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Author: Zarnke, Randall L.

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26 puffins inhabiting the Hornøya Island. Neither *Yersinia enterocolitica* nor *Salmonella* spp. were encountered in this study.

All isolates, except one, belonged to the biotype NARTC (Nalidixic Acid Resistant Thermophilic Campylobacters) proposed by Skirrow and Benjamin (Skirrow and Benjamin, 1980a, J. Clin. Pathol. 33: 1122). One puffin harbored two distinct biotypes (NARTC and *C. coli*). NARTC strains have occasionally been recovered from human clinical specimens, but the clinical significance is dubious (Skirrow and Benjamin, 1980b, J. Hyg. Camb. 85: 427–442). This biotype, however, seems to be prevalent among birds associated with marine ecosystems (Kapperud and Rosef, unpubl. data; Skirrow and Benjamin, 1980b, op. cit.). The adult puffins examined were apparently healthy when captured. There is some evidence, however, that juvenile birds are more susceptible to campylobacteriosis than adults (Ruiz-Palacios et al., 1981, Infect. Immun. 34: 250–255).

A causal relationship between chick mortality and campylobacter infection cannot be established at the present time. The critical factor responsible for the mortality was most probably a substantial reduction in the food supply (Lid, 1980, op. cit.). However, the possibility that bacterial infections may have contributed to increased mortality cannot be excluded. Latent infections may become manifest under conditions of stress due to starvation.

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Abdominal Hernia in a Moose from Alaska

Randall L. Zarnke, Alaska Department of Fish and Game, 1300 College Road, Fairbanks, Alaska 99701, USA

An adult female moose (*Alces alces*) with a large (25–30 cm diameter) spherical mass centrally located on its abdominal wall was observed by several persons in an area 5–8 km north of Fairbanks, Alaska during the period from autumn 1980 through winter 1981–1982. A calf moose was seen with this cow on several occasions during autumn 1980. Several unsuccessful attempts were made to collect this animal for scientific study. The author trailed the moose for 2 hr on November 20, 1981. Two "beds" were located. Each appeared normal except that the snow had melted down to the bare ground where the ventral mass had been situated. After the moose had walked for 20 min and run 200 m, the mass appeared hyperemic when seen from a distance of 50 m. The animal browsed and walked normally. It moved over obstacles up to 1 m high without any apparent difficulty. On January 10, 1982 the moose was shot by a member of the public at the direction of the Alaska Department of Fish and Game.

Received for publication 10 May 1982.

At necropsy, the mass was found to be a hernia located on the ventral mid-line. Normal hair extended down 2–3 cm on the exterior of the hernia; the remainder was denuded of hair. The skin surrounding the hernia was thickened, and the underlying tissue was fibrous in nature. Both of these latter characteristics are similar to reports of hernias in white-tailed deer (Wobeser and MacLennan, 1971, J. Wildl. Dis. 7: 1–2; Schlegel et al., 1972, J. Wildl. Dis. 8: 320). Debris such as spruce needles, grass, twigs, etc., was both imbedded in and adhered to the skin covering the hernia. The hernia involved the rectus abdominis muscle and the abdominal aponeurotic insertion of the internal abdominal oblique, external abdominal oblique, and transversus muscles. A portion of the rumen occupied the anterior half of the hernia. The posterior portion was filled with several loops of small intestine, one of which was adhered to the interior wall of the hernia. Both of these segments of the gastrointestinal tract were filled with typical contents and appeared to be functioning normally. The animal was not pregnant at the time of collection. Standard fat deposits (sub-

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cutaneous, mesenteric, etc.) were low or exhausted. Bone marrow fat content was 23%. This figure reflects an animal in a low nutritional plane (Franzmann and Arneson, 1976, J. Wildl. Manage. 40: 336–339). The animal otherwise appeared to be in good health.

This is believed to be the first report of a hernia in moose. It was not possible to determine its cause. It seems most likely that it was either a result of trauma or of umbilical origin. The hernia was apparently a long-standing condition. Based upon (a) reports that the moose had survived for more than 1 yr in its condition, (b) the fact that it had produced and raised a calf, (c) its ability to run and negotiate obstructions, and (d) the normal functioning of the affected organs, it would appear that the hernia posed no direct threat to the animal's health. This was most likely an isolated case which has no implications to the moose population of the area as a whole.

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Blindness Associated with Retinal Dysplasia in a Prairie Falcon, *Falco mexicanus*

T. W. Dukes, Agriculture Canada, Animal Diseases Research Institute, NEPEAN, P.O. Box 11300, Station H, Nepean, Ontario K2H 8P9, Canada; **and G. A. Fox,** Toxic Chemicals Section, Canadian Wildlife Service, 100 Gamelin Boulevard, Hull, Quebec H8Y 1V9, Canada

Retinal dysplasia results from the response of the developing retina to unusual stimuli. The morphologic changes include retention of an embryonic appearance, retinal folds or retinal rosettes which have been classified. These may occur alone or in association with other ocular lesions. Several pathogenetic mechanisms associated with specific factors or agents affecting the developing retina have been proposed (Silverstein et al., 1971a, Am. J. Ophthalmol. 72: 13–21; Lahav et al., 1973, Am. J. Ophthalmol. 75: 648–667).

Many reports have been written on retinal dysplasia in man but there are fewer concerning its occurrence in animals. Cases have been reported in dogs, horses, pigs, deer, rats and mice (Lahav et al., 1973, op. cit.). We are reporting the occurrence of apparent congenital blindness associated with retinal dysplasia in a prairie falcon. We were unable to find reports of retinal dysplasia in birds or reports on the effect of viruses, toxic chemicals, or abnormal incubation temperatures on the developing avian retina.

Received for publication 17 September 1981.

During a study of the effects of toxic chemical residues on the reproduction of birds of prey, a clutch of four prairie falcon eggs with thin shells were collected in southern Alberta and brought to the Endangered Species Unit in Wainwright for incubation. Only one egg hatched and the chick was blind at hatching. It was sent to us for evaluation and study when 6 wk old.

The bird, a female, was alert. Ophthalmoscopically, there was variable pigmentation of the fundus with the choroidal vasculature being obvious in most of the fundus. There were focal areas of bluish opacity and pigmentation in the retina (Fig. 1). The pupils were widely dilated and responded poorly to light. The eye preservation reflex was absent but corneal sensitivity was present.

At necropsy, no changes were macroscopically apparent in the eyes or other tissues. Tissues were fixed in Bouin's solution overnight and were washed in running water and stored

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