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Cystinuria in Two Scotch Terriers.

EDWIN R. BLAMEY AND ERWIN BRAND.
From the Laboratory of Dr. Edwin R. Blamey and from the Department of Biochemistry, College of Physicians and Surgeons, Columbia University, New York.

Cystinuria has been observed in the Dachshund[1] and more recently in a family of Irish terriers.[2-5] By inbreeding these Irish terriers, several animals with cystinuria have already been obtained.[5]

The present report deals with the occurrence of cystinuria in 2 *Scotch* terriers, Dogs Sc-1 and Sc-2. Since these dogs were pets, no extended observations could be made.

From one of these Scotch terriers (Sc-1) small calculi were removed, which had the typical appearance of cystine stones, and were identified as such by qualitative tests. Cystine crystals were present in the urine in considerable amounts. The analysis of a typical urine specimen is reported in Table I. The sample contained about 250 mg of cystine per liter, and the cystine sulfur accounted for about 20% of the total sulfur. Cystine was determined by the photometric method[6] as well as by the Sullivan[7] *cf.* [8] and Lugg-Sullivan[9] methods. The cystine values by the 3 methods are in close agreement, indicating the absence of substances which interfere with the Sullivan reaction.[3, 6] In general the sulfur partition and cystine excretion of this Scotch terrier resemble closely that of cystinuric Irish terrier No. 1.[3]

The second Scotch terrier (Sc-2) had no calculi, but cystine crystals could be identified in the urine. This dog excreted 200-400 mg of cystine per liter, and the sulfur distribution was typically cystinuric (Table I). However, the Sullivan reaction was negative in his urine. This does not indicate the absence of cystine, but rather the presence of interfering substances,* [3, 6] since after pre-

1 Lentz, W. J., *J. Am. Vet. Med. Assn.*, 1921, **59**, 365.

2 Morris, M. L., Green, D. F., Dinkel, J. H., and Brand, E., *North American Vet.*, 1935, **16**, 16.

3 Green, D. F., Morris, M. L., Cahill, G. F., and Brand, E., *J. Biol. Chem.*, 1936, **114**, 91.

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5 Brand, E., Cahill, G. F., and Slanetz, C. A., *J. Biol. Chem.*, 1938, **123**, xvi.

6 Kassell, B., and Brand, E., *J. Biol. Chem.*, 1938, **125**, 115.

7 Brand, E., Harris, M. M., and Biloon, S., *J. Biol. Chem.*, 1930, **86**, 315.

8 Kassell, B., and Brand, E., *J. Biol. Chem.*, 1938, **125**, 435.

9 Lugg, J. W. H., *Biochem. J.*, 1933, **27**, 668.

* The modification[10] of the Sullivan method, which eliminates to a considerable extent the influence of such interfering substances was not available at the time the urine of these Scotch terriers was investigated.

10 Sullivan, M. X., and Hess, W. C., *J. Biol. Chem.*, 1936, **116**, 221.

TABLE I.
Analysis of the Urine of Cystinuric Scotch Terriers.
Sulfur Distribution and Cystine Excretion.

Constituent	Dog Sc-1*			Dog Sc-2†			
				Sample 1			Sample 2
	g per liter	% of total S	% of neutral S	g per liter	% of total S	% of neutral S	g per liter
Total S	.38			.46			
Total SO_4	.20	53		.19	41		
Total neutral S	.18	47		.27	59		
Cystine S (photometric[6])	.07	19	46	.05	11	19	
Undetermined neutral S	.11	28	60	.24	48	81	
Cystine (photometric[6])	.27			.19			.45
" (Sullivan[7, 8])	.22			neg.			neg.
" (Lugg-Sullivan[9])	.24						
" (Cu_2Cl_2 precipitation followed by Sullivan method[6])							.35

* Cystine stones removed and cystine crystals in urine.
† Cystine crystals in urine.

cipitation of the cystine with cuprous chloride,[6] the values by the photometric and Sullivan methods are in reasonable agreement (Table I, Sc-2, Sample 2).

Summary. 1. Two cases of cystinuria in Scotch terriers have been described. One of them had cystine calculi. 2. Cystinuria with and without cystine calculi has been found in the following breeds of dogs: Dachshund, Irish terrier, Scotch terrier.

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Failure to Recover Pregnandiol Glucuronidate in Monkeys, Rabbits and Cats.*†

U. WESTPHAL‡ AND C. L. BUXTON. (Introduced by E. T. Engle.)

From the Departments of Anatomy and Obstetrics and Gynecology, College of Physicians and Surgeons, Columbia University, and Sloane Hospital for Women, New York City.

Previous experiments have shown that injected progesterone has been transformed into pregnandiol not only by women but also by men.[1] In pursuing this problem further, an attempt was made to find pregnandiol glucuronidate in the urine of experimental animals during normal cycles, during pregnancy and following injections of progesterone.

Urine was collected in metabolism cages and placed in the ice box with several drops of chloroform as a preservative. Examination for pregnandiol glucuronidate was then carried out on pooled specimens consisting of one or 2 liters of urine, according to the well proven method of Venning and Browne.[2] Urine from monkeys was collected from the first day of injection until 2 days after the last injection.

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‡ Fellow of the Rockefeller Foundation.

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2 Venning, E. M., and Browne, J. S. L., PROC. SOC. EXP. BIOL. AND MED., 1936, **34**, 792; Venning, E. M., *J. Biol. Chem.*, 1937, **119**, 473; Venning, E. M., *J. Biol. Chem.*, 1938, **126**, 595.