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TRANSPLACENTAL TRANSMISSION OF *Protostrongylus* SPP. IN BIGHORN SHEEP*

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Abstract: Third-stage larvae of *Protostrongylus* spp. were recovered from the liver and lungs of a bighorn sheep foetus and from the placenta of the ewe.

During the course of investigations into the causes of excessive lamb mortality among bighorn sheep in Colorado, a 9-10 year old pregnant ewe was collected from the Pikes Peak herd on May 16, 1972. The purpose of the collection was to obtain foetal tissues for use in tissue culture, and to examine tissues for evidence of transplacental or transmammary transmission of *Protostrongylus* spp.

A complete postmortem examination of this animal revealed that she was in excellent physical condition for a ewe collected in early Spring. Nodules caused by infection with *Protostrongylus stilesi* were evident in the diaphragmatic lobes of both lungs but these were few in number. No additional changes were detected.

Following postmortem examination, two cotyledons, the mammary gland, the mesenteric, hilar and bronchial lymph nodes from the ewe; the mesenteric, hilar and bronchial lymph nodes from the foetus; and a small piece of foetal lung from one diaphragmatic lobe (approximately 5 x 50 mm) were placed in baermann funnels separately for 24 hours and examined for larvae of *Protostrongylus* spp.

One third stage larva was recovered from the cotyledons, 11 third stage larvae from the foetal liver, and one from the foetal lung. Except for size, these 13 third stage larvae were morphologically identical to the infective larvae of *Protostrongylus* spp. found in the snail host, *Vallonia pulchella*. They measured 532 to 606 microns long and 33 to 40 microns wide. Third stage from snails infected 33 to 40 days previously average 505 microns long and 30 microns wide.

The majority of the foetal lung was used for tissue culture, and the remainder of the cotyledons were discarded; otherwise, a greater number of third stage larvae might have been recovered.

G. Post (personal communication) and a number of other investigators have excellent circumstantial evidence that *Protostrongylus* sp. is transmitted transplacentally; however, this is the first time that third-stage infective larvae have been isolated from the foetal tissues.

Monson and Post[1] have shown that infection of an animal can occur by ingestion of the third-stage larva with the snail. Presumably, infection of the foetus occurs when the ewe eats infected snails, releasing the third stage to cross the placenta.

The details of this biological cycle are currently being investigated.

LITERATURE CITED

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