

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

West Central Research and Extension Center,
North Platte

Agricultural Research Division of IANR

1983

Cerebral Abscess and *Cephenemyia phobifer* in a Mule Deer in Central Nebraska

Jerre L. Johnson

West Central Research and Extension Center, North Platte

John B. Campbell

West Central Research and Extension Center, North Platte

Alan R. Doster

University of Nebraska-Lincoln, adoster1@unl.edu

George Nason

Nebraska Game & Parks Commission

R. J. Cagne

SEL, USDA, Beltsville

Follow this and additional works at: <https://digitalcommons.unl.edu/westcentresext>

 Part of the [Agriculture Commons](#)

Johnson, Jerre L.; Campbell, John B.; Doster, Alan R.; Nason, George; and Cagne, R. J., "Cerebral Abscess and *Cephenemyia phobifer* in a Mule Deer in Central Nebraska" (1983). *West Central Research and Extension Center, North Platte*. 10.

<https://digitalcommons.unl.edu/westcentresext/10>

This Article is brought to you for free and open access by the Agricultural Research Division of IANR at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in West Central Research and Extension Center, North Platte by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

as an additional stress, thereby directly, or indirectly, causing poor condition or death of the host.

This work was supported in part by a Western Kentucky Faculty Research Grant awarded to the senior author.

Journal of Wildlife Diseases, 19(3), 1983, pp. 279-280
© Wildlife Disease Association 1983

Cerebral Abscess and *Cephenemyia phobifer* in a Mule Deer in Central Nebraska

Jerre L. Johnson, John B. Campbell, University of Nebraska North Platte Station, North Platte, Nebraska 69101, USA; **Alan R. Doster**, University of Nebraska-Lincoln, Lincoln, Nebraska 68583, USA; **George Nason**, Game and Parks Commission, North Platte, Nebraska 69101, USA; and **R. J. Cagne**, Systematic Entomology Laboratory, USDA, Beltsville, Maryland 20705, USA

A wild yearling male mule deer (*Odocoileus hemionus hemionus*) from south central Ne-

braska was submitted to the University of Nebraska North Platte Station Diagnostic Laboratory with the history of severe depression, slight incoordination, and visual impairment. Gross examination revealed a large abscess in-

Received for publication 11 June 1982.



FIGURE 1. Sagittal section of mule deer head showing large cerebral abscess (1) and bots (*Cephenemyia phobifer*) in retropharyngeal area (2).

volving approximately 65–75% of the cerebral hemispheres of the brain and approximately 30 bots in the retropharyngeal pouches (Fig. 1). No other gross lesions were present.

Bacteriologic examination, utilizing 5% sheep blood agar, revealed *Klebsiella pneumoniae* from the kidney, liver, spleen, and cerebral spinal fluids. Cultures of the brain, utilizing 5% sheep blood agar and chocolate agar, revealed alpha-*Streptococcus* and *Corynebacterium pyogenes*. The bots were identified as *Cephenemyia phobifer*. Representative specimens have been deposited in the U.S. National Parasite Collection in Beltsville, Maryland (Accession No. 77316). No virus was isolated via inoculation of tissue cultures or embryonated chicken eggs.

Utilizing routine histopathologic methods (Luna, 1968, *In Manual of Histologic Staining Methods of the Armed Forces Institute of Pathology*, McGraw-Hill, Inc., New York, pp. 32–39), examination of the brain revealed areas of necrotic debris surrounded by degenerative neutrophils encapsulated by inflammatory cells and connective tissue.

Five species of *Cephenemyia* have been reported in North America: *C. apicata*, *C. jellisoni*, *C. phobifer*, *C. pratti*, and *C. trompe*. *Cephenemyia pratti* is most commonly found in mule deer (Harwood and James, 1979, *In Entomology in Human and Animal Health*, Macmillan Publishing Co., New York, pp. 311–312). *Cephenemyia phobifer* is usually present in eastern United States and generally is found in white-tailed deer (*Odocoileus virginianus*) (Davis and Anderson, 1971, *In Parasitic Diseases of Wild Mammals*, Iowa State University Press, Ames, Iowa, p. 283).

Cerebral abscesses may arise from septic thromboemboli or bacterial emboli, or by direct invasion of the brain from an adjacent structure. It may be possible that migration of the larvae of *C. phobifer* may play a role in the development of the cerebral abscess. Myiasis producing frontal abscesses with *Corynebacterium pyogenes* has been reported in sheep and cattle (Jubb and Kennedy, 1970, *In Pathology of Domestic Animals*, Academic Press, New York and London, p. 402).

Journal of Wildlife Diseases, 19(3), 1983, pp. 280–285
© Wildlife Disease Association 1983

Lymphoproliferative Disease in the American Goldfinch, *Carduelis tristis*

A. L. A. Middleton, Department of Zoology, College of Biological Sciences, University of Guelph, Guelph, Ontario N1G 2W1, Canada; and **R. J. Julian**, Department of Pathology, Ontario Veterinary College, University of Guelph, Guelph, Ontario N1G 2W1, Canada

During a long-term study of the American Goldfinch near Guelph, Ontario (Middleton, 1978, *Condor* 80: 401–406; Middleton, 1979, *Ecology* 60: 418–432), various attempts have been made to establish a research population from wild-trapped stock. These efforts have not met their objectives as the majority of the captives have either died before the experiments were started or during their course. The type of experiments have varied from placing individually caged birds in an environmental

chamber to test the effect of photoperiod in gonadal cycles and molt, to placing free-flying birds in outdoor flight pens with natural vegetation in efforts to induce reproduction. With few exceptions birds have not survived in captivity for longer than a year, and death has consistently occurred at times of apparent stress, such as changing holding conditions during experimentation, or during molt. Routinely, carcasses in suitable condition were sent for necropsy to the Department of Pathology, Ontario Veterinary College, Guelph. When cause of death could be established the reports most frequently suggested that it was due to enteric

Received for publication 10 August 1982.