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The

BLUE JAY

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FOR SASKATCHEWAN AND ADJACENT REGIONS

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Photo by Gary W. Sieb, Regina
Muttall's Cottontail, Frenchman River Valley, Val Marie

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UNIVERSAL CONCERN ABOUT THE ENVIRONMENT

The first United Nations conference on the human environment will be held in Stockholm, Sweden, June 5-16, 1972. A Canadian, Mr. Maurice Strong, has, appropriately enough, been appointed Secretary-General of the conference in which 130 nations will participate. Each nation, whether developing or developed, has environmental problems and since Canada might be fitted into either category, Canadians, better than most, should be able to see both points of view.

Since the conference was first proposed to the United Nations by Sweden in 1968, much work has been done: 12,000 pages of preparatory material have been compiled and studied and background material (800 pages) has been distributed to each participating nation. In Canada our National Preparatory Committee has condensed this material and conducted a series of 11 consultations in various cities across the country.

Such public discussions are important for they give background information to the public, they allow the public to talk about environment problems peculiar to their area, and they allow the delegates to the international conference to gain some assurance that recommendations agreed to at the conference can be implemented at home. Unfortunately, the consultation in Regina accomplished little. Attendance was poor and those present seemed entirely absorbed in small local pollution problems. There appeared to be little understanding of the world as one ecosystem, and consequently little feeling of urgency to find solutions for the problem of global environmental deterioration. The brief presented by your editor stressed, in addition to the need for preserving a variety of habitats within individual countries, the following points:

The main cause of environmental deterioration is human population (see Bentley, *Blue Jay*, December 1971; Sheppard, *Blue Jay*, March 1972). Although the United Nations draft declaration on the human environment states that population in certain areas is sufficient to " . . . frustrate all efforts to conquer poverty and underdevelopment and to maintain a decent human environment . . . ", it makes no statement directing the attention of nations to population control. In fact, the draft suggests that many countries " . . . have not yet reached population densities conducive to economic efficiency . . ." Surely, when 70 per cent of the world's population is undernourished or starving, there are enough people, at least until we are able to give everyone adequate food. Also, it is unfair for one country to have policies aimed at stimulating human reproduction while other countries try to reduce their population. Canada, with its wide open spaces and its relatively favorable balance of resources to people, is in an excellent position to show leadership in human population control and human environment protection.

Canada has indeed shown some leadership in the matter of chemicals which man is adding to the environment. With our proportion of people to space and with our ability to monitor the environment for chemicals it is not essential for us to completely ban any chemical in order to protect our own environment. However, large portions of certain long-lived chemicals (e.g. DDT) escape; the general atmosphere and waters of the world become polluted. By banning DDT completely in Canada we are allowing a certain amount of use in other countries where health problems require the use of such a poison.

It is expected that one of the real achievements of the UN conference on environment will be the setting up of a world-wide monitoring system, "Earthwatch," so that all changes in the environment can be recorded and environmental-improvement activities (at present nonexistent or fragmented) co-ordinated internationally. Obviously, the health of the earth is of first importance and man cannot survive without a healthy environment.

It is unlikely that complete agreement among all nations on all complex environmental topics will be reached but at least a start on the international level will have been made. The oceans at present are no-one's responsibility but recently 14 nations in the northeastern Atlantic area came to an agreement on ocean dumping (UN CESI news release December 3, 1971). On April 15, President Nixon and Prime Minister Trudeau signed the Great Lakes Water Quality Agreement, the first pact between two countries designed to protect and, if possible, revive a shared waterway. These are hopeful initial steps in the right direction.

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AUGUSTUS F. KENDERDINE, 1870 - 1947

by Jean E. Murray, Department of History,
University of Saskatchewan, Saskatoon

AUGUSTUS F. KENDERDINE had an established reputation as an artist when he came to Canada in 1908. He was born near Blackpool, Lancashire, England, in 1870, and when fourteen he was apprenticed to an art dealer. He received his first lessons in painting from his godfather, Chevalier Lafosse, a Belgian artist who had settled in Manchester. Later, at the insistence of his godfather, he studied art at l'Académie Julien in Paris. On his return to England the young painter opened an art shop and studio at Blackpool and became known as a portraitist as well as a painter of landscapes. He exhibited at the Royal Academy, London, and the Paris Salon, and his paintings were acquired by several British galleries.



Photo by E. Davis, Prince Albert

Gus Kenderdine at Emma Lake

In 1908 he decided to emigrate. He considered going to Japan where he had relatives in the ship business but chose instead to settle on a homestead in Western Canada. In his youth he had been a trooper and an instructor in equitation in a British cavalry regiment; he loved horses and longed for a ranch of his own. He found a homestead that he liked near Lashburn, selecting the land, his daughter says, on the basis of its natural beauty and not the quality of the soil. He moved there with his wife and four children in August, 1909, and built a house at the crest of a high hill which he whimsically named "Pike's Peak." During the next ten years he was busy clearing land, breaking sod, riding range and herding cattle but he did not give up the idea of painting as a means of livelihood. He had a son who would take over the ranch eventually.

In 1920 this homesteader from Pike's Peak showed some of his paintings in Saskatoon and he found an appreciative audience. He was advised to move to Saskatoon and he did so in 1922. He accepted the University's offer of space for a studio in the new Physics Building, taught the first of his University night classes in 1926-27, and in 1933-34 the first of the courses in Art History that he gave in association with Professor R. A. Wilson of the Department of English.

During the summer 'Gus' Kenderdine went on painting, sketching and camping trips, travelling west to the mountains and the sea in the 1920's, north to the lakes and wooded country in Saskatchewan in the 1930's. In 1935 he and Dr. Wilson proposed a summer art school at Emma Lake where students could sketch outdoors and paint in surroundings that were free from the dreariness of the dust-laden prairies. The University was willing to open an art camp if the plans were made on a simple scale. Land was



Courtesy Norman MacKenzie Art Gallery, Regina

Kenderdine's 1923 North Saskatchewan River, oil on 29½" x 39¾" canvas

leased, a site was cleared, a few small buildings were erected, and the camp was opened in 1936. Expenses were kept within the narrow limits of the University budget and to the delight of all concerned the camp was an unqualified success from the beginning. Gus Kenderdine returned to teach there each summer until his death in 1947.

In 1936 he was appointed the Director and Professor of Art at the newly established School of Art at Regina College. His classes became larger than ever but in his free time during the eleven years he spent at Regina College he was able to sketch and paint scenes in the beautiful Qu'Appelle Valley.

Although his early paintings show the influence of the nineteenth century academicians under whom he studied, Gus Kenderdine's later work was done in a freer style. In Canada he found subjects so varied that they required different techniques. In one of his public addresses he drew attention to problems in composition which must be

solved when contrasting the broad sweep of the prairies with the vastness of the sky; in another he stressed the importance of capturing the quality of the light, for the light in wooded areas, he noted, is different from the light on the prairies.

He was a kindly man, unselfish and tolerant, a witty companion who had a quiet way of enlivening social gatherings. He had a deep feeling for Saskatchewan and would be pleased with the tribute paid him in the memorial which has been placed on the site of his homestead. The plaque on this memorial reads:

He was the foremost interpreter of Saskatchewan scenery, from the open prairies to the northern lakes and forests; and he was also a painter of portraits. Gus Kenderdine had no rival in capturing the spirit, majesty and power of the Western Canadian scene. His pictures are his bequest and our heritage. For he left a record on canvas of scenes that have now vanished forever.

DR. AND MRS. R. T. GAMMELL OF NORTH DAKOTA RECEIVE CITIZENS AWARD



Photo by James E. Frates, Manager, Des Lacs National Wildlife Refuge

The March, 1972 issue of *North Dakota Outdoors* records the winning of this coveted conservation award by a well-known Kenmare couple, Bob and Ann Gammell.

The Citizens Award is a recently established U.S. Department of the Interior, Bureau of Sport Fisheries and Wildlife, award designed to give special official recognition to private citizens for contributions which they voluntarily make to the public service.

The award was presented in Kenmare, North Dakota, at a special commemorative supper, January 19, 1972. James E. Frates of the Des Lacs National Wildlife Refuge described the event for *North Dakota Outdoors* (a monthly publication of the State Game and Fish Department, Bismarck, North Dakota, editor Ed Bry). According to the article the Gammells have, since 1957, banded over 160,000 birds of 224 different species.

Bob and Ann Gammell are always willing to share their interest and knowledge of birds and their home is a favorite stop-over place each summer for birders throughout the United States and Canada. They are enthusiastic supporters of the U.S. National Wildlife Refuge system, particularly the Lostwood and Des Lacs Refuges near Kenmare.

Congratulations from the *Blue Jay* to the Gammell team.

A. O. U.

The American Ornithologists' Union is holding its 90th annual meeting, August 14 - 18, 1972 at the university in Grand Forks, North Dakota. Several field trips to the wetlands of North Dakota are planned as part of the meeting. The Gammells of Kenmare, N.D. are members of the arrangements committee.

THE PASSENGER PIGEON IN SASKATCHEWAN

by C. Stuart Houston, 863 University Drive, Saskatoon

It is a surprising but not always appreciated fact that, for much of the last century, Carlton House and Cumberland House were better known ornithologically than most other areas on this continent, and probably better than any other area in Canada. *Fauna Boreali-Americana, Volume 2 the Birds* (Swainson and Richardson, 1832), describing the collections and observations of Richardson and Drummond, in the 1820's, largely at these two localities, antedated by 60 years the publication of McIlwraith's *Birds of Ontario*. The studies by another serious observer, Thomas Blakiston (1861-63), who lived at Carlton in 1857-58, antedated McIlwraith by 25 years.

It is regrettable that Richardson, Drummond and Blakiston left us so little solid information about the two species which later disappeared—the Passenger Pigeon (*Ectopistes migratorius*) and the Eskimo Curlew (*Numenius borealis*). The explanation is quite simple—these two species were so common as to merit little comment, much less any attempt to collect specimens. The situation might be compared to one of us visiting another city today, and recording little or nothing about the status of the now-ubiquitous House Sparrow.

The classic, scholarly study of the Passenger Pigeon by Schorger (1955) omitted some important observations of this species within the present boundaries of Saskatchewan. Several publications were not available to Schorger and in several others the geographical references were unclear and misinterpreted. I have collected 21 observations of the Passenger Pigeon within Saskatchewan and two within immediately adjacent portions of Manitoba. These are listed below in chronological order.

PASSENGER PIGEON RECORDS FOR SASKATCHEWAN AND ADJACENT MANITOBA

July 24, 1691. [Nipawin]. Henry Kelsey (1929). “. . . we sat down & roasted 3 pigeons wch I had kill'd yt morning.”

Whillans' (1955) detailed and plausible reconstruction of Kelsey's route, presuming Kelsey had ascended the Saskatchewan, would place this a few miles south of the present site of Nipawin. Alternatively, if Kelsey had ascended the Carrot River, as Bell suggested (1928), he would have been a bit further south, somewhere east of the present sites of Carrot River or Arborfield.

1774-1775. [Cumberland House]. Samuel Hearne (1795). “In the interior parts of the country they fly in large flocks, and perch on the poplar trees in such numbers that I have seen twelve of them killed at one shot. They usually feed on poplar buds, and are good eating, though seldom fat. They build their nests in trees, the same as the Wood Pigeons do; never lay but two eggs, and are very scarce near the sea-coast in the Northern parts of Hudson's Bay.”

The only inland site where Hearne lived for any time was Cumberland House, which he founded September 3, 1774 and where he resided until May 29, 1775 and again from August 19 to October 16, 1775.

1800 - 1802. Assiniboine and Swan Rivers. Daniel W. Harmon (1820). “May 2 [1802] . . . of fowls, we have swans, geese, bustards [Canada Geese], cranes, cormorants, loons, snipes, several species of ducks, water-hens [Coots], pigeons, partridges [Ruffed Grouse], pheasants [sharp-tailed Grouse], &c. &c.”

Harmon resided at Alexandria, a North West Company trading post on the Assiniboine River, 10 miles north and two miles east of the present site of Canora, Saskatchewan, from October 23, 1800 to March 6, 1801 and from June 1 to October 2, 1801. He then moved to Thunderbird Mountain post, named for the nearby Thunder Hill, on October 2, 1801. This post was on the Swan River, seven miles north of the present site of Durban, Manitoba and six miles west of the the present Saskatchewan boundary. His observations undoubtedly refer to the Upper Assiniboine and the entire Swan River valley.

August, 23, 1808. Saskatchewan River, east of The Pas, Manitoba. Alexander Henry (the younger). (1897). "We shot a number of wild fowl during the day—outardes [Canada Geese], ducks, pelicans, and some pigeons, of which we saw great numbers."

Owing to mention of a "pine island", Schorger erred in assigning latitude and longitude to this observation; it was one day's paddle east of The Pas, between 59° 30' and 53° 50' North and between 100° 30' and 101° West.

October 23, 1819 — June 13, 1820. [Cumberland House]. Robert Hood and John Richardson (compiled by Sabine, in Franklin, 1823). "They breed together in large numbers, rearing only one young at a time . . . though they prefer living thus in common, they are frequently known to make their nests in detached places . . . It seems likely that, as population and cultivation extend westward, the countless multitudes of these birds, which darken the air for hours and miles together in their flight, will be reduced; their visitations must be ruinous to agricultural districts, and consequently incompatible with civilization; indeed, it is probable that their less frequent appearance in the Atlantic States has been caused by the necessity they have felt to retire from the frequented abodes of man."

A specimen was sent back from the first Franklin expedition, most likely from Cumberland House, where "the

principal supply of specimens was obtained" collected by John Richardson or Robert Hood. Joseph Sabine, in the zoological appendix to the account of that expedition, quoted several facts from Alexander Wilson, but Sabine's prophecy of the ultimate decline in numbers of the Passenger Pigeon was apparently original.

July 29, 1820. Ile-à-la-Crosse. Robert Hood (in Franklin, 1823). "The only birds visible at this season, are common to every part of the Missinippi [Churchill River]: gulls, ducks, pigeons, goatsuckers and the raven"

June 28 - August 20, 1825. Cumberland House. Thomas Drummond (1830). "The Passenger Pigeon is very common, building its nest in the willow bushes on the margins of the lake, and feeding principally at this season upon the berries of the *Cornus alba* [red osier dogwood] and *C. Canadensis* [bunchberry]."

This is the only nesting record for the present province of Saskatchewan, and the farthest northwest for the continent.

May through July 14, 1827. Carlton. Thomas Drummond. May 24 - June 21, 1827. Cumberland House, John Richardson (Swainson and Richardson, 1832). "Summer. In small flocks . . . arrives in the fur-countries in the latter end of May and departs in October. It annually attains the sixty-second degree of latitude [Great Slave Lake] in the warmer central districts, but reaches the fifty-eighth parallel on the coast of Hudson Bay [north of York Factory] in very fine summers only. . . . A few hordes of Indians, that frequent the low, flooded tracts at the south end of Lake Winnipeg, subsist principally on the pigeons during a period of the summer when the sturgeon-fishery is unproductive, and the *Zizania aquatica* [wild rice] has not yet ripened; but farther north, these birds are too few in number to furnish a material article of diet."

July 25, 1828. Saskatchewan River, eight miles east of Manitoba boundary.

Archibald McDonald and George Simpson (McDonald, 1872). "Put up about two leagues below the Barriere . . . Shot three or four pigeons."

July 6, 1833. Sturgeon Landing on Namew Lake. Richard King (1836). ". . . and encamped at the mouth of Sturgeon River. While the men were occupied in pitching our tents and preparing the supper, Mr. Annance and myself took a stroll through the woods in pursuit of some pigeons that had been seen to alight. Although we got no pigeons . . ."

July 14 - August 8, 1835. Churchill, Sturgeon - Weir and Saskatchewan rivers from La Loche to Grand Rapids. Richard King (1836). "Along the whole course of the Missinippi [Churchill] and Saskatchewan Rivers, we met with small flocks of the *Columba migratoria*, or passenger pigeon, and here [Grand Rapids, Manitoba] they were extremely numerous."

May 23, 1858. Carlton. Thomas W. Blakiston (1862-63). "Common in the interior. The first Passenger Pigeon arrived at Fort Carlton in 1858, on the 23rd day of May; and by the middle of June numerous flocks were making their way northwards. They may be distinguished at a long distance, from waterfowl or waders, by their flight being in no particular order, but on the principle of 'everyone for himself, and the devil take the hindermost'."

July 20-26, 1858. Qu'Appelle River, Fort Qu'Appelle to Fort Ellice. J. A. Dickinson (Chapter 17 in Hind, 1860). "Cherry-birds [Cedar Waxwings] and pigeons were calmly and listlessly perched on the dense trees, having eaten plentifully of their favourite fruits . . ."

August 2-5, 1858. South Saskatchewan River, Elbow to east of St. Louis. Henry Youle Hind (1860). ". . . extraordinary absence of animal life . . . we have seen . . . of birds, eagles, geese, a few ducks, kingfishers, cliff martins, pigeons, crows, cranes, plover, hawks, and a few of the smaller birds . . ."

The likely sites for the pigeon sightings were the Moose Woods, south of the present site of Saskatoon, and the area from St. Laurent to the forks east of St. Louis.

July 2, 1859. East of Fort Qu'Appelle. James Carnegie, Earl of Southesk (1875). "M'Kay, however, discovered a few pigeons in a little grove, and shot two or three of them. We halted for dinner not far from Qu'Appelle Fort."

July 25 - Sept. 12 - October 22, 1873. Winnipeg to Rocky Mountain House to Grand Rapids. Alfred R. C. Selwyn (1875). "Cranes, bitterns, plovers, sand-pipers, snipe and other waders, as well as pigeons, blackbirds, larks and a number of other small birds are plentiful on the prairies or in the swamps, or along the river valleys, and crows and several kinds of hawks are also very common."

Autumn, 1874. Fort Pelly on the Assiniboine. Charles A. Boulton (in Atkinson, 1905). "I have resided in Manitoba since 1872 and have taken pigeons as far north as Fort Pelly in the fall of 1874 . . ."

Mid - May, 1877. Whitesand. River [northwest of Kamsack]. W. J. McLean (in Atkinson, 1905). "1877 was the last occasion on which I saw any numbers of the birds, when I encountered large flocks of them passing northwesterly from White Sand River near Fort Pelly. This was on a dull drizzling day about the middle of May, and I presume they were then heading toward the Barren grounds district, where the blueberry and cranberry are again very abundant."

August - September 1881. Swan River [Parrhill Lake to Livingstone]. John Macoun (1909). "In the latter part of August and early in September of the same year (1881), on the Swan River, above Livingstone, and also on the upper Assiniboine we saw large flocks and as food was scarce we shot large numbers for the pot. The low flats along the river were covered with *Cornus stolonifera* [red osier dogwood], and on the ripe berries of this shrub they were feeding."

September, 1881. Assiniboine River, below Fort Pelly [near Kamsack]. John Macoun (1922). "One afternoon, the canoe was ahead of my boat . . . I heard a shot . . . my nephew, Davie . . . was sitting on a box in the canoe, and fired at the pigeons in the tree, and the recoil of the gun caused him to lose his balance and he tumbled headlong into the river . . ."

"In all my travels in the northwest I have never since found them breeding" (*in* Thompson, 1890). "Few pigeons are seen on the plains, but in the latter part of August and the first half of September, they are abundant in the northern river valleys, feeding on the berries of the Wild Cornel" (Macoun, 1882).

1880 - 1885. Fort Qu'Appelle. George F. Guernsey. (*in* Thompson, 1891). "Occasional, [arrives] May 10."

October 10-18, 1883 and June 7-22, 1884. Homestead, sec. 36-28-1-W1, 1½ miles southwest of present Runnymede. Ernest E. Thompson (1886). "Common summer resident . . . noted along the Assiniboine."

1894 - 1900 Prince Albert and St. Louis. Eugene Coubeaux (1900). "Common; a straggler during the migrating season, and oftenest seen in fall."

Common was almost certainly an exaggeration, even for 1894 when Coubeaux arrived.



Photo by John Waddington, University of Saskatchewan

The only Passenger Pigeon specimen in Saskatchewan is the one shown above in the Department of Biology museum, University of Saskatchewan, Saskatoon Campus. It was not collected in Saskatchewan, however, but near Port Hope or Cobourg, Ontario in the 1800's by either Alexander Hamilton Pringle (who settled there in 1832 - 33) or by his son Alexander Whyte Pringle. It became the property of the grandson Ernest H. Pringle who came West in 1905 at the age of 17 years, and it was donated to the University by the latter's wife, Mrs. Eva Pringle of Saskatoon.

Discussion

This single species may have accounted for up to one-half of the total number of individual birds on this continent; Schorger has estimated a possible Passenger Pigeon population of 3,000,000,000 in the 1600's. They declined slowly everywhere throughout the 1800's, with the decline becoming precipitous from 1871 to 1880; by 1890 they were rare everywhere. Human persecution, well documented by Schorger, was no doubt the main cause of their decline in their areas of greatest density, including Michigan and Wisconsin. Possibly other unknown factors were involved in their disappearance from the unsettled portions of Manitoba and Saskatchewan.

Spectacular flights occurred in neighboring Manitoba. In 1887, Donald Murray related to Miller Christy how he "used to see flocks of pigeons following the course of the Red River, which were so large that the front of each flock was out of sight in the north whilst the tail was out of sight in the south, but they never come now" (Thompson, 1890).

Even in neighboring Alberta, farther from their centre of abundance, Alexander Henry the younger (1897) reported on August 31, 1810, a heavy southward migration "in immense flocks, particularly in the morning and evening." This was at Terre Blanche House, near the junction of the White Earth River with the North Saskatchewan, 12 miles E.S.E. of the present town of Smoky Lake, Alberta. Smith and Kidd (1971) have recently reported 14 bones from at least two individual Passenger Pigeons, in excavating the cellars of Fort George on the north bank of the North Saskatchewan, 30 miles west of the present Saskatchewan boundary; this fort was occupied from 1792 until about 1801.

The last breeding record for Manitoba was a colony of less than 20 nests on the west bank of the Waterhen River between Lake Manitoba and Lake Winnipegosis; John Macoun collected two eggs from the flimsy nests,

some only 10 feet from the ground, on June 23, 1881. (Macoun and Macoun, 1909). The last specimen taken in the Winnipeg area was shot southeast of the St. Boniface cathedral in the fall of 1893 by Dan Smith, while the last Manitoba specimen, a magnificent male, was shot at Winnipegosis on April 10 or 14, 1898 and mounted by George E. Atkinson (Atkinson, 1904). The last Manitoba sightings were both by Norman Criddle, then Manitoba's foremost naturalist, near the junction of the Souris with the Assiniboine: a spring migrant on April 8, 1899 and a male seen in the fall on September 21, 1902 (Macoun and Macoun, 1909). As it is only a sight record, the latter is not accepted as authentic, but depending on one's assessment of other contending sight records, it may have been the last Passenger Pigeon seen in the wild anywhere on this continent.

Postscript: the Mourning Dove

The final question for discussion is whether any of the sight records of so-called Passenger Pigeons may have involved mistaken identifications of Mourning Doves. In Saskatchewan, this is quite unlikely for a number of reasons. While all large flocks were almost certainly Passenger Pigeons, and while naturalists like Richardson, Drummond, King and Blakiston were unlikely to confuse the two species, the argument is strengthened most by the evidence that Mourning Doves seem to have been absent from Saskatchewan before the days of settlement.

T. S. Roberts (1936) has described the increase of the Mourning Dove with settlement in northern Minnesota, appearing in many localities where it was formerly absent, as areas of forest were cleared for settlement. In 1882-1884, Ernest E. Thompson (later known as Ernest Thompson Seton) saw only one Mourning Dove in all his travels throughout Manitoba, and hence listed it as a rare summer resident (Thompson, 1890). In contrast, he reported on a return visit in 1892 (Thompson, 1893) that "on the Big Plain (north of Carberry), wherever there are trees and water, three or

four pairs seem to be semi-domesticated around each barnyard."

The first Saskatchewan sighting of the Mourning Dove was apparently that of George F. Guernsey at Fort Qu'Appelle in 1880-1885 (Thompson, 1890). In 1892, only a few stragglers were seen at Indian Head by Spreadborough (Macoun and Macoun, 1909), while by 1903, George Lang described it as common there. South of Calder, in the Yorkton area, R. P. Rooke noted the Mourning Dove only on rare occasions in the 1890's; the major increase in its numbers there did not occur until the period from 1925 or 1930, through 1944 (Houston, 1949). Criddle and Atkinson reported to the Macouns (1909) that Mourning Doves became common along the Assiniboine and as far west as Yorkton, Saskatchewan, by 1906.

Mourning Doves were still rare at Quill Lake in 1909, with four observations in two months (Ferry, 1910) and at Davidson in 1932, with only four sightings in 10 weeks by a Carnegie Museum collecting expedition (Todd, 1947). Although Bent (1907) found them "very common in the timber along the creeks" in the Maple Creek area in 1905, Potter (1930) reported that at Eastend on the south side of the Cypress Hills, they had increased very noticeably since 1920.

Mourning Doves were still a novelty in west-central Saskatchewan in 1931: Humphry (1932) reported one seen at the Manitoba Forest Reserve on August 20 and Bruggeman (1933) reported one 20 miles north and four miles east of Lloydminster on July 3; each was said to be a first record for the area.

Conclusions

It is evident that Passenger Pigeons migrated across the open plains of Saskatchewan in the days of the buffalo, but were resident in moderate numbers in wooded areas. We know they were once common near Cumberland House and on the south slopes of the Porcupine Hills in the Swan River valley, as well as at Winnipegosis and Grand Rapids in adjacent Manitoba.

They required wooded areas, and appear to have nested in moderate numbers there, whereas the open plains were unsuitable for Passenger Pigeons as well as for Mourning Doves. The Passenger Pigeon disappeared from Saskatchewan just as the settlers began to arrive.

With settlement, clearings were made in wooded areas and road allowances across the open plains made fire control possible. The clearings immediately provided suitable habitat for Mourning Doves, while fire control after a time allowed "bluffs" of poplar to grow up across the middle third of settled Saskatchewan. Such areas gradually became ideal habitat for the Mourning Dove, which reached approximately its present abundance only in the decade 1940-1950. To some extent, we may consider the Mourning Dove as filling the "niche" left by the disappearance of its once-abundant relative, the Passenger Pigeon. Meanwhile, another Columbiform, the Rock Dove, has been introduced by man and thrives by the thousands where human population is greatest—and this relatively new status of the Rock Dove has been essentially ignored and undocumented, much as the Passenger Pigeon was ignored when it was still abundant.

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TWO NEW RECORDS OF THE VARIED THRUSH IN MANITOBA

by Norman Lee, R.R. 3, Selkirk, Manitoba

About 6:30 p.m. on October 9, 1971, while I was watching a group of seven robins in my yard near Lockport, 23 miles north of Winnipeg, my attention was caught by one "Robin" which had a bright orange-red breast instead of the usual brick-red or washed out red. A closer look revealed a black band running across its breast. By then I was pretty sure that this was a Varied Thrush. I immediately went for *The Birds of Canada* by Earl Godfrey (1966) for an exact description.

Meanwhile my brother Jack watched the bird take a bath, then followed it to a crab-apple tree where it fed with robins on fallen crab-apples. He noted a thick orange-red eye line and two distinct orange wing bars on each wing and less noticeable orange lines along the primaries. The bird flew off following an alarmed robin and was not seen for the rest of the evening.

A search took place the next morning from 7:30 to 8:30 a.m. and again at 9:00 a.m. with Herb Copland.

Though there was a careful watch for it the rest of the day, the bird still wasn't sighted. Then, five minutes after Herb left, about 6:05 p.m. it reappeared with some robins and took a bath. This time my brother Eric was around and due to better lighting conditions, we had a much better look at it.

It did not show up again until the next evening (October 11) when it was once again with a group of robins and taking a bath. It stayed for only a few minutes then left. This was the last sighting.

Another sighting of a Varied Thrush was made December 19, 1971 at Miami, about 90 miles southwest of Winnipeg by Norm and Madeleine Cleveland. Norm reported (pers. corres.): "a beautiful male bird, sitting in a cherry tree. He took some red cherries off the tree and flew to a nearby hedge to eat them, then came back. I went to get my wife and when we got back he had moved up into a maple tree where we observed him for about another five minutes."

Jack Westaway, in whose yard the observation was made, said the Varied Thrush had been present there for two or three weeks prior to December 19 but he had not realized the importance of this rare visit. Although Jack has fed birds for years and is an ardent bird lover, he is not a bird identifier and was informed that it was a Varied Thrush by a Mrs. Criddle, also of Miami. After being advised of the sighting by Norm Cleveland, Herb Copland and David Hatch drove to Miami on December 22 and observed the bird for several hours (Gardner, 1972b).

Mr. Westaway left Miami during the Christmas season. The Varied Thrush did not reappear after he returned.

A review of all the known records of the Varied Thrush in Manitoba was made by Ken Gardner (1972a). "The first recorded sightings of the Varied Thrush in Manitoba go back to 1929 when one was seen at Rathwell during the summer and another

in Winnipeg in mid-October. Both were seen in the company of robins.

"Miss M. E. Jollow of Brandon reported a female trying to build a nest there in early June, 1930. No male was seen. This sighting was verified by B. J. Hales. In late August, 1931, two Winnipeg birders spotted no less than three of these Thrushes at Husavick on Lake Winnipeg.

"The next report comes from Killarney Lake where J. H. Kitley observed a male and female on June 22 and 23, 1932. No more were reported until 1955 when Harold Hosford saw one in St. Vital Park, Winnipeg.

"However, it wasn't until 1965 that a specimen was obtained. This was a male that had been attending the feed tray of Mrs. M. E. Bristow in Brandon during November. This bird was verified by John Lane and was kept under observation until December 28 when it died during a cold snap. The bird was prepared as a specimen for the B. J. Hales Museum at Brandon University.

"The next sighting was made by George Gryzbowski who observed a lone male at the southeast corner of Birds Hill Provincial Park May 14, 1970."

According to Godfrey (1966) the Varied Thrush's breeding range in Canada starts at the Yukon and northwestern Mackenzie southward throughout British Columbia and southwestern Alberta. Godfrey makes no mention of this bird in Manitoba, but does mention reports in Alberta, Saskatchewan, Ontario, Quebec, and New Brunswick.

Recently, Sealy (1971) summarized all known records for Saskatchewan.

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FURTHER RECORDS OF SUMMER FLOCKING OF COMMON LOON

by Robert W. Nero, Department of Mines, Resources and
Environment Management, Winnipeg

In summer, Common Loons are usually observed singly or in pairs and the occurrence of even a dozen birds in a flock is enough to attract attention. However, flocks of as many as 100 birds have been recorded. The reasons for this unusual behaviour are not all clear.

Rand (1948) briefly examined the nature of summer flocking in the Common Loon as observed by J. M. Harrison for the Flin Flon area of central western Manitoba. Harrison reported daily adult congregations of up to 60 birds on Lake Athapapuskow and more than 100 on File Lake in July 1943, and June and July 1946. Loons flew in to these lakes in the early morning and left in late evening, with flock size reaching a peak about 3:00 p.m. It was suggested by Rand that these were feeding aggregations. It was unclear why loons would leave their young if they were from pairs nesting on nearby smaller lakes, or why they would leave the lake at all if they were non-breeders.

Olson and Marshall (1952: 66-69) presented a discussion of summer flocking based on extensive observations on breeding grounds in Minnesota. Some birds began to associate in flocks early in the season, with the largest flocks forming on the biggest lakes. They considered groups of 10 to 30 or more loons to be major flocks, and noted that such flocks were found on certain areas of the larger lakes year after year. The flocks slowly declined in numbers through September and early October. They believed that unsuccessful breeding pairs and non-breeding birds were the main components of flocks. Coordinated behaviour within flocks was observed. Feeding formations in particular were notable, birds usually assuming evenly spaced positions in straight lines. Still, the authors con-

cluded: "The reasons for flocking are not known."

The present note brings together some additional observations of summer flocking in the Flin Flon area but offers no further explanation of the activity.

Douglas and Dorothy Wade (1963: 138) reported separate flocks of 35, 57 and 100 loons at Wildnest Lake, about 30 miles northwest of Flin Flon in Saskatchewan, August 18-20, 1963, and stated: "Outside of large but loose concentrations (which could not be called flocks) seen by us off the coast of North Carolina, we had never seen such large, closely-assembled flocks of Common Loons in salt or fresh water."

James D. Hale and Paul M. Hale reported (pers. commun., 1971) large numbers of loons in late June 1970 on Athapapuskow Lake. They saw an estimated 100-200 birds in scattered small groups over a stretch of nine miles and a concentrated flock of about 50. This was a larger number of loons than they had ever before seen though they had fished for a few days on this same lake during roughly the same period for the past eight years.

Roy A. Reinke, Conservation Officer, has noted (pers. corres., July 30, 1971) large, compact flocks of loons on Kississing Lake, 30 miles north of Flin Flon. "It is safe to say that there would be 100 to 200 in one flock. There seems to be one large flock on the lake with a number of smaller flocks at other points on the lake. The large flock is most always in the same location covering an area of about a square mile in compact groups of 25 to 100 birds. They seem to be in greatest numbers during June and early July." Reinke also reported flocks of up to 100 loons on Second Cranberry Lake.

These observations, all from within 50 miles of Flin Flon, from 1943 to 1971, show that summer flocking is of fairly regular occurrence, at least in this area.

Reports of summer flocking of loons on lakes south of Kenora in western Ontario show that the phenomenon is not limited to the Flin Flon region. Robert R. Taylor (pers. commun., 1971) observed a flock of 16 at Dogtooth Lake, June 5, 1971, and an estimated 120 strung out in groups of 15 to 20 for three miles on Dryberry Lake, from 5:00 - 6:00 p.m., June 12, 1971. On August 4, 1970, he recorded two flocks of 21 birds each, about one-quarter mile apart on Hillock Lake.

That cooperative group feeding may occur even late in the season is suggested by an observation by Kip Park and Bob DeCruyenaere (pers. commun., October, 1971). An estimated 35 loons were seen fishing in a fairly tight flock occupying a circle of about 200 feet in diameter. When approached by boat, individuals dived when it was about 15 feet away, surfacing almost immediately once it moved out of that range. The boat moved well within the flock, which showed no indication of fear, nor made any attempt to fly off. This was at 3:30 p.m. on October 17, 1971, at Shoal Lake, just over the Manitoba border in western Ontario. The lake supports a fairly substantial loon

population during the year.

Little information is available on fall migration and it is generally supposed, as reported by Chapman, that "loons move singly or in small groups at considerable height" (in Olson and Marshall, 1952: 69). Palmer (1962: 26-27) notes that "up to 300 birds may gather temporarily on small lakes when migrants encounter adverse weather." Campbell (1970) reported an unusually large number of loons migrating over Mille Lacs Lake in central eastern Minnesota early in the morning of November 11, 1969: "Very conservatively, I would estimate that at least 500 loons passed through my viewing area between 7 a.m. and 9 a.m. of that day. It seems that Mille Lacs is an important link in the migration route of the loons. I suppose this might be because of an abundance of fish like tullibeas, central location, and the fact it freezes later than most other lakes."

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GREAT CRESTED FLYCATCHER AGAIN OBSERVED IN ALBERTA

by Graeme M. Greenlee, 10609 - 85 Ave., Edmonton 60

The evening of June 19, 1971 was clear, calm and warm. My wife and I had driven to a location about nine miles east of Two Hills, Alberta. The site was stop number one of the Breeding Bird Survey which we were going to conduct the following morning. The topography was rolling and the countryside was covered with aspen, broken by scattered small clearings seeded to tame hay.

The time was about 7:00 p.m. and we were standing beside the car, listening for bird calls. We heard two birds, one on either side of the road, uttering the same call. It was a call neither of us recognized, and could be described as a loud hoarse "cheep." As we began to move toward the source of the nearest call, a bird flew across the road in front of us. We did not immediately recognize it, but

our first thought was: "western kingbird." It was about the same size as a Western Kingbird, had a dark back and yellow belly and flew like a flycatcher. Upon closer observation of the bird in a perched position, it was seen to have a flycatcher profile. However, the call was completely unlike any I have ever heard from a Western Kingbird, a bird with which I am completely familiar.

We followed and observed the two birds with 7 x 50 binoculars for about three-quarters of an hour, and had several good close looks at them. They had dark backs, gray throats (white in Western Kingbird), two white wing bars per wing (absent in Western Kingbird), long rusty tails (black with white outer tail feathers in Western Kingbird) and yellow bellies. In consultation with the field guide, *Birds of North America* by Robbins, Brunn, Zim and Singer, which we had with us, we identified these birds as Great Crested Flycatchers.

We could hardly believe our eyes, since these birds were not even on the hypothetical list in the first edition of *Birds of Alberta* by Salt and Wilk. (They are on the hypothetical list in the latest edition of the book, since Edgar T. Jones of Edmonton saw a pair about 30 miles east of the city a few years ago.) There was no doubt in our minds that they were Great Crested Flycatchers.

While we observed the two birds, their call was given repeatedly, often with a short trill on the end of it.

When we began our Breeding Bird

Survey the following morning at 3:26 a.m. the birds were again heard calling at the same spot. I returned to the same place at 4:45 a.m. on June 22 and stayed for an hour without hearing or seeing any sign of the birds. It was a calm morning with an overcast sky and cattle were bellowing and making a lot of noise in the area. I returned at 4:30 a.m. on a sunny calm June 29 and again heard the birds calling. I wandered through the woods for two hours searching for a nest, but was unsuccessful.

On June 30, a sunny calm morning, I watched both birds between 5:00 and 5:30 a.m., but still found no nest. Two more Great Crested Flycatchers were heard calling and were seen between 6:00 and 6:30 a.m. on the same morning, three miles west of the original location. They could have been the same birds. On this occasion I noted that the call was given singly, or repeated several times in succession.

I did not again return to the area until 4:45 a.m. on July 7. It was a cloudy, windy, cool morning, and no Great Crested Flycatchers were heard or seen. I arrived at 4:40 the following day on a sunny, calm, cool morning, and heard and saw one of them. I spent two hours searching for a nest, but again was unsuccessful.

I heard and saw two again one mile east of the original location at 8:30 a.m., July 15, and saw one at 8:00 a.m. the following morning in this same area.

I did not observe the birds again in 1971 but I was absent from the area between July 15 and August 26.

A RARE OBSERVATION OF THE ESKIMO CURLEW

by Fred W. Lahrman, Saskatchewan Museum of Natural History, Regina

On January 21, 1972, while on vacation in Texas, Dr. Fred G. Bard and I observed a bird which we are convinced was an Eskimo Curlew. The bird was sighted at about 11:40 a.m.

on Padre Island, where we were watching birds at a location approximately one-half mile northeast of the end of the causeway connecting the island to the mainland at Port Isabel.

We were especially interested that morning in a number of shorebirds, gulls and terns resting on a large expanse of shallow water and mudflats, bordered on the far side by a belt of green grass beyond which could be seen the blue water of Laguna Madre Bay. It was bright and sunny and we were able to get good views of the birds with a 32X telescope, securely mounted on a window-mount tripod. Dr. Bard was looking at a group of Willets on the far side of the mudflats, approximately 200 yards away, when suddenly he said, "Have a look, Fred — another bird has just alighted with the Willets." I could detect a note of excitement in his voice, and when I looked through the telescope which was "locked on the bird" I was surprised to see a small curlew. It was walking rather briskly, with brief pauses, among the Willets. Because of its small size, we considered the possibility of its being an Eskimo Curlew. It was too far away from us for us to see fine details or to photograph it, but we could see clearly that it was considerably smaller than the Willets, and that it had a slender, down-curved bill. The upper parts of the body were brownish-gray and the underparts and breast were lighter in shade — a buffy gray, but not quite as buffy in colour as the few Long-billed Curlews which were standing nearby. I could hear a few rather faint calls coming from the direction of the bird, which were strange and hard to describe. I attempted to make a recording, but the bird did not call again.

Meanwhile, the bird had been walking briskly towards the strip of grass on the far side of the expanse of water and mudflats, feeding as it went and taking occasional short runs, apparently to snatch up insects. Soon only its head could be seen bobbing about in the greenery, and then as it entered the taller grasses it was lost to view. It was not seen again, although we checked the area several times during the next two days.

Later, when I returned home from holidays, I consulted the literature for recent observations of the rare Eskimo Curlew. The curlew which we had seen conformed very closely in appearance to the bird pictured in an excellent black-and-white photograph taken in 1962 by Don Bleitz which I found in the *Audubon Magazine* (July-August, 1962) and in the *Auk* (82:495, July, 1965). At the time we saw the bird, however, it should have been in southern South America, as the winter range given by A. C. Bent in his *Life histories of North American shore birds* (1929) includes Uruguay, Argentina and Chile.

The Eskimo Curlew was once considered to be extinct and recent observations of this rare species are therefore important evidence that there may still be a small breeding population in the far north. The note by F. M. Weston and E. A. Williams in the issue of the *Auk* mentioned above (82:493-496), gives 11 recent records, nine of which were recorded within less than 20 years, from 1945 to 1963. Five of the 11 observations were made on the Atlantic Coast, representing the fall migration southward; the other six were observed in the spring on the Texas coast and are of special interest to us here because of their close proximity to our Padre Island observation. The following are the spring records for Texas given in the *Auk*:

April 29, 1945 — two seen on Galveston Island.

April 27, 1950 — one seen on this date at Aransas Bay, and again on April 28, 29.

March 22, 1959 — one seen on Galveston Island.

April 3, 1960 — one seen on Galveston Island.

For six days in the latter part of March and early April, 1962 — a group of three, or possibly four, birds seen on Galveston Island.

April 11, 1963 — one seen south of Rockport, at Aransas Bay.

ADDITIONAL INFORMATION ON GREAT BLUE HERON COLONIES IN MANITOBA

by **Kees Vermeer**, Canadian Wildlife Service, Edmonton, Alberta
and **David R. M. Hatch**, Oak Lake, Manitoba

Island colonies of Great Blue Herons (*Ardea herodias*) on large lakes in Manitoba were surveyed in 1969 (Vermeer, K., *Blue Jay*, 28:84-86, 1970). In 1971, a survey was made of Great Blue Heron colonies in other parts of Manitoba by plane, boat and automobile. (Inasmuch as the survey was not exhaustive and colonies may therefore have been missed, further information on heronries will be much appreciated by the writers.)

The numbered colonies in Fig. 1 are identified in Table 1. Ten colonies with 258 active nests were found in Duck Mountain Forest Reserve, which includes Duck Mountain Provincial Park, and five colonies with 197 active nests were found in Riding Mountain National Park (Fig. 1). One colony (no. 22) with 44 active nests was in Turtle Mountain Provincial Park and two (no.'s 34 and 35) with 52 active nests were in Whiteshell Provincial Park. These 18 colonies with 551 nests are protected by park or reserve boundaries in Manitoba, compared with one colony of nine nests in Elk Island National Park, Alberta and four colonies with a total of 114 nests in Backes Island Wildlife Refuge, Horseshoe Lake Wildlife Refuge, Meadow Lake Provincial Park and Duck Mountain Provincial Park in Saskatchewan.

Our survey of heronries in the Duck Mountain area has resulted in better protection for heronries there. D. R. Witty, park planner, wrote that the information provided on heronries was: "of invaluable assistance to us in our zoning of Duck Mountain Provincial Park. For instance in recognition of colonies 4 and 5, Elk and Beautiful Lakes have been zoned as non-power boating water bodies to protect these major nesting sites from excessive human disturbances." Unfortunately, all colonies in Manitoba are not so safe from man-caused habitat changes. For instance, the large colony (no. 21) near

Table 1. Location and size of active Great Blue Heron colonies observed in Manitoba in 1971.

Map No. (Fig. 1)	No. active nests	Section	Township	Range
1	8	14	33	25 W1
2	55	13	32	25 W1
3	11	31	31	25 W1
4	20	14	30	26 W1
5	41	6	30	24 W1
6	22	17	29	26 W1
7	6	27	28	26 W1
8	68	24	28	35 W1
9	22	15	27	26 W1
10	5	28	26	25 W1
11	31	18	26	29 W1
12	42	16	23	25 W1
13	55	....	22	20 W1
14	50	16	21	23 W1
15	33	....	21	19 W1
16	17	30	20	22 W1
17	34	13	19	21 W1
18	34	16	10	14 W1
19	21	21	9	17 W1
20	19	16	9	10 W1
21	89	36	3	13 W1
22	44	17	1	21 W1
23	12	9	1	22 W1
24	9	2	1	20 W1
25	127	12	25	10 W1
26	ca. 50*	6	23	10 W1
27	ca. 20	....	44	4 E1
28	ca. 12	....	39	7 E1
29	ca. 12	....	34	16 E1
30	26	1	32	4 E1
31	23	11	18	15 E1
32	16	8	17	7 E1
33	28	8	16	15 E1
34	7	36	11	14 E1
35	45	33	8	17 E1
Pickerel Lake**				
	10	35	41	15 W1
Head River**				
	ca. 50*	18	52	20 W1

*includes active and inactive nests

**Discovered in 1970, but information received after map had been drawn.

Glenora is in danger of being destroyed because the lessee of the land on which the heronry is located intends to clear the nesting trees for cultivation purposes. One colony (no. 31) has been saved from timber salvage through intervention of three conservationists, R. W. Nero, L. Bidlake and L. G. Yarn after the Abitibi Pulp and Paper Company agreed to leave the trees surrounding that colony.

The tree and aquatic habitats of active heronries are shown in Tables 2 and 3 respectively. Twenty-four of the 30 colonies shown in Table 2 were situated in one tree species. Besides the trees indicated in Table 2, herons also nested in birch (*Betula occidenta-*

lis), ash (*Fraxinus campestris*) and elm (*Ulmus americanus*). Some colonies were entirely in dead trees (no. 5, 22 and 25) while others were entirely in living trees (no. 8). One-third of the 34 colonies shown in Table 3 were located in water. The 10 heronries situated in dead trees (Table 2) were found in such flooded terrain. Trees will die when inundated for a lengthy period and colony sites may disappear because the dead trees eventually blow down.

Although fire may be a possible hazard to nesting colonies, two heronries in which there had been fires showed surprisingly little damage. The bush surrounding the large heronry at

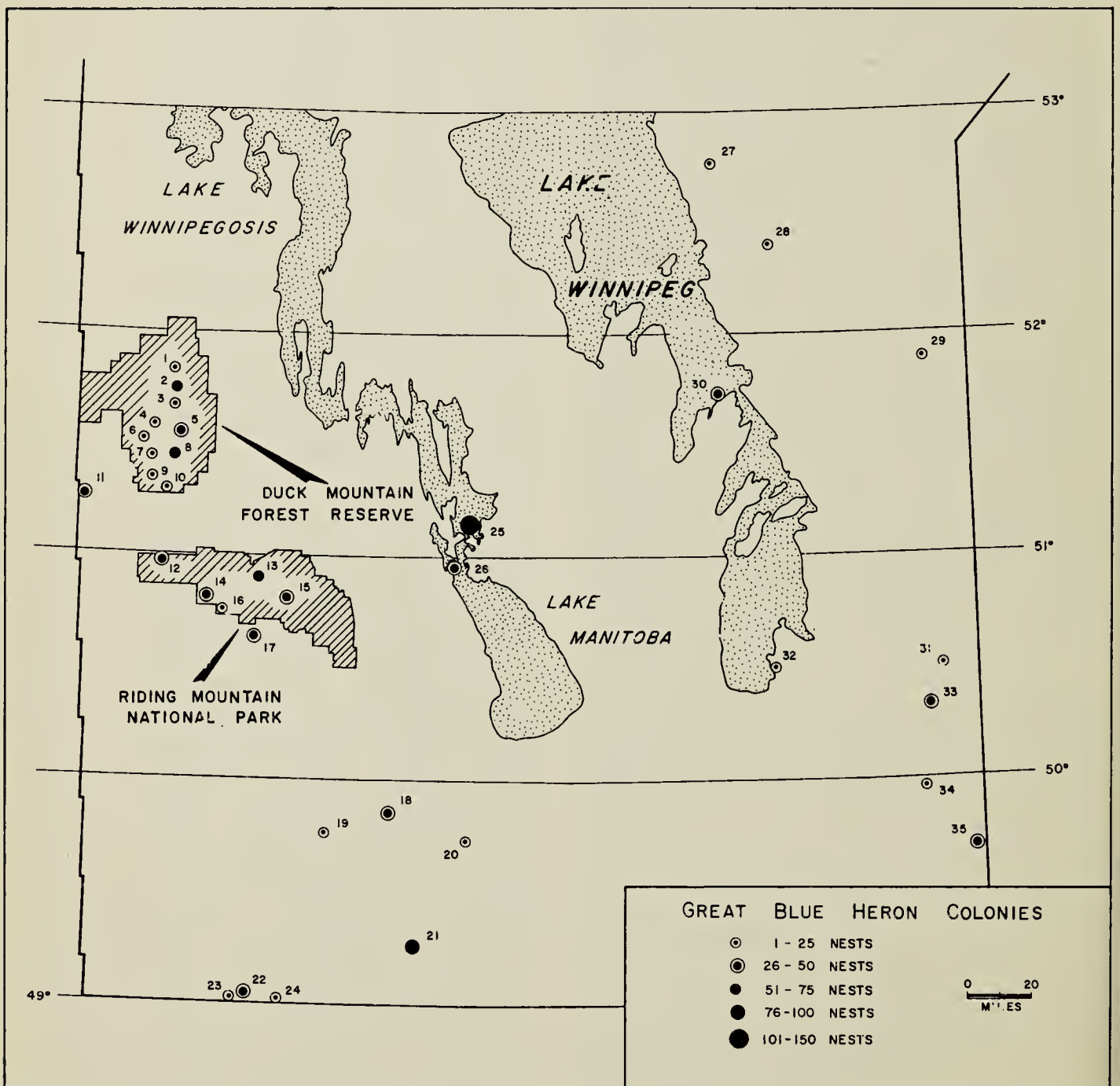


Fig. 1 Location and approximate size of Great Blue Heron colonies in Manitoba, 1971.

Richard Point (no. 25) was struck by lightning the day before the junior writer visited the colony. The resulting fire burned one-third of the undergrowth beneath the colony but only four nesting trees were destroyed. Young herons in nesting trees still standing appeared to be alive and well. A ground fire which swept through another heronry (no. 31) in June 1971 caused little damage to the nesting trees and no young herons appeared to have died because of smoke inhalation.

Some heronries (no. 18, 19, 20 and 21) may have suffered raccoon (*Procyon lotor*) predation. The ground around the nesting trees was covered with raccoon tracks and many nests which had fallen to the ground showed raccoon hair on their edges. Two nests with eggs, of which the contents had been eaten, showed signs of raccoon predation.

Table 4 shows 11 colonies which are known to have disappeared, mostly during the last decade. Local residents blamed raccoons for destruction of the colonies at Hilton, Oak Lake, Virден and Pipestone, human disturbance for the disappearance of those at Singush and Whitemud lakes, and a storm for the destruction of another colony (13-27-25 W1) in the Duck Mountains. The colony at Basswood disappeared because the nesting site was cleared for cultivation.

A mixed colony of Double-crested Cormorants (*Phalacrocorax auritus*)

Table 2. Tree habitat of 30 active Great Blue Heron colonies.

Dominant tree species in colony	No. colonies	Prevalent condition of nesting trees	
		Alive	Dead
<i>Populus tremuloides</i>	16	9	7
<i>Populus balsamifera</i>	3	1	2
<i>Salix amygdaloides</i>	1	1	..
<i>Picea mariana</i>	9	8	1
<i>Pinus banksiana</i>	1	1	..
Total	30	20	10

and Great Blue Herons was found on an island in Stewart Lake (no. 17). There were 20 heron nests in live and 13 in dead balsam poplar trees (*Populus balsamifera*) with one nest in live white birch (*Betula papyrifera*). There were 14 active nests of Double-crested Cormorants which were generally situated on lower branches than those of

Table 3. Aquatic habitat of 34 active Great Blue Heron colonies.

Nesting location	No. colonies	Prevalent location of nesting trees	
		on land	In water
Lake island	9	8	1
Lake edge	6	6	..
River bank	4	2	2
River island	1	1	..
Pond	5	1	4
Beaverpond	3	1	2
Small swamp	4	3	1
Junction of lake and creek	2	..	2
Total	34	22	12

Table 4. Great Blue Heron colonies no longer active in Manitoba.

Locality	Section Township and Range	Last year known in use
Hilton	9-6-16 W1	1966
Oak Lake	16-8-24 W1	1957
Virден	4-11-25 W1	1965
Maple Leaf, Pipestone	30-6-25 W1	1960
Basswood	19-15-19 W1	1962 or 1963
Hooper Lake	?-15-27 W1	....
Whiteshell Prov. Park	5-11-14 E1	1965
Whiteshall Prov. Park	28-13-16 E1	1965
Duck Mountains	13-27-25 W1	1967
Duck Mts., Island in Singush Lake	30-30-24 W1	1964
Duck Mts., Island in Whitemud Lake	14-30-25 W1	1964
Turtle Mountain Prov. Park	12-1-21 W1	1969

herons. Eleven of the cormorant nests were in live and three were in dead balsam poplars. Another mixed colony of Double-crested Cormorants and Great Blue Herons in the Turtle Mountain area (no. 24), was in a flooded stand of dead aspen poplar. Both heron and cormorant nests varied greatly in height above the ground. Of the 20 active nests present, 11 were used by the cormorants and nine by the herons. A young Great Horned Owl (*Bubo virginianus*) was found in a former Great Blue Heron nest in the large heronry on Richard Point (no.

25). The tree in which the young owl was found contained two other nests with young herons. Common Grackles (*Quiscalus quiscula*) had built nests in the bottom of 12 heron nests in the same colony. Common Grackles were also observed nesting in the bottom of six Great Blue Heron nests in the heron colony at Kawinaw Lake in 1971.

Acknowledgments

The authors appreciate the help of at least 18 persons who provided information or assisted with locating heronries.

TRAILL'S FLYCATCHER NESTING AT SASKATOON

by Wayne C. Harris, Raymore

At approximately 9:00 a.m. on July 23, 1971 a bird tentatively identified as a Traill's Flycatcher (*Empidonax traillii*) was observed by J. A. Wedgwood, S. J. Shaddick and myself four miles north and four miles west of Ardath (within the Saskatoon study area). The bird was giving alarm notes and seemed unwilling to leave the area. Though these actions led us to believe that there was a nest, a search of the area revealed nothing.

Another visit was made at 8:30 p.m. on the same day in an attempt to locate a nest. Following a thorough search, we flushed a small flycatcher from a small patch of rose bushes, and a nest containing four eggs was found 2½ feet high in the crotch of a rose bush. The habitat was shrubbery (rose, willow, red-osier dogwood, and snowberry) near the bank of a permanent creek. We left the area with the identification of the bird still in doubt as no singing male was heard in the vicinity of the nest.

On July 31, J. B. Gollop, J. A. Wedgwood and the writer revisited the nest in order to verify the identification of the bird. We found the female still on the nest and she was not flushed. Shortly, a male Traill's Flycatcher began singing from the top of a tree. A survey of the area revealed five Traill's Flycatcher in the vicinity (including the incubating female).

Another nest of the same construction as the first was found and, although the young had already fledged, it appeared that this nest was also that of a Traill's Flycatcher, something which could account for the number of birds of this species in the area.

When the female was finally flushed from the active nest, it was found to contain two eggs and two young. This was the last time the nest was visited; hence the outcome is not known.

Traill's Flycatcher was regarded as an uncommon migrant in the Saskatoon area and until this year there were no records between June 13 and August 19 (records from the "Saskatoon Bird Review"). This year there were several records between these dates. C. S. Houston observed one eight miles south of Saskatoon on June 19, and apparently the same individual was observed by the author in the same locality on June 22, 26, and July 5. A nest could not be located in this area although the bird was singing on three of the four sightings.

The above records not only constitute the first summer records but also include the only known breeding record for this area. This, however, is not the first breeding record for southern Saskatchewan; W. Earl Godfrey (*The birds of Canada*, Natl. Mus. Can. Bull. 203. 1966) states that Traill's Flycatcher breeds locally in the southern part of the province.

TRUMPETER SWANS IN THE CYPRESS HILLS

by Dan Nieman, Canadian Wildlife Service, Saskatoon

The Trumpeter Swan (*Olor buccinator*), the largest waterfowl in the world, once ranged as a breeding bird from Alaska and Arctic Canada south to Iowa and Missouri and east to Indiana (Banko and Mackay, 1964). Unable to adapt to the encroachment of civilization, these magnificent birds were virtually eliminated from most of their former range by overhunting and destruction of breeding habitat (Taverner, 1949; Banko, 1960). By the early years of this century, Trumpeters were near extinction. Although small, unreported groups may have existed in remote parts of British Columbia and Alaska, it was thought that there were only several dozen in the wild by 1916 (Munro, 1962).

Trumpeter Swans have staged a comeback in several areas: they have been protected throughout North America and have bred in captivity in Canada and the United States. Surveys of breeding and wintering grounds indicate that the total continental population was approximately 1,500 by 1961 and likely exceeds 4,000 at present (Evenden, 1969). The Trumpeter Swan's survival in North America is probably assured, but the species may never become abundant.

Trumpeter Swans are no longer listed as endangered species in Canada, but are still relatively rare. Here, they are restricted to British Columbia, Alberta and Saskatchewan. In the United States they are found in scattered localities in several northwestern states and in southern Alaska.

About one-half of the world's population of Trumpeters winters in British Columbia. The largest concentration (450) is located on Lonesome Lake, approximately 240 miles north of Vancouver. Other wintering populations are present on the north half of Vancouver Island and on the Queen Charlotte Islands (Morris, 1971). Small numbers winter in north-central British Columbia where fast

streams and warm springs keep the water from freezing. There have been no substantiated reports of Trumpeters breeding in British Columbia. A fairly stable population of about 100 birds, including from 15 to 30 breeding pairs, resides near Grande Prairie in the Peace River District of Alberta (Banko and Mackay, 1964). Another one or two pairs have occasionally nested near Brooks, Alberta.

The Trumpeter Swan in Saskatchewan

A small population breeding in the Cypress Hills region of southwestern Saskatchewan comprises a tiny part of the continental population. As the species is relatively rare, this local, isolated breeding population—thought to be the only one in the province—is important.

Trumpeter Swans may have been first reported in Saskatchewan in 1914, when one pair was observed on Cypress Lake (Symons, 1967). Lister (1951) reported a breeding pair with a brood each year, from 1948 through 1950, on the Alberta side of the Cypress Hills, approximately three miles from the Saskatchewan border. But Trumpeter Swans were not reported as breeders in Saskatchewan until 1953, when Bard (1953) saw one pair with a brood in the Cypress Hills. No expansion of the population was reported until a family group of nine birds (two breeding pairs, three cygnets and two non-breeding adults) was located in 1961 (Lahrman, 1961). The breeding population dropped to one pair in 1962 and remained at that level until 1966, when two pairs nested in the area (N. Knowles, pers. comm.).

Methods and Objectives

On July 20-21, 1971, accompanied by H. J. Poston of the Canadian Wildlife Service, and Cpl. N. Knowles of the Royal Canadian Mounted Police, I conducted an extensive ground and aerial survey to determine

the number of Trumpeter Swans breeding in the Cypress Hills and to delineate their individual breeding areas. We also made a special effort to locate non-breeding Trumpeters which are thought to return to their rearing areas until they attain breeding age, believed to be four years (Banko, 1960).

Results

We found 16 Trumpeter Swans: three breeding pairs, one adult non-breeder, two broods of two cygnets each and one of five cygnets. From an average clutch of five to six eggs, only two or three cygnets survive to migrate south in the fall (Banko and Mackay, 1964).

All of the breeding territories were located within the boundaries of the Cypress Hills Provincial Forest and Park, Saskatchewan. The lone adult

was outside the park boundaries.

Discussion

The breeding population of Trumpeter Swans in the Cypress Hills of Saskatchewan remained at one pair until 1961 when an additional family group was observed. In 1971, an intensive survey of the area revealed a total of 16 birds, including three breeding pairs. This is the highest population yet reported in the Cypress Hills.

The size of the Cypress Hills population of Trumpeter Swans has not increased greatly in recent years. The reasons are not clear, but further growth of the population may be restricted by a shortage of the proper habitat and high cygnet mortality. Cygnet mortality from accidents, parasites and disease has been reported high in other areas (Banko



Trumpeter Swans in Cypress Hills, Saskatchewan.

Photo by Fred W. Lahrman, Museum

and Mackay, 1964). Fledged cygnets from the Cypress Hills flock have been shot in the past, a fact which could be an important factor in survival. If brood mortality was not excessive, one would expect to find more non-breeders — cygnets which have homed to their rearing areas and have not yet reached breeding age.

The Cypress Hills Trumpeter Swans require, as they do in other areas, large breeding territories with a maximum of one pair on each lake. Some of the lakes are quite large, but the Trumpeters are so aggressive they will chase other swans and geese from their breeding areas. They will tolerate ducks, however (Delacour, 1954). While other suitable breeding areas may exist in the park, they are not enough to provide nesting habitat for many more swans — probably no more than 10 or 12 breeding pairs. The nests are usually located on muskrat houses in stands of emergent cattail and bulrush vegetation (R. Mackay, pers. comm.).

Further research and management are needed if the breeding population of wild Trumpeter Swans in Saskatchewan is to be preserved. The loss of even one nesting territory or breeding pair will seriously jeopardize the survival of this small group. An evaluation of the breeding biology and habitat requirements and determination of the migration routes and wintering grounds of this flock could help preserve this remnant of a rare waterfowl species in Saskatchewan.

Acknowledgments

I wish to gratefully acknowledge the technical and field assistance of H. J. Poston, Canadian Wildlife Service. N. Knowles, Royal Canadian Mounted Police, directed us to breeding areas and his intimate knowledge of the terrain was a great asset to the survey. Special thanks go to the R.C.M.P. for providing an aircraft for the aerial survey. I also want to thank R. H. Mackay and J. B. Gollop, Canadian Wildlife Service, both of whom critically reviewed the manu-

script and provided helpful suggestions.

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ALBINO MALLARD NESTS AT WATERHEN MARSH

by R. Kent Brace,
306 - 4725 Albert St., Regina

During 1970 and 1971, a partial albino female Mallard (*Anas platyrhynchos*) twice nested on a 5.9 acre island in the centre of Waterhen Marsh (Lat. N. 52°51' Long. W. 105°02') near Kinistino, Saskatchewan.

The bird's plumage was white except on the breast, the upper part of the back and the speculum. The feet and bill were bright orange.

In both years the duck nested in a dense stand of snowberry (*Symphoricarpos* sp.), the second nest being approximately 50 feet from the first.

In mid-April 1971, the duck was paired with a normal Mallard drake; in 1970, the mate was not observed.

Clutches of seven and eight eggs were laid in the two seasons. Five of seven hatched in 1970, and all eight eggs hatched in 1971. The 1970 brood was not observed; however, the 1971 brood was sighted—the young downy ducklings showed no apparent signs of albinism.

THE USE OF HOVERING AS A SEARCH METHOD BY THE NORTHERN SHRIKE*

by Martin K. McNicholl, Department of Zoology,
University of Alberta, Edmonton

In his treatment of the Northern Shrike (*Lanius excubitor*), Bent (1950:120) stated that this species "has two principal methods of hunting, watchful waiting and active pursuit." Similar statements have resulted from more recent studies of this species in North America (Cade 1962; 1967) and in Europe (Mester 1965), and from earlier studies of the Loggerhead Shrike (*L. ludovicianus*) by Miller (1931). Miller (*op. cit.*: 211) and Cade (1967: 31) also described Loggerhead and Northern Shrikes respectively as *sometimes* hovering over a spot where prey has been sighted. Miller suggested that this method may serve as a searching device to allow the bird to judge better the rest of the attack. Zimmerman (1955:205) believed that hovering behaviour was more common in the Northern Shrike than in the Loggerhead Shrike, an impression shared with Cade (*pers. comm.*, 1972).

Bent (*loc. cit.*) stated that "mice may be secured by hovering over the fields . . .", possibly suggesting a method of searching for previously undetected prey. Trautman's statement (*in* Zimmerman *loc. cit.*) that the Northern Shrike "habitually stops and flutters in a stationary position in mid-air, as does the Sparrow Hawk (*Falco sparverius*)" may also refer to search behaviour. However, neither of these statements clearly referred to search for previously undetected prey, and both could be interpreted as referring to the final securing of prey detected by other methods. Studies by Thielcke (1956) indicate that this species even continues to use a watchful waiting method for capturing mice previously detected from a distance by waiting on the ground near the site of the mouse's

disappearance. Lawrence (1926) stated that Northern Shrikes, if unsuccessful in using the watchful waiting method from trees or other high perches near stubble fields, will sometimes hover "for ten seconds or so" to more closely inspect the stubble. Otherwise, hovering as a method of prolonged searching for previously undetected prey does not appear to have been described for this species.

On December 28, 1969, Harold R. Bauer and I observed a Northern Shrike hovering for 20 minutes over an open, marshy field at distances varying from 50 to 150 yards from the nearest tree. This was at the University of Manitoba Field Station at the Delta Marsh, Manitoba. It repeatedly hovered over one spot for a few seconds, then flew a few yards and hovered over another spot for a few more seconds, and so on. When it changed locations, it sometimes stayed at the same level in relation to the ground, but more frequently increased or decreased its height slightly, varying from 10 to 30 feet above ground, in much the same manner as a foraging Forster's Tern (*Sterna forsteri*) hovering over open marsh (McNicholl 1971:607-608). The shrike finally plunged to the ground as if after a target, and did not appear again before we left, suggesting that it had secured prey. As there were no small birds flying over the field, I suspect the shrike was hunting for small mammals, such as voles (*Microtus*).

The hovering posture that we saw was similar to that described for a Northern Shrike by Lawrence (*op. cit.*), who stated that "The shrike when hovering appears to be almost standing on its tail, the body held at an angle of 15 degrees with the tail three-quarters spread, nearly straight down. The wings beat furiously . . ."

*Publication No. 17 of the University of Manitoba Field Station, Delta, Manitoba.

Bent's (1950:154) description of a Loggerhead Shrike "hanging suspended in the air on rapidly vibrating wings" also applies well to the bird observed by us.

It is perhaps significant that our observation took place over an open field, away from trees or other high perches, where neither of the main hunting methods would be suitable. Although not previously described in the literature, the behaviour described above has also been observed in the Northern Shrike on New York wintering grounds and Alaska breeding areas (T. J. Cade, pers. comm., 1972). Similar hovering behaviour frequently is used over wide expanses of High Arctic tundra by Long-tailed Jaeger (*Stercorarius longicaudus*) (P. S. Taylor, pers. comm.), and over open fields by Roughlegged Hawk (*Buteo lagopus*) and Sparrow Hawk (pers. obs.; see also Bent 1937:276; 1938:114; numerous other references).

Acknowledgments

I should like to thank Drs. Thomas J. Cade, Roger M. Evans, and Robert W. Nero for their comments on the manuscript, Peter J. Cowan for loaning the British literature to me, and Reto Zach for translating Thielcke's paper. Philip S. Taylor kindly added his observations on hovering by Long-tailed Jaegers.

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PILEATED WOODPECKERS NEAR DRUMHELLER, ALBERTA

by **John E. Storer**, Provincial Museum and Archives of Alberta and **Michael Wilson**, Department of Geology, University of Wyoming

The Pileated Woodpecker (*Dryocopus pileatus*) occurs, according to Salt and Wilk (*Birds of Alberta*, 2nd Ed., 1966), "mainly in the mountains and in the northern and western parts" of Alberta. The only sighting in southeastern Alberta known to the authors is that of Randall (*Can. Field-Nat.*, 60:123-131, 1946), who states that the Pileated Woodpecker is "An accidental and rare visitor in the fall" to the Brooks area. Thus sightings made in the Drumheller area may be of importance.

On July 6, 1971, the authors saw an adult Pileated Woodpecker (identified as a female by M. Wilson) foraging on the ground along a fallen log: close approach and easy identification were possible. On July 11, Storer saw two adults in a tree at a greater distance. Both sightings were made in a mature stream-bank stand of cottonwood at the Bleriot Ferry campground, about 10 miles northwest of Drumheller. Discussion with Mr. Lloyd Heaton, one of the ferrymen, revealed that the birds have been seen in the vicinity of the ferry for several years.

The presence of these birds at the Bleriot Ferry over several years may indicate a range extension for the Pileated Woodpecker. Whether the Pileated Woodpecker is spreading down the Red Deer River, apparently the easiest route from its optimal range, to the Drumheller area cannot be determined without additional sightings.

SOME NOTES ON NESTING GREAT HORNED OWLS

by Chris Rees, No. 2 - 13027 - 83 St., Edmonton

Photographs by the Author

Over the past eight years I have been studying and photographing Great Horned Owls. The following notes on a 1969 nest include some observations made over this period.

On March 16, 1969 near Edmonton I found a nest about 25 feet above the ground in a tree without any branches obscuring the view from the front. With several friends I returned to the site early in April to erect a photographic tower. The first night spent in the blind was April 7. The nest at this time contained three eggs. (Although it is always difficult to work with birds still on eggs, Horned Owls seem to be most aggressive for a period of about a week before and a week after the eggs hatch. This period of aggressiveness evidently

corresponds to a maximum degree of possessiveness on the part of the adults toward their offspring.) Once I was in the blind the female owl quickly returned to the nest.

From about 7:30 p.m. until 8:00 p.m. the male hooted almost continuously. Around 8:00 p.m. he must have gone hunting, for I could not hear him calling or moving. He returned about 8:45 and came in close to the nest. The male hooted several times and the female on the nest answered with a low, chicken-like clucking. The two birds kept up this hooting and clucking for the next half hour. During this time the female also hooted several times. After 9:15 the birds fell silent until about 10:30 when the male hooted about 10



Female Great Horned Owl inspects eggs upon returning to nest.



Incubating Great Horned Owl female.

times then once again was quiet.

On the nights of April 9 and 16 the birds were quiet and completely inactive. On the latter night one egg was pipped and the chick peeped softly.

All three eggs had hatched by April 20 and that night proved to be one of the most eventful I had ever spent with Horned Owls. As soon as I was settled in the blind, the female returned to the nest. She was an affectionate mother. Carefully she covered the young and while brooding would occasionally raise herself up and rub the young with her face disk. About 8:00 p.m. the male hooted and the female instantly answered with the food call, a long, drawn-out hiss. The chicks also started to peep. The male did not return with food until almost 9:00 p.m. At that time he brought a mouse to the female, hooted

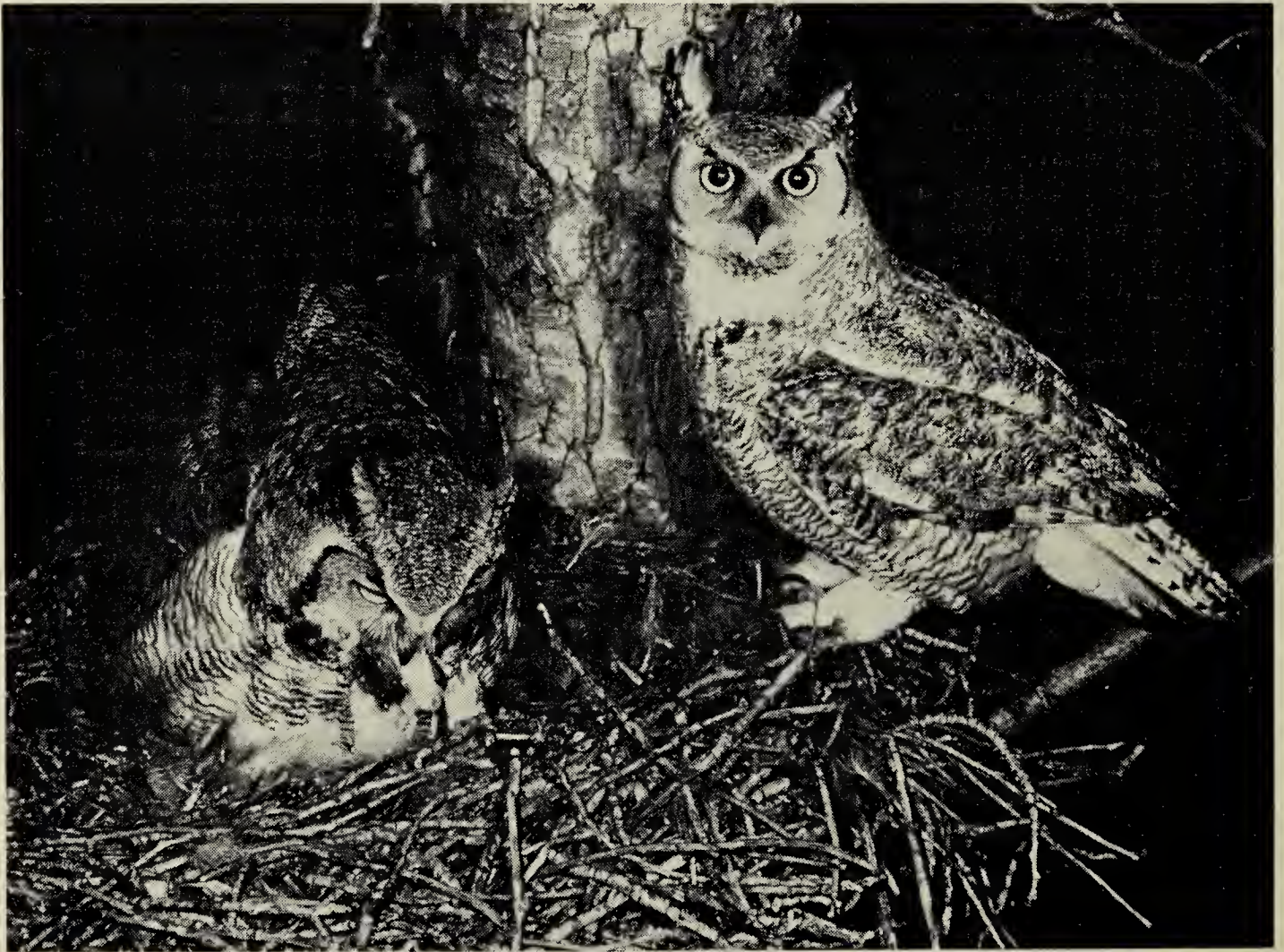
while on the nest, and was gone again. The young became extremely excited, peeping and squirming under the brooding parent. Now and again a little face would peek out from between her breast feathers but each time this occurred she would shuffle and cover the young up again. The female tore the mouse into small pieces and fed the young, eating little herself. Once the mouse was eaten, the young settled down and went to sleep. The male, meanwhile, was off hunting and could be heard hooting from various locations.

After the young are about three weeks of age the adults do not brood anymore for the young are by this time well covered with insulating and protective down and feathers. The description of a typical night for this period follows. Between 9:00 and

11:00 p.m. the adults would make six visits to the nest, each time bringing a meadow vole. One of the young would grab the vole from the adult and swallow it whole. The young would be active all the while, walking around, picking up sticks and bones and peering over the edge of the nest. With the arrival of the old birds the young would become even more active, bobbing their heads and calling. After 11:00 p.m. and for the rest of the night, until the first greying shadows appeared in the woods, the birds would be quiet. The young would snuggle down in the nest, while the adults would sit close by, calling softly from time to time. Feeding would begin again at the break of dawn. On the morning of May 14 the adults made only three visits to the nest. Each time a vole was brought in.

The wings gradually develop until at about five or six weeks of age the

young venture out onto branches around the nest. Sometimes they return to the nest for feeding but after a few more days the adults go directly to the hunger calls of the young and the young no longer return to the nest. I found one young that had left the nest at the end of May. An adult was close at hand and was fierce in its defense. It approached menacingly close, clicking its bill and screaming. When I did not back down, it carried the act further by feigning injury and flopping around on the ground. The young bird put up a valiant defense, fluffing himself up and turning his wings to look large and vicious. He clicked his bill and hissed, an act that was no bluff, for, when I got too close, he quickly and painfully grabbed my hand with both feet. At this point the adult approached to within five feet of my head and sat clicking and screaming. I beat a hasty retreat.



Male Great Horned Owl pauses on edge of nest after delivering a deer mouse to the female.

FIRST RECORD OF THE LONG-EARED OWL IN RIDING MOUNTAIN NATIONAL PARK

by William J. Walley, Dauphin Regional Comprehensive Secondary School,
Dauphin, Manitoba

Previous to this observation, the Long-eared Owl (*Asio otus*) had never been recorded for Riding Mountain National Park, although its occurrence in the surrounding aspen parkland is well documented (Bird, 1961; Godfrey, 1966). A number of workers have noted its absence even after lengthy studies of the avifauna of the park. Taverner and Sutton (1940) stated that it had "not as yet" been "officially recorded from the park, but of almost certain occurrence as a summer resident and probable nester." Soper (1953) studied the birds of the park at intervals from 1940 to 1946 and did not record it. Godfrey (1953) noted its absence from the 1921 observations of P. A. Taverner and Hoyes Lloyd and the 1938 observations of A. H. Shortt and R. Sutton.

On June 4, 1971 a biology field trip was conducted near Highway 10 on the north slope of the park. The party consisted of the author and grade XII biology students from the Dauphin Collegiate Technical Institute. The objectives of the trip were to study the various habitats and their associated fauna, especially birds. The particular area which was chosen consisted of mixed coniferous and deciduous forest with considerable muskeg and swamp which was located on the summit of the north slope.

While studying the vegetation of a muskeg from a piece of higher, drier land which projected into the muskeg and almost bisected it, the students noticed a bird on a nest in a white spruce (*Picea glauca*). The tree was located in a mixed stand of spruce and aspen (*Populus tremuloides*) which also occurred on this higher ground. A rusty-brown bird could be seen on the nest which was about 15 feet up and built against the trunk

of the tree. The bird was flushed when a student ascended the tree to count the eggs, but identification was not made at that time, although it was apparent that it was an owl. The nest contained two eggs and was constructed of twigs — probably an old crow nest. Because of previous experience with nest desertion in Short-eared Owls (*Asio flammeus*), the area was not visited again until July 4. At that time one young bird was found perched on a spruce bough about 25 feet from the nest tree and approximately 10 feet from the ground. It was approached to within five or six feet for a photograph, but it did not attempt to escape. Another smaller bird was still in the nest. When approached, it snapped its bill, hissed, raised its wings and cowered at that edge of the nest near the tree trunk. The adults were not in the vicinity. When the area was visited about two hours later, an adult, presumably the female, flew from the nest tree some 100 feet and perched on an aspen near the edge of the muskeg. From a distance of about 50 feet, positive identification of the Long-eared Owl was made with the use of 7 x 50 binoculars. This is the first record of the species for the park as well as the first breeding record.

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BREEDING STATUS OF THE FORSTER'S TERN IN MANITOBA

by David R. M. Hatch, Manitoba Museum of Man and Nature,
190 Rupert Avenue, Winnipeg

The breeding distribution of the Forster's Tern (*Sterna forsteri*) in the Prairie Provinces was reviewed by Gerrard and Whitfield (1971). They cited somewhat vague records of early observations by Macoun, Taverner, and Gunn for lakes Winnipeg, Winnipegosis, and Manitoba. These are large lakes with hundreds of miles of shoreline, and consequently, unspecified nesting localities have limited value. More specific nesting localities have been documented (Table I, Figure 1).

According to studies by McNicholl (1971:66-69) and others summarized by him, Forster's Terns usually nest in fairly dense stands or "islands" of bulrush (*Scirpus*), cattail (*Typha*), and similar plants in relatively open marshes or marshy bays. My observations have revealed three distinct types of nest sites: on muskrat houses, on mats of floating year-old vegetation, and on platforms of fresh vegetation constructed by the pair. The last situation is the least common; however, one colony seen by the author was composed exclusively of nests of this type. These nests were platforms in moderately dense vegetation, each surrounded

by a fringe of open water from which the nest material apparently had been taken. There was only one nest on each platform. Table I shows the type of structure used in each colony.

Between 1969 and 1971, inclusive, I visited nearly all the major marshes and lakes in Manitoba's Interlake region. Forster's Terns were found nesting on the western side of Lake Winnipeg in the Netley marshes and in marshes at Gimli, Riverton, Hecla Island, and Matheson Island. No evidence of nesting was seen on any of the interior marshes or lakes between lakes Winnipeg and Manitoba, including East, West, and North Shoal lakes. In two marshes on the east side of Lake Manitoba, namely Marshy Point southwest of Lundar and the St. Ambroise marsh, Forster's Terns were present, but there was no evidence of nesting. However, Forster's Terns were photographed nesting at Marshy Point in 1970 by Mr. George Cotter who found eight nests in one colony and about 20 in another. A colony of six nests, containing two to three eggs each, was visited in the Pineimuta marsh border-

TABLE No. 1
Nesting Details of Forster's Tern in Manitoba

Colony Location	Year Last Visited	Dominant Vegetation	Nest Type*
Netley marsh	1971	<i>Scirpus</i> & <i>Typha</i>	A & B
Gimli	1971	<i>Sparganium</i>	B & C
Riverton	1970	<i>Sparganium</i>	C
Hecla Island	1971	<i>Typha</i>	A & B
Matheson Island	1971	<i>Sparganium</i>	A & B
Marshy Point, Lundar	1970 (Cotter)	<i>Typha</i>	A & B
Pineimuta marsh, Lake St. Martin	1970	<i>Typha</i>	A
South Lake, Riding Mountain Nat. Park	1971	<i>Scirpus</i>	A
"Turtle Marshes", Dauphin Lake	1971	<i>Scirpus</i> & <i>Typha</i>	A & B

*A = nests on floating mats of decaying vegetation

B = nests on muskrat houses

C = nests on platforms made of vegetation of the current year

ing Lake St. Martin on June 25, 1969; this was the only evidence of nesting in the Fairford River-Lake St. Martin complex.

A colony on the east side of Netley marsh, visited June 28, 1971, contained 38 nests scattered over a 400-yard distance and fringing a Franklin's Gull colony. All nests contained from one to three eggs. When visited July 12, 1971, the Gimli colony had largely flightless young with only five nests harbouring eggs. This colony consisted of approximately 100 pairs and was located two miles south of Gimli in a marsh bordering Lake Winnipeg.

A colony in the Riverton marsh (sec. 24-24-4E) visited on July 28, 1970, had 27 nesting platforms with some young already on the wing and others only three to four days old. One colony in the Hecla marsh (sec. 9-24-5E) was visited in 1970 and 1971. Despite disruptions due to a causeway being built through this colony in 1971, young were still produced. The colony had approximately 40 nests all containing eggs on June 19, 1971. Also, at Hecla marsh, colonies were seen in

sections 8-24-5E and 17-24-5E on June 19, 1971 where they have traditionally nested, although in 1970, high water coupled with wind-tides prevented them from nesting at these sites.

The Matheson Island colony was in a marsh on the southwest side of the island and was visited in both 1970 and 1971. On June 25, 1971, the colony contained 17 nests, mostly with young. This colony was unique by being in a marsh bordered by conifers and aspen on the limestone outcrop of Matheson Island. It is on the northeastern extremity of the species' breeding range in the Prairie Provinces.

The species was not recorded in Riding Mountain National Park in surveys made between 1938 and 1946 (Soper, 1953). It has now, however, gained a foothold and has been recorded nesting annually since 1968 when the author found four nests. Each year the nests have been in a narrow band of bulrush on South Lake. Only two nests, each with two eggs, were found on June 17, 1971, and as this bulrush stand is becoming thin, the species may soon be lost from the



park as a breeding bird. This was the smallest of the colonies discovered.

Forster's Terns were recorded nesting in the "Turtle Marshes" on the south side of Dauphin Lake, two miles upstream from the mouth of the Turtle River. This colony was visited on July 13, 1971 and at this time contained several young of which at least 15 were too small to fly. The number of adults was estimated to be 60.

There are several factors limiting the breeding distribution of Forster's Tern in the Interlake, of which food supply may well be the most important. Many of the water bodies in the Interlake are infertile, and, as a result, animal life in the form of minnows, aquatic insects, dragonflies, etc. is limited. As these are staple foods of Forster's Tern, the number of breeding terns is small. There is a lack of marshes with moderately dense stands of bulrush, cattail, or bur-reed (*Spartanium*) for nesting cover. Marshes

with both good nesting habitat and an abundant food source are scarce in the Interlake, although some of the marshes bordering lakes Winnipeg and Manitoba are exceptions. Lake Winnipeg is the eastern border of the breeding range of this species. East of this lake the habitat is boreal, and marshes are replaced by bogs surrounded by forest.

Acknowledgments

I wish to thank George Cotter and Martin McNicholl for the use of their data.

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CATBIRD AT CHURCHILL, MANITOBA

by **R. Barry Ranford**, 1345 Kendall Road, Mississauga, Ontario and
Mrs. Linda McKeane, 5 Sherwood Avenue, Toronto 12, Ontario

While on a bird-watching and photographic trip to Churchill this spring, we had the good fortune to find a pair of nesting Pigeon Hawks (*Falco columbarius*) in a small spruce grove across from the Northern Lights Observatory east of Fort Churchill. We spent several days photographing these hawks and it was during this time on June 18, 1971 that a Catbird (*Dumetella carolinensis*) was first heard and later seen.

It was about 10:00 a.m. and slightly overcast when we heard a distinctive cat-like mewing. Minutes later the bird appeared at the foot of a spruce tree about 15 feet away from us. We could clearly see the blackish cap and rusty undertail coverts on this slate grey bird. It remained in the open for several minutes before moving out of sight. However, during that day we heard it calling frequently and saw it

again on four or five occasions in the same area. As both of us are from southern Ontario where Catbirds are a common breeding species, there could be no doubt in our minds as to the bird's identity.

According to Jehl and Smith (*Birds of the Churchill region, Manitoba*. Manitoba Museum of Man & Nature, Spec. Publ. No. 1, Winnipeg, 1970) the Catbird has not previously been recorded at Churchill. However, two residents of Churchill, Angus and Berenice McIver, mentioned seeing a Catbird near Churchill about 15 years ago. That bird was at Herriot Creek, which flows into the Churchill River about 20 miles south of the town of Churchill.

Godfrey (*The birds of Canada*. Natl. Mus. Can. Bull. 203, 1966) notes the accidental occurrence of the Catbird north to Lesser Slave Lake.

SUMMARY OF THE MANITOBA 1971 CHRISTMAS BIRD COUNT

Christmas Bird Counts (December 18, 1971, to January 2, 1972) were made in 25 localities in Manitoba. In four localities, Winnipeg, Minnedosa, Pinawa and Riding Mountain two or more field parties had been organized. The counts were compiled and submitted to the *Blue Jay* but they were not received in time for the March issue. This report lists the localities in which counts were made and the bird species recorded. The numbers following the species names give the number of individuals seen and in brackets the number of localities in which they were recorded. If you wish more detail on the 1971 Manitoba Christmas Bird Count or if you have suggestions re publication of the counts, write to H. W. R. Copeland, Manitoba Museum of Man and Nature, 190 Rupert Avenue, Winnipeg, Manitoba, R3B 0N2.

Localities in Manitoba in which 1971 Christmas Bird Counts were taken include the following 25 areas: Balmoral, Brandon, Deleau, Delta, Douglas, Glenora, Gypsumville, Hartney, Kenville, Laurier, Lockport-Selkirk-Birdshill Park, Lorette, Lyleton, Miami, Minnedosa, Oak Lake, Pinawa, Reston, Riding Mountain National Park, Roland, St. Norbert, Sandy Hook, Souris, Stonewall and Winnipeg.

Birds seen during the 1971 Manitoba Christmas Bird Count include the following 65 species. (Numbers in brackets refer to the number of localities in which the species was recorded): Canada Goose 16(2); Mallard 19(2); Goshawk 5(4); Red-tailed Hawk 2(2); Rough-legged Hawk 1(1); Golden Eagle 3(2); Marsh Hawk 1(1); Gyrfalcon 1(1); Pigeon Hawk 3(3); Spruce Grouse 2(2); Ruffed Grouse 55(12); Sharp-tailed Grouse 267(11); Ring-necked Pheasant 13(3); Gray Partridge 102(9); Turkey 24(2); Rock Dove 247(4); Mourning Dove 8(3); Screech Owl 1(1); Great Horned

Owl 21(11); Snowy Owl 24(10); Great Gray Owl 1(1); Short-eared Owl 2(1); Pileated Woodpecker 11(5); Hairy Woodpecker 92(23); Downy Woodpecker 83(21); Black-backed Three-toed Woodpecker 2(1); Northern Three-toed Woodpecker 1(1); Horned Lark 12(3); Gray Jay 52(3); Blue Jay 377(19); Black-billed Magpie 353(21); Common Raven 263(9); Common Crow 107(4); Black-capped Chickadee 796(25); Boreal Chickadee 39(2); White-breasted Nuthatch 80(15); Red-breasted Nuthatch 21(3); Brown Creeper 5(2); Brown Thrasher 1(1); American Robin 2(2); Varied Thrush 1(1); Golden-crowned Kinglet 3(2); Bohemian Waxwing 256(4); Cedar Waxwing 4(1); Northern Shrike 7(7); Starling 362(11); House Sparrow 5,804(21); Western Meadowlark 5(5); Yellow-headed Blackbird 3(1); Red-winged Blackbird 1(1); Rusty Blackbird 3(1); Common Grackle 3(2); Brown-headed Cowbird 1(1); Rose-breasted Grosbeak 1(1); Evening Grosbeak 1,030(17); Pine Grosbeak 403(20); Hoary Redpoll 39(7); Common Redpoll 2,341(19); Pine Siskin 2(1); American Goldfinch 4(1); White-winged Crossbill 177(10); Slate-colored Junco 2(2); Harris' Sparrow 1(1); Song Sparrow 1(1); Snow Bunting 1,956(14).

REQUEST FOR INFORMATION RE SHOREBIRDS RECAPTURE OPERATION

Several species of shorebirds will be caught on the Magdalen Islands (Gulf of St. Lawrence) and marked with yellow feather dye or yellow leg streamers or both. Reports of sight records of these marked birds would be appreciated. Please give locality, date, species, name and address of observer(s) and if the bird is captured, weight and band number.

Information should be sent to: Raymond McNeil, Centre de Recherches Ecologiques de Montréal, 4101 est, rue Sherbrooke, Montréal 406, Que., Canada.

LOCKED ANTLERS OF MULE DEER AND WHITE-TAILED DEER

by **Kenneth Scheelhaase** and **Ross MacLennan**,
Saskatchewan Department of Natural Resources, Saskatoon

In late January, 1971 while working in the sandhill area two miles south and two and a half miles east of Harris, Saskatchewan, the senior author* found two buck deer lying dead on a knoll in low shrubs. The deer had their antlers locked together, apparently as a result of a fight during the previous mating season. Upon closer inspection it was discovered that one was a mule deer (*Odocoileus hemionus*) and the other a whitetail (*O. virginianus*).

The whitetail had four tines on the right antler and three on the left antler in typical pattern, while the mule deer had less regular antlers. Both sides of the antlers had two irregular points in addition to the normal tines. The right antler of the whitetail was locked into the left antler of the mule deer. Some of the

*Before the submission of this article Kenneth Scheelhaase was killed in an automobile accident.

irregular points on the mule deer antler were involved in this locking. The left antler tip of the whitetail was wedged against the skull of the mule deer on the left side of the ridge formed by the sagittal suture of the frontal bones. This ridge, and the springiness of the antlers, held the two very firmly together. The whitetail tine had penetrated the skin and made a small indentation in the mule deer skull, but no fracture was evident.

Very little is known about the occurrence of fighting between mule and white-tailed deer. The authors are aware of only one other documented case of locked mule deer and whitetail antlers. This involved antlers found northwest of Fort Walsh, Saskatchewan, by Mr. L. Dumont, in 1955, and reported in the Records of North American Big Game (Webb, Fitz and Baker, 1958) and in a report



Photo by Ross MacLennan

Locked antlers of Mule Deer and White-tailed Deer,
near Harris, May, 1971.

on locked antlers by Notz (1965).

One may only speculate on the frequency of occurrence of aggressive interactions between the two species. While their distribution shows considerable overlap in west-central North America (Hall and Kelson, 1959), habitat variability usually provides for effective ecological separation in the overlap zone. Ecological separation, however, appears to be less developed in the relatively flat northern Great Plains and foothills, and thus the species may come into direct contact frequently in southwestern Saskatchewan and adjacent Alberta and Montana.

Likewise, we can only speculate on the behavioural significance of such interactions. Even in a species such as the whitetail in which many thousands of conspecific fights between males occur every year, locked antlers are a fairly rare occurrence. But the two instances of interspecific locked antlers in Saskatchewan indicate that head-to-head encounters between males of the two species may occur in areas where both are fairly abundant. Such interactions between male mule and white-tailed deer could, of course, merely represent the release of high levels of aggression toward the nearest available moving object. (For example, various male ungulates during the rutting period have been known to charge people, automobiles

or even freight trains.) However, the usual function of ritualized frontal encounters in conspecific male ungulates is to establish dominance, which results in reproductive advantage. If this drive is the explanation for mule deer-whitetail combats, then it suggests that Pleistocene differentiation of the two species from a common stock did not proceed as far as complete behavioural isolation.

These apparently reproductively related interactions do not necessarily indicate actual mating of the species, much less the production of viable hybrids in the wild. However, the two species are known to interbreed in captivity (Taylor, 1956).

Acknowledgments

I would like to thank Don Blood, DNR, for assistance in the writing and editing of the manuscript and Hugo Maliepaard, DNR, for translation of the Notz paper.

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POPULATION SIZE AND PRODUCTIVITY OF THE BLACK-TAILED PRAIRIE DOG IN SASKATCHEWAN

by Larry Kerwin, 905 McKinnon Drive, Calgary, Alberta

Despite the concern of conservationists little is known about the status of the black-tailed prairie dog (*Cynomys ludovicianus ludovicianus*) in Canada. Paynter (1962) estimated that there were 45,000 animals in eight colonies inhabiting some 2,400 acres. An investigation during 1970 (Kerwin and Scheelhaase, 1971) revealed 16 colonies with an estimated 10,823 animals occupying about 1,244 acres. Some additional information is

now available on the status of this species in southwestern Saskatchewan.

METHODS

Colonies were located during the summers of 1970 and 1971 and their location plotted on a 1:50,000 topographical map. The area of each colony was determined by planimeter. Several representative colonies were counted twice a week in both May and July to determine the breeding

population and to evaluate productivity. The rodents were counted either in early morning or late evening with the use of a 20-60X spotting scope. Litter sizes were determined by counting the number of young prairie dogs assembled at burrows.

RESULTS

(a) Colony Formation

In addition to the 16 prairie dog colonies found in 1970 (Kerwin and Scheelhaase, 1971), one new colony was discovered in 1971 in the NE $\frac{1}{4}$ Section 13 of 2-12-W3. This colony ("O") was less than 1 acre in size and had 11 burrows. Four adult animals were observed in the colony which was not begun until the fall of 1970 or the spring of 1971. I first observed the colony on April 5, 1971 and I know that it did not exist before September 1, 1970. Colony O is 1.9 miles from the nearest colony. Nelson (1930) reports the establishment of new colonies as far as six miles from other towns, although Reid (1954) found that 1.5 to 2.0 miles was a more usual distance. Koford (1958) states that even at a favourable site within dispersal range of a thriving dog town, there is little chance that a new dog town will spring up.

(b) Population Census

Colonies G, I, and N were selected for population census during 1971. The total population for each colony was determined by averaging a number of censuses (Table 1) and the corresponding density was then calculated using this data. Population densities ranged from 0.9 to 3.8 animals per acre in the three colonies counted. King (1955) had reported an average July density in South Dakota to be 8.7 animals per acre; using this figure, Kerwin and Scheelhaase (1971) estimated the Saskatchewan population to be 10,823 animals. If a density of 3.8 animals per acre is used to calculate the total population, the figure would be about 4,730 animals, a number which is well below previous estimates.

(c) Litter Size

Litter sizes can be determined by counting embryos, placental scars or corpora lutea. A fourth method is to count the number of young prairie dogs at burrows. If the holes are far apart, this method is reliable for about two weeks after the young emerge (Koford, 1958).

In this study, mean litter size was determined by counting the young.

Table 1. Summary of population counts and corresponding densities of three prairie dog colonies during 1971.

Colony	Area (acres)	Total Population		Density (No. per acre)	
		May	July	May	July
G	85	211 (5)*	322 (3)	2.5	3.3
I	110	247 (3)	265 (3)	2.2	2.4
N	300	284 (2)	—	0.9	—

* Number in parentheses indicates the total number of counts made during that month.

Table 2. The mean litter size for three prairie dog colonies during 1970 and 1971.

Colony	Number of Litters Observed		Mean Litter Size	
	1970	1971	1970	1971
G	12	37	3.50 (2-6)*	3.02 (2-5)
I	2	7	2.50 (2-3)	2.57 (2-4)
N	5	12	2.80 (2-3)	2.33 (1-4)
Total & Mean	19	56	3.21	2.82

* Number in parentheses indicates the range.

Mean litter size varied from 2.33 to 3.50 among the three colonies counted (Table 2). The largest litter observed was six. Other data on litter size for prairie dogs ranges from 4.1 in Colorado (Koford, 1958) to 5.0 in Kansas (Wade, 1928). These averages, however, were determined from embryo and corpora lutea counts and so are not directly comparable to the data in this study.

CONCLUSION

Since the black-tailed prairie dog is considered to be an endangered Canadian mammal (Novakowski, 1970), it is important that a more intensive study be carried out on the status and ecology of this species. It would appear from our results that there are even fewer prairie dogs existing

in Canada than was previously supposed.

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SCORPIONS IN SASKATCHEWAN

by Donald J. Buckle, R.R. 1, Preeceville, Saskatchewan

While scorpions are typically warm-climate animals, one small species, *Vejovis boreus* (Girard), extends north into western Canada. Gertsch and Soleglad (1966. The scorpions of the *Vejovis boreus* group in North America. *Amer. Mus. Nov.* 2278:1-54) recorded it from several localities in the prairie region of southern Alberta and in the lower Okanagan Valley of British Columbia. As habitats in southwestern Saskatchewan are very similar to those in southern Alberta, it seemed probable that *V. boreus* also occurred there and inquiries were made to those institutions likely to have material from the province and to a number of local naturalists.

No specimens were located but two sightings came to light. Harvey Beck (personal communication: 1970) told of seeing a scorpion near Minton, Saskatchewan in 1964. G. S. McLean of Eston, Saskatchewan, whom I contacted through the assistance of Ronald Hooper, reported (personal communication: 1970) the following incident which took place $\frac{3}{4}$ mile north of the Lancer Ferry on March 30, 1963. This incident is additionally interesting because it provides some information on the little known hiber-

nation behaviour of the species:

"My son and his chum were digging a cave in one of the high cliffs. The cliff was sloping $\frac{3}{4}$ of the way up so that they had a footing where they were digging. They had dug back about six feet and they asked me to help them. About the first shovel full I sliced off in the very fine sandy soil I severed a little tunnel about the size of my small finger. The next slice in, four little creatures about the size of cockroaches dropped out. They apparently were hibernating. Having visited in Africa and seen scorpions I immediately recognized what they were . . ."

The scorpions were given to the Biology Department of the University of Saskatchewan at Saskatoon where they seem to have been misplaced or lost. A search of the Department's invertebrate collection in 1970 failed to locate them.

Further reports are necessary to establish the distribution of *V. boreus* in Saskatchewan and the rest of western Canada. I would greatly appreciate receiving specimens or data.

SOUND PRODUCTION IN THE COURTSHIPS OF TWO LYCOSID SPIDERS

Schizocosa avida Walckenaer and *Tarentula aculeata* (Clerck)

by Donald J. Buckle, R.R. 1, Preeceville, Saskatchewan

In many lycosid species courting males indulge in complex and often spectacular visual displays and a considerable amount of literature has grown up about this. There have been far fewer reports of acoustic displays but whether this is due to the uncommonness of this behaviour or its less conspicuous nature is not presently known. However, the diversity of the species for which acoustic displays have been recorded suggests that such displays are widely distributed throughout the family.

When P. Bonieau in his *Discours sur le Langage des Betes* (see Bonnet, 1945), published early in the 18th century, mentioned "drumming spiders" he may have been referring to a lycosid. More specific information on sound production in this family begins with Lahee's (1904) observations on *Lycosa gulosa*, the male of which taps its palpi and vibrates its abdomen on the substratum during courtship. This behaviour has since been commented upon by several authors, the latest of whom was Harrison (1969) who included in her paper oscillograms and spectrograms of field-recorded sound. Bristowe and Locket (1926) noted that courting *Tarentula pulverulenta* males produce sound by vibrating their abdomen on the substratum, and mentioned that "burrowing species of Lycosidae, such as *T [rochosa] picta* . . . drum rapidly with their palps and legs on the ground at the entrance to the female burrow." Chopard (1934) told of finding female *Pardosa lugubris*, which he assumed to be courting, "dont tout le corps, et les pattes en particulier, sont agités d'un tremblement convulsif, tandis que l'extrémité abdominale frappe rapidement la feuille sur laquelle se trouve l'araignée." In view of Bristowe's

(1929) description of the courtship of *P. lugubris* as a conventional visual one in which the male waves his palpi and legs, it seems probable that Chopard's identification of the species he observed was erroneous. Kaston (1936) mentioned palpal drumming in the courtship behaviour of male *Schizocosa crassipes* and *Lycosa rabida*. Rovner (1967) analyzed sound production in the latter species, demonstrating by playback techniques that the sounds played a functional role in the courtship of this species and indicating that the spiders were probably able to perceive airborne sound. He also found that bursts of palpal tapping occurred during agonistic behavior in male-male encounters. Hallander (1967) told of courting male *Pardosa chelata* producing "a distinct drumming or purring sound" by drumming their palpi on the substratum.

In the course of work in 1969 on the copulatory behaviour of spiders I found that the males of two lycosid species, *Schizocosa avida* and *Tarentula aculeata*, produced sounds during courtship. Because of the paucity of literature on the subject, it seemed worthwhile to report on this despite the incompleteness of my data.

Schizocosa avida inhabits dry grasslands and is found throughout the United States and southern Canada. Observations were made in late June on a series of adults collected in southwestern Saskatchewan. *Tarentula aculeata* is a woodland species found throughout Europe, northern Asia and northern North America. Observations were made during the latter half of May on specimens from east-central Saskatchewan.

All observations were made on captive specimens performing on artificial substrata, usually wood or cardboard.

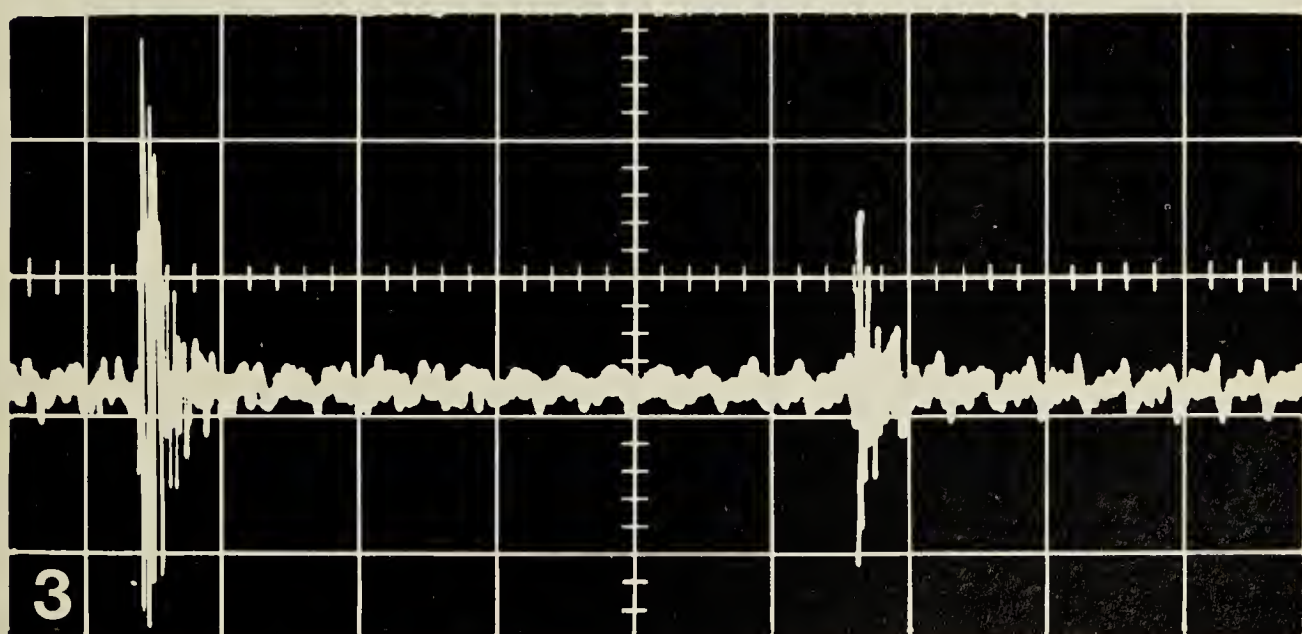
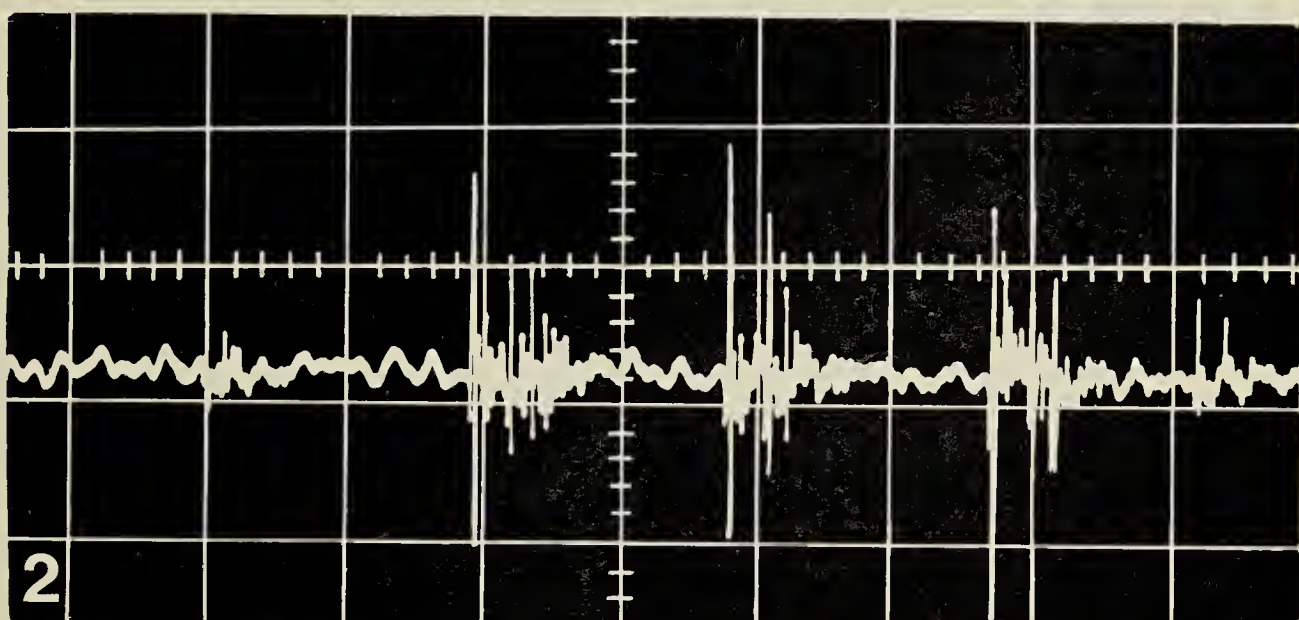
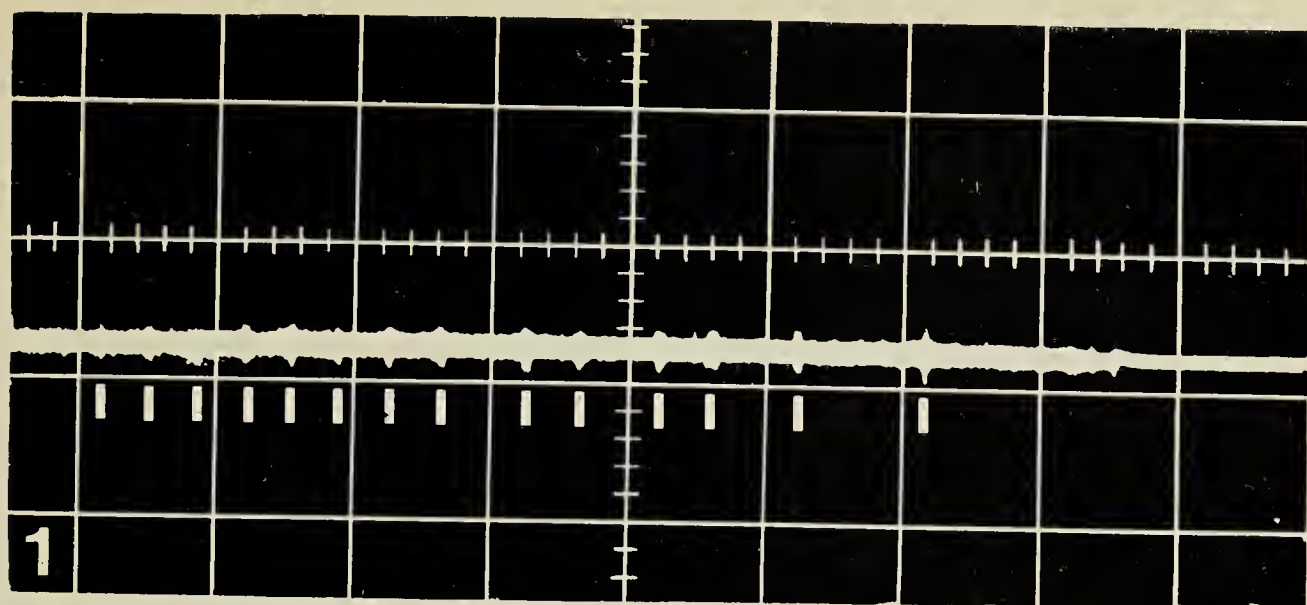


Fig. 1. *Schizocosa avida*. Sequence of palpal tapping comprised of 14 strums. 1 sec. per square.

Fig. 2. *Schizocosa avida*. A single strum. 10 sec. per square.

Fig. 3. *Tarentula aculeata*. Two consecutive impacts of spider's abdomen on substratum.

For recording purposes a polyethylene container, 16 cm. in diameter, its bottom lined with light cardboard, was used as a sound stage. The microphone of a Craig 2107 tape recorder was taped to one side of the container, its head touching the cardboard liner, a position in which it could pick up both air- and substratum-borne vibrations. Single pairs of spiders were placed in the container, and sounds produced during the male's courtship were taped at 3½ ips, the recorder's maximum speed. The taped sound was later fed directly into a Tektronix 556 oscilloscope and the traces photographed.

The courtship behaviour of *Tarentula aculeata* was filmed at 24 fps with a Bolex H8 adapted for the purpose by placing a +3 diopter portra lens over its 8-40 mm lens. Repeated viewing of the film, including examination of single frames, proved very useful in interpreting the spider's behaviour.

The courting male *Schizocosa avida* faced the female and rapidly tapped his palpi on the substratum in a sequence of nearly contiguous strums lasting for 2 to 5 seconds and followed by a period of inactivity. Repetitions of this behaviour continued for a half hour or more, the sequences becoming progressively longer and closer together. Shortly before initiating copulation the male began to follow his palp tapping sequences by vigorously vibrating his extended first, and occasionally second, pairs of legs on the substratum. Finally, forelegs vibrating, he moved forward, mounted the female and initiated copulation.

Attempts to film palpal tapping of *S. avida* were unsuccessful so the exact nature of the palpal movements remains unknown. Oscillograms made from recorded sounds showed a series of strums of sound at approximately 0.4 second intervals (Fig. 1). Each strum was 70-80 msec. in length and separated by 12 msec. intervals (Fig. 2). The leg vibrations made a swishing sound which was too faint for analysis.

The courting male *Tarentula aculeata* faced the female and began to vibrate his palpi rapidly back and forth, scraping the substratum with the palpal tarsi. After several seconds of this he rushed forward, his front legs elevated, repeatedly raising and dropping his body as he went. Just before contacting the female he veered to one side and halted. After a short pause the sequence was repeated. Repetitions continued for several minutes. If the female was receptive and sat quietly the male finally mounted her, rather than turning aside at the end of one of his rushes, and initiated copulation.

The palpal vibrations of *T. aculeata* produced a scratching sound which pulsated slightly and irregularly in volume. Unfortunately, recordings of the sound were not of sufficient quality to produce satisfactory oscillograms. Examination of the film showed that the tarsal tip of each palp was scraped back and forth on the substratum about seven times per second. The palpal movements were usually, but not always, in alternation. Each time the male dropped his body during a forward rush his abdomen struck the substratum with a sharp "plop" that was louder than the palpal scraping. During a rush, which might last for one and a half or two seconds, his body was raised and dropped three or four times per second (Fig. 3).

Because experimental evidence is lacking, it is difficult to say whether or not the sounds produced by *S. avida* and *T. aculeata* serve any communicatory function. But since palpal tapping is the principal component in the courtship of *S. avida*, it seems likely that the sound is functional. The situation is less clear with the palpal scraping of *T. aculeata*, as the courtship of this species also includes visual display. The sounds produced by the anterior legs of *S. avida* and the abdomen of *T. aculeata* may well be non-functional by-products of behaviour directed toward tactile and visual stimulation, respectively. Ex-

perimental studies are needed to determine the roles of these various movements and sounds during pre-copulatory behaviour in these species.

Acknowledgments

Thanks are due to D. W. Whitfield and R. C. Holmberg who produced the oscillograms and to Dr. J. S. Rovner for his helpful comments.

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THE BUTTERFLIES OF MANITOBA'S PROVINCIAL PARKS I: WHITESHELL PROVINCIAL PARK

by John H. Masters, P.O. Box 7511, St. Paul, Minnesota

With 675,840 acres, Whiteshell is Manitoba's largest provincial park. Located in extreme southeastern Manitoba, it can be reached by the TransCanada highway No. 1 or Manitoba trunk highway No. 4. The region is typical boreal zone of eastern Manitoba and northern Ontario. It is situated on Precambrian or Canadian Shield where lakes, rivers, acid bogs and rock outcroppings are all numerous. Birch and aspen forests cover most of the region, but these are replaced by jack pine on rock outcroppings or sandy areas, by black spruce in bogs, and by larch in swampy areas.

The butterflies of Whiteshell have received some attention in the past. George Shirley Brooks, who published a check-list of the butterflies of Manitoba (1942), collected at Seven Sisters Falls before the Provincial Park was formed, and recorded several species from here. Charles D. Bird spent the summers of 1954 and 1955 at Red Rock Lake and published a list (1956) of 40 species of butterflies he collected there. Between 1966 and 1971, I made six collecting trips to Whiteshell as part of field work on a Manitoba Lepidoptera project. My collecting has added several species to Bird's list and in addition, I am adding adult flight date and habitat data that were missing from

the previous reports. Skippers (Hesperiidae) have not been included in this study.

Species List

Swallowtail Butterflies:

PAPILIONIDAE

TIGER SWALLOWTAIL *Papilio glaucus canadensis* Rothschild & Jordan A common and conspicuous species of roadsides and deciduous forests. Adults in mid-June to early July.

Whites and Sulphurs:

PIERIDAE

NORTHERN WHITE *Pieris napi oleracea* Harris One of very few double-brooded species in this region. The first brood emerges in mid-May and may be taken until mid-June, the second brood is on the wing in August. A woodland species.

CABBAGE BUTTERFLY *Pieris rapae* (Linnaeus) This is an ubiquitous species originating from Europe and reported from Whiteshell by Bird. The butterflies would not be expected to penetrate any of the forested areas and are more to be expected around gardens or human habitats. They would be expected to fly throughout the summer period.

ORANGE SULPHUR *Colias eurytheme eurytheme* Boisduval This species is not especially common at Whiteshell. It is to be found in late

summer (it may not overwinter here), principally along roadsides.

COMMON SULPHUR *Colias philodice philodice* Godart This, like *C. eurytheme*, is principally a roadside butterfly at Whiteshell. Although it is somewhat scarce, it may be taken from June until September.

BLUEBERRY SULPHUR *Colias interior interior* Scudder Locally common at the edges of bogs or other areas where blueberries grow from late June until the end of July.

GIANT SULPHUR *Colias gigantea* Strecker This species is not yet recorded from Whiteshell, but is likely to occur here. The first records from eastern Manitoba were provided by Masters (1970). The species should be looked for in bogs from late July to early August.

LARGE MARBLE *Euchloe ausonides* ssp. Lucas This species was first recorded from Whiteshell by Bird. The eastern Manitoba population is quite distinct from *E. ausonides mayi* Chermock & Chermock of western Manitoba, to which it has been referred in the past. Adults are on the wing in early June and they are most abundant in areas where jack pine occurs.

Monarchs:

DANAIDAE

MONARCH *Danaus plexippus plexippus* (Linnaeus) This well known migrant butterfly seldom penetrates into the Whiteshell region, but in some years it may be quite common here. Adults are most likely to be taken in late summer, however, my only example was collected in June.

Satyrs and Wood Nymphs:

SATYRIDAE

PEARLY EYE *Lethe anthedon borealis* (Clark) Found in deciduous woods from June until early July. *Lethe anthedon* has been formerly considered as a subspecies of *Lethe portlandia* (Fabricius). The Whiteshell subspecies, *borealis*, is quite similar in appearance to the nominate subspecies, but very different in habitat and habits. (Masters, 1971).

EYED BROWN *Lethe eurydice*

eurydice (Johansson) In the Whiteshell region, this species seems to inhabit grassy bogs. Adults can be taken from mid-July until mid-August.

LITTLE WOOD NYMPH *Euptychia cymela cymela* (Cramer) Recorded from Whiteshell by Bird. This is a species of deciduous woods. Its northern range limit usually corresponds with the northern limit of red oak, which does not quite reach Whiteshell. It should be looked for in late June.

INORNATE RINGLET *Coenonympha tullia inornata* Edwards Only a few records from Whiteshell. Found on roadsides or grassy areas in woodlands, usually in July.

AMERICAN GRAYLING *Cercyonis pegala nephele* (Kirby) For some reason, there are no records of this species from Whiteshell although it should occur here. It should be looked for in deciduous woods during July.

SPRUCE EREBIA *Erebia disa mancinus* Doubleday I took the only Whiteshell examples of *Erebia disa* in a bog near Brereton Lake on June 29, 1968. This species seems to be associated with bogs that have heavy stands of black spruce and should be sought in the last few days of June or in early July. There is some reason to suspect that it may occur biennially — that is to say, adults only fly every other year.

RED-DISCED EREBIA *Erebia discoidalis discoidalis* (Kirby) This species is to be found at the edges of open grassy bogs in late May. It is not rare at Whiteshell, but has never been taken in numbers.

MACOUN'S ARCTIC *Oeneis macounii* (Edwards) This highly prized species was first recorded from Whiteshell by Bird who considered it to be a significant range extension. It is now known to be quite widespread in jack pine areas throughout southeastern Manitoba. It flies in late June and early July in Manitoba; Pat Conway and I found it quite common at Whiteshell on June 29, 1968. It is biennial and in eastern Manitoba

it flies only in even-numbered years; in western Manitoba it flies only in odd-numbered years. Detailed notes on its habitat and habits at Riding Mountain, Manitoba are provided by Masters and Sorensen (1968).

BOG ARCTIC *Oeneis jutta ascerta* Masters & Sorensen This is a bog species with an adult flight in late June to early July. Like *Oeneis macounii* it has a biennial flight, but flies in odd-numbered years, alternating with *O. macounii*, in eastern Manitoba. Interestingly, however, two specimens were taken by me, in abeyance of the biennial flight, near Brereton Lake in late June 1968.

Brush-footed Butterflies:

NYMPHALIDAE

WHITE ADMIRAL *Limenitis arthemis arthemis* (Drury) A conspicuous and common butterfly throughout the Park. Found from the last week of June through July along roadsides and in deciduous forest areas. Specimens from Whiteshell show some signs of intergradation to ssp. *rubrofasciata* (Barnes & McDunnough), but I prefer to reserve that name for populations of western Manitoba and westward.

VICE ROY *Limenitis archippus archippus* (Cramer) Recorded from Whiteshell by Bird, I have not seen it here. It would be expected to occur in July and August in marshy areas where willow grows.

RED ADMIRAL *Vanessa atalanta rubria* (Fruhstorfer) A roadside species that is rather scarce at Whiteshell. I have one record from June 1966.

HUNTER'S BUTTERFLY *Cynthia virginiensis* (Drury) Recorded from Whiteshell by Bird. Possibly occurring here as a migrant only.

PAINTED LADY *Cynthia cardui* (Linnaeus) A migrant species at Whiteshell, very common here in 1967, but not seen in other years.

COMPTON'S TORTOISE SHELL *Nymphalis j-album j-album* (Boisduval & LeConte) A common species along roadsides in August and early September, *j-album* presumably overwinters as an adult and may again

be taken in early spring.

MOURNING CLOAK *Nymphalis antiopa antiopa* (Linnaeus) Not nearly so abundant as *Nymphalis j-album* at Whiteshell, but occurring at the same time and places.

MILBERT'S TORTOISE SHELL *Nymphalis milberti milberti* (Godart) A somewhat scarce but widespread species, *milberti* occurs in all habitats but seems to prefer wet open fields. There are at least two broods a season and they are somewhat irregular in occurrence from year to year, thus adults may be observed sporadically from May to September.

SATYR ANGLE-WING *Polygonia satyrus neomarsyas* dos Passos. This is the scarcest of the three *Polygonia* that are known to occur at Whiteshell. It is found in company of the other two species, along roadsides in August or September, but does not penetrate deeply into wooded areas as the other two do.

GREEN COMMA *Polygonia faunus faunus* (Edwards) This is the most frequently encountered species of *Polygonia* at Whiteshell. It overwinters as hibernating adult butterflies, as do the other *Polygonia*, and tattered specimens are often taken as late as mid-June. I have often wondered whether they all overwinter as adults or whether some individuals overwinter as pupa and then emerge quite early in the spring. Fresh adults are seen in August and September.

GRAY COMMA *Polygonia progne* (Cramer) This species is either double-brooded or partially double-brooded here. Fresh examples can be found in June and again in late August and September. It is a woodland species but can be most readily observed along roadsides and trails.

PEARL CRESCENT *Phyciodes tharos* (Drury) ssp. A common roadside butterfly, having at least two annual broods with adults flying almost continually from early June until late August.

TAWNY CRESCENT *Phyciodes batesii* (Reakirt) This is a sibling species to *Phyciodes tharos*. Most

Manitoba lepidopterists have, in the past, failed to distinguish between the two and, as a result, there are virtually no records of *batesii* for the province. *Phyciodes batesii*, unlike *tharos*, is single-brooded with peak flight in early July. It is found together with *tharos* most frequently at mud-puddle congregations, but is not nearly as common and apparently is much more restrictive in its habitat requirement.

SILVERY CRESCENT *Chlosyne nycteis reversa* Chermock & Chermock Recorded from Whiteshell by Bird; I have not taken it here. The proper adult flight dates should be late June into mid-July and the habitat should be wet fields and marshy areas.

SILVER-BORDERED FRITILLARY *Boloria selene atrocotalis* (Huard) In this area, *Boloria selene* is restricted in habitat to wet marshy areas and the marshy borders of bogs. There are apparently two annual broods with peak adult flights in mid-June and mid-August.

MEADOW FRITILLARY *Boloria bellona toddi* (Holland) This species is more widespread in occurrence than the other *Boloria* and is to be found in meadows and along roadsides. It is the only *Boloria* to be found in dry upland meadows at Whiteshell. It is at least partially double-brooded with adults in June and again in late July.

FREIJA FRITILLARY *Boloria freija* Thunberg ssp. As of yet I have no records of *Boloria freija* for Whiteshell or southeast Manitoba at all. The species is found on the Manitoba Escarpment and throughout northern Manitoba, thence southeastward to Carlton County, Minnesota and it is to be expected in Whiteshell. *Boloria freija* inhabits bogs, preferring the more open ones, and adults would be expected in late May to early June.

PURPLE LESSER FRITILLARY *Boloria titania grandis* (Barnes & McDunnough) This choice fritillary is not uncommon at Whiteshell in early August. It apparently is a bog obligate in this part of its range, but

is an avid visitor at flowers. There are no flowers in bloom in Whiteshell bogs in August and it is probably because of this that individuals are sometimes taken at flowers some distance away from bogs.

BOG FRITILLARY *Boloria eunomia dawsoni* (Barnes & McDunnough) This species is a bog obligate and has been reputed to have a very short annual flight. Although it may be quite common locally, it is generally rare in collections and published records of its occurrence are sparse. The only records for southeastern Manitoba, and for Whiteshell, are a short series of about six males taken by the author and Pat Conway in a bog just west of the park boundary at Rennie on June 29, 1968.

ATLANTIS FRITILLARY *Speyeria atlantis atlantis* (Edwards) This is the most common *Speyeria* at Whiteshell. It is a Canadian Zone woodland species but strays throughout the area, being found at flowers along roadsides, in fields, forests, marshes and bogs alike. It is single-brooded with adults first being on the wing in mid-June, but the emergence period is prolonged and fairly fresh examples can still be found in early August.

GREAT SPANGLED FRITILLARY *Speyeria cybele Fabricius* ssp. This is the scarcest *Speyeria* at Whiteshell. It was recorded here by Bird, but I have not taken it. Southeastern Manitoba examples of *Speyeria cybele* are difficult to place as to subspecies; they show intergradation between nominate *cybele*, *krautwurmi* (Holland) and *pseudocarpenteri* (Chermock & Chermock).

APHRODITE FRITILLARY *Speyeria aphrodite winni* (Gunder) In the Whiteshell populations, *Speyeria aphrodite* and *atlantis* are almost indistinguishable, *Aphrodite* taking on a close resemblance to *atlantis*. The population is quite distinct in appearance from the populations of *S. a. mayae* of western Manitoba and from those of nominate *S. a. aphrodite* of areas to the southeast of Manitoba. The assignment of them to *winni* is

only tentative, however. *Speyeria aphrodite* is not nearly as common as *Speyeria atlantis* at Whiteshell. The two occur together, although the emergence period for *aphrodite* may be a little later.

VARIEGATED FRITILLARY *Euptoieta claudia claudia* (Cramer) This species is not a permanent resident at Whiteshell, but migrates here sporadically and in small numbers. It was recorded from Whiteshell by Bird and I have taken it here twice. One of the specimens that I took was found in a bog during June 1966.

Hairstreaks and Blues:

LYCAENIDAE

BOG ELFIN *Callophrys (Incisalia) augustinus augustinus* (Westwood) *Incisalia augustinus* is confined, almost exclusively, to bog habitats in Manitoba, although it is more widespread in occurrence elsewhere. At Whiteshell it is ubiquitous to all bogs from mid-May until mid-June.

PINE ELFIN *Incisalia nippon clarki* Freeman Recorded from Whiteshell by Bird. This species should be looked for in jack pine areas during early to mid-June.

CORAL HAIRSTREAK *Harkenclenus titus titus* (Fabricius) Not uncommon along roadsides in July.

STRIPED HAIRSTREAK *Satyrium liparops fletcheri* (Michener & dos Passos) Taken at flowers in forest openings or along roadsides in early August.

ACADIAN HAIRSTREAK *Satyrium acadica acadica* (Edwards) Recorded from Whiteshell by Bird. *Satyrium acadica* is usually associated with the Transition Zone and is not to be expected quite as far north as Whiteshell. It is a species of marshy areas.

HARVESTER *Feniseca tarquinius tarquinius* (Fabricius) This is a very rare butterfly in Manitoba. Bird recorded one specimen at Whiteshell, June 15, 1954.

DORCAS COPPER *Lycaena dorcas dorcas* Kirby A single-brooded species with adults in early July. I have had the most luck in finding

them at the edges of bogs.

BOG COPPER *Lycaena epixanthe* (Boisduval & LeConte) ssp. Bird's record of this species for Whiteshell was the first Manitoba record. The species is now known to be widespread in Manitoba bogs. In the past, it has probably been confused with the previous species. It is single-brooded with adults from mid-July until early August.

NORTHERN BLUE *Lycaeides argyrognomon* (Bergstrasser) ssp. Whiteshell specimens of *argyrognomon* belong to an as yet unnamed subspecies and not to ssp. *scudderii* (Edwards) as they are commonly attributed. The species was recorded from Whiteshell by Bird; I have not taken it here. It should be found in mid- to late July. The habitat is seemingly very selective in certain clearings in the forested areas.

GREENISH BLUE *Plebejus saepiolus saepiolus* (Boisduval) A single-brooded species appearing from mid-June to early July.

Everes comyntas comyntas (Godart) Southeast Manitoba is part of a very limited area where *E. comyntas* and *E. amyntula* occur sympatrically, *comyntas* being an eastern species and *amyntula* a western one. They are similar in appearance and previous Manitoba records for one or the other are usually confused. *E. comyntas* is the commoner of the two; it is multiple-brooded and occurs in nearly every habitat throughout the summer.

Everes amyntula albrighti Clench The assignment of eastern Manitoba examples of *E. amyntula* to *albrighti* is tentative. At Whiteshell, *amyntula* is single-brooded with an adult flight in the first half of July.

SILVERY BLUE *Glaucopsyche lygdamus couperi* Grote This is an early species, occurring in deciduous forests in late May and early June.

SPRING AZURE *Celastrina argiolus pseudargiolus* (Boisduval & LeConte) A double-brooded species of deciduous forests. Adults in May and again in July.

Summary

The 55 species listed for Whiteshell, represent 76 per cent of the 72 species known to occur in southeastern Manitoba. It is quite likely that another five or six will be eventually recorded at Whiteshell. Skippers (Hesperiidae) have not been included in my study. Bird (1956) recorded seven species of skippers for Whiteshell, but there are possibly a dozen species occurring here.

A LIST OF BUTTERFLIES TAKEN AT NORTHWEST ANGLE PROVINCIAL FOREST, MANITOBA

by John H. Masters, P.O. Box 7511, St. Paul, Minnesota

Manitoba's Northwest Angle Provincial Forest is located in the extreme southeast corner of the province. It borders Minnesota's Northwest Angle and Buffalo Bay of the Lake of the Woods, but is traversed by a single highway — Manitoba's No. 308 which can be taken out of Sprague or East Brainerd. The forest reserve is comprised of over 150,000 acres, most of which is in seral forest growth. A tourist court and campgrounds and picnic areas are located at Moose Lake. The entire area is Canadian Zone forest with birch and aspen gradually yielding back to pine and spruce interspersed with large marshy areas and smaller sphagnum bogs.

During the last six years, I have been studying butterfly distribution in Manitoba and have spent three weekends in the Northwest Angle Provincial Forest. Since I now have the butterfly distribution of southeast Manitoba pretty much in hand and expect to concentrate on the northwest and southwest areas during the next two to three years, I don't contemplate any further studies in the Northwest Angle Forest. Since there are no published records of butterflies from here, it seems worthwhile to record those species that I have found.

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My collecting was done in July and August of 1969 and August of 1970; thus I have no records of species flying in May and June. In all, 33 species are recorded, this being only slightly over half of the 50 to 60 that are expected here. Whiteshell Provincial Park is directly north of the Northwest Angle Forest and contains almost identical habitats. All but two of the known Northwest Angle species, *Polygonia comma* and *Lycaena helloides*, have also been taken at Whiteshell. The remaining 30 species have identical flight periods and habitats at both spots, these having been given in some detail in another paper (Masters, 1972. The butterflies of Manitoba's provincial parks. I. Whiteshell Provincial Park. *In Press*). The species observed are as follows:

PAPILIONIDAE:

Papilio glaucus canadensis Rothschild & Jordan.

PIERIDAE:

Pieris napi oleracea Harris, *Pieris rapae* (Linnaeus), *Colias eurytheme eurytheme* Boisduval, *Colias philodice philodice* Godart, *Colias interior interior* Scudder.

SATYRIDAE:

Lethe anthedon borealis (Clark), *Lethe eurydice eurydice* (Johansson), *Cercyonis pegala nephele* (Kirby).

NYMPHALIDAE:

Limenitis arthemis arthemis (Drury), *Limenitis archippus archippus* (Cramer), *Vanessa atalanta rubria* (Fruhstorfer), *Nymphalis j-album j-album* (Boisduval & LeConte), *Nymphalis antiopa antiopa* (Linnaeus), *Nymphalis milberti milberti* (Godart), *Polygonia satyrus neomarsyas* dos Passos, *Polygonia faunus faunus* (Edwards), *Polygonia comma* (Harris), *Polygonia progné* (Cramer), *Phyciodes tharos* (Drury) ssp., *Phyciodes batesii* (Reakirt), *Boloria selene atrocotalis* (Huard), *Boloria bellona toddi* (Holland), *Boloria titania grandis* (Barnes & McDunnough), *Speyeria atlantis atlantis* (Edwards), *Speyeria cybele* (Fabricius) ssp.

LYCAENIDAE:

Harkenclenus titus titus (Fabricius), *Satyrium liparops fletcheri* (Michener & dos Passos), *Lycaena epixanthe*

(Boisduval & LeConte) ssp., *Lycaena helloides* Boisduval, *Everes comyntas comyntas* (Godart), *Glaucopsyche lygdamus couperi* (Grote), *Celastrina argiolus pseudargiolus* (Boisduval & LeConte).

The first two weeks of August, usually a poor time to study Lepidoptera in Manitoba, produced exceptional results for me at the Northwest Angle Forest. *Nymphalis j-album* and *Polygonia faunus* congregate in large numbers at roadside puddles; *Boloria titania grandis* was taken at roadside puddles and at flowers bordering bogs in better numbers than I have ever encountered it elsewhere; *Pieris napi* and *Cercyonis pegala* were frequently seen in the edges of wooded areas; *Harkenclenus titus*, *Satyrium liparops* and worn *Speyeria atlantis* covered flowers along the roadsides; and collecting in bogs produced numbers of *Lycaena epixanthe* plus worn examples of *Lethe eurydice*.

MAMMALS OF THE HAND HILLS FORMATION OF SOUTHERN ALBERTA: PRELIMINARY FAUNAL LIST

by John E. Storer, Provincial Museum and Archives of Alberta, Edmonton

The Hand Hills, south-central Alberta's highest topographic feature, rise to an altitude of 3,500 feet at their northwestern edge, and stand about 700 feet above the prairie. Located about 15 miles east of Drumheller, the hills are remnants of an ancient plateau, long since uplifted and dissected by erosion.

The age of the Hand Hills Conglomerate, which lies at the summit of the Hand Hills, in townships 29 and 30, ranges 16 and 17 west of the 4th meridian, has long posed a problem. Until recently, the horse astragalus reported by L. S. Russell (A horse astragalus from the Hand Hills conglomerate of Alberta. Nat. Mus. Can., Nat. Hist. Papers, No. 1.

1958) was the only identifiable fossil recovered from the deposit. Russell's find pertains to an advanced type of horse, probably *Equus*, and demonstrates that the Hand Hills Conglomerate must be in part Blancan (latest Pliocene — earliest Pleistocene) or younger.

Collections made in 1970 and 1971 by the University of Alberta and Provincial Museum and Archives of Alberta have added to the known fauna of the Hand Hills Formation, and fossil mammals of two different ages are now known. A preliminary faunal list of the two components, one uppermost Miocene or lowermost Pliocene, and the other Irvingtonian (middle Pleistocene) or later, follows. A more thorough account is in preparation.

*Natural History Contribution No. 10 of the Provincial Museum and Archives of Alberta.

Uppermost Miocene or lowermost
Pliocene

Order Perissodactyla

Family Equidae

Merychippus sp.

Order Artiodactyla

Family Camelidae

Camelidae, gen. et sp. *indet.*

Order Rodentia

Family Sciuridae

Sciuridae, gen. et sp. *indet.*

Family Cricetidae

Peromyscus sp.

Family Eomyidae

Adjidaumo cf. *A. russelli*

Irvingtonian or later

Order Proboscidea

Family Elephantidae

Elephantidae, gen. et sp. *indet.*

Order Perissodactyla

Family Equidae

Equus cf. *E. conversidens*

Order Rodentia

Family Sciuridae

Spermophilus cf. *S. richardsonii*

Family Cricetidae

Microtus cf. *M. pennsylvanicus*

Family Geomyidae

Geomys sp.

Order Lagomorpha

Family Leporidae

Leporidae, gen. et sp. *indet.*

Fossils from the Miocene-Pliocene portion of the deposit have not been reported previously, whereas the Irvingtonian or later date attached to the Pleistocene portion is far later than the previously accepted Blancan date.

CANADA LYNX IN REGINA, APRIL, 1972

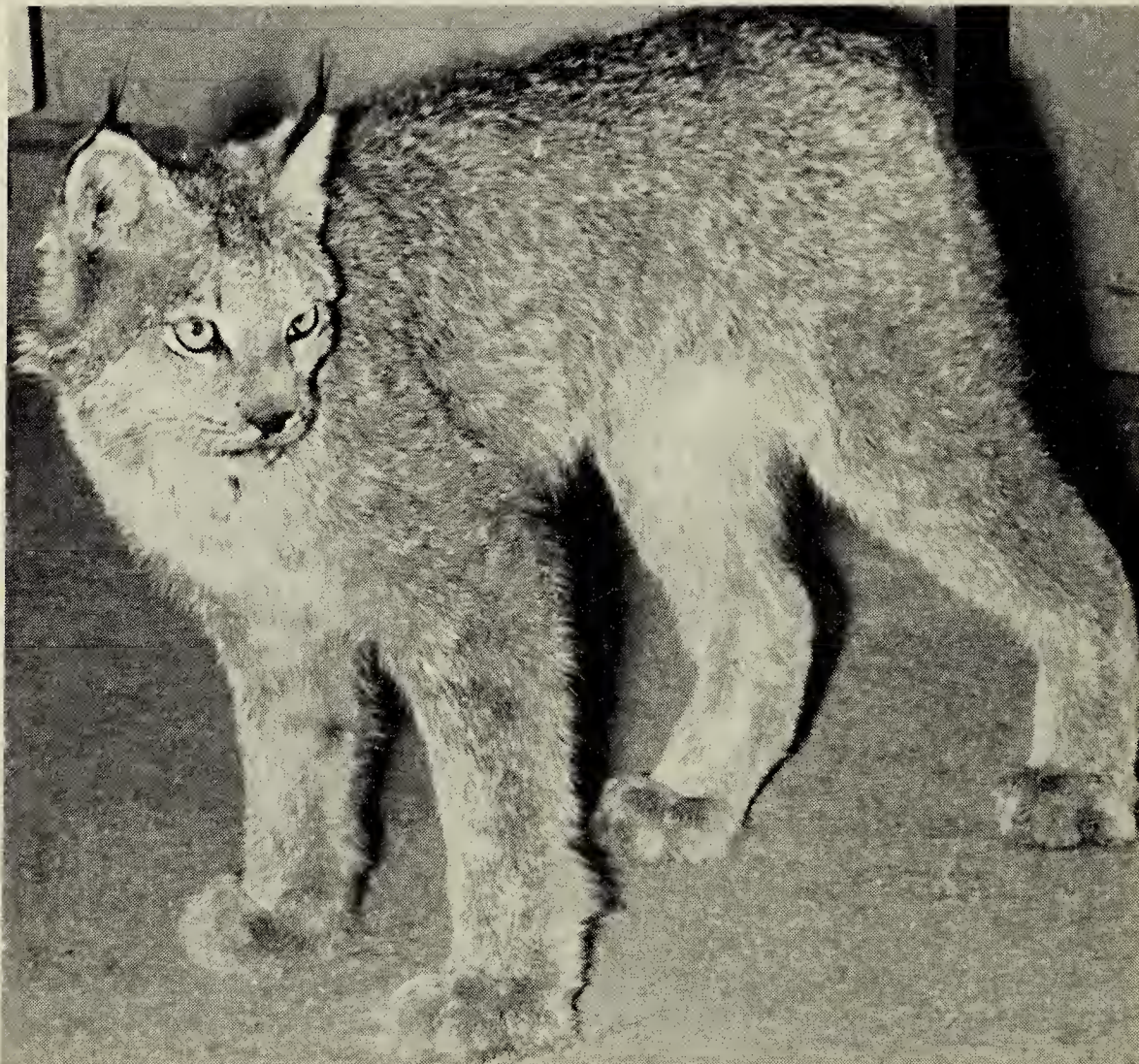


Photo by Roy Antal, Leader-Post, Regina

The above photograph of a two-foot-high Canada Lynx was taken April 21, 1972 at the Humane Society animal shelter, Albert Street and Armour Road, Regina. The animal, which had been hit by a car in the Whitmore Park area of Regina was released later in the Qu'Appelle Valley by the Department of Natural Resources. At least one other Canada Lynx came into the city of Regina in late winter, 1971 - 72.

HOW PLANTS ARE NAMED

by Keith F. Best, Regina Research Station, Regina

“What’s the common name of this plant” asks the visitor. To the inquirer’s disappointment I sometimes must admit that it has no common name. Many books furnish common names only for those plants which are frequently encountered. Some texts attempt to give common names for all plants mentioned, but many of these are merely translations of the scientific names. People tend to avoid the scientific names. What a pity!

Linnaeus, in the 18th century, began the modern concept of naming plants by establishing the genera and species on a scientific basis. All plants are named under his binomial system. The botanical names are written in Latin, the chief language of science, which makes them understandable to all peoples in all languages.

The simplest names are termed monomials, such as “apple”, “bean”, “cat” or “Jones”. When we wish to indicate a particular kind of plant or animal, we add another name such as “lima” bean, “Persian” cat or “Tom” Jones. Scientific names are constructed in a similar fashion but use a Latin terminology, placing the chief name first, with the modifying name following.

The first Latin name is that of the genus, a group of closely related species — like all the brothers and sisters in the Jones family (or the genus may contain only a single species — where Tom Jones was the first and last offspring of the Joneses). The genus or generic name is capitalized, whereas the species name which follows is not.

Scientific or botanical names are usually descriptive of the plant to which they are given and often help in studying the plant when the meaning is understood. The first or generic name is the accepted name of a group of plants all having certain similarities in their flowers, fruits, etc.,

while the specific names include all the different members of the group. As an example, *Helianthus* is the generic name for all of the sunflowers. *Helianthus* is from the Greek *helios*, the sun, and *anthos*, a flower, as the flowers follow the sun across the sky. Referring to a particular sunflower, we add a descriptive adjective. Then we have *Helianthus annuus*, which is the scientific name for “annual sunflower”.

Many people, not accustomed to using these names, regard them as difficult and hard to recall. With use, they become as simple as the names of our friends or co-workers.

Generally, most botanical names are short and simple. When the scientific names are looked at without prejudice, they can be mastered with little difficulty. Many of the generic names have also become common or vernacular names such as “Alyssum” and “Petunia”. Horticulturists and amateur gardeners accept such names as “Chrysanthemum”, “Asparagus” and “Aster” without hesitation. When we wish to designate a particular kind of aster, we add the species name, *Aster multiflorus*, meaning “many-flowered aster”, or *Aster oblongifolius* which refers to the “oblong-leaved aster”.

Different varieties within the same species are indicated by the addition of the varietal name, separated from the specific name by “var.”, the abbreviation for the word “variety”. As an example, botanists write *Lilium philadelphicum* var. *andinum* to indicate that our Western Red Lily is only a variety of the wood lily.

When exact scientific identification of a plant species is required, the name of the person who first named the plant (or an abbreviation of that scientist’s name) is added to the generic and specific names. We would then write *Lilium philadelphicum* L. var. *andinum* (Nutt.) Ker.

Common names vary from place to

place and may even change with time. Common names also lack precision, a fact which often limits their usefulness. Sometimes they are confusing and misleading. We know that African violets, for instance, are not true violets, that pepper-grass is not a grass and that sow-thistle is not a

true thistle. Canada thistle is a weedy invader from Europe and the same plant in New Zealand is tagged as California thistle.

It is indeed a good idea to be familiar with the scientific names of plants.

1971 BOTANICAL RECORDS FOR SASKATCHEWAN

by John H. Hudson, 103 Richmond Crescent, Saskatoon

The 1971 collecting season produced the best harvest of novelties for me since 1958. Here are reported two plants new to Canada, two new to Saskatchewan alone, and three seldom mentioned varieties.

Of the plants new to Canada perhaps the most interesting is *Salsola collina* Pall. I collected it as #2749 on August 17, 1971 at Estevan, "C.N.R. tracks, soil cindery and very drouthy, abundant." A couple of weeks later, back in Saskatoon, I visited the downtown C.N.R. yards to see how *Eragrostis poaeoides* as reported by Hudson (1971) was surviving (very nicely, thank you) and found more *Salsola collina*, collection #2754 of September 3, 1971, "downtown C.N.R. yards west of 600 block 1st Avenue, soil dry and cindery." This plant, in the same genus with ordinary Russian Thistle, appears as a less branchy, more erect, version of the famous weed with a hint of *Kochia* about the flowers. Technically, the mature calyx lacks the horizontal wing so prominent in *Salsola kali*, while the inflorescence tends to be in terminal inconspicuously bracted spikes. In Russian Thistle axillary flowers are numerous, while such flowers as are in terminal spikes are conspicuously bracted with the noxious prickles. One gathers *Salsola collina* is little of a tumbleweed; on a railroad embankment in L.S.D. 3 of 31-1-VI W2nd, 3 mi. E. of Roche Percee, on May 3, 1971, I had found a plant described in my notes as "a dead Goosefoot Family annual I don't know, like *Salsola* but not quite so

spiny, and with tough, not shattering, stems." When in August I got back to the site, the next generation of these annuals turned out to be *S. collina*.

This *Salsola collina*, a native of Soviet Middle Asia, was reported in Minnesota by Pohl and Gillespie (1959). Then Stevens (1961) reported it for North Dakota, with collections going back to 1949. It is also keyed and mapped for Montana by Booth and Wright (1966). It is not in Boivin (1966) so presumably is new to Canada. This one seems to be spreading largely by rail—I have not yet seen it away from railroad tracks.

A hitherto unreported desert shrub for Canada is what I have taken to be *Suaeda intermedia* S. Wats., collected as #2762 on September 23, 1971 on "bare exposed S-facing outcrops and crags of 'Redeposited Ravenscrag' formation on NE¼ 21-1-X W3rd, alt. 3000'." This plant looked much like a small Greasewood, with terete fleshy leaves, but these distributed all around the unbranched and brittle shoots of the year which radiate in every direction from the woody base. Flowers and fruit were poorly displayed due to the lateness of the collection (and the dryness of the summer?); no seed appeared to have been set, but the flowers seemed to have been in axillary glomerules scattered towards the ends of these shoots of the year. Boivin (1968) weighed a Hitchcock (1964) report from Alberta and found it wanting, so presumably this is new to Canada.

The habitat of this shrub is very

striking. The valley of the Frenchman river 25 miles southeast of Val Marie, where it turns from S.E. to S.W. just before crossing the Line, attains a depth of some 500 feet below prairie level. Consequently, the valley slopes abound in precipitous buttes and cut-banks, largely developed in dull grey Bearpaw shale. Above the Bearpaw and below the thin brown glacial drift, however, is a formation of some 10-50 feet of buff calcareous silt, very conspicuous at a distance, whose coaly streaks class it as non-marine; its age is uncertain. On these beds *Suaeda intermedia* was found; it was not seen above or below.

In the course of taking my daughters to the Saskatoon Animal Park I was halted before the paddock of the Japanese Sika Deer watching the 2-year-old feed the deer and idly regarding the much-trampled vegetation in the paddock; it consisted of nettles and biennial wormwood amid bare trodden ground. I must have been looking at the nettles five minutes before the realization seeped into my consciousness that the nettles were wrong—the leaves were half size and ovate instead of lanceolate. Upon collecting the nettles through the fence, I discovered them to be taprooted annuals, and were therefore *Urtica urens* L. The collection is #2756 of September 4, 1971. The plant is a world-wide weed of Eurasian origin, reported for Manitoba and Alberta, as well as the rest of Canada, but not Saskatchewan, by Boivin (1967). I should imagine that we are constantly being inoculated with the seeds of so widespread a weed, but that for some reason or other it takes hold only under rare favourable conditions. Competition would be much reduced in zoo enclosures. As the animals in the Animal Park are to be transferred to the old Forestry Farm, the future of *Urtica urens* in Saskatoon is uncertain.

Another rare introduced weed was brought to me from his home area, Gronlid, by a co-worker of mine, Mr. Bernie Zuk. A first specimen in a dried but unpressed state was given to me

about September 12; upon determining it as *Spergula arvensis* L. or Spurrey, a common weed of moister climates in Eurasia and North America, I asked him to collect more into a plastic bag so that it would arrive fresh for pressing. This he did as "#2765, October 11, 1971, NW ¼-15-48-XVII W2, summerfallow field on light soil, very frost-resistant." This *Spergula arvensis* looks like a horsetail but with flowers, being in habit an annual with many recumbent stems, leaves numerous and thread-like in well-spaced whorls, and small sandwort-like flowers in terminal cymes, the flower stalks becoming reflexed in fruit. Moss (1959) attributes it to Alberta, while Boivin (1968) by writing "(Man S)—Alta—" signifies that he has read of reports of the plant from Manitoba and Saskatchewan but not seen any collections. Breitung (1957) and Scoggan (1957) do not report it.

So much for the novelties. Three other little reported plants I ran across during the summer are worth mention; these are *Scirpus rufus*, *Scirpus pumilus*, and *Boltonia asteroides*.

Scirpus rufus (Huds.) Schrad. was collected by me as #2711, July 4, 1971, abundant to dominant in more saline and more stagnant parts of large spring-fed bog SW ¼-24-31-IV W3rd, 3 mi. N. Hanley; also as #2724, July 16, 1971, spring-fed marl bog, near shore, somewhat saline conditions, soil black smelly reducing muck, W. edge SW #-26-34-XIII W3rd, 4 mi. S. and 2 W. of Keppel. I also saw this at a bog 8½ mi. N. of Kinley on L.S.D. 8 in 13-37-XI W3rd on September 12, 1971. This *Scirpus rufus* was reported from a bog near Sutherland by W. P. Fraser (1940), and I have seen it in two Sutherland bogs, one on SE ¼ 11 and other on NE ¼ 11, both in 37-V W3rd. There is a Pike Lake report in Fraser and Russell (1944) but the material in the Fraser Herbarium is all from Sutherland. One may describe *Scirpus rufus* as superficially like the common *S. americanus* (Three-Square Bulrush) in size, habit and colour, also in the single terminal spikelet, often

so bracted as to look falsely lateral, but differing sharply in the scales of the spikelet being 2-ranked rather than spirally arranged.

Scirpus pumilus M. Vahl was collected as #2722, July 16, 1971, on moss of spaces between pools just outside *Salix candida* zone in spring-fed marl bog SW $\frac{1}{4}$ - 26 - 34 - XIII W3rd, south of Keppel. It was also seen in the above-mentioned Kinley bog September 12. The only previous report of this in Saskatchewan was given from a Sutherland bog by W. P. Fraser (1940). He does not give the land number, so it is hard to say which bog is meant. I have been unable to find it in the two Sutherland bogs with survey numbers given under *S. rufus*. This failure proves nothing, for *Scirpus pumilus* is as inconspicuous as a plant can well be and still photosynthesize. It just cannot be seen from a standing position — one must kneel. The plant consists of a single ovoid spikelet at best 3 mm long mounted on a threadlike stem some 6-10 cm high carrying one reduced and usually withered leaf some 6-10 mm long low down (field distinction from the genus *Eleocharis*). These culms are not even bunched but scattered, the plant being rhizomatic. The best way to locate *Scirpus pumilus*, I found, is to look for *Lobelia kalmii* and then hunt around thereabouts.

Boltonia asteroides (L.) L'Her. is, on the other hand, very conspicuous but well camouflaged. As I was driving to Estevan at highway speeds August 8, 1971, there seemed to be a great deal of *Aster hesperius* in the heavy clay soil of the road ditches from Corinne south-east on #39. Presently these asters began to look oddly flat-topped in the inflorescence; this aroused my suspicions, as I recalled from floral lists that the pseudo-aster *Boltonia* had been reported from not too far away. Finally, I stopped and examined a stand, which proved to contain both *Boltonia* and *Aster hesperius*. The *Boltonia* was collected as #2740, August 8, 1971, "roadside ditch in Regina Heavy Clay, soil wet earlier, S. edge L.S.D. 3 in 6-12-XVIII W2nd", be-

tween Milestone and Lang. *Boltonia asteroides* looks almost exactly like *Aster hesperius* save for being wholly glabrous and having a tendency towards a flat-topped inflorescence. The botanical distinction is that the achenes lack the usual Composite pappus (tuft of hairs serving for wind dispersal of the seed) but instead have merely a couple of awns (like *Gaillardia*). The plant has been reported by Breitung (1957) from Weyburn and Torquay. Further travel along #39 showed *Boltonia* to be thickly abundant from Milestone to Yellowgrass, but decreasing as the Regina clay decreases from Yellowgrass south to McTaggart, and absent south thereof; while north again it ended almost sharply between Milestone and Corinne — possibly from encountering the end of its climatic preference, for certainly the habitat remained unchanged.

Duplicates of these collections have been sent to the Fraser Herbarium of the University of Saskatchewan and to that of the Central Experimental Farm at Ottawa.

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The Blue Jay Bookshelf

MOOSE AND DEER BEHAVIOUR IN SNOW. 1971. By John P. Kelsall and William Prescott. Canadian Wildlife Service Report Series No. 15, Information Canada, Ottawa. 28 pp. \$1.00.

Ecologists and wildlife managers agree that a most important and yet often overlooked or under-investigated phase of vertebrate ecological study is that concerning the relationship of a species with its biotic and abiotic environment during winter. Wildlife literature abounds with references to the importance of the winter period and the winter range to, for example, wild ungulate survival. However, there are few published studies which, in detail, measure and describe such basic topics of concern as the intra- and inter-specific relationships of ungulates in winter relative to the depth, quality, and distribution of snow on contracted wintering ranges.

This gap in our knowledge has been reduced as a result of recent studies such as the one under review. Kelsall and Prescott have presented a well-documented account of their study on the influence of winter snow conditions on moose and white-tailed deer distribution in Fundy National Park, N.B., over a three-winter period.

A noteworthy feature of this publication is the obvious planning and experimental design input that preceded methodical quantitative and qualitative data accumulation on snow and animal numbers. The authors' opening statement (p.10) pertaining to the study objectives states that the study was conceived and developed "... to examine the morphology of snow in Fundy National Park ... to learn if altitudinal differences in depth and structure might account for an observed separation of the winter ranges of moose (*Alces alces*) and white-tailed deer (*Odocoileus virginianus*)."

Unfortunately, this objective was not attained, *per se*, even though much data on differences in moose

and deer distribution, snow-level tolerance, etc., were gathered. This cannot be considered a deficiency of the study, but rather the declaration of an open-ended objective that could not be proved by the methods employed. Having shown that snow differences in quantity and quality are related to the presence and absence of moose and deer altitudinally, the authors ask, "How do differences in snow depth account for the observed differences in cervid distribution?" They contend that deep snows curtail deer use of high elevation ranges in winter and that deer are restricted in winter to lower elevation regions, but there are no data to indicate why moose, on the other hand, do not co-inhabit these lower, less rigorous ranges with deer. The suggestion is made (p.24) that competition for food between moose and deer, and the presence of "moose sickness" might account for the absence of moose on deer winter ranges. However, such a consideration implies that moose are less capable of meeting their winter nutritional requirements when co-inhabiting lower elevation ranges with deer (a function of deer vs. moose numbers? palatability of forage?), or that moose in some way have learned to "avoid" deer ranges because of the prevalence of the parasitic nematode (*Pneumostromylus tenuis*) causing moose sickness, a disease which is harboured by deer on these lower elevation ranges.

The authors' citation of two major U.S.S.R. studies on snow ecology and the inclusion of a Russian language abstract in the report give an international importance to the New Brunswick study. As such, a figure showing the relative geographic position of New Brunswick and Fundy National Park would have improved the orientation of the readers. These same readers who are conditioned to expect figure captions to appear immediately below each figure may find the placement of all captions at

the top of the page in this report somewhat inconvenient especially when, on pages with two vertically arranged figures, the appropriate captions appear horizontally-arranged and above both figures. The reader will also have some difficulty interpreting the meaning of the words "range" and "ranges". These words appear 15 times on page 19, for example, and refer to "areas of occupation" in ten instances, and to a "spread in values or readings" in the remaining five instances.

The naturalist and biologist, particularly those concerned with snow quality and quantity and their effects on winter survival, ecology, and behaviour of ungulates at relatively high latitudes, will gain from reading this informative report. — *George J. Mitchell, Regina.*

INTO THE WOODS BEYOND. 1971.

By Cy Hampson. MacMillan Co. of Canada, Ltd., 70 Bond Street, Toronto 2. 118 pp. Price \$5.95.

How can we experience some depth of feeling for wild animals, particularly the ones which most of us consider dangerous? If we could acquire this depth of sensitivity, perhaps we would kill less and tolerate killing less easily. Perhaps, too, our lives would be further enriched by the contact we have with the lives of these wild animals. Cy Hampson's new book on some of his encounters with native mammals can bring some of this depth of feeling to us.

The book begins with the adventures of Cy and Mary Hampson and a porcupine. Although the porcupine lived with them for nearly three years, there is no suggestion that their hold on the animal had permanence or restriction, nor that such an association is without hazard. "Porky" lived with the Hampsons without unnecessary confinement, and finally left, with their help, to return to his life in the wild. He had lived because of them, had lived as their guest, and they counted this their good fortune.

Anger, even when it is justified, is out of fashion in our "over-regulated civilization", but Dr. Hampson's attitude comes out in his description of his son's justified anger and the action he takes against the cruising "hunter" who shoots and kills their pet coyote, "Yipper". Some of the incidents in the book are not described in complete detail, but the book is not intended to be an exhaustive, well-documented scientific report. Dr. Hampson can write scientific reports, too, and does, as a university teacher in Zoology and education. But in this book he is writing to everyone from the primary grade student to the devoted naturalist and speaks to those shut off from animals by their own lives, or by restriction of the animals' habitat.

Here are a few excerpts from some of the eight chapters of this delightful excursion into our natural world:

"My first encounter with the most highly-perfumed member of the weasel family reaches back to a second-hand encounter in the depths of the hungry thirties. The stench was terrific, and although it gradually died away it was still very pronounced three years later whenever it rained."

"Our meter man stood transfixed, his expression an indescribable blend of fascination and horror, as he watched Mary and an enormous timber wolf romping together in the big pen behind our home." In a more thoughtful mood, still on the subject of wolves, the author "supposes it is understandable that man should wish to be rid of those wolves which are killing his domestic animals. However, the length to which he has gone in his attempts to wipe the wolf from the face of the earth makes very little sense." On his favorite subject, flying squirrels: "Before taking off, flying squirrels bob their heads up and down, probably to judge the distance to the spot where they wish to land. Then they inch their hind feet forward to a position under the chin. . . ."

In winter flying squirrels have an interesting method of coping with severe winter conditions involving low temperatures, . . . a dozen or more use the same hole for sleeping . . . total surface area is reduced so that each squirrel loses heat more slowly to the surroundings."

Dr. Hampson's photographs intensify the contact with the animals we meet in his book. They bring us the eye-to-eye contact with animals without removing the animal's freedom or the reader's feeling of their "essential wildness". This is true from the sight of the porcupine on the front dust jacket to the picture of the author gazing through his camera lens on the back. He is probably looking past his "outdoor laboratory", over the mixed wood forest and upland glades "into the woods beyond". — *James Jowsey*, 2635 Nineteenth Avenue, Regina.

WHY WILDERNESS. A Report on Mismanagement in Lake Superior Provincial Park. 1971. Edited by Bruce M. Littelljohn and Douglas H. Pimlott for the Algonquin Wildlands League. New Press, Toronto. 108 pp. \$2.50.

"Preserved by one generation, destroyed by the next," sums up a great deal of the content of this book on the vanishing natural parks of Ontario, and particularly Lake Superior Provincial Park.

Formed in 1968, the Algonquin Wildlands League recognizes the importance of undisturbed wildlife communities, and, in 1970, made a study of what was happening to the natural parks of Ontario. They found that 95% of Lake Superior Park is in Crown timber licenses held by U.S. based companies, and that commercial uses had vastly deteriorated Algonquin, Killarney, Quetico and Lake Superior Parks. Pimlott gives his opinion that the system of timber licenses is an anachronism that should

be dispensed with in parks. The supposed wilderness canoe route in Lake Superior Park, which should give a feeling of remoteness, is actually bordered by a logging road used by huge trucks.

Littlejohn, in his chapters, reminds us of the impact made by the wilderness on many Canadian writers and painters, adding that we do not allow the government to sell Canadian paintings from the National Gallery to the highest bidder. Why then, he asks, do we allow it to sell the environment of our parks to the highest bidder?

There is a chapter by the naturalist, Fred Bodsworth, wherein he states that wild nature is a sensitive thing, its qualities easily destroyed by concentrated numbers of people. Three million square miles of boreal spruce and arctic tundra are no consolation to people who seek the thrill of hiking under towering pines, or paddling a wilderness waterway within one day's drive of home.

The J. Bruce Falls chapter states that governments have a moral responsibility. Indeed they do, but how often citizens find that various Government Departments "express interest" — but nothing really happens. Dr. Falls, a noted ecologist, thinks that Canada should try to preserve as much wilderness as possible everywhere.

Pimlott writes of that branch of 19th century thought which considered nature only as something that must be conquered because it stood in the way of (so-called) progress. He sums up the recommendations made to the Government by the Wildlands League — recommendations to preserve historical and natural aspects. He also sets forth eight excellent suggestions for individuals (like ourselves) who care, eight guidelines that we would do well to read and keep in mind.

If we do not persevere, more and more we shall feel as Pimlott does, "disappointed, frustrated and saddened". — *Christine Pike*, Waseca.

ECOLOGICAL EFFECTS OF THE BENNETT DAM

EVALUATION OF ECOLOGICAL EFFECTS OF RECENT LOW WATER LEVELS IN THE PEACE-ATHABASCA DELTA. 1972. By Herman J. Dirschl. Can. Wildlife Service Occasional Paper, No. 13. Information Canada, Ottawa. Illus. 28 pp. PEACE-ATHABASCA DELTA. THE PROBLEMS, PROPOSALS AND ACTION TAKEN. December, 1971. By D. M. Hornby, Project Director, and others. An interim report of findings and recommendations of the Peace-Athabasca Delta Project task force. Illus. 36 color photos. 24 pp.

In a letter in the June, 1971 *Blue Jay* R. D. Symons expresses concern for the Delta marsh at Lake Athabasca because of the control of the flow of water in the Peace River by the Bennett Dam. In a letter in the September, 1971 issue of the *Blue Jay* Mrs. D. H. Calverley explains that the Peace-Athabasca Delta has sometimes been dry before the building of the Bennett Dam and that because the Peace River joins Rocher River to form the Slave River some miles below Lake Athabasca, it is only when the water in the Peace River is exceptionally high that the delta will be filled with water.

The two papers listed above report the findings of the Canadian Wildlife Service and of the Peace-Athabasca Delta Project (a joint project of the federal government and the Provinces of Alberta and Saskatchewan) and predict that the peak level of Lake Athabasca will continue to remain three-four feet below the mean peak present in the Lake before the completion of the Bennett Dam. The level in Lake Athabasca will not now be able to reach a peak (e.g. 688 feet) sufficient to flood the delta unless artificial controls are built to hold back some of the outflow each spring.

The task force, which includes many experts in widely different fields, must make an ecological appraisal of the area and determine the environmental consequences of continued low

water levels in the Peace-Athabasca Delta.

The delta is a 1,700-square-mile area in northeastern Alberta at the western end of Lake Athabasca. It is important as bison habitat (currently about 10,000 animals) and as a waterfowl breeding, moulting and fall staging area. Fishing and muskrat trapping have provided the main livelihood of some 1,500 Cree, Chipewyan and Metis residents at Fort Chipewyan. The flat terrain in the area has allowed extensive flooding in the area as the water levels fluctuated. Control of the Peace River has caused a decrease of the nine largest delta lakes by 28 per cent. If the present water level continues, the productive shallow marsh and wet meadow environments will become relatively unproductive willow thicket or phragmites or reedgrass meadows.

The Canadian Wildlife Service began a study of the area in 1968 and the Peace-Athabasca Delta Project began its three-year study early in 1971. Because of the size and the low relief of the delta and the rapidity of vegetational changes taking place, the ground studies have been supplemented with an air photo study which has been strictly supervised at every step. Contour maps are being developed from the vegetation zonations. The normal vegetation which is adapted to the seasonal inundation is being rapidly replaced by plants which tolerate drier conditions. Nine lakes in the area (each larger than three square miles) with a total size of 638 square miles have been reduced to 465 square miles, a reduction of 28 per cent. An additional 25 lakes, between 1.0 and 3.0 square miles in size, have now completely dried up. The task force will have to assess all the interrelated resource aspects and then decide what remedial actions should be taken.

We are pleased to see these two interim studies which seem to consider the multiplicity of values of the

Peace-Athabasca Delta. The present-day national and continental significance of the delta is recognized by the decision to build a temporary rock-fill dam (to be finished in December, 1971) in the west arm of the Chenal des Quatre Fourches to impound water from the Birch River

and raise water levels in some 60 per cent of the Delta area. The formation of a management advisory board which would coordinate the activities of the many agencies interested in the resources of the area and give an adequate voice to local people is suggested.—*G. F. Ledingham, Regina.*

Letters and Notes

ALBINO YELLOW-HEADED BLACKBIRD

At noon on May 22, 1971 I discovered an albino Yellow-headed Blackbird at a roadside slough about a mile east of Moosomin, Saskatchewan. The bird attracted our attention as we were driving by, its startling white plumage making my wife think at first that it was a piece of facial tissue caught on a reed.

There were no other Yellowheads at this shallow marshy place, but a number of Red-winged Blackbirds were nesting nearby. Since I always carry a camera loaded with colour film, I at once proceeded to stalk the bird. Although I was able to approach to within 15 or 20 feet, I regret to say that I was unable to get a photo. Nevertheless, I had a good look at it and made notes of its appearance before leaving the scene.

I contacted Manitoba government wildlife personnel three days after seeing the bird and gave them details of the sighting. Recently I have been urged to make a further record of the observation. The bird, which appeared to be an adult male, lacked the normal black plumage. Except for the usual yellow head and breast it was all white with the exception of a small black spot on the right wing. I was close enough to note that its bill and feet were yellowish in colour instead of black, though of a darker shade of yellow than the head. The head plumage was lighter than that usually observed in this species (a canary-yellow colour). Unfortunately, I was unable to determine the eye colour.

When it flew away, I again noticed that it was white all over except for its yellow head.

I have been informed by R. W. Nero that this bird was probably close to a "total albino", that is, almost totally lacking in melanic (black) pigment in its plumage and fleshy parts. (Albinism, it is interesting to note, does not directly affect red or yellow pigments.) It was also suggested that my close approach may have resulted from poor vision in the bird—if it lacked pigment in its eyes. I understand that although albinism is fairly common in members of the blackbird family, there appear to be few reports of albinism in Yellow-headed Blackbirds.—*James W. Demianyk, 36 Parkville Drive, Winnipeg, Manitoba.*

IMPORTANCE OF OCEANS

The November, 1971 newsletter of the Council of Resource and Environment Ministers explains why the marine environment must be protected. "Photosynthesis within the ocean produces two-thirds of the oxygen consumed by man. Phytoplankton, a major oceanic photosynthesizer, is increasingly threatened and destroyed by pollutants entering waters, principally from dumping. Without phytoplankton there would be no life at sea, and man would suffocate from lack of oxygen and excess of carbon dioxide." According to the Swiss oceanographer, Jacques Piccard, continuation of present levels of ocean dumping could decimate the world's population within the next 50 years. Laws must be introduced to forbid ocean dumping.



Photo by Sam Alberts, Brooks, Alberta

In reply to the question "How in the World?" (see page 68 in March, 1972 *Blue Jay*) we have had a number of excellent letters.

Mary K. Anderson, Carlyle, writes on March 14 and suggests: "The coyote was waiting for a mouse, chipmunk or squirrel to emerge from the hole in the partly hollow fallen log. When the intended prey emerged, the coyote reared up high, to pounce with stiff front legs and thus came down very suddenly, and hard between branch and trunk, resulting in a severe blow in the region of the heart and also continued severe pressure on the heart. Result — instant death. The wide stance of the hind legs is correct for a pounce."

E. Kuyt, Canadian Wildlife Service biologist at Fort Smith, N.W.T., would prefer, before offering an opinion, to examine the dead animal, but, based on the information gained from the photo, says: "My guess is that the coyote in chasing prey attempted to jump between the tree and its branch and in doing so impaled itself on a sharp twig, penetrated a vital organ in the chest area and the coyote

haemorrhaged internally. Some of the twigs appeared to have been chewed by rabbits or hares and this could explain the existence of the sharp twigs as well as the prey. The coyote may have jumped over the barbed wire or in jumping up with its rear (after having become lodged) flipped its rear legs over the wire. (P.S.) I did not see the coyote's tail in the photograph. The lesion on the animal's left flank could be related to the barb wire. Perhaps the tail is caught by the barb wire?"

In answer to Mr. Kuyt's query about the tail *Sam Alberts* (who found the coyote and took the photos in April, 1971) wrote in his letter of January 11, 1972, "The coyote was without any sign of a tail, it might have been born that way or at least lost it at a very early age. There was no sign of any stub or a recent scar."

Noticing the absence of the tail a *Blue Jay* reader from Kindersley (who did not give his name) wrote "It is very plain to see that the coyote committed suicide on the wire fence — imagine a coyote without a fine bushy tail—any self respecting beast

would do itself in. Seriously, I do believe it was pierced by a piece of the fence . . . and died instantly with only marginal internal bleeding."

Mrs. R. Parfitt, Moosomin, wrote on March 28 that her husband "thinks it was chasing rabbits and ran into a piece of wire which speared its heart." She herself thinks that "it was being chased and that it ran for cover. It died from exhaustion."

Mrs. M. C. Peronne, Clarence, New York on March 28 asks, "How come the tail is missing?" She doubts that the coyote got into the predicament shown in the picture all by itself "because the body is too stiff; if it was instant death surely the body would have slumped and the legs would be bent." She adds: "I am most suspicious. It looks too false, too artificial, too uncanny. Either the coyote was found dead by poisoning or it was chased until dead by snowmobile, then set in this position. All appearances lead me to believe it was a put up job."

Mrs. Peronne concludes her letter by saying that she does not want speculation in the June *Blue Jay* but that she expects to see a proper analysis following autopsy or post-mortem by a competent mammalogist. Unfortunately the analysis she asks for cannot be given because the animal died some 16-18 months ago and we first learned of it when we received the photos and letter from Mr. Alberts five months ago.

Mr. Alberts, Brooks, wrote that there was no evidence that man had placed the animal in this position and poison was ruled out because the nearest poison bait station was 15 miles away. Apparently there was no evidence of fence or sharp branch piercing a vital organ. Mr. Alberts explains: "The coyote appeared to have jumped over the bottom wire of the fence and to have come down with its front feet and mouth in the stump of the willow tree. There was nothing to indicate that it had caught anything and there was no evidence of its having made any struggle to free

itself. The body was firmly wedged between a branch and the main trunk of the tree. Possibly the animal came down hard enough to collapse the heart cavity, causing instant death."

ALBINO ROBIN AT SELKIRK, MANITOBA

During the afternoon of August 13, 1970, Herb Copland of the Manitoba Museum of Man and Nature was notified by Mrs. Kennedy that Mr. and Mrs. Walter Sargent had found a young and apparently abandoned albino robin in their back yard in Selkirk. On his way from Winnipeg to Selkirk, Herb stopped by to pick up my two brothers and me so that we could see this unusual bird.

The robin had pure white plumage except for slightly pinkish feathers on the head, and pink eyes. It was badly infested with lice, but otherwise appeared in good health. It was given to Eric, Jack and me to care for.



Young albino robin

We solved the lice problem in a couple of days. It took readily to us and ate large amounts of worms, small fruit and other food — and grew as fast as its appetite. After one week, we placed it in an outdoor cage, to become accustomed to its future environment. Unfortunately, the ending was not a happy one — a dog managed to break into the cage. — Norman Lee, R.R. No. 3, Selkirk.



Photo by Helen Morrison, Regina

At this time of year we should all be reminded of what Mrs. R. McLaughlin, writing a year ago in *The Yorkton Enterprise*, called our "vulnerable emblem." In the past the very existence of this strikingly beautiful lily has been threatened by thoughtless picking and destruction of habitat. All citizens, and particularly Natural History Society members, should attempt to do everything possible to insure that "the flame-like flower" is protected.

OUR LAST FRONTIER

The Canadian Arctic is one of the last frontiers of the world and in typical fashion man is rushing headlong into making it the kind of place he has made of all other places. This statement is from a Pollution Probe release which asks for support in effecting a fair balance between resource development and the protection both of the environment and of native Canadians in the Arctic. Pollution Probe proposes a five-point program to protect our last frontier. Briefly these proposals include the following:

1. A two-year (or longer) freeze on all new Arctic oil and gas extraction and transportation (pipeline and tanker) and a scaling down of northern exploration activities.

2. Full discussion with Native

People before the commencement of any exploration or development in the Arctic and recognition of the right of Native People to live off the land.

3. Reorganization of the Department of Indian Affairs and Northern Development to separate the conflicting interests of development, environment protection and human welfare.

4. Proclamation of the Arctic Waters Pollution Prevention Act and development of regulations to enforce all environment protection acts.

5. The establishment and implementation of official long-range comprehensive policies regarding the Arctic after information has been made available and public hearings held.

Pollution Probe suggests that citizens write to Prime Minister Trudeau asking him to put a freeze on development in the Arctic until

more is known about how we can protect the Arctic environment. If you want to know more about the problems of the Arctic, write for Pollution Probe's 28-page background statement on the Arctic. Write to Arctic Campaign, Pollution Probe, University of Toronto, Toronto 181, Ontario.

HIGH ARCTIC

In the March, 1972, *Blue Jay* there is a review by Margaret Belcher of George Miksch Sutton's book *High Arctic*. In my library I have a book with the same title, *High Arctic*, but it was written by Captain R. M. Banks and was published by Dent and Sons, London in 1957. My *High Arctic* is the story of the British Greenland Expedition of 1952-54, obviously a very different book from the one reviewed in the last issue of the *Blue Jay*. I wonder if Mr. Sutton had any idea that a book with the same title was in existence? — *C. S. Williams*, Orangeville, Ontario.

MOOSE MOUNTAIN NOTE

In *Birds of Moose Mountain* Nero and Lein note Gray Partridge from areas around the park, but none inside. Therefore, I thought it of interest to record that I saw two Gray Partridge on July 3, 1970 inside the park. I think the birds were along the Nature Trail, but all I have recorded is that they were in the park. — *Dale Hjertaas*, General Delivery, Sub P.O. No. 6, Saskatoon.

CROWS OVERWINTER

An oddity for Manitoba has occurred. A flock of 37 Common Crows successfully overwintered in 1971-72 near the town of Douglas, Manitoba. Despite an intensely cold and windy December and January the crows did remarkably well. Because of a light snow cover they found ample food in an unharvested millet crop and in sunflower fields. Scavenging at the refuse pit and along the highway also supplied food. Thick willows and poplars near the town provided shelter

and a roosting site. — *Ray Whaley*, Wasagaming, Manitoba.

Editor's Note: An estimated 90 crows wintered at Winnipeg, foraging at refuse dumps and roosting in aspen woods. These are unprecedented numbers for this region. — *R. W. Nero*, Department of Mines and Natural Resources, Winnipeg.

ENVIRONMENTAL CHANGE

Chief Billy Diamond of Rupert House is organizing native resistance to the James Bay Hydro Project which will flood or drain some 144,000 square miles and displace some 5,000 Cree Indians who live in the area. The project will take some 10 years to build, may cost \$10 billion and holds the promise of 125,000 new jobs during the construction phase alone. Diamond claims that the land belongs to the Cree because the Indians did not sell it, they did not give it away and they were not conquered in battle. — Condensed from *James Wilde's* report in *Time*, April 24, 1972.

MASKED SHREW

In early October, 1971, I found a Masked Shrew, *Sorex cinereus*, dead in a back alley in Dundurn less than one block from a marshy creek. The specimen was identified by Dr. D. H. Sheppard, Regina. About a year earlier I found a similar animal impaled on a barb of a barbed-wire fence which went through a marsh. These are the only two shrews that I have seen since the winter of 1908-09 at Regina. — *E. W. Sullivan*, Dundurn, Saskatchewan.

WINDSHIELD STICKER

When driving around the country we may come in contact with other members of the Saskatchewan Natural History Society and never know it. How about a small bumper or windshield sticker or something in that line to identify members of the society? I am a towerman just north of Meadow Lake Park in the summer. I would like to know how many members of the society I meet in my

travels. — *John S. Rule*, Pierceland.

Editor's Note: The society does have a decal of its crest (see back cover) which could be used on a car window. These transparencies are in color and the circle has a diameter of about 3½ inches. The decals, 35 cents each or three for a dollar may be obtained from the *Blue Jay* Bookshop, Box 1121, Regina.

INSTITUTE FOR BIRD POPULATION STUDIES

I am forming an Institute for bird population studies to stress the theoretical and analytical dimensions of the study of bird populations. The institute activities will *not* overlap with current Nest Record and other such programs but it will attempt to get as much information as possible from Christmas counts and nest record data. It will also try to organize amateur efforts towards cooperative, intensive, single species analyses.

The institute would popularize ornithology and get more people to see the value of bird life. It would analyze data now being gathered and provide an understanding of what regulates bird numbers. No one can presently predict fluctuations in any non-game North American bird population. I am personally committed to enhancing and protecting bird life in our environment. If you agree, I hope you will become a member of the Institute. More information later. — *Steve Fretwell*, Biology, Kansas State University, M a n h a t t a n, Kansas, 66502.

THE NATURE CONSERVANCY OF CANADA

The Nature Conservancy of Canada is a charitable organization formed to acquire and preserve natural land areas throughout Canada for the benefit of future generations.

The Conservancy held its annual meeting April 15, 1972, in Toronto when it reviewed its accomplishments since its foundation in 1963 and considered its present financial position

and its role in the future. In 1970 the Conservancy had realized that to adequately fill its role it must have a full-time Executive Director and an Administrative Director. Mr. Aird Lewis and Mr. Charles Sauriol respectively occupy these positions and 1971 has witnessed a rapidly expanding programme.

During 1971 (the first year with two full-time employees), the size and the complexity of projects considered by the Conservancy have increased tremendously and the annual meeting of the Board of Trustees reflected considerable satisfaction in the progress made in the preservation of natural areas at the same time as it expressed the need to acquire more money and save other natural areas.

To date, seven projects have been completed and there are at least twice as many projects which are actively being studied. It is, of course, important that each area be carefully studied before funds are spent for land acquisition. Sites acquired by Nature Conservancy will be transferred to a local conservation organization where the local group is able and willing to assume legal responsibility. The transfer title will have the rider that, if the local group disbands or is unable to operate, the title then returns to Nature Conservancy of Canada. The objective of this rider is simply to guarantee long-term protection to the natural values of the property.

Since the organization developed in Ontario (because of the need to preserve one particular property there), a number of the projects preserved or being considered by the Conservancy are in Ontario. The Nature Conservancy of Canada, however, is a truly national organization which is prepared to consider areas in all parts of Canada. Projects mentioned above include three in Nova Scotia and one each in Quebec, Alberta and British Columbia. No specific area in Saskatchewan is as yet being considered by the Conserv-

ancy.

This year, 1972, both Mr. Lewis and Mr. Sauriol will visit Saskatchewan to meet conservationists and natural history people and to examine some of the properties which need to be saved. At that time we will also approach Corporations and individuals who wish to donate money or property to be used for long-term preservation of natural areas. If you know of natural areas which should be preserved or which are in imminent danger of being destroyed, please write to me about them and if you wish to receive more information about Nature Conservancy of Canada, write to Mr. Aird Lewis, 120 Eglinton Ave. E., Toronto 12, Ontario — *G. F. Ledingham*, 2335 Athol St., Regina.

APOLOGY

THE GOOD, GOOD EARTH. 1971.
By Ralph O. Brinkhurst and Donald A. Chant. The MacMillan Co. of Canada, Ltd., Toronto. \$6.95; paper \$3.95.

This book was reviewed by R. D. Symons, Sifton, in the March issue of the *Blue Jay* but somehow we neglected to include the names of the authors. Our apologies go to Brinkhurst and Chant and also to the publisher and the reviewer.

CORRECTION

On December 21, 1971, E. Kuyt, Wildlife Biologist, Canadian Wildlife Service, Fort Smith, wrote to point out that the Ruffed Grouse shown on page 18, March *Blue Jay*, 1971 was misidentified as Spruce Grouse. A previous letter pointing out our error is printed in the June, 1971, *Blue Jay*. The editor welcomes corrections from members if errors occur in the *Blue Jay*.

ALBINO REDPOLL

Among the many redpolls that fed at our feeding station this past winter was an albino. The wings and tail were pure white, the body had a

creamy tinge when seen against the white snow, the chest had just the faintest streaks of grey and the front of the head had the red cap as all redpolls do (it was very cute when seen close up). — *S. O. Jordheim*, White Bear, Saskatchewan.

BAN ON POISONS

The March 22, 1972 news release from the United States Department of the Interior announces that the use of poisons for the control of predatory animals has been banned on all federally-owned lands in the United States. The Fish and Wildlife Service and state, local and private co-operators may control the coyote and other predators by trapping, shooting and denning. Poisons as a means of predator control can only be used if a special permit has been obtained to cover a specified situation. The release also states that there will be an expanded federal research effort to learn more about the control and conservation of predatory animals.

BIRD PROTECTION

Recent amendments to the wildlife convention between the United States and Mexico give extra protection, especially from wanton shooting, to 32 additional families of birds. These amendments increase the number of protected families from 31 to 63. Six of the families comprise all the birds of prey, including ospreys and vultures. Since the list of protected birds includes crows, magpies and horned owls, there are provisions for population control in certain nuisance situations.

Because only 11 of the 32 families are currently protected by the 1916 Migratory Bird Treaty between the United States and Canada, it is obvious that Canada's agreements with the United States should now be updated.

MAN AND THE BIOSPHERE

The International Coordinating Council for MAB met, November

9-19, 1971, and agreed to a problem oriented programme made up of 13 projects. The general objectives are: "to develop the basis within the natural and social sciences for the rational use and conservation of the resources of the biosphere and for the improvement of the global relationship between man and the environment; to predict the consequences of today's actions on tomorrow's world, and thereby to increase man's ability to manage efficiently the natural resources of the biosphere."

One project, "The conservation of populations of plants and animals and the genetic variation they represent," supports the work of the International Union for the Conservation of Nature which this year meets September 10 - 16 at Banff, Alberta.

POSSIBLE RECENT KIT FOX RECORD IN SASKATCHEWAN

In reply to an inquiry from the *Blue Jay* editor, Dr. J. Looman, Phytosociologist, Forage Production and Utilization, Research Station, Swift Current wrote:

"I found the Kit Fox along the roadside between sections 13 and 24, Twp. 7, Rge. 15, W3rd, on May 27, 1969. I stopped and examined the carcass with an eye on the possibility that it might still be suitable for mounting. However, the animal had been dead for too long and the skin had dried out and hardened.

"Measurements on the carcass were: body length 27 inches, tail 9½ inches; and sex — male. My conclusion that it was a Kit Fox is based on its overall size, which is very small, but in particular on the size and shape of its ears. These measured almost four inches and were almost round. It was this fact that made me stop.

"In addition, I also was already fairly sure that I'd seen Kit Foxes in Twp. 6, Rge. 15, in the Beaver Valley Community Pasture."

Editor's Note: May I ask the mammalogists of the society if the evidence given by J. Looman is acceptable? The last authentic report of the Kit Fox in Saskatchewan is of an animal trapped in 1927 near Ravenscrag and donated to the Museum in Regina where it is mounted and preserved (*Blue Jay* 14:63-65, 1956). More recently, David Chandler (*Blue Jay* 23:135, 1965) reports hearing, near Shaunavon in 1964, and near Masefield back in the 1950's what he believes to be the call of the Kit Fox. Can any of our researchers supply reports? Are there still some Kit Fox in Saskatchewan?

WHOOPING CRANE CONSERVATION ASSOCIATION

This international association meets in Regina at the Museum of Natural History, September 18 - 20, 1972. Registration and programme information may be obtained from Mr. M. K. Baker, Director of the Museum or Mr. E. L. Paynter, 2175 Retallack Street, Regina.

SNHS ANNUAL MEETING

At the annual meeting in the Museum of Natural History, Regina, October 13, 14, 1972, Dr. Douglas Pimlott, President of the Canadian Nature Federation will be the guest speaker. He will talk about the role of naturalists in the environmental affairs of Canada.

LATE MAILING

The June, 1972 *Blue Jay* has been delayed by a printers' strike in Regina. We regret any inconvenience that this may have caused members of the society. In spite of the lateness of this mailing (early July instead of early June) we hope that the September *Blue Jay* will be produced on schedule. Please submit material for the September issue immediately.

THE SASKATCHEWAN NATURAL HISTORY SOCIETY

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All items for publication should be submitted to George F. Ledingham, Editor, 2335 Athol Street, Regina.

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