Physiol.*, 1913, vi, 147.
[2] Huxley, F. M., *ibid.*, 1913, vi, 159.
[3] Huxley, F. M., *ibid.*, 1913, vi, 183.
[4] Paton, D. Noel., *ibid.*, 1913, vi, 197.

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The Regulation of the Flow of Bile: III. The Rôle of the Gall Bladder.

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It has been demonstrated that the resistance to bile flow lies in the tenacity of the duodenum, rather than in the activity of a sepa-