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Source: Journal of Wildlife Diseases, 7(3) : 139-141

Published By: Wildlife Disease Association

URL: <https://doi.org/10.7589/0090-3558-7.3.139>

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PHYSIOLOGIC VALUES OF STONE SHEEP

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Abstract: Physiologic values obtained from 10 stone sheep (*Ovis dalli stonei*) were reported, providing a start in establishing base line values for the species. The influence of excitability, diet, and stress of the sheep at sampling upon certain values was recognized.

INTRODUCTION

Physiologic values are necessary criteria for disease study of a species. Most domestic animals and some wild species have established values. The stone sheep (*Ovis Dalli Stonei*) has no published values to my knowledge. This report presents physiologic values obtained from 10 captive stone sheep at the Okanagan Game Farm, Penticton, British Columbia on October 27, 1970.

MATERIALS AND METHODS

The sheep were in a 3 acre enclosure and were fed good quality alfalfa hay and protein supplement. Salt and water were available at all times. Each indi-

vidual's condition in the herd at time of sampling was rated 9 on a 10 point grading system modified for stone sheep. There was no clinical evidence of disease and the herd's reproductive rate has been above 80% the past 2 years. The sheep were highly excited at time of handling.

A field laboratory was established utilizing the Unitest System (Biodynamics Inc., Indianapolis, Ind.) to obtain these values: blood glucose, blood urea nitrogen, cholesterol, serum glutamic oxalacetic transaminase, hemoglobin, and total protein.

Blood mineral values were determined by using the facilities of the Washington State University, School of Veterinary Medicine Clinical Pathology Laboratory,

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Pullman, Washington. The calcium determinations were done by microtitration (Oxford Laboratories, San Mateo, California), and the phosphorus determination by Phospho-Pak (Uni Tech Chemical Mfg. Co., Sun Valley, California). Erythrocyte and leukocyte counts were obtained using the Coulter model B electronic particle counter courtesy of The Endoparasite Vector Pioneering Research Laboratory, Agriculture Research Service, Pullman, Washington.

RESULTS

Physiologic values obtained from the stone sheep are shown in Tables 1 and 2 with the individuals listed in order of handling and bleeding. There are some wide variations in values between individuals and comparing these with published values from Rocky Mountain bighorn sheep^{1,2} and domestic sheep³ there are notable differences as well as similarities between groups. With small sample sizes and many potential variables

Table 1. Blood serum chemistry values for stone sheep.

Sex/Age	BUN* (mg/100 ml)	Cholesterol (mg/100 ml)	Glucose (g/100 ml)	Total Protein (g/100 ml)	Ca (mg/100 ml)	P (mg/100 ml)	SGOT**
M 6 mo.	37	95	180	10.6	8.3	4.7	175
F 6 mo.	80	140	245	8.9	8.7	5.9	130
F 6 mo.	30	110	180	8.7	10.7	3.3	220
F 6 mo.	90	100	270	10.1	8.3	4.4	175
F 1 yr.	32	90	305	7.0	8.0	3.7	180
F 4 yr.	40	95	250	6.0	7.6	1.6	150
M 6 mo.	37	100	450	3.1	10.7	4.6	30
F 5 yr.	44	90	200	7.1	10.7	4.2	110
F 6 yr.	38	110	240	3.6	9.7	3.3	160
F 5 yr.	40	115	310	3.5	8.3	2.5	110

* Blood urea nitrogen

** Serum glutamic oxalacetic transaminase (Karmen units)

Table 2. Hematologic and physiologic values for stone sheep.

Age/Sex	* WBC (10 ³)	** RBC (10 ⁶)	*** PCV (%)	Hemoglobin g/100 ml	Heart Rate/min	Respiratory Rate/min	Rectal Temp. (F)
M 6 mo.	6.4	5.09	54	22.0	120	80	105.6
F 6 mo.	8.6	8.91	53	20.5	120	50	104.2
F 6 mo.	6.7	7.08	55	20.5	88	36	103.8
F 6 mo.	—	—	54	18.0	120	40	104.6
F 1 yr.	6.1	4.54	52	20.0	140	72	104.2
F 4 yr.	5.4	7.51	51	19.0	110	40	103.8
M 6 mo.	11.7	8.71	56	21.0	220	48	104.6
F 5 yr.	3.6	7.59	50	15.5	112	36	103.8
F 6 yr.	5.1	8.27	48	18.0	148	60	102.8
F 5 yr.	6.8	6.30	52	20.0	148	52	103.2

* leukocytes

** erythrocytes

*** packed cell volume

affecting each group, a meaningful interpretation of differences between groups would not be valid, but a discussion of the possible influence of some known variables in this sample may aid in comparing results.

DISCUSSION

There are several factors such as excitability, high protein intake, and stress inherent with sampling this group of sheep which influenced the results obtained.

Excitability can influence physiologic values and in particular such values as glucose, rectal temperature, respiratory and heart rates.² The stone sheep blood glucose values are very high compared to domestic sheep¹ as are the rectal

temperature, respiratory and heart rates.⁸ Excitability could also have had an influence on high blood urea nitrogen (BUN) levels, but perhaps more important was the fact that these sheep were on a high protein diet which directly affects BUN.²

Serum glutamic oxalacetic transaminase (SGOT) values reflect cell necrosis⁶ and this value increases with muscular activity and stress. This corresponds with these results.

Some of the particularly variant individual values such as for total protein, and the generally low phosphorus values cannot be explained from the limited values available, but this does manifest the need for accumulated physiologic data on this and other wild species to establish base line values for useful interpretation of results.

Acknowledgement

I am most grateful to Mr. Ed Lacey and the organization at the Okanagan Game Farm for their cooperation and assistance, and to the College of Forestry, Wildlife, and Range Science and the Idaho Cooperative Wildlife Research Unit for their support.

LITERATURE CITED

1. CAMPBELL, L. A., and D. S. KRONFIELD. 1961. Estimation of low concentrations of plasma glucose using glucose oxidase. *Am. J. Vet. Res.* 22: 587.
2. COLES, E. H. 1967. *Veterinary Clinical Pathology*. 455 pp. W. B. Saunders, Philadelphia.
3. DUKES, H. H. 1955. *The Physiology of Domestic Animals*. 817 pp. Cornell University Press, Ithaca, N.Y.
4. FRANZMANN, A. W., and E. T. THORNE. 1970. Physiologic values in wild bighorn sheep (*Ovis canadensis canadensis*) at capture, after handling, and after captivity. *J.A.V.M.A.* 157: 647-650.
5. WHANGER, P.O., P. H. WESWIG, O. H. MUTH, and J. E. OLDFIELD. 1969. Tissue lactic dehydrogenase, glutamic-oxalacetic transaminase, and peroxidase changes of selenium-deficient myopathic lambs. *J. Nutr.* 99: 331-337.
6. WOOLF, A., and D. C. KRADEL. 1970. Hematologic values of captive Rocky Mountain bighorns. *J. Wildl. Dis.* 6: 67-68.

Received for publication December 21, 1970