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

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

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

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

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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 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).

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Lymphoproliferative Disease in the American Goldfinch, *Carduelis tristis*

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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

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