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Wyominia tetoni (CESTODA: THYSANOSOMATINAE) FROM BIGHORN SHEEP IN WASHINGTON

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Abstract: In Washington, eight California bighorn sheep, *Ovis canadensis californiana*, were necropsied to ascertain age and general physical condition. Four were found to harbor *Wyominia tetoni*.

INTRODUCTION

Resident bighorn sheep, *Ovis canadensis californiana* and *Ovis canadensis canadensis*, probably disappeared from Washington shortly after the last reported sighting in 1925.[1] In 1957, bighorns (*O. c. californiana*) were reintroduced into Washington with animals trapped from Riske Creek, British Columbia. While a census in 1969 revealed that the population had risen to 130, subsequent and consecutive counts indicated a decline to aproximately 80 sheep in 1972. In order to ascertain some ages and the general health of the bighorns, six were killed for examination during the fall of 1973.

MATERIALS AND METHODS

The animals examined in 1973 were collected by hunters with special either sex permits for the Wooten Wildlife Recreation Area. Hunters were instructed to collect the viscera in plastic bags and bring the carcass to Wooten W.R.A. headquarters. If this was not possible, the Game Department personnel were notified and assisted in packing out the animals. The livers were inspected at the headquarters and parasites, as well as representative tissue sections, were preserved in 10% formalin. Two to three grams of femur marrow were dehydrated with a solution of chloroform and methanol for the determination of fat content.[6] Both kidneys and adhering fat were removed and weighed to 0.1 g. With the fat removed, the kidney was weighed and a ratio (%) Kidney Fat Weight/Kidney Weight determined using an average for both kidneys.[5] Primary incisors were removed from the lower jaw and age determined by counting cementum annuli.[2]

RESULTS

Five sheep were collected from September 15-30, 1973, and one on December 15, 1973. Ages ranged from 3½ to 12½ years and whole body weights from 54 to 79 kg. The percentage of kidney and bone marrow fat content were determined. Four of the six sheep harbored three to six *Wyominia tetoni* in their bile ducts.

Two additional bighorns killed illegaly in northern Washington on September 28 and December 31, 1973 were also examined. They proved to be a 3½ year old male and a 4½ year old female and did not harbor *Wyominia*.

DISCUSSION

This paper constitutes the first report of *Wyominia* in California bighorns. Although the sheep examined were from Washington, we assume that the B.C. population from which they were obtained had this parasite and introduced it into the study area.

TABLE 1. Physical data and **Wyominia tetoni** infections in California bighorns from Wooten Wildlife Recreation Area.

Sheep Number	Age	Sex	Weight (kg)	Bone Marrow Fat	Kidney Fat	No. *Wyominia*
1.	3½	M	79	88%	72%	6
2.	3½	F	60	96%	232%	4
3.	5½	F	67	96%	390%	4
4.	7½	F	60	53%	13%	3
5.	9½	F	?	91%	78%	0
6.	12½	F	54	19%	12%	0

Ransom has reported that the complimentary use of the percentage of kidney and bone marrow fat content is the best means of assessing physical condition.[4] The results indicate that the sheep are generally in good condition, at least in the fall of the year, but there appears to be a decline in general physical condition and the numbers of tapeworms, as the age increases.

Honess and Winter report that aged sheep infected for years with *Wyominia* will show biliary hyperplasia and a marked fibroplasia, occasionally occluding bile ducts and resulting in a chronic icteric condition.[3] None of the bighorns with *Wyominia* infections from the Wooten W.R.A. had any changes consistent with the above description either grossly or microscopically. Considering their physical condition, we do not believe *Wyominia tetoni* had any deleterious influence on the population.

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