

## DIROFILARIASIS IN IOWA COYOTES

Author: FRANSON, J. CHRISTIAN

Source: Journal of Wildlife Diseases, 12(2) : 165-166

Published By: Wildlife Disease Association

URL: <https://doi.org/10.7589/0090-3558-12.2.165>

---

The BioOne Digital Library (<https://bioone.org/>) provides worldwide distribution for more than 580 journals and eBooks from BioOne's community of over 150 nonprofit societies, research institutions, and university presses in the biological, ecological, and environmental sciences. The BioOne Digital Library encompasses the flagship aggregation BioOne Complete (<https://bioone.org/subscribe>), the BioOne Complete Archive (<https://bioone.org/archive>), and the BioOne eBooks program offerings ESA eBook Collection (<https://bioone.org/esa-ebooks>) and CSIRO Publishing BioSelect Collection (<https://bioone.org/csiro-ebooks>).

Your use of this PDF, the BioOne Digital Library, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at [www.bioone.org/terms-of-use](http://www.bioone.org/terms-of-use).

Usage of BioOne Digital Library content is strictly limited to personal, educational, and non-commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

---

BioOne is an innovative nonprofit that sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

## DIROFILARIASIS IN IOWA COYOTES

J. CHRISTIAN FRANSON, Department of Veterinary Pathology, Iowa State University, Ames, Iowa 50010, USA.

RICHARD D. JORGENSON, Veterinary Medical Research Institute, Iowa State University, Ames, Iowa 50010, USA.

EDWARD K. BOGGESE, Department of Animal Ecology, Iowa State University, Ames, Iowa, 50010, USA<sup>1</sup>.

**Abstract:** Heartworms (*Dirofilaria immitis*) were found in eight of 220 (3.6%) coyotes (*Canis latrans*) collected from fur buyers in Adams, Carroll, Cass, and Warren counties in southwestern Iowa. Infections ranged from one to 23 worms per coyote.

### INTRODUCTION

*Dirofilaria immitis* now exists in a widespread but uneven distribution throughout the Midwest, with canine infections reported from Ohio, Michigan, Illinois, Minnesota,<sup>7</sup> Kansas,<sup>4</sup> and Iowa.<sup>1</sup> Midwestern reports from wild canids include the coyote (*Canis latrans*)<sup>3,5</sup> and the red fox (*Vulpes fulva*)<sup>8</sup> as hosts.

In Iowa the number of coyotes claimed for bounty has increased in recent years from 2,000 in 1965 to 7,000 in 1974.<sup>2</sup> The coyote is now classified as a game animal with no season or bag limit restrictions. A survey of *D. immitis* was made possible through the cooperation of fur buyers.

### METHODS

During February and March, 1975, 220 coyote carcasses were collected from fur buyers in Adams, Carroll, Cass, and Warren counties. Although precise locations were not available, most coyotes came from southwestern Iowa, with perhaps a few from northwestern Missouri.

Carcasses were frozen when received and were subsequently thawed for heart

removal. Ventricles, atria, and pulmonary arteries were examined.

### RESULTS AND DISCUSSION

Adult *D. immitis* were recovered from the right ventricles of eight of 220 (3.6%) hearts. Numbers varied from one worm in two coyotes to as many as 23 in one of the remaining six cases.

These data indicate a considerably lower prevalence of heartworm infection in coyotes from southwestern Iowa than in northeastern Kansas, where 8% of 111 coyotes were reported positive.<sup>5</sup> Canine reports are also lower in Iowa; 6.5%<sup>1</sup> as compared with 16.7% in Kansas.<sup>4</sup>

There is disagreement in the literature regarding the status of wild canids in the epidemiology of heartworm infection. Otto<sup>7</sup> considered wild mammals only accidental hosts for *D. immitis* and not important in transmission to domestic dogs. However, Monson *et al.*,<sup>8</sup> in a survey on foxes and wild canids in New York, concluded that such species may be important reservoir hosts. Infectivity trials and studies of microfilarial development and transmission are necessary to determine whether wild canids may function as reservoir hosts of *D. immitis*.

<sup>1</sup> Present address: Southwest Area Extension Office, Kansas State University, Garden City, Kansas 67846, USA.

**Acknowledgements**

The authors express appreciation to Hollis Perrin, Cassie Knight, Neil Hooper, and Paul Hoffman for providing coyote carcasses. The Iowa Conservation Commission supplied transportation for carcass collection.

**LITERATURE CITED**

1. ALLS, M. E. and J. H. GREVE. 1974. Canine dirofilariasis in Iowa. J. Am. vet. med. Ass. 165: 532-533.
2. BOGGESE, E. K. 1975. Some population parameters of Iowa coyotes and an analysis of reported livestock losses. M.S. thesis. Iowa State University, 94 pp.
3. GIER, H. T. and D. J. AMEEL. 1959. Parasites and diseases of Kansas coyotes. Kans. Agric. Exp. Sta., Tech. Bull. 91.
4. GRAHAM, J. M. 1974. Canine filariasis in northeastern Kansas. J. Parasit. 60: 322-326.
5. GRAHAM, J. M. 1975. Filariasis in coyotes from Kansas and Colorado. J. Parasit. 61: 513-516.
6. MONSON, R. A., W. B. STONE and B. C. WEBER. 1973. Heartworms in foxes and wild canids in New York. N.Y. Fish and Game J. 20: 48-53.
7. OTTO, G. F. 1972. Epizootiology of canine heartworm disease. In: *Canine Heartworm Disease: The Current Knowledge*. Ed. by R. E. Bradley and G. Pacheco. pp. 1-15. Proceedings of the Second University of Florida Symposium on Canine Heartworm Disease. Jacksonville, Florida.
8. SCHLOTTHAUER, J. C. 1964. *Dirofilaria immitis* in the red fox (*Vulpes fulva*) in Minnesota. J. Parasit. 50: 801-802.

Received for publication 6 August 1975