

Investigation on lung and heart parasites of Newfoundland coyotes

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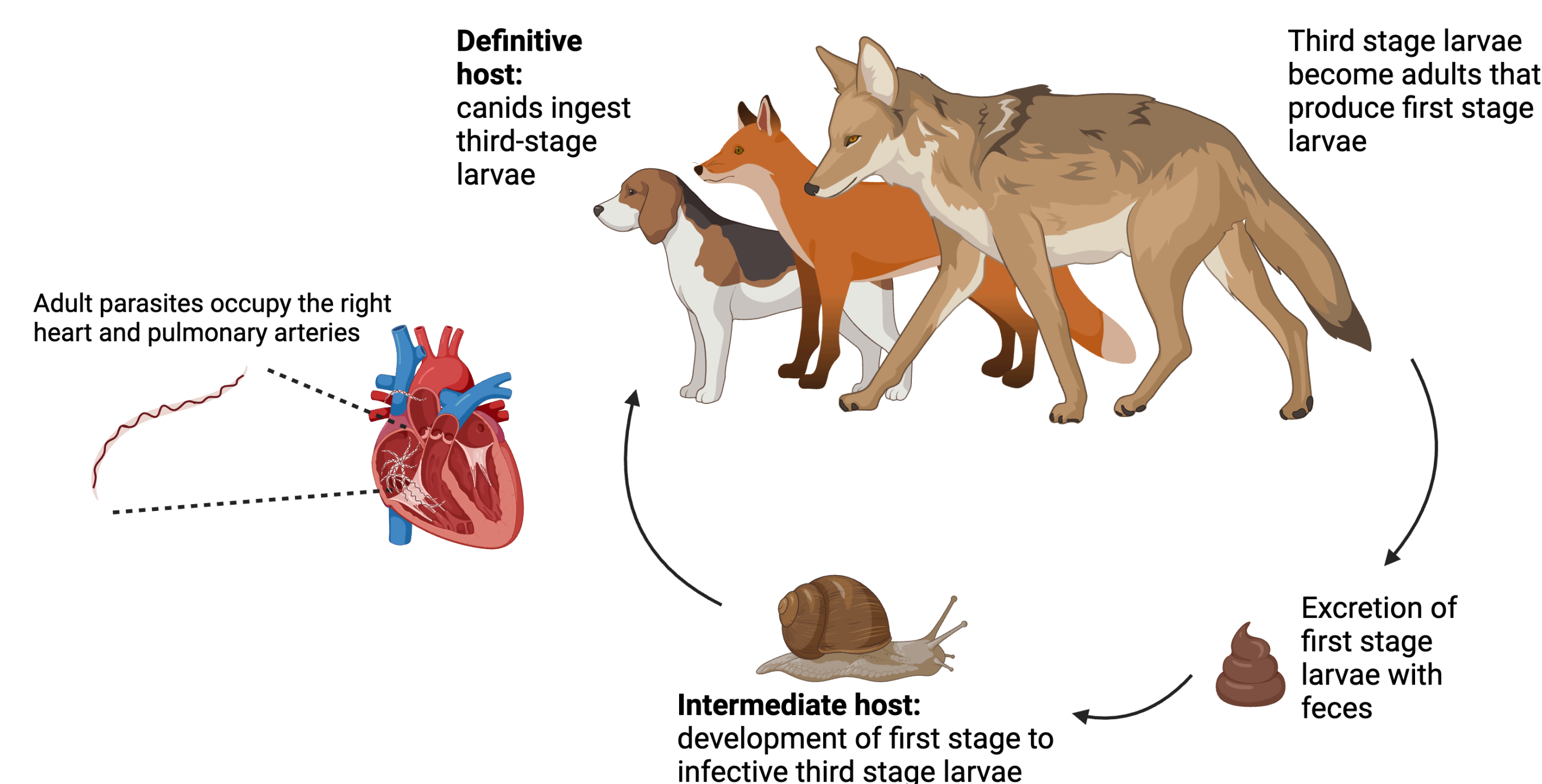


Highlights

- High prevalence of *Angiostrongylus vasorum* in Newfoundland coyotes
- Increase in *A. vasorum* positive and *Crenosoma vulpis* negative coyotes since 2017-2020
- First study to report *A. vasorum* in all areas of insular Newfoundland

Introduction

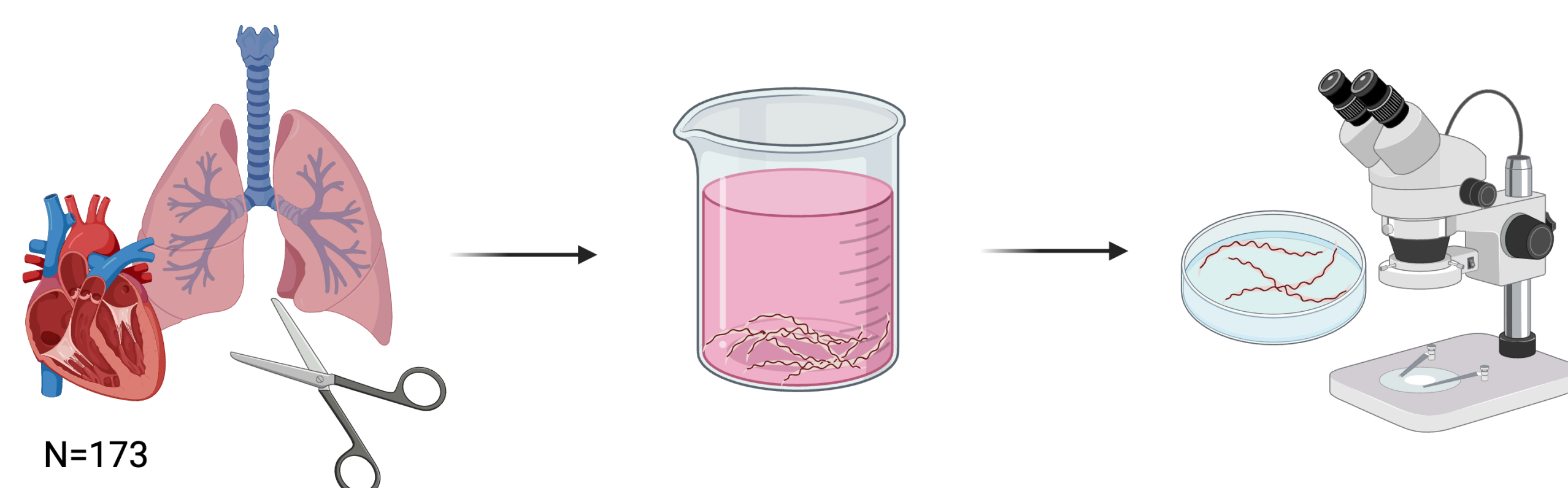
- *Angiostrongylus vasorum*, or French heartworm, is endemic in Europe and Newfoundland
- In Newfoundland 56% of foxes are infected with *A. vasorum*¹
- *A. vasorum* causes clinical disease in dogs²
- No current studies on prevalence in Newfoundland coyotes
- **Aim:** to determine prevalence of *A. vasorum* and other lungworms (*Crenosoma vulpis* and *Capillaria aerophila*) in Newfoundland coyotes



Life cycle of *Angiostrongylus vasorum*.

Methods

- Coyote lungs and hearts were dissected in a water bath
- Sediment was examined under a dissecting microscope and parasites were identified and counted

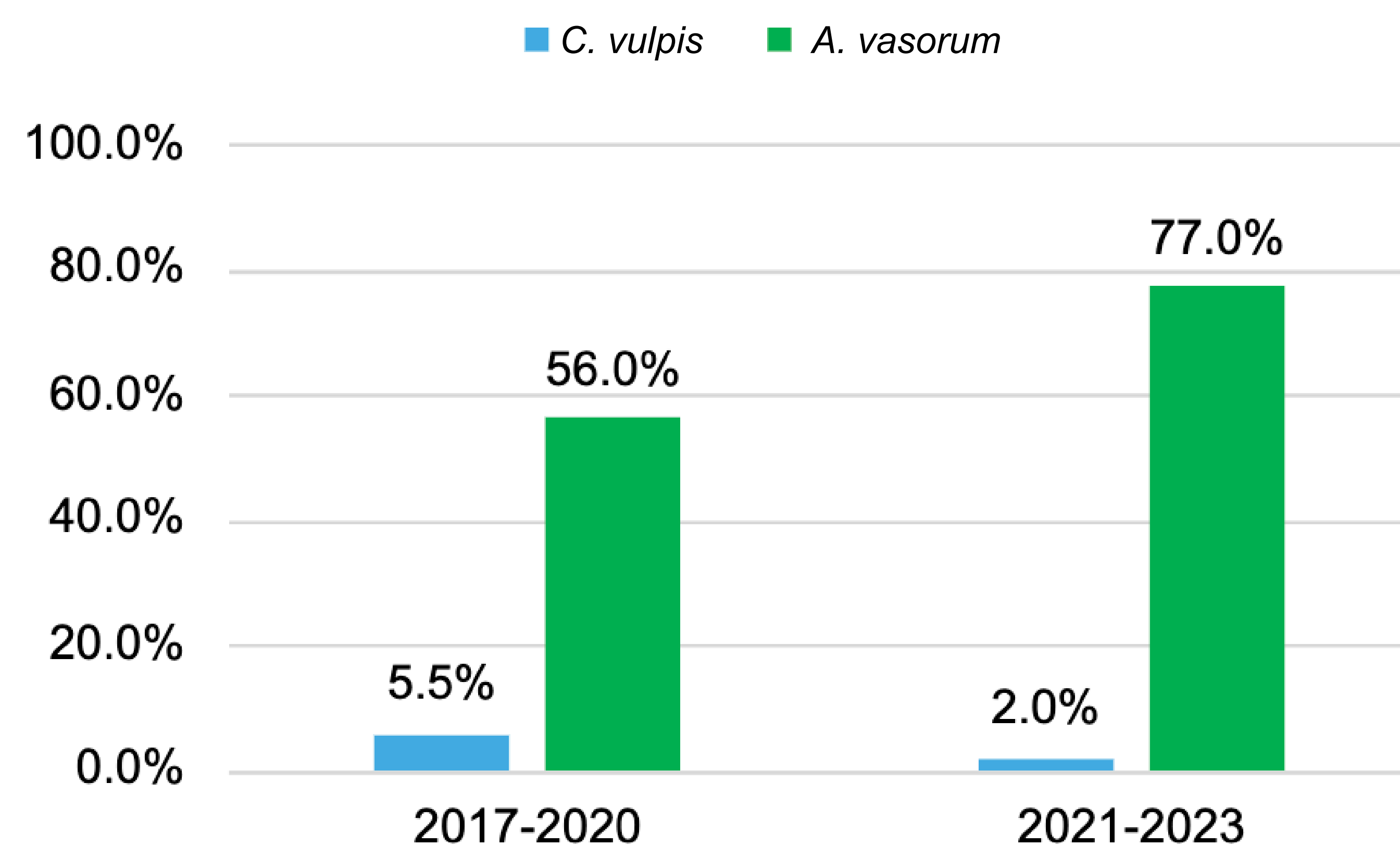


Methods for this study, including dissection, sedimentation, and observation under a dissecting microscope.

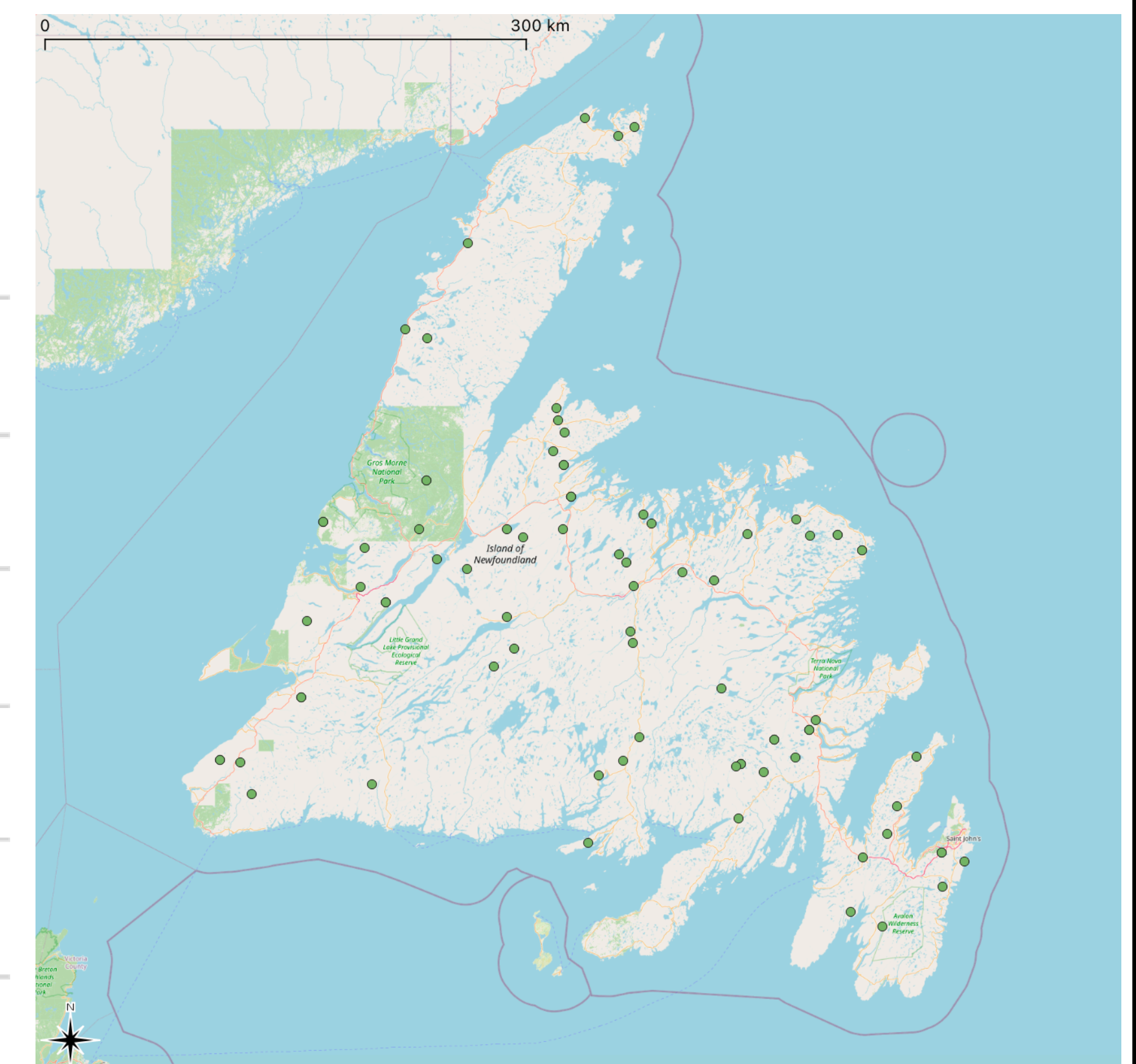
Results

- 77% of 2021-2023 samples positive for *A. vasorum*, compared to 56% in 2017-2020
- 2% of 2021-2023 samples positive for *C. vulpis*, compared to 5.5% in 2017-2020
- 1 coyote with co-infection in 2021-2023, compared to 2 coyotes in 2017-2020
- Worm burden ranged from 1-57 in 2021-2023 and 1-105 in 2017-2020
- No *C. aerophila* was detected

Prevalence of Newfoundland coyotes positive for lung and heart parasites (N=173)



Graph depicting number of coyotes positive for *A. vasorum* and *C. vulpis*.



Map of insular Newfoundland depicting coyotes positive for *Angiostrongylus vasorum*. Each green dot represents a positive case.

Discussion

- *A. vasorum* prevalence increased while *C. vulpis* prevalence decreased since 2017-2020
- Methods used are reliable and comparable to other methods previously used for the detection of lungworms³
- Positive animals detected in all areas of insular Newfoundland
- No *C. aerophila* was detected, indicating a potential lack of this parasite in Newfoundland canids

Outlook

- Coyote samples to be obtained each year for further parasite detection
- More detailed mapping involving climate trends with parasite distribution
- Manuscript writing in progress for publication of data

References: 1. Jeffery, R. A. et al. 2004. Can J Zool, 82(1), 66-74. 2. Morgan, E. R. et al. 2010. Vet Parasitology, 173, 255-261. 3. Gillis-Germitsch N. et al. 2020. Parasitology, 147, 1071-1079.

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