Syringe and needle were sterilized in 70% ethyl alcohol. The shaved skin area through which the subcutaneous injections were to be made was "sterilized" with 70% alcohol, which seemed to be a better disinfectant than an alcoholic picric acid solution. A 10% solution of calcium gluconate was used throughout.

As everyone knows who has worked with parathyroidectomized dogs, each animal presents an individual problem, probably because of the difference in the degree of parathyroid deficiency produced by the usual thyro-parathyroidectomy. The amount of calcium (in terms of cc. of a 10% solution of calcium gluconate) necessary to prevent tetany is therefore only an approximation which we hope will nevertheless be found useful to those working in this field (on dog or man).

To be certain that tetany would ensue in a given animal, no injection was given after the operation until definite signs of tetany appeared. After restoring the animal to an apparently normal status by a large dose of calcium gluconate, the dose was cut down in time until on a given dose tetany appeared.

Results and Discussion. Briefly, thyroparathyroidectomized animals will remain in normal state of health without evincing tetany if given subcutaneously 1.5 cc. of a 10% solution of calcium gluconate per kilo of body weight daily even when on a fairly high protein intake. A slight induration of the skin is likely to ensue if the solution is injected in the same area over a prolonged period of time (months).

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Sixteen Months Survival with Complete Biliary Obstruction in a Dog.

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The longest survival that we have been able to find in jaundiced dogs is that reported by Still,[1] 205 days. For that reason the findings in one of our animals who lived over twice that long in apparent good health is of interest.

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[1] Still, K. S., and Carlson, A. J., *Am. J. Physiol.*, 1929, **89**, 34.

Dog No. 454 was operated April 7, 1930, cholecystectomy and common duct divided between ligatures. The early course was normal, deep jaundice ensued and marked emaciation occurred. After several months the jaundice disappeared entirely and the dog's appetite returned, and he became sleek and glossy in appearance, ate ravenously and more than regained the weight loss. He was then put on a meat diet for 3 months, hoping to produce ascites as reported by Rowntree,[2] but as this did not occur he was left on the ordinary mixed diet. His stools remained entirely free from bile and extensive metabolic study was planned but had not been made except to determine that his urine was free from albumin and biliary constituents when he died very suddenly from a profuse hemorrhage from the bowel.

Autopsy showed the following significant changes: The subcutaneous, abdominal and perirenal fat were unusually large in amount and the fat was of a very light color and unusually firm in consistency. There was no connection between the biliary tract and the bowel. The common duct and the distal branches of the hepatic ducts were enormously dilated, containing a clear yellow fluid which gave negative reactions for both bile salts and cholesterol. Several small calcium-pigment stones were present in the ducts. The liver was astonishingly small, weighing but 325 gm. It was almost pure white in color with light brown streaks outlining the lobules. It was excessively friable and greasy to the touch. Sections showed that it had undergone fatty degeneration to a most astonishing degree, there being practically no liver tissue left. The stomach contained numerous small erosions and one ulcer. The duodenum had 4 large ulcers from one of which the animal had bled to death. The kidneys were nearly normal in gross appearance but the pelvis on each side contained numerous large stones as well as much fine sand, which was also found in the bladder urine. Sections of the kidneys showed practically normal glomeruli and convoluted tubules. The straight tubules contained numerous fine calcium deposits and showed slight inflammatory changes. The severe nephritis expected was conspicuously absent. The adrenals had thick cortices and an almost total absence of medulla and the lungs showed marked thickening of the alveolar walls, but no acute inflammatory changes. Bone changes were not found.

This unexplained survival of 499 days is reported to show the possibility of apparent good health and state of nutrition, with the taking over of the biliary functions by other unknown mechanisms.

[2] Snell, A. M., Greene, C. H., Rowntree, L. G., *Arch. Int. Med.*, 1927, **40**, 471.