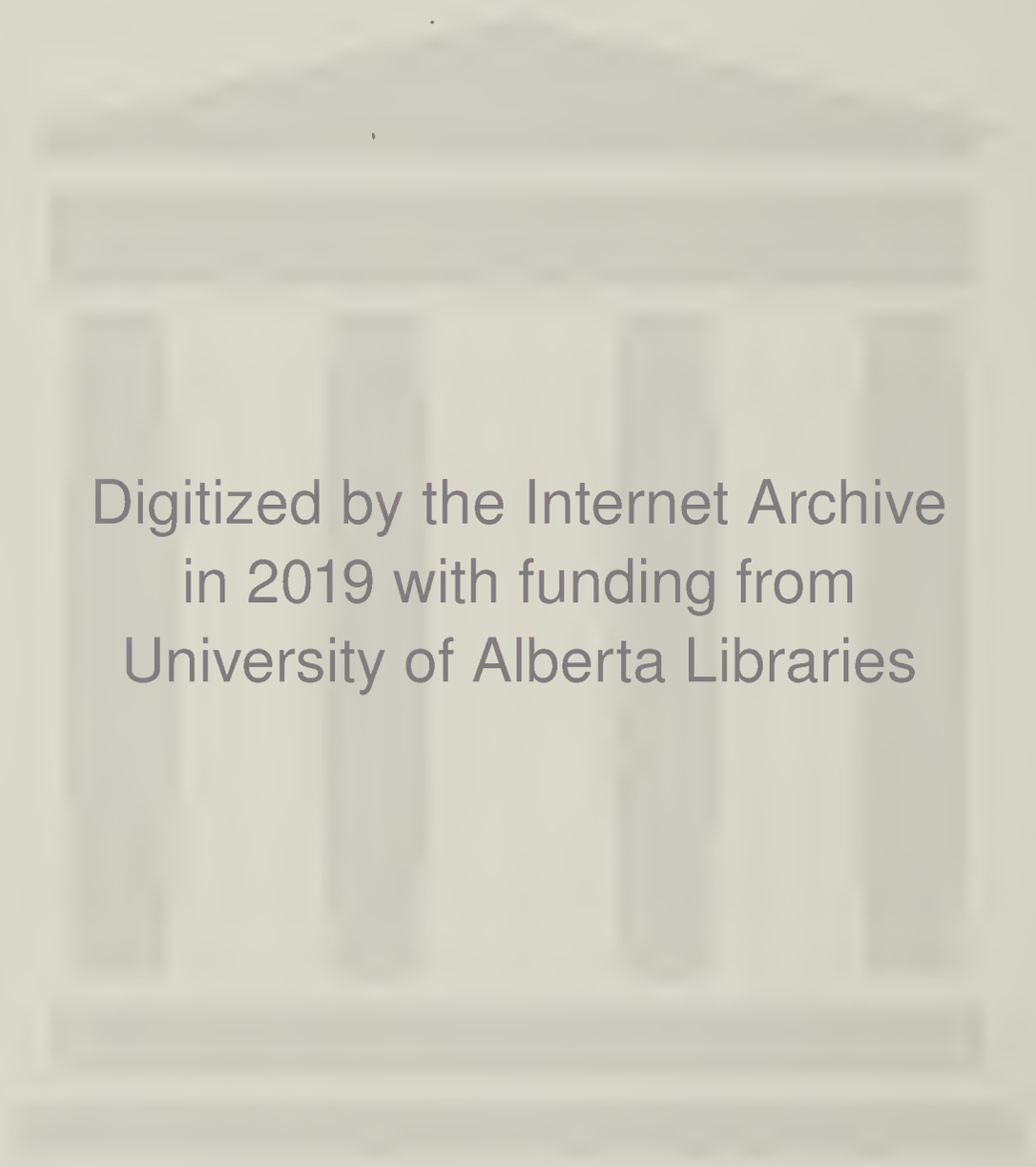

blue jay

June, 1974

Blue Jay

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Ruffed Grouse drumming. Robert E. Gehl

!!NOISE!!
THE ULTIMATE INSULT!

by ALFRED ETTER

Dr. Alfred Etter is Naturalist at The Morton Arboretum, Lisle, Illinois. This article is part of the testimony Dr. Etter presented before the Environmental Protection Agency, Office of Noise Abatement and Control, in formal EPA hearings on the subject, Noise! (From *The Minnesota Volunteer*, September-October, 1973.)

I speak today for a little girl who recently visited the Morton Arboretum where I am the naturalist. On the "floor" of a woodland, she discovered a small piece of a tree. Unable to recognize wood that had never been sawed or nailed, she asked what it was. When she learned that it was a piece of a genuine tree — just the way God made it — she was so delighted that she embraced it like a doll and carried it home to the ghetto with her on the bus. That is how ignorant of nature our people (especially our children) have become. For many of them, the "unnatural" has become the usual. And so it has been with "Noise".

I think I speak not only for this little girl but for people of every age who, because of rising levels of noise everywhere, are searching for something they feel they have lost. Without knowing it, they need to walk and sit together in a quiet place and look at the earth; to listen to how the birds sing and, perhaps, to puzzle how wild plants can grow and develop without ever making a sound."

When I requested permission to testify at this hearing, I was asked whether I wanted to testify as an "expert." How does one qualify as an expert in these matters? Must he have a PhD to speak out against the inhumanity of man's noise? Isn't just being alive enough? Aren't ears sophisticated enough to tell the difference between what is strident and what is soothing? Aren't irritation and anger as good a measure as decibels?

If it helps impress someone then, yes, — I have a PhD. I have spent eight years in college and my entire life studying the earth and the life on it. I have made it my responsibility to understand how the world is put together. And not a little of this understanding has come from listening to the sounds of nature — the "silent sounds" of stars, the timeless flow of rivers, the enthusiasm of wrens, the gnawing of squirrels as they husk walnuts in the fall . . .

At the Arboretum on field trips, I often try to tell children's groups how we should take care of the earth. What hyprocisy! My words and their questions are drowned out by banging vehicles and rasping tires. The sounds of frogs or birds or squirrels might as well not even be! Not long ago there was national concern about a "Silent Spring." We have "solved" that threat with a greater one. Who knows whether the spring is silent or not amid the pandemonium of modern man's vehicles? . . .

On a farm where I lived and did research, it was an everyday observation that vibrations of every frequency were constantly being exchanged between animals, men and the earth. But this communication was only possible when everything was quiet. Life is absolutely dependent on *quietness*. Animals and birds depend upon it to make their living, to find

their mates, to protect themselves from attack. Embryos, still in the egg, communicate with their siblings in adjacent eggs, and so, synchronize their hatching. Have you ever watched a robin lean down to listen for a worm? What happens to the radar of bats, the trilling of toads, the prolonged symphonies of thrushes when their home ranges are invaded by raucous man-made racket? For the most part, they give up.

Last fall, I watched a string of Sandhill Cranes winding their way southward over their ancestral route, suburban Chicago, once a land of marshes and lakes and clear streams, now a checkerboard of streets blanketed with polluted haze, threaded with webs of jets, helicopters and small planes. How much longer will the wild cries of the adults keep the young of the flock on course until they find a sanctuary?

When animals are made to listen to noise, they grow sullen, unresponsive, erratic — or even violent. Is it any wonder that we have violent, despondent, indifferent people when they cannot hear, in their neighborhood, the once familiar events by which they timed their day, conjured up visions of friends passing by, of tradesmen plying their routes, of church services or children at recess? People need sounds to stimulate the joys of expectation; to reassure them that they are part of a system, a pattern; or to challenge them to be alert and observant — and to hear sounds, they need quiet . . .

Noise is the *ultimate insult*! It belittles us. It gives us nothing at which to strike back. It kills what is left of many things that we have loved — music, beauty, friendship, hope and excitement — and the reassurance of nature. Traditionally, noise is used to ridicule, embarrass, denigrate and curse. Silence is used for worship, respect, anticipation and love. Do we hate each other as much as our noise level indicates?

Collapsing Rome didn't give a dam how much noise it made any more tha we do. Read *Juvenal* — and weep wit him:

"Insomnia causes more deaths amon Roman invalids than any other factor . . How much sleep, I ask you, can one get i lodgings here? Unbroken nights — and th is the root of the trouble — are a rich man privilege. The wagons thundering pa through those narrow twisting streets, th oaths of draymen caught in a traffic jam – these alone would suffice to jolt the dozie sea-cow of an Emperor into permanen wakefulness."

Will the noise of modern man jo the doziest sea-cow of all, th American city where the sounds of An cient Rome have been magnified hundredfold? Unless it does, I see n future for man.

Whom do I blame? I blame no on I blame everyone. I blame all th people, including myself, who hav come to Chicago to find a place to liv a job to do, and in the process hav destroyed nature and created a tumu of noise borne of their demands fo every convenience and every novelt and every protection from exercis from chance, from weather. We eac demand too much. It is our demand that destroy us, that keeps the truck roaring and the jets rocketing an giantism proliferating.

Like the little ghetto girl who ha seen nothing but boards all her lif we have come so used to living in th noise-torn world that we accept th dissonant and sonorous as part of ou environment. We no longer recogniz quietness, nor know that some ca adapt to noise, as to other irritant But no adaptation is achieved withou sacrifice. If people ever rediscove quietness again, they will embrace i like the little girl embraced her piec of tree, and treasure it as somethin that is not sawed and nailed an misshapen by man, but which contain within it some of the secrets of life an some of the explanation of why we ar here.

THE NATIVE LADY'S-SLIPPER ORCHIDS OF SASKATCHEWAN

by VERNON L. HARMS*

Among the most beautiful and interesting wildflowers of Saskatchewan are the various species of Lady's-slipper Orchids. These, with the Calypso Orchid, represent the largest flowered native orchids in Saskatchewan, where most members of the orchid family have relatively small, inconspicuous flowers. As all orchids, the lady's-slipper flower is epigynous with the sepals and petals arising above the inferior ovary (Figure 1). The two fertile stamens are attached on either side of a petal-like sterile stamen (staminodium) and all are fused to the style to form a column with the two anthers on either side below the stigma. The three petals include two slender, lateral petals and a lower petal called the lip which is modified into a pouch-like structure. Although three sepals are basically present, in most lady's-slipper species the two lower ones are more or less fused to form what appears to be only two sepals: an upper and a lower one (Figure 1).

There are four native species of lady's-slippers known from Saskatchewan: the Yellow Lady's-slipper (*Cypripedium calceolus* var. *pubescens*), the Stemless Lady's-slipper (*Cypripedium acaule*), the Northern Lady's-slipper (*Cypripedium passerinum*), and the Ram's-head Lady's-slipper (*Cypripedium arietinum*). Of these, the latter three species are quite rare in their occurrence, and only the Yellow Lady's-slipper is relatively frequent. But even the Yellow Lady's-slipper is hardly abundant anywhere in the province.

The rarity of these lady's-slippers greatly enhances interest in their discovery. A primary reason for publishing this article on the lady's-slippers is to encourage wildflower enthusiasts and nature lovers in the province to be more aware of these orchids and locate new records for them. However, because of the rarity of these orchids, they should not actually be collected. Successful transplanting to local gardens nearly always fails because of the special requirements of the plants. Good photographs are very desirable, especially if in colour. Anyone finding these orchids will perform a valuable service if they record the exact locality and forward this information to us at the Fraser Herbarium, University of Saskatchewan, Saskatoon, or to any other recognized herbarium. If there seems good reason to collect a voucher specimen, a botanist from the herbarium will go and carefully collect what is necessary, prepare and file it properly in order to authenticate the record without endangering the perpetuation of a local colony of these orchids.

The following identification key can be used to determine the different species of lady's-slippers. Such a key is quite simple to use. The user is first confronted with a choice between the number one leads. If the characters of the unknown plant fit the first lead, the plant is identified as the Stemless Lady's-slipper. If, instead, the characters of the unknown plant fit the second of the number one leads, the user goes on to the choice between the

*Fraser Herbarium,
University of Saskatchewan,
Saskatoon, Sask.

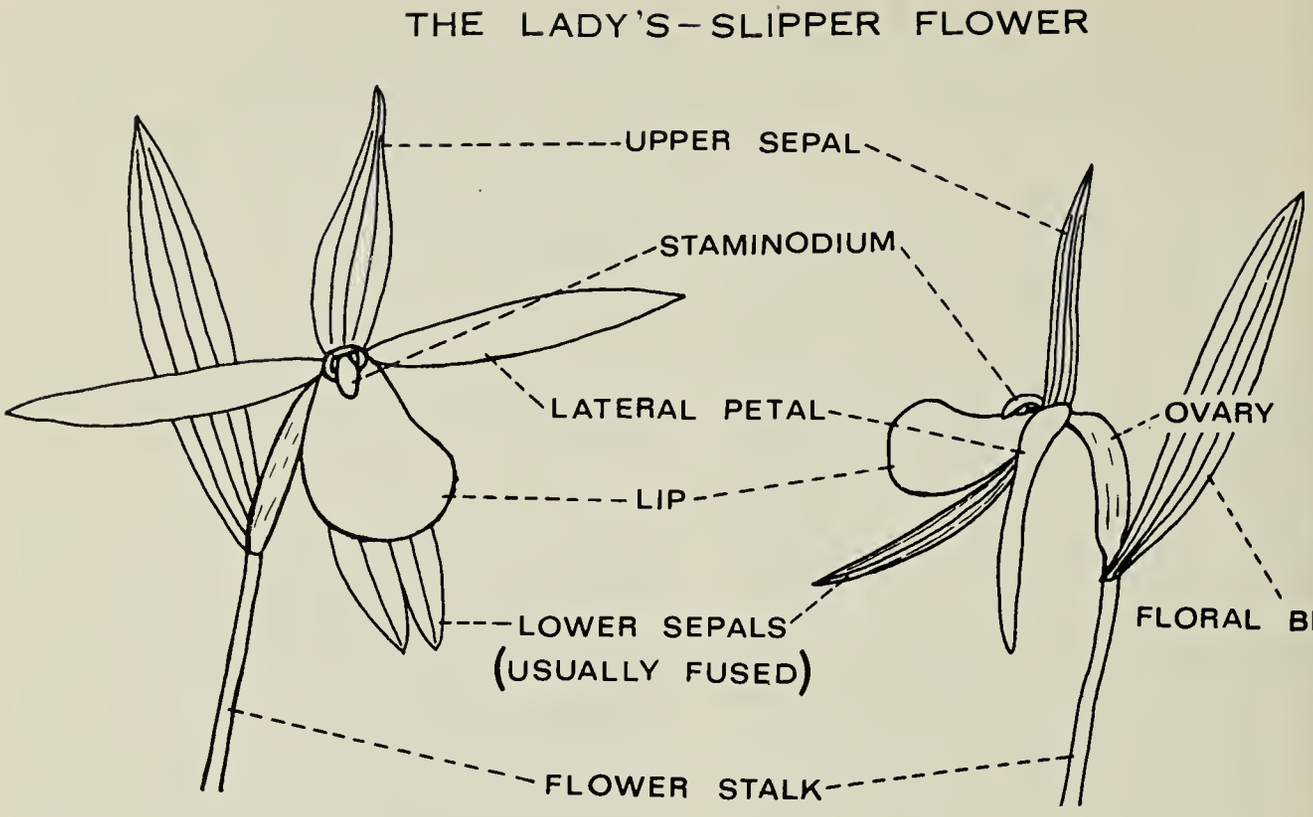


Figure 1. Parts of a lady's-slipper flower

number two leads. If the choice is the first of these leads, the identity of the unknown plant is the Yellow Lady's-slipper. If, instead, the choice is the second of these number two leads, the user goes on to a choice between the number three leads which will give him the species' identification.

The four lady's-slippers of Saskatchewan are illustrated in Figure 2, and their known distributions in Saskatchewan are shown in Figure 3. The locality records shown in Figure 3 a derived from literature reports a from locality data on specimens file in the W. P. Fraser Herbariu University of Saskatchewan, Saskatoo (SASK); the Biology Department He barium, University of Saskatchewa Regina (USAS); the Saskatchewa Museum of Natural History, Regi (DAS); the Department of Agricultu Herbarium at Swift Current (SCS); t Plant Research Institute, Departme

IDENTIFICATION KEY TO THE LADY'S-SLIPPER ORCHIDS OF SASKATCHEWAN

1. *Flowering stem* leafless except for two basal leaves and the floral bract; li pink with red veins, cleft (fissured) down the front. ..... (1) Stemless Lady's-slipper (*C. acaule*)

1. *Flowering stem* with alternating leaves nearly to the top; lip not cleft, but wit a rounded opening near the base. .....
   2. *Lip* yellow ..... (2) Yellow Lady's-slipper (*C. calceolus*
   2. *Lip* white, pink, or pale purple. .....

3. *Lip* white or pinkish-white, strongly purplish veined, inflated at the base an prolonged downward at the tip into a blunt, conical spur-like pouch; al three sepals free ..... (3) Ram's-head Lady's-slipper (*C. arietinum*)

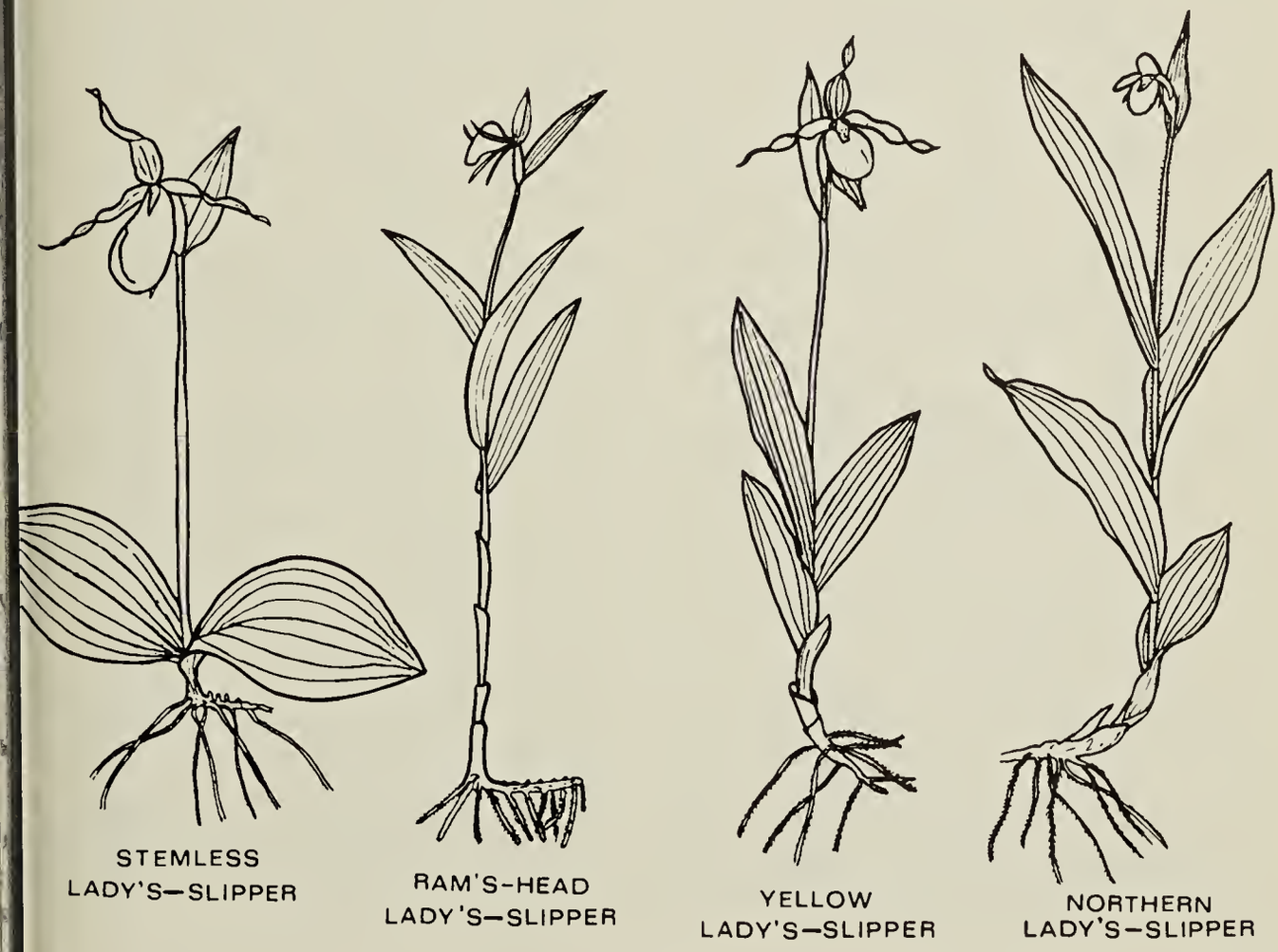
3. *Lip* white or pale purple with purple spots, less strongly veined, broadl rounded at the tip; the two lower sepals partly or entirely united ..... (4) Northern Lady's-slipper (*C. passerinum*)

Agriculture, Ottawa (DAO); and the ational Museum of Canada, Ottawa AN).

(1) **Stemless Lady's-slipper**. *ypripedium acaule* Ait. The flowering ems are 4 to 12 inches to, rarely, 24 ches high, hairy, leafless except for e floral bract and two basal leaves. ne two basal leaves are narrowly liptical to egg-shaped, sparsely hairy, to 8 inches long, pale beneath. The ral bract is lance-shaped, arching rward over the solitary terminal wer. The sepals are 1 to 2 inches ng, lance-shaped, yellow-green aded with purple, with the lower two als united and located under the . The lateral petals are 1-2 inches ng, lance-shaped, greenish-brown to llowish-green, flat or slightly isted. The lip is 1 to 3 inches long, g-like, drooping, with a cleft down front, pink with red veins.

This species is sometimes also called the Moccasin Flower or Nerve Root. In Saskatchewan, this is a boreal forest species, apparently found only in the northern half of the province. It is most often found on sandy soil under Jack-pine woods, but it has also been collected under both aspen and spruce woods. In Saskatchewan, the species is rare and thus far is known only from Lake Athabasca, Cree Lake, Lac Ile-a-la-Crosse, 36 miles north of Green Lake, Pelican Narrows, Lac la Ronge, and from 15 to 70 miles north of La Ronge there are specimens from Cycloid Lake, Lynx Lake, MacKay Lake, Otter Rapids and Bervin Lake. The flowers bloom in June and July.

(2) **Yellow Lady's-slipper**. *Cypripedium calceolus* L. var. *pubescens* (Willd.) Correll (including *C. parviflorum* Salisb.). Stems 5 to 15 to rarely 25 inches tall, sparsely hairy and glandular, bearing 3 or 4 more or less sheathing leaves up and down the



ure 2. The four Saskatchewan lady's-slippers

stem. The leaves are broadly elliptic, egg-shaped, or lance-shaped, pointed, 2 to 8 inches long and about half as wide, sparsely hairy and usually glandular. The large, terminal flowers are single or, rarely, two, each subtended and usually exceeded by an erect, leaf-like floral bract. The sepals and lateral petals are greenish-yellow to purplish-brown. The upper sepal is broadly lance-shaped, 1 to 3 inches long; the lower sepals are somewhat narrower, united under the lip to sometimes almost distinct. The lateral petals are narrowly lance-shaped, 1 to 3-1/2 inches long, wide-spreading, flat or usually somewhat twisted. The lip is inflated, pouch-shaped, rounded at the top with a rounded opening near the base, 1 to 2-1/2 inches long, yellow and often purple-spotted near the basal opening.

This species is sometimes also called the Golden Slipper, Whip-poor-will Shoe or Moccasin Flower. In Saskatchewan, this species occurs mostly under moist aspen and other woods in the southern half of the province. It has also been collected occasionally on moist low spots in prairie areas. The Yellow Lady's-slipper has apparently not yet been collected in the northern half of the province north of the Lac La Ronge site, nor in southwestern Saskatchewan. The flowers bloom in June and July. It is the most common and abundant lady's-slipper in Saskatchewan. Plants with shorter sepals (under 2 inches), shorter lateral petals (under 2 inches), a smaller lip (under 1-1/4 inch long), and narrower leaves (less than 2-1/2 inches wide) have often been separated as variety *parviflorum* (Salisb.) Fern. or even as a separate species, *C. parviflorum*, but these are now usually regarded as only an ecological form of wetter and colder habitats which is not worth distinguishing taxonomically.

(3) **Ram's-head Lady's-slipper.** *Cypripedium arietinum* R. Br. The stems are slender, 4 to 15 inches tal thinly hairy, with 2 or 3 sheathin scales below and 3 to 5 leaves abov the middle. The leaves are lance shaped to elliptic, often folded, 2 to inches long, smooth except for som fine marginal hairs. The flowers ar solitary and terminal. The sepals an lateral petals are 1/2 to 1 inch lon greenish-brown to somewhat purplish All three sepals are distinct. The uppe sepal is broadly lance-shaped; th lower sepals are narrower and more o less twisted. The lateral petals ar narrowly lance-shaped. The lip whitish, strongly purplish-veined, 1/ to 3/4 inch long, irregularly triangula prolonged downward at the tip with yellowish-green, blunt, conical, spu like pouch.

In Saskatchewan, the Ram's-hea Lady's-slipper was, until very recentl known only from Prince Albert, base upon two undated specimens collecte by O. C. Furniss which are filed in th Fraser Herbarium. Recently, W. Cody (in the *Blue Jay* 31 (3): 180-18 September, 1973) reported i rediscovery a few miles northwest o Prince Albert by Mr. and Mrs. And Rosent. Even more recently, Mr. Fer ton R. Vance (in a letter dated Oc tober 23, 1973 to the *Blue Jay*) repo ted sighting and photographing th species from near the town site of Huc son Bay. I have examined th photograph and it is indeed the Ram' head Lady's-slipper. Subsequently specimen from Hudson Bay was give to us by Bernard de Vries and filed i the Fraser Herbarium. Thes specimens were found in mid-June o sandy soil under a stand of Jack-pin woods. This is an eastern species whic reaches its westernmost range limit i Saskatchewan. Elsewhere, it general occurs on moist acid soils i coniferous woods and blooms in Ma or June.

(4) **Northern Lady's-slippe** *Cypripedium passerinum* Richards. Th

ISTRIBUTION IN SASKATCHEWAN

STEMLESS
LADY'S–SLIPPER

YELLOW
LADY'S–SLIPPER

RAM'S–HEAD
LADY'S–SLIPPER

NORTHERN
LADY'S–SLIPPER

3

gure 3. Distribution of lady's-slippers in Saskatchewan

stems are 6 to 14 inches tall, quite densely hairy, and leafy throughout. The leaves are broadly lance- to egg-shaped, 2-1/2 to 8 inches long, 1/2 to 2 inches broad, hairy and glandular. The flowers are relatively small, usually single, but occasionally 2 or 3, exceeded by a large green floral bract. The upper sepal is green, broad, usually rounded or blunt at the tip, about 1/2 inch long. The lower pair of sepals are also green, somewhat shorter, either completely united or almost distinct. The lateral petals are white, broad, blunt or rounded at the tip, about 1/2 inch long. The lip is egg-shaped, 1/2 to 3/4 inch long, white or pale lilac with reddish-purple spots on the inside.

This species is sometimes also calle the Sparrow-egg Lady's-slipper c Small White Lady's-slipper. Althoug the species occurs in Saskatchewa from the Cypress Hills in the southwe to Hasbala Lake in the northeaster corner of the province, it is relativel rare. Most collections are from spruc woods and bogs in the southern part o the boreal forest area in the centra part of the province. In Saskatchewar the species is known from the Cypres Hills, Lake Waskesiu, MacDowal Bjorkdale, Prince Albert, Duck Lak McKague, Candle Lake, Nipawin Amisk Lake and Hasbala Lake. Th plants bloom from late June to earl August.

A SECOND SASKATCHEWAN RECORD FOR THE RAM'S-HEAD LADY'S-SLIPPER

by BERNARD de VRIES*

Reference to the rediscovery of the Ram's-head Lady's-slipper, *Cypripedium arietinum* R. Br. (Sub *Criosanthes arietina* (R. Br.) House), in Saskatchewan has been made by Cody[2]. Since publication of that paper, this orchid has also been reported from Hudson Bay in east-central Saskatchewan[5]. This location is particularly noteworthy, as it constitutes a second record for Saskatchewan (Cody, personal communication, 7/1/74).

The present author had the opportunity to visit this location on June 15, 1973, and found several well established populations in a forest type best described as the consociation *Pinetum banksianii*. Recognized withi this consociation are limited strata edaphic socieities, with such species a Lyre-leaved Rockcress (*Arabis lyrata*) Bluets (*Houstonia longifolia*), Roc Selaginella (*Selaginella rupestris*) an Reindeer-moss (*Cladonia* spp.).

The collection station lies within th southern section of the boreal parkland transition zone of east central Saskatchewan. For a ful description of the Hudson Bay are and regional climate, reference can b made to Breitung, Thomas, and Ken drew and Currie.[1 4 3]

The Saskatchewan localities are: A few miles northwest of Prince Albert *A. Rosent*, May, 1972; a few mile southwest of Hudson Bay, *B. de Vries* June 15, 1973. No. 195.73. Vouche specimens are in the Vascular Plan Herbarium, Biosystematics Researc Institute Research Branch Agriculture Canada, Ottawa (D MacPhedran, photo, Cody[2]), the W. P Fraser Herbarium, University o Saskatchewan, Saskatoon (O. C. Fur niss, first authentic report for Saskat chewan, Cody[2]), and in the For Qu'Appelle Herbarium (No. 195.73).

*Fort Qu'Appelle Herbarium,
Fort Qu'Appelle, Saskatchewan.
S0G 1S0

The species ranges through temerate eastern America from the outhern New England states south to Massachusetts and New York, west to Michigan, Wisconsin and Minnesota, orth to southwestern Quebec, and est to southcentral Manitoba. It ocurs in Saskatchewan as disjunct opulations.

It is hoped that this rare orchid will ot succumb to overzealous collectors r vandalism. Although some efforts re being made to protect the species t Hudson Bay[5], the author strongly rges that *all* our native orchids be laced on the list of protected native flora soon before it is *too* late.

[1]BREITUNG, A. J. 1947. *Catalogue of the Vascular Plants of Central Eastern Saskatchewan*. Canadian Field Naturalist. 61(3):71-100.

[2]CODY, W. J. 1973. *Ram's-head Lady's-slipper Rediscovered in Saskatchewan*. Blue Jay. 31(3):180-181.

[3]KENDREW, W. G. and B. W. CURRIE. 1955. *The Climate of Central Canada*. Queen's Printer, Ottawa.

[4]THOMAS, M. K. 1953. *Climatological Atlas of Canada*. Canada Department of Transport, Ottawa.

[5]VANCE, F. R. 1973. *Ram's-head Lady's-slipper at Hudson Bay, Saskatchewan*. Blue Jay. 31(4):249-250.

THE ROLE OF NATURAL BIOLOGICAL AGENTS IN CONTROLLING A PINE STEM RUST (*CRONARTIUM COMANDRAE*)

by JOHN M. POWELL*

The stem or blister rust fungi are mong the most destructive and angerous diseases of pines. Six ecies of these rusts are found in anada, five of which occur in the rairie Provinces. The best known is e introduced white pine blister rust hich attacks the five-needle or white nes. The others are native and occur n the two-needle or hard pine group hich includes jackpine (*Pinus nksiana* Lamb.) and lodgepole pine (*P. contorta* Dougl. var. *latifolia* Engelm.). One of the native rusts is the Comandra blister rust (*Cronartium comandrae* Pk.) which is found across Canada[1] and over much of the United States, and now has been reported infecting 15 species of pines in North America[6]. This rust has been the subject of a 6-year study carried out largely in southwestern Alberta where it occurs on lodgepole pine. One objective of the study was to assess the role of various biological agents, namely the macro- and micro-fauna and micro-flora, on the production of rust spores and whether rust cankers

Northern Forest Research Centre,
anadian Forestry Service,
epartment of the Environment,
dmonton, Alberta.

Figs. 1 to 4. Cankers of comandra blister rust on lodgepole pine.

ay be inactivated through the action some of these biological agents.

The Comandra blister rust fungus s five spore forms which are oduced in succession and it takes 2 more years to complete its life cle, for, like most rusts, it requires o distinct host plants to complete its cle. The rust fungus grows perenally in the living bark of pines, its imary host, and causes a swelling d canker. The rust annually oduces its spermogonial and aecial ore states along the edges of the nker (Fig. 1). The spermogonial ore state is the sexual spore stage of rust which produces masses of inute spores (called spermatia or rcniospores). The spores exude from spermogonia (structures that bear sex organs) in orange gelatinous oplets in mid- or late summer. The cial spore state develops from miday to August on the same area of the rk where the spermogonia were oduced the previous year. The aecia blister-like fruiting bodies, which ve the disease its name, push through bark tissues to rupture and release wdery masses of small, pear-shaped ange-yellow spores (aeciospores, g. 5) which are dispersed by the nd. These aeciospores may land on sceptible alternate hosts, i.e., the rennial herbs comandra or bastard d-flax (*Comandra umbellata* and *ocaulon lividum*), germinate and gin the next succession of spore tes on these plants, thus completing life cycle of the fungus.

Cankers of the rust usually persist branches and trunks of pines for many years before growth of the rust around the stem kills the branch or tree, or the canker is inactivated. Some cankers have been found that were 100 years old and still growing. They may grow to a length of several feet. The centre or older portion of the canker is composed of cracked, rough dead bark tissues, killed by the rust.

Rust cankers provide a suitable habitat for the development of certain fungi and arthropods. Over a period of several years the fungi, bacteria, spiders, mites and insects found associated with the cankers and spores were collected and identified. Observations were made on the incidence of these organisms and their effect on cankers and on spore production. The incidence of rodent damage was also noted, for the swollen infected bark, which has a high concentration of sugars, is very attractive to rodents. The causes of canker inactivation were also recorded.

A total of 56 species of fungi and 8 bacteria was identified[2]. A purple mold (*Tuberculina maxima*) (Fig. 2) and an undescribed dark green fungus (*Cladosporium* sp.) were most common and played an important role in reducing aeciospore production. The purple mold is parasitic on the rust canker and occurred on 20 to 55% of the active cankers depending on the year. It prevented spore production on 10 to 15% of the potential aecial-producing tissues in any one year and was the main cause for inactivation on about half the cankers[3]. Certain species of *Cladosporium* are parasitic on the aeciospores and occurred about

g. 1. Aecial pustules (blisters) of the rust rupturing to release spores.

g. 2. Canker infected with the purple mold (*Tuberculina maxima*) which is conspicuous as a darker area where the surface bark has been removed or cracked (see arrows).

g. 3. Typical rough bark of canker showing evidence of insect damage. Note exit holes and Lepidoptera frass (refuse left by boring insects) at top of canker and further frass in lower rough zone (see arrows).

g. 4. Annual squirrel damage on a large canker. Note the strip of dried dead bark not removed each year, and the abundant exudation of resin.

Fig. 5. Aeciospores with typical tail of species (magnified 650 times).

half as frequently as the purple mold. Several of the other fungi and bacteria, especially some *Penicillium* spp., *Arthrobacter* spp., *Pseudomonas* spp. and *Rhodotorula* spp., were commonly found. These also affected aeciospore viability [2 5].

A large number of arthropods were collected from the cankers, representing 143 species of insects, 19 mites and 4 spiders [4 7]. The insects damaged 41 to 62% of the cankers observed in any one year and reduced aeciospore production by 10% (Fig. 3). Three species appeared to depend exclusively on the host fungus for food during at least their larval stages. These were a nitidulid beetle (*Epuraea obliquus*), a cecidomyiid fly (*Mycodiplosis* sp.) and a drosophilid fly (*Paracacoxenus guttatus*). These species feed extensively on the spores but do little damage to the underlying infected bark tissue. Other species, notably the twig weevils (*Cylindrocopturus deleoni* and *Pissodes schwarzi*, Fig. 6) and larvae of the cone moth (*Dioryctria* spp., Fig. 7, and *Laspreyresia* spp.), needleminer moth (*Eucordylea* spp.) and an olethreutid moth (*Grapholitha* sp.) fed among the spore masses and then mined extensively into bark tissues destroying large areas of the aecial and spermogonial zones of the canker. Others also did damage or fed on the spores but many of these could be classified as only occasional visitors, not regularly associated with the rust.

Rodents caused extensive damage to the cankers through removal of the rust-infected bark down to the sapwood, usually in winter and spring although there was some chewing throughout the summer and early fall. In some areas there was extensive damage every year, so that aeciospore production was minimal (Fig. 4). Squirrels, rabbits and hares were responsible for most of this extensive damage, although porcupines, chipmunks and mice were also responsible for some of the bark removal. The rodents usually restricted their activity, except in the case of porcupines, to the infected bark, often removing all the spermogonial and some of the aecial zone, completely ringing the older portion of the canker. Often over 90% of the infected trees in a pine stand have been scarred by rodent chewing. Nearly 500 cankers were kept under

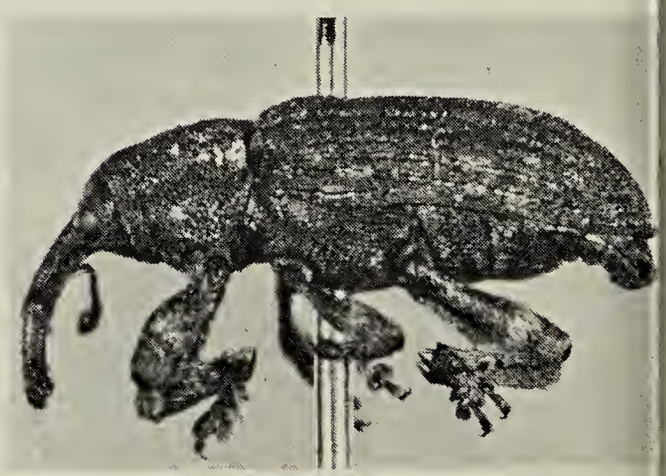


Fig. 6. Adult *Pissodes schwarzi* (side view length: 6 mm.).

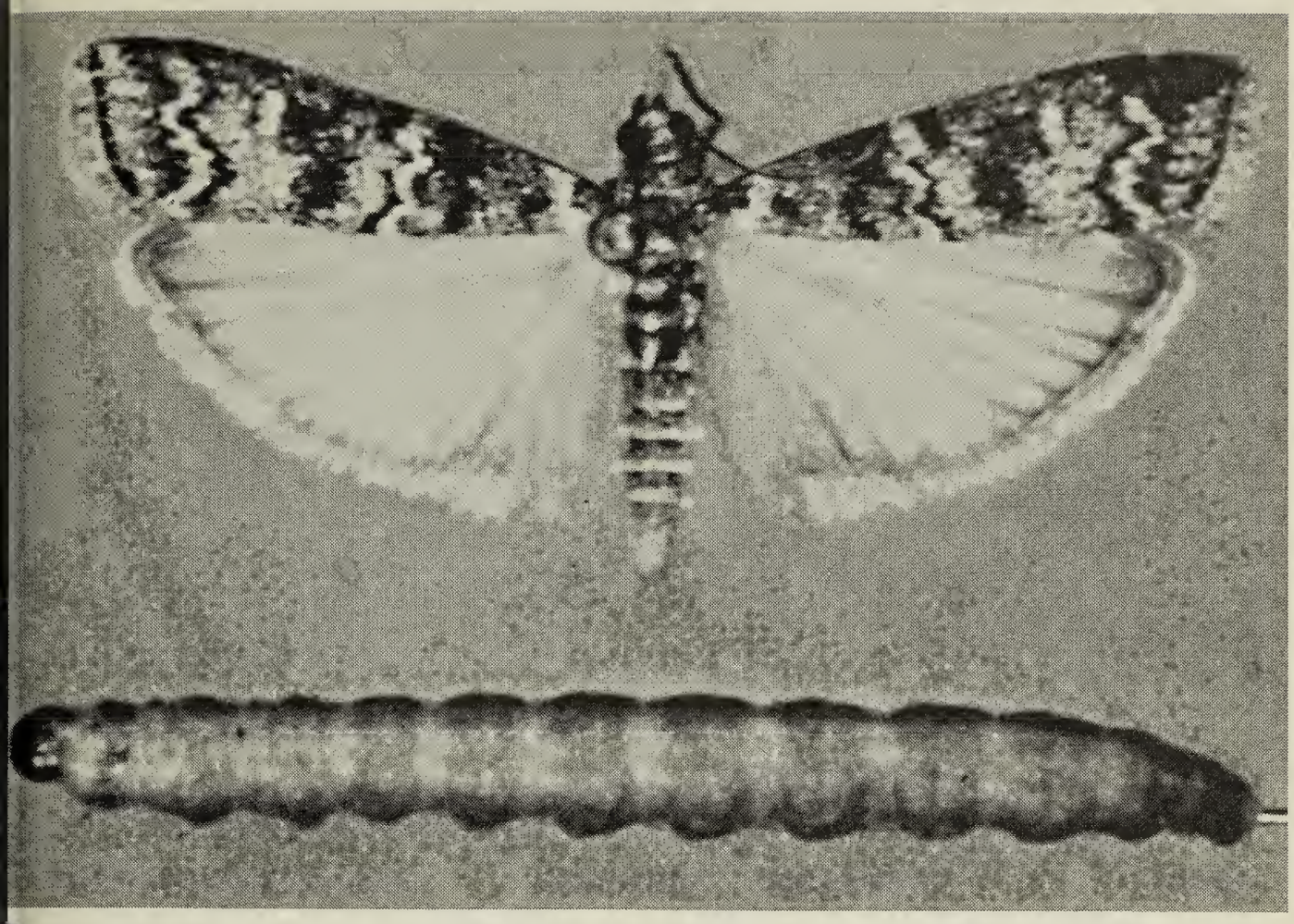


Fig. 7. Adult and larvae *Dioryctria abietivorella* (wing span: 28 mm.).

bservation for 6 years in 20 different tands in southwestern Alberta. In any ne year 25 to 52% of the active ankers were gnawed. Rodents educed the potential aecial producing ark tissues by 30% in any one year, nd some 17% of the cankers were nactivated.

Together these biological agents ere responsible for destroying 55% f the potential spore production on ine in any one year. The purple mold *Tuberculina maxima*) and the rodents, ere responsible for over 60% of the ust cankers which were inactivated, lthough this was often a slow process nd total canker inactivation took nany years. These natural biological ontrol agents, therefore, play a very mportant role in keeping the coman- ra blister rust (and other pine stem usts) under control; without them we ould be faced with far bigger rust isease problems in forest anagement, especially with our increasing trend towards intensively managed forests.

[1]POWELL, J. M. 1970. *Cronartium comandrae in Canada, its distribution and hosts.* Can. Plant. Dis. Surv. 50: 130-135.

[2]POWELL, J. M. 1971. *Fungi and bacteria associated with Cronartium comandrae on lodgepole pine in Alberta.* Phytoprotection 52: 45-51.

[3]POWELL, J. M. 1971. *Incidence and effect of Tuberculina maxima on cankers of the pine stem rust, Cronartium comandrae.* Phytoprotection 52: 104-111.

[4]POWELL, J. M. 1971. *The arthropod fauna collected from the comandra blister rust, Cronartium comandrae, on lodgepole pine in Alberta.* Can. Entomol. 103: 908-918.

[5]POWELL, J. M. 1971. *Daily germination of Cronartium comandrae aeciospores.* Can. J. Botany 49: 2123-2127.

[6]POWELL, J. M. and N. W. WILKINSON. 1973. *Pinus mugo, a new host for comandra blister rust.* Plant Dis. Reptr. 57: 283.

[7]POWELL, J. M., H. R. WONG and J. C. E. MELVIN. 1972. *Arthropods collected from stem rust cankers of hard pines in western Canada.* Environ. Can., Forestry Serv., Northern For. Res. Centre, Edmonton, Alta., Information Report NOR-X-42. 19 pp.

AN INTRODUCTION TO SASKATCHEWAN'S SPHINX MOTHS

by RONALD R. HOOPER*

The family SPHINGIDAE or Sphinx Moths has 115 species in North America (north of Mexico). Twenty-two species have so far been taken in Saskatchewan, but at least another four species may yet be found in the province.

The sphinx moths are so named because of the custom of the caterpillars to sometimes raise the head and front segments in a threatening posture. They are, however, quite harmless. The caterpillars are usually also somewhat protected by having a sharp thorn-like spine or horn on the last segment. They usually feed on trees and shrubs. The Tomato Hornworm is one of the exceptions but, fortunately, it is rare in the province.

The sphinx pupa is unusual for moths as it is not enclosed in a silken cocoon. To make up for this, the caterpillar often burrows into loose earth for pupation. Some species have the proboscis enclosed in a separate part of the pupa, giving it the appearance of having a handle.

Adult sphinx moths are sometimes called "hawkmoths". This is not because they are predacious, but because of the unusually long fore wings in comparison with the short hind wings. The body of a sphinx moth is stout and relatively long. The antennae are finely feathered with short barbs.

All adult sphinx moths are avid flower feeders. Some species are called hummingbird moths because of thei habit of hovering over flowers whil feeding. The Hummingbird Clearwin and the Snowberry Clearwing fly i bright sunshine with the butterflies The Galium Sphinx, Striped Mornin Sphinx and Clemen's Hawkmoth ca be found at flowers in the daytime o at dusk. Most of our other species o sphinx moths fly in the evening or a night and come readily to lights. The are usually found from late May unti early July.

The following is a preliminary list o Saskatchewan sphinx moths and thei distribution within the province:

Tomato Hornworm — *Manduca quinquemaculata* (Haworth) Southern Sask.; rare.

Elm Sphinx — *Ceratomia amynto* (Geyer). Central Sask.

Waved Sphinx — *Ceratomia undulos* (Walker). South and Central Sask

(Hermit Sphinx — *Sphinx eremitu* (Hubner). Expected in Easter Sask.)

Great Ash Sphinx — *Sphinx chersi* (Hubner). Southern part.

Vashti Sphinx — *Sphinx vasht* (Strecker). Southern Sask.

Laurel Sphinx — *Sphinx kalmia* (Smith). Southeastern Sask.

Gordius Sphinx — *Sphinx gordius* (Cramer). Central and Northern Sask.; tamarack woods.

Clemen's Hawkmoth — *Sphinx luscitiosa* (Clemens). Central Sask

Wild-cherry Sphinx — *Sphinx drupiferarum* (Smith). Southern Sask.

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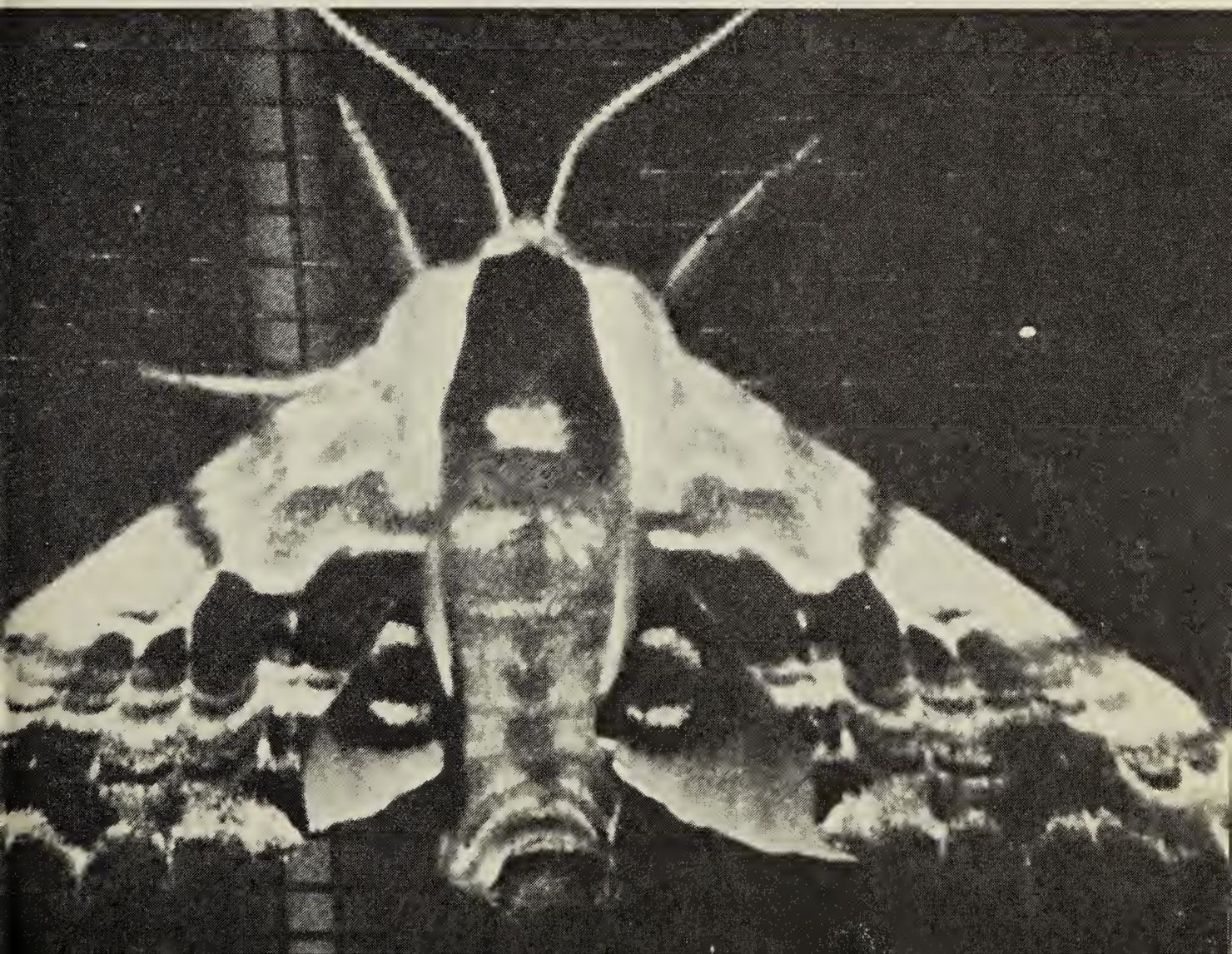
omato Hornworm — Richard Fyfe

erisy's Sphinx — R. E. Ives

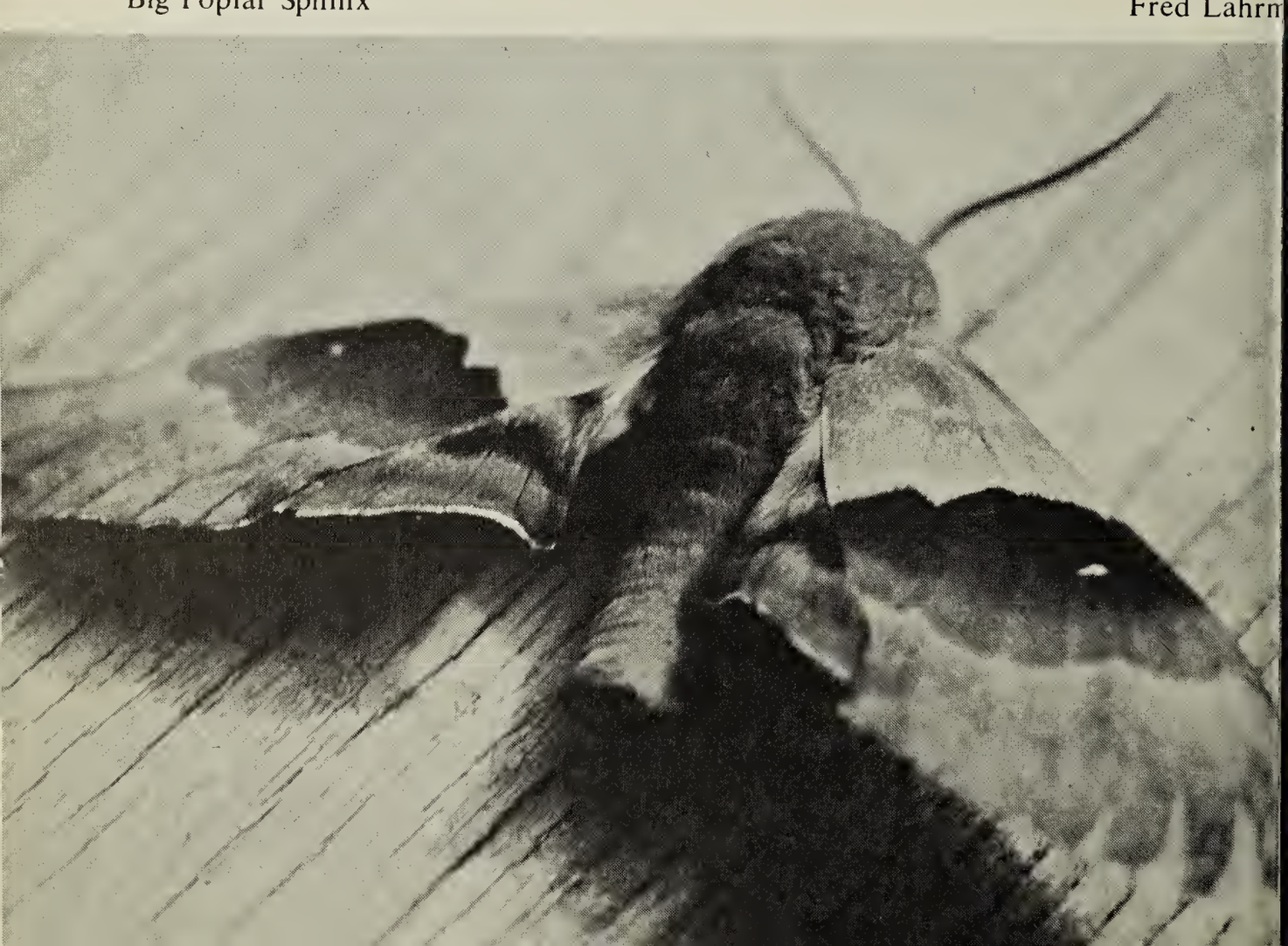


Small-eyed Sphinx

Fred Lahrman

Big Poplar Sphinx

Fred Lahrm



Hummingbird Clearwing on sweet rocket — Donald Hooper

Snowberry Clearwing — Fred Lahrman

Striped Morning Sphinx

Fred Lahrman

Bombyx Sphinx — *Lapara bombycoides* (Walker) Central Sask.; pine woods.

Twin-spot Sphinx — *Smerinthus jamaicensis* (Drury). Southern half of province.

Cerisy's Sphinx — *Smerinthus cerisyi* (Kirby). Southern half.

Blinded Sphinx — *Paonias excaecatus* (Smith). Southern half.

Small-eyed Sphinx — *Paonias myops* (Smith). Southern third of province.

Walnut Sphinx — *Cressonia juglandis* (Smith). Expected in Eastern Sask.)

Big Poplar Sphinx — *Pachysphinx modesta* (Harris). Southern and Central Sask.

Hummingbird Clearwing — *Hemaris thysbe* (Fabricius). Throughout province.

Snowberry Clearwing — *Hemaris diffinis* (Boisduval). Southern half.

Gaudy Sphinx — *Eumorpha labruscae* (Linnaeus). Straggler to Southern Sask.

Nessus Sphinx — *Amphion nessus* (Cramer). Expected in Southern Sask.)

Strecker's Day Sphinx — *Proserpinus juanita* (Strecker). Expected in Southwestern Sask.)

Yellow-banded Day Sphinx — *Proserpinus flavofasciata* (Walker). Central Sask., rare.

Azalea Sphinx — *Darapsa pholus* (Cramer). Eastern Sask.

Galium Sphinx — *Hyles gallii* (Rottenburg). Throughout province.

Striped Morning Sphinx — *Hyles lineata* (Fabricius). Southern part.

Editor's Note: All 26 species are illustrated in colour in the 1968 Dover reprint of W. J. Holland's *The Moth Book*, originally published in 1903. Twenty-one species appear in colour in *Butterflies and Moths* by R. T. Mitchell and H. S. Zim, a Golden Nature Guide (1964) but some of the common names are different: Tomato Hornworm = Five-spotted Hawkmoth; Gordius Sphinx = Apple Sphinx; Blinded Sphinx = Blind-eyed Sphinx; Snowberry Clearwing = Bumblebee Moth and Striped Morning Sphinx = White-lined Sphinx.

A KEY TO THE SPHINX MOTHS OF SASKATCHEWAN

Lepidoptera without clubbed antenae ..... MOTHS
Lepidoptera with clubbed antennae ..... BUTTERFLIES

MOTHS

Fore wing usually less than half as long as hind wing ..... OTHER MOTHS
Fore wing usually more than half as long again as hind wing ..... SPHINX MOTHS

SPHINX MOTHS

Wings partly transparent:
Upper side of abdomen black ..... YELLOW-BANDED DAY SPHINX
Upper side of abdomen buff basally; dark maroon median band; last two segments buff, divided by maroon ..... HUMMINGBIRD CLEARWING
Upper side of abdomen black and yellow, with the last two segments yellow ..... SNOWBERRY CLEARWING

Wings not transparent:
Round eyespot present on hind wing:
"*Pupil*" divided into two parts ..... TWIN-SPOT SPHINX

"*Pupil*" in center of hind wing ..... CERISEY'S SPHINX

"*Pupil*" not in center; no other markings:

Outer edges of wings very wavy ..... BLINDED SPHINX

Outer edges of wings angled but not wavy ..... SMALL-EYED SPHINX

Round eyespot not present on hind wing:

Abdomen with faint dark line down center of the upper side ..... BOMBYX SPHINX

Abdomen with a row of large yellow spots along each side ..... TOMATO HORNWORM

Abdomen banded with two bright yellow bands ..... NESSUS SPHINX

Abdomen banded with black and white bands:

Median buff stripe of fore wing crossed by white lines ..... STRIPED MORNING SPHINX

Median buff strip of fore wing not crossed by white lines ..... GALIUM SPHINX

Abdomen with black bands along sides and a black line down the center of the upper side:

Hind wing black with two narrow pale bands ..... HERMIT SPHINX

Hind wing grayish white with two black bands ..... VASHTI SPHINX

Hind wing buff with black margin ..... CLEMEN'S HAWKMOTH

Hind wing brown with wavy lines and a black and white fringe:

Fore wing medium brown with wavy lines ..... WAVED SPHINX

Fore wing two-toned, light and dark brown ..... ELM SPHINX

Abdomen not noticeably banded or striped:

Hind wing orange with black outer edges ..... STRECKER'S DAY SPHINX

Hind wing light brown with darker brown lines ..... WALNUT SPHINX

Hind wing rusty coloured ..... AZALEA SPHINX

Hind wing pink and blue ..... BIG POPLAR SPHINX

Hind wing yellow and blue ..... GAUDY SPHINX

Hind wing light brown or gray with two black bands:

Fore wing brown ..... LAUREL SPHINX

Fore wing contrasting black and white ..... WILD CHERRY SPHINX

Fore wing dark gray:

Outer black band of hind wing follows outer margin ..... GORDIAN SPHINX

Outer black band of hind wing inwards from outer margin ..... GREAT ASH SPHINX

SOME SKIPPERS AND BUTTERFLIES FROM DINOSAUR PROVINCIAL PARK, ALBERTA

by C. D. BIRD* and N. KONDLA**

There have been no published records of skippers or butterflies from Dinosaur Provincial Park, 20 miles northeast of Brooks, Alberta. The purpose of this paper is to report the 18 species collected there by the junior author in July, 1971, including one, the Acadian Hairstreak, *Strymon acadica acadica*, which is new to Alberta. These reports are significant because very little is known about the skippers and butterflies of the prairie and badland area of southeastern Alberta.

Dinosaur Provincial Park is of unusual interest because it encompasses some of the finest badland terrain in Canada. Western Cottonwood (*Populus sargentii*) forms a scattered riverine forest along the Red Deer River and several tributaries. Shrubby Sagebrush (*Artemisia cana*) and Greasewood (*Sarcobatus vermiculatus*) occur in the coulee systems along with Wolf Willow (*Elaeagnus commutata*) and willows. Short grass prairie, with many characteristic badland plants, is found on the south-facing slopes and summits of the buttes and ridges. The ecology of the area will be further described in a paper now being prepared on the birds of the region by the junior author.

The following determinations were made by the senior author in connection with the writing of a book, with John and Allan Legge, on the butterflies and skippers of Alberta. Voucher specimens are in the collections of both authors. The nomenclature corresponds to that of Hooper's *Butterflies of Saskatchewan*.

Peck's Skipper (*Polites coras*). One specimen collected on July 21 in a Western Cottonwood clearing with much Wild Bergamot.

Garita Skipper (*Oarisma garita*). One individual visiting Pink Cleome on July 14.

Common Checkered Skipper (*Pyrgus communis communis*). One female collected in a coulee on July 26.

Persius Dusky Wing (*Erynnis persius*). One male collected in a coulee on July 26.

Bruce's Swallowtail (*Papilio bairdii brucei*). One male on July 21 and a female on July 27, both in the vicinity of Western Cottonwoods.

Alfalfa Butterfly (*Colias eurytheme eriphyle*). Two albinistic females on July 26 in a coulee.

Acadian Hairstreak (*Strymon acadica acadica*). One fresh female on July 14 in open Western Cottonwood riverine forest. New to Alberta, Hooper cites specimens north to Fort Qu'Appelle and Eston, Saskatchewan. The specimen is light grayish brown beneath rather than light tan brown and thus cannot be *S. acadica watrini* which also occurs in Saskatchewan.

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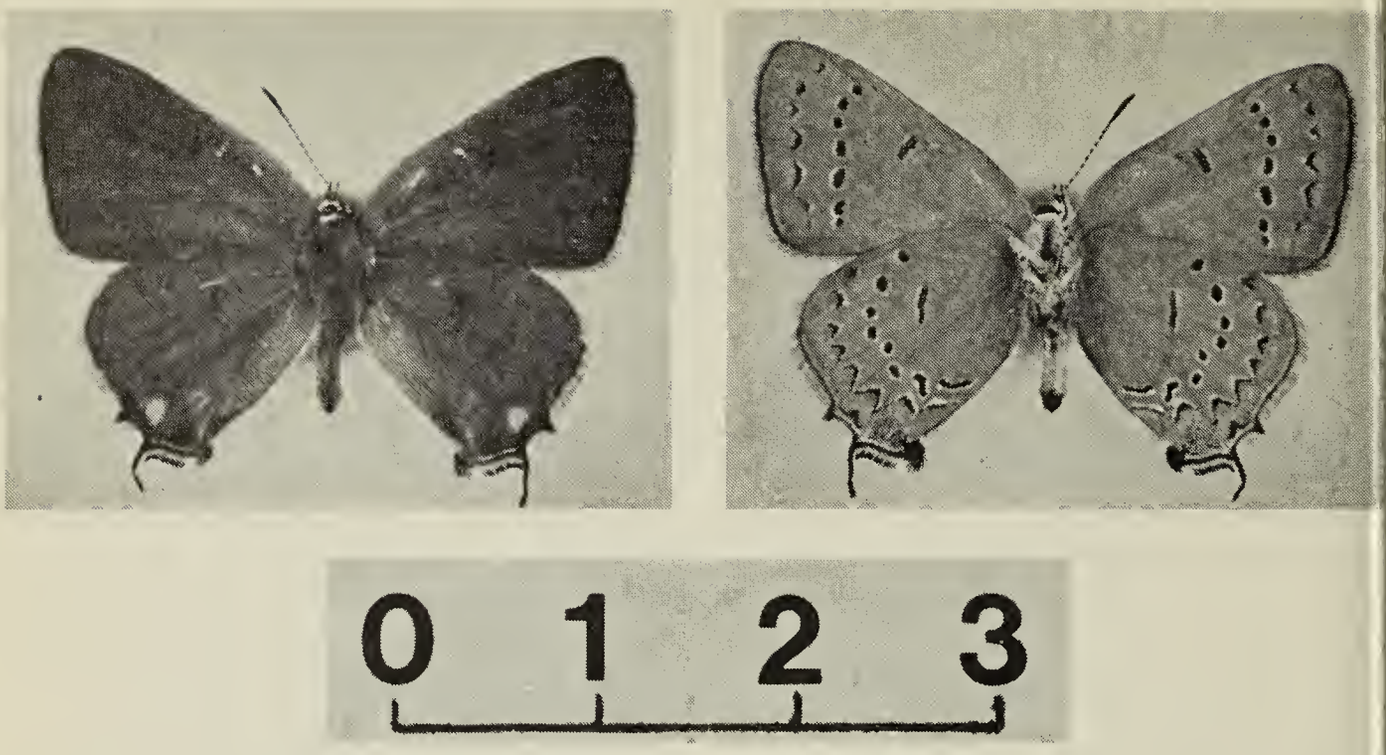

Female Acadian Hairstreak (*Strymon acadica acadica*) collected at Dinosaur Provincial Park, Alberta on July 14, 1971, by N. Kondla. The scale is in centimeters.

Melissa Blue (*Lycaeides melissa*). One was collected in a coulee on July 26.

White Admiral (*Limenitis arthemis rubrofasciata*). One individual on July 21 along the riverine forest.

Milbert's Tortoise Shell (*Nymphalis milberti milberti*). One in open Western Cottonwood forest on July 14.

Acasta Checkerspot (*Chlosyne acastus*). A female was collected in a coulee on July 26. Known elsewhere in Alberta only from badland terrain along the Red Deer River up to Drumheller.

Pearl Crescent (*Phyciodes tharos*). Six specimens collected from July 14 to 26 in coulees and in the riverine forest.

Meadow Crescent (*Physiodes campestris camillus*). One individual collected in a coulee on July 26.

Meadow Fritillary (*Boloria toddi jenistai*). Six individuals from July 21 to 26 in the vicinity of the riverine forest.

Callippe Fritillary (*Speyeria callipp calgariana*). Four females and on male collected from July 21 to 2 in a coulee and in riverine forest

Northwestern Silverspot (*Speyeri atlantis helena*). Three males fro July 21 to 26 in riverine forest.

Great Spangled Fritillary (*Speyeri cybele pseudocarpenteri*). Ten in dividuals from July 14 to 26 in, o near, the riverine forest.

Small Wood Nymph (*Cercyonis oetu oetus*). Three individuals wer collected in a coulee on July 26.

The relatively small number o species discovered reflects, in part, th absence of collections during th spring and late summer. It is highl likely that early butterflies such a Western Checkered White (*Pieri protodice occidentalis*), Spring Azur (*Celastrina argiolus lucia*), Alberta Arc tic (*Oeneis alberta*), and Varuna Arcti (*O. uhleri varuna*); and late ones suc as species of Coppers (*Lycaena* spp. are also present.

PRACTICAL BUGWATCHING

by AL GLASS*

For years we've heard about birdwatchers. Now there's a new kind of watcher — the bugwatcher. Bugs are not as easy to watch as birds which may account for the fact that there are no bugwatching clubs (there are of course many learned entomological societies). Some insects such as crickets and cicadas are "vocal" but most go about their business in a more or less silent fashion (at least to our ears). Birds, on the other hand, are noted for song.

A birdwatcher and her/his binoculars are seldom far apart. If binoculars are symbolic of birdwatching, let me advocate that a magnifying glass be symbolic of bugwatching. A bugwatcher does not go madly dashing about the countryside waving a butterfly net to acquire a good selection of "cabinet specimens". Instead he wants to pry into the secret lives of insects to learn of their fascinating ways.

The bugwatcher does his collecting with a camera. Photographing bugs can be quite a challenge especially if they are to be photographed "wild and free". There exists a group of "nature photographers" who actually take pictures of dead insects — for shame! Some people advocate putting the insects into a refrigerator to "slow 'em down". How much more fun it is to stalk insects. A useful set-up for capturing insects on film is the combination of a 105 mm. lens, bellows unit and electronic flash. This allows you to fill a good portion of the picture with the subject and the flash gives good depth-of-field and stopping of action. This method has proven to be very effective in photographing butterflies.

One place you will often see the modern bugwatcher is in a flower patch. Here he can see and study beautiful creatures like the hummingbird moth, bee fly, and syrphid fly (a fly that looks like a wasp). In the flower patch the bugwatcher will be astonished at the various kinds of mimicry. You think you're looking at a wasp when actually it's a moth. Mimicry is the protective similarity of one species with another. There are examples of one of the two species being distasteful and where both species have similar warnings. Look for bugs that resemble ants, moths that resemble wasps and beetles that resemble bumblebees. After you get to know a little about this "masquerade party" you will want to impress your friends. Pick up a syrphid fly on the end of your finger and show them how you can pick up a *wasp* and not get stung. You can be like one naturalist who found a "beastie" and proudly announced, "Watch me pick up this *wasp*." In his smug confidence he thought to himself, "Heh! Heh! They think it's a wasp but it's only a fly." Right in middle of explaining the difference between a wasp and a fly to a gathering of people the naturalist was stung on the finger. His finger wasn't the only part of him that turned red.

Bugwatchers are very fond of following ants about and trying to make some sense of what appears to be chaos. If you take up "anting" don't give up in despair; just remember it takes a lot of patience. In the summer a good place to look for ants is on young cottonwood trees where you will frequently find them "milking" aphids. You will watch in fascination as the ants stroke the aphids to obtain the sweet liquid called honeydew. Understanding ants may lead you to a new kinship with nature.

We can't fight bugs — there are over a million different kinds! Only a few of these million could be called real pests and with a little understanding maybe we could learn to love the rest.

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32nd ANNUAL SASKATCHEWAN CHRISTMAS BIRD COUNT 1973

Compiled by MARY I. HOUSTON*

Cold weather and much deeper snow than usual made bird counting more difficult this year. A number of areas were covered by snowshoers or skiers where cars could not operate. Consequently, it was most encouraging to note that counters were out in 42 areas (Fig. 1), and observed total of 67 species plus 4 other species seen during count period but not seen on count days. This total of species has been exceeded only once — in 1962 when 68 species with 8 additionals were recorded.

One new species were added to the all-time total. A Black Duck was reported from Regina. A Mountain Bluebird seen at Fort Qu'Appelle during the count period (though not on count day) adds a new "additional" to the grand total. This total is now 116 species and 7 additionals.

There were no major increases or decreases in species occurrences. Of interest was the fact that Golden Eagles were not seen on count day (and only once during count period) for the first time in 10 years. As in 1971, Gyrfalcons were reported from 2 localities. This is the third year of the 32 in which counts have been taken that this species has been reported.

1. BANGOR. Dec. 26; temp. 19°, around yard and feedstacks; 8 species, 45 individuals. — Mrs. A. Thompson.

2. BIGGAR. Dec. 24; 3 mi. in 3 hrs. on foot and 15 mi. in 1/2 hr. by car, temp. 20°, fog patches, calm; 11 species, 496 individuals. (Add: Rusty Blackbird, 2, Dec. 23) — Donald Renaud, Wayne Renaud (compiler).

3. BORDEN. Dec. 20; 79 mi. by car in 7 hrs. and 3 mi. on foot in 1-1/2 hrs., temp. 9° to 22°, partly cloudy, wind SE 0-13 mph, 8 inches of snow; 13 species, 1796 individuals. — Ron Bobowski, Vi Harper, Vic Harper, John Shadick, Stan Shadick (compiler).

4. BROADVIEW. Dec. 30; 123 mi. by car in 6 hrs., temp. -30°, clear, wind light; 10 species, 529 individuals. (Add: Rock Dove, 12, Dec. 29; Hairy Woodpecker, 1, Dec. 29) — David Chaskavich, Don Weidl.

5. CARROT RIVER. Dec. 27; 60 mi. by car in 1-1/2 hrs., temp. 15°, calm; 7 species, 12 individuals. — Barbara and Ronald Hooper.

6. DALMENY. Dec. 26; 44-3/4 miles in 23 hrs. on skis, temp. 15°, wind NW 13 mph, overcast, light snow; 12 species, 747 individuals. (Add: Starling, 9, Dec. 28) — Brian Sperling, Gilbert Sperling (co-compiler), Lorne Sperling, Lloyd Sperling (co-compiler).

7. DILKE. Dec. 27; 23 mi. by car and 1 mi. by foot and sleigh at chores, temp. 0 to 20°, overcast to sunny, wind SW changing to NW, rising from light to 15 mph; 6 species 164 individuals. (Add: Snow Bunting, Dec. 22, 26 and 28). — J. B. Belcher.

8. ENDEAVOUR. Dec. 26; around farmyard and 3 mi. on foot, temp. 10°, overcast with light snow; 10 species, 250 individuals. (Add: Great Horned Owl, 1, Dec. 24; Blue Jay, 3, Dec. 31; Rusty Blackbird, 1, Dec. 27). — William Haras.

9. FILLMORE. Dec. 27; 25 mi. by car, 3/4 mi. on foot in 3-1/2 hrs., temp. 10°, partly cloudy, wind 15-20 mph with drifting snow, 2-1/2 ft. snow; 7 species, 683 individuals. (Add: Sharp-tailed Grouse, 8, Dec. 28; Snowy Owl, 1, Dec. 23). — Larry and Marie Wiggins, Michael and Michelle Wiggins.

10. FORT QU'APPELLE. Dec. 29; 96 mi. by car in 9 hrs., temp. -20° to -15°, wind NW 5-9 mph, 12-1/2 in. snow; 20 species, 445 individuals. (Add: Merlin, 1, Dec. 17; Ruffed Grouse, 1, Dec. 21 and 2, Dec. 27; Ring-necked Pheasant, 1, Dec. 26; Snowy Owl, 1, Dec. 21; White-breasted Nuthatch, 1, Dec. 22 and 28; Mountain Bluebird, 1,

*863 University Drive, Saskatoon, Sask.

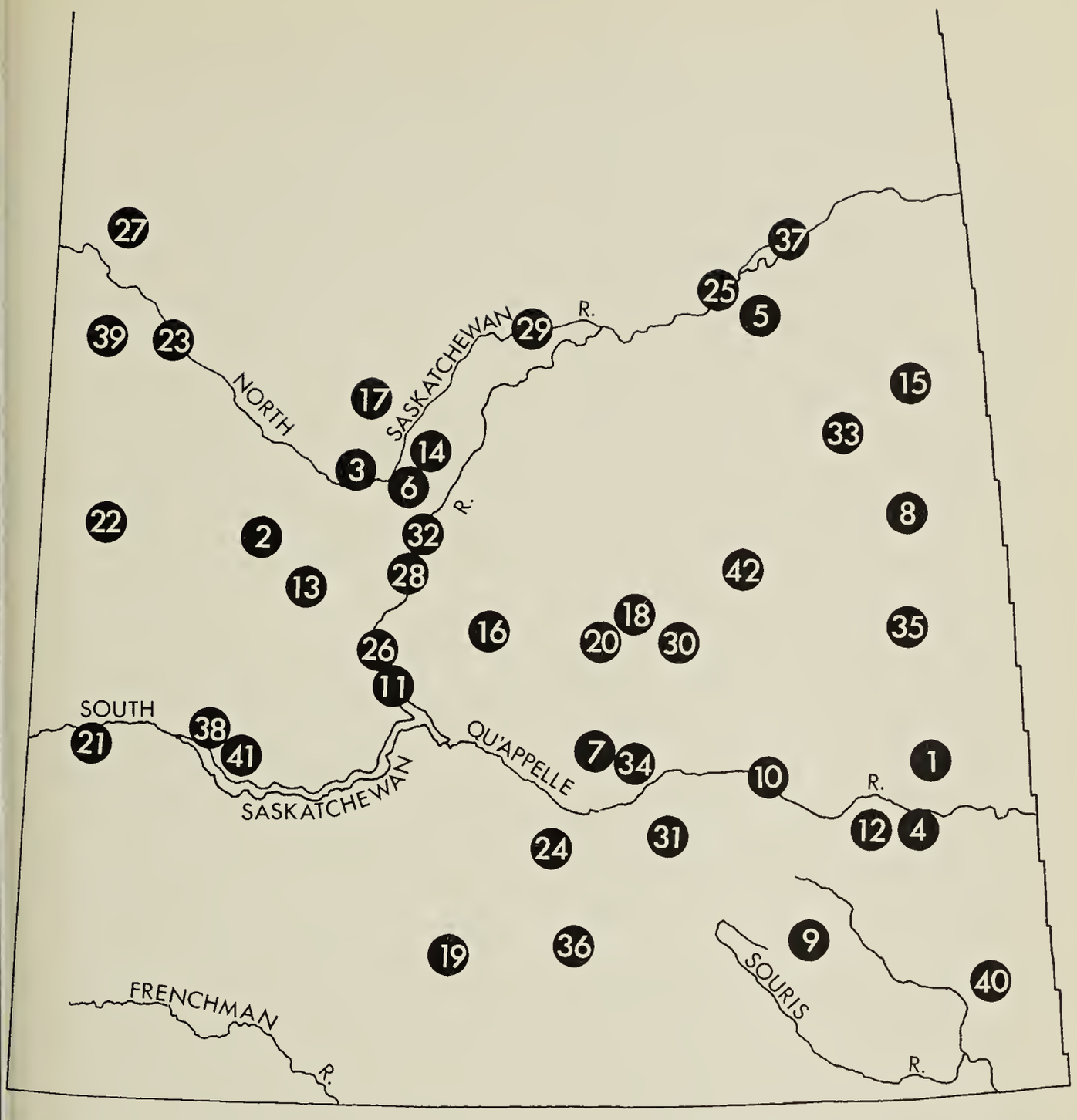

Figure 1. Locations of Saskatchewan Christmas Bird Counts, 1973. (See text for identification of numbers.)

Dec. 26; Rusty Blackbird, 1, Dec. 27 and 5, daily to Dec. 21; Evening Grosbeak, 2, Dec. 26). — E. Manley Callin, Brian Gladwell, Mrs. William Gray, Wanda and Paul Hanley, Ron and Don Hooper, Inez and Joseph Kralkay, Shirley Spidla, Mrs. Cy Williams and Cynthia Williams, Kay and Bernard de Vries (compilers) — Members of the Fort Qu'Appelle Naturalists Society.

11. GARDINER DAM. Dec. 27; 9 mi. on foot in 4 hrs. and 30. mi. by car in 1-1/2 hrs., temp. 10°, clear, wind NW 8 mph; 17 species, 647 individuals. — Wayne Harris, Sheila Lamont, Don Renaud, Wayne Renaud (compiler).

12. GRENFELL. Dec. 24; around yard and short drive, temp. 26°, calm, 12 in. snow; 5 species, 206 individuals. (Add: Ring-necked Pheasant, 1, Dec. 20; Gray Partridge, 6, Dec. 31; Snowy Owl, 1, Jan. 2; Black-billed Magpie, 1, Jan. 2). — Betty Hubbard.

13. HARRIS. Dec. 22; 125 mi. in 12 hrs. by car, 24 mi. in 19 hrs. on foot, 3 mi. in 2 hrs. by snowmobile, temp. 25° to 28°, calm, fog patches; 17 species, 2515 individuals. (Add: Merlin, 1, Dec. 21; Evening Grosbeak, 2, Dec. 23). — Mark Abley, Ron Bobowski, Tom Donald, Bob Godwin, Allan Moulin, Lynn Oliphant, Don Renaud, Wayne Renaud (compiler), Stan Shadick.

14. HEPBURN. Dec. 25; 6 species, 93 individuals. — Margaret, Philip, Phyllis and

	Bangor Dec. 26	Biggar Dec. 24	Borden Dec. 20	Broadview Dec. 30	Carrot River Dec. 27	Dalmeny Dec. 26	Dilke Dec. 27	Endeavor Dec. 26	Fillmore Dec. 27	Fort Qu'Appelle Dec. 29	Gardiner Dam Dec. 27	Grenfell Dec. 24	Harris Dec. 22	Hepburn Dec. 25
Pied-billed Grebe														
Mute Swan														
Canada Goose														
Mallard										7	151			
Black Duck														
Gadwall											1			
Pintail														
Redhead														
Canvasback														
Lesser Scaup										1				
Common Goldeneye										2	5			
Bufflehead														
Ruddy Duck														
Common Merganser											4			
Red-br. Merganser														
Goshawk										1				
Bald Eagle														
Gyrfalcon														
Prairie Falcon											1			
Merlin														
Ruffed Grouse														
Sharp-tailed Grouse	8		2	38		8	5	5		10	27	2	183	
Ring-neck. Pheasant														
Gray Partridge		7	70			14	35		8	14	33		239	4
American Coot														
Rock Dove		155							13	39	5		51	
Great-horned Owl			3			2				1		1	8	
Snowy Owl		1	1			1	2				1		2	
Hawk Owl														
Great Gray Owl					1									
Long-eared Owl														
Short-eared Owl														
Common Flicker														
Pileated Woodpecker														
Hairy Woodpecker	1							3		2			1	
Downy Woodpecker	1		1			3		1		3	1		7	
N. 3-t. Woodpecker														
Horned Lark					1									
Gray Jay								1						
Blue Jay				1	1					7				
Black-billed Magpie	2	10	66	16	3	44	7	4	6	20	78		170	3
Common Raven					1			15						
Bl.-cap. Chickadee	6	3	17	4		6		4	3	23		1	39	3
Boreal Chickadee														
W-breasted Nuthatch														
R-breasted Nuthatch														
Brown Creeper														
Robin										1				
Bohemian Waxwing		49	200		2	70	15	41		16	39		84	40
Cedar Waxwing														
Northern Shrike				1									1	
Starling		2		1									26	
House Sparrow	15	260	441	56	3	68	100	26	285	194	253	200	1583	34
Rusty Blackbird														
Brewer's Blackbird														
Common Grackle														
Evening Grosbeak	2													
Purple Finch														
Pine Grosbeak	10		64	32		13				6	2		3	
Hoary Redpoll			5							3	1			
Common Redpoll		4	621	209		58			50	90	40	2	49	
Pine Siskin														
W-winged Crossbill		1												
Dark-eyed Junco														
Tree Sparrow													1	
W-throated Sparrow														
Snow Bunting		4	305	171		460		150	318	5	5		68	9

Tena Siemens.

15. HUDSON BAY. Dec. 29; 60 mi. by car, temp. -15°; wind NE 15 mph; 11 species, 102 individuals. — Darren Hayes, Dwight Hayes, Les Hayes, Eldon Thorson.

16. KENASTON. Jan. 2; within 2 mi. of farmyard, temp. 0°, wind NW 10 mph, 10' in. snow; 5 species, 100 individuals. (Add: Sharp-tailed Grouse, 16, Jan. 3; Downy Woodpecker, 1, Dec. 21; Bohemian Waxwing, 15, Dec. 21, 22; Common Redpoll, 1, Dec. 22, 23, 24; Snow Bunting, 25, Dec. 24). — P. Lawrence Beckie.

17. KRYDOR. Dec. 26; 24 mi. by car and 3 mi. on skis in 3 hrs., temp. 20°, wind WSW 7 mph, overcast with some light snow; 3 species, 18 individuals — Robin and Keith Bracken, Frank, Louise, Molly and Ray Denson, Barry and Jane Findlayson, Charles, John and Peggy Hall, Susan Lamers, John and Renee Merz, Alan and Dolores Reid.

18. KUTAWAGAN LAKE (centered 12 mi. N. of Semans). Dec. 29; 30 mi. by car in 4 hrs., 2 mi. on snowshoes in 1 hr., temp. -28° to -25°, clear, wind 0-5 mph, 15 in. snow; 10 species, 348 individuals. — Wayne Harris, Sheila Lamont.

19. LAFLECHE. Dec. 26; temp. 20°, light wind, 10 in. snow; 9 species, 197 individuals. (Add: Golden Eagle, 1, Dec. 19; Snowy Owl, 1, Dec. 27), — C. H. Shulver.

20. LAST MOUNTAIN LAKE (management unit and immediate area). Dec. 15; 62 mi. by car in 5 hrs. and 6 mi. on foot in 2 hrs., temp. -21° to -9°, sunny, wind ESE 7-15 mph, 15 in. snow; 9 species, 200 individuals. — Greta Harris, Wayne Harris, Sheila Lamont.

21. LEADER. Jan. 2; temp. 12°, snowing, 1 foot of snow; 4 species, 31 individuals. — Daisy D. Meyers.

22. LUSELAND. Dec. 22; 8 mi. by car and 5 mi. by snowshoe in 4 hrs., temp. 16° to 22°, dense fog, 1 foot of snow; 9 species, 119 individuals (Add: Snowy Owl, 1, Dec. 27; Downy Woodpecker, 1, Dec. 27; Horned Lark, 6, Dec. 31). — K. B. Finley, K. J. Finley, B. Holton.

23. MAIDSTONE FERRY (21 mi. north of Maidstone). Dec. 22; 36 mi. by car in 2 hrs. and 7 mi. on snowshoes in 3-1/2 hrs., temp. 10° to 15°, cloudy with heavy fog, wind E 0-5 mph, 15 in. snow; 15 species, 559 individuals. (Add: Rock Dove, 2, Dec. 23; Snowy Owl, 1, Dec. 26; Blue Jay, 1, Dec. 24; Bohemian Waxwing, 20, Dec. 24; Snow Bunting, 1, Dec. 24, 50, Dec. 25 and 13, Dec. 26). — Wayne Harris, Sheila Lamont, Tommy Lamont, Jean McPherson.

24. MOOSE JAW. Dec. 26; 80 mi. by car and 4 mi. on foot, temp. -16°, wind 10 mph, overcast, 2 feet of snow; 17 species, 1,086 individuals. (Add: White-winged Crossbill, 4, Dec. 21). — Doug Francis, Ruth Hilling, Pat Kern, Leith Knight (compiler), Sid and Mickey Lane, Moray Lewis, Dave Robinson, James Roe, Jennifer Roe and Inez Simmonds.

25. NIPAWIN. Dec. 29; temp. -20°, heavy hoarfrost; 8 species, 108 individuals. (Add: Pileated Woodpecker, 1, Dec. 25; Hairy Woodpecker, 1, Dec. 26; Downy Woodpecker, 1, Dec. 25; Black-backed Three-toed Woodpecker, 1, Dec. 26; Black-capped Chickadee, 10, Dec. 26). — Robert Moore, Stan and Gladys Riome.

26. OUTLOOK. Dec. 22; around the town, temp. -20°, much snow; 2 species, 81 individuals. (Add: Black-billed Magpie, 2, Jan. 1). — Harold Kvinge.

27. PARADISE HILL-MINISTIKWAN LAKE. Dec. 24; 71 mi. by car in 5 hrs. and 3 mi. on snowshoes in 1-1/2 hrs., temp. 10° to 20°, foggy until noon, then mostly clear, wind SE 5 mph, 12 in. snow; 15 species, 319 individuals. — Wayne Harris, Sheila Lamont.

28. PIKE LAKE. Dec. 29; 63 mi. by car in 6 hrs., 1/2 mi. on foot in 1/2 hr., 1 mi. on skis in 1 hr., temp. -16° to -30°, wind 6-11 mph SW and NW; 14 species, 782 individuals. — Margaret and Ed Driver, Madeleine and Bernard Gollop, Laura Hoyt.

29. PRINCE ALBERT. Dec. 31; 8 species, 39 individuals. — Christie Aschim.

30. RAYMORE. Dec. 28; 67 mi. by car in 8 hrs. and 5 mi. on snowshoes in 4-1/2 hrs., 1 hr. at feeder, temp. -17° to -4°, mainly clear with occasional heavy fog patches, wind NW 0-12 mph, 25 in. snow; 17 species, 1300 individuals. (Add: Downy Woodpecker, 1, Dec. 30). — Chas., Greta and Wayne Harris, Sheila Lamont.

31. REGINA. Dec. 26; 254 mi. by car in 80 hrs., 40 mi. on foot in 32 hrs., 24 hrs. at feeders, temp. 5° to 17°, overcast with light snow in A.M. mostly cloudy in P.M., wind SE 4 mph to NW 9 mph, 26 in. snow; 40 species, 4,925 individuals.—Gary Anweiler, Jessie Bailey, Fred Bard, Gordon Barr, Keith Barr, Margaret Belcher (compiler), Tom Beveridge, Al and Betty Binnie, Joanne Boychuk, Tom Burns, Elizabeth Cruickshank, Dick and Maureen Du Wors, George Ferguson, Bill Freeman, Wayne Gemmell, Valerie Harrison, Dwayne Harty, Jim Hines, Jim and Shirley Jowsey, Ernie Kassian, Darlene Kauk, David Kelly, Bob Krcba, Shirley Larmour, George Ledingham, Christine MacDonald, Mr. and Mrs. J. F. McKay, Juan Martinez,

	Hudson Bay Dec. 29	Kenaston Jan. 2	Krydor Dec. 26	Kutawagan Lake Dec. 29	La Fleche Dec. 26	LastMountain Lake Dec. 15	Leader Jan. 2	Luseland Dec. 22	Maidstone Ferry Dec. 22	Moose Jaw Dec. 26	Nipawin Dec. 29	Outlook Dec. 22	Paradise Hill-Ministikwan Lake Dec.24	Pike Lake Dec. 29
Pied-billed Grebe														
Mute Swan														
Canada Goose														
Mallard						1								
Black Duck														
Gadwall														
Pintail														
Redhead														
Canvasback														
Lesser Scaup														
Common Goldeneye														
Bufflehead														
Ruddy Duck														
Common Merganser														
Red-br. Merganser														
Goshawk									1				1	
Bald Eagle	1													
Gyrfalcon														
Prairie Falcon														
Merlin														
Ruffed Grouse									1				5	
Sharp-tailed Grouse				2	5			1	9	15			5	3
Ring-neck. Pheasant					9		1			1				
Gray Partridge		18		37	15	18		18		43				
American Coot														
Rock Dove				2	11	1		8		281				
Great-horned Owl		1				1			1				1	
Snowy Owl			1	2		6				1				
Hawk Owl														
Great Gray Owl											2			
Long-eared Owl														
Short-eared Owl														
Common Flicker														
Pileated Woodpecker									1					
Hairy Woodpecker	1								2			1		5
Downy Woodpecker	1								2	1				5
N. 3-t. Woodpecker														
Horned Lark				2	33								2	
Gray Jay	5												2	
Blue Jay	6										1		1	5
Black-billed Magpie	3	4	4	17	2	20	20	18	10	13	8		4	42
Common Raven	31										21		1	
Bl.-cap. Chickadee	2	2					2	5	17	9			9	12
Boreal Chickadee														
W-breasted Nuthatch														1
R-breasted Nuthatch														
Brown Creeper														
Robin														1
Bohemian Waxwing					19			10		60		80		625
Cedar Waxwing														
Northern Shrike						1			1				1	
Starling					3					70				
House Sparrow		75	12	200	100	32	8	26	30	405	2			8
Rusty Blackbird									1					
Brewer's Blackbird														
Common Grackle										1				
Evening Grosbeak											40			
Purple Finch														1
Pine Grosbeak	2								9	6	1		3	11
Hoary Redpoll				2					3				1	
Common Redpoll	47			25				32	471	2	33		158	13
Pine Siskin										12				
W-winged Crossbill														
Dark-eyed Junco										1				
Tree Sparrow														
W-throated Sparrow														
Snow Bunting	3			59		120		1		165			125	50

	Prince Albert Dec. 31	Raymore Dec. 28	Regina Dec. 26	Saskatoon Dec. 26	Somme Dec. 26	Sorenson Beach Dec. 26	Spirit Lake Dec. 26	Spring Valley Dec. 27	Squaw Rapids Dec. 29	Tyner Dec. 28	Waseca Jan. 3	Wauchope Dec. 29	White Bear Dec. 31	Wynyard Dec. 24	No. of Counts Species Seen
Pied-billed Grebe			2												1
Mute Swan			2												1
Canada Goose			425												1
Mallard			500	45					11						6
Black Duck			1												1
Gadwall															1
Pintail			1	1											2
Redhead			4												1
Canvasback			2												1
Lesser Scaup			6												2
Common Goldeneye			13	55					6						5
Bufflehead			2												1
Ruddy Duck			1												1
Common Merganser															1
Red-br. Merganser				2											1
Goshawk				3							1				5
Bald Eagle									2						2
Gyrfalcon				1									1		2
Prairie Falcon			1												2
Merlin			1	5		1									4
Ruffed Grouse		2		1		4	3				2	1		2	9
Sharp-tailed Grouse		31	21	89		5	2	41		25		11			25
Ring-neck. Pheasant			1	23											5
Gray Partridge		15	136	138	9	11	8	82					7	31	24
American Coot			2												1
Rock Dove		35	201	808				37				21			15
Great-horned Owl		1	2	9		3							1		14
Snowy Owl			8	3	1		1	1		1					16
Hawk Owl							1								1
Great Gray Owl															2
Long-eared Owl			2												1
Short-eared Owl			1												1
Common Flicker			2	2											2
Pileated Woodpecker															1
Hairy Woodpecker	2	3	1	3	2		6				1	2			16
Downy Woodpecker	2		1	23		1	7	1		1	1	2		1	21
N. 3-t. Woodpecker					1										1
Horned Lark								13					8		6
Gray Jay				1	1										5
Blue Jay	9	1		23	1		5				3				13
Black-billed Magpie		55	42	276	10	2	22	12	2	3	5	12	100	11	39
Common Raven	2				8				8						8
B.-cap. Chickadee	10	17	27	218	3	2	27			7	4	19		6	30
Boreal Chickadee					1		1				4				3
W-breasted Nuthatch	1			1			3								4
R-breasted Nuthatch			3	5											2
Brown Creeper				1											1
Robin			9	6						1					5
Bohemian Waxwing	3	5	1034	1756			30				100			105	22
Cedar Waxwing			16	20											2
Northern Shrike			2				1								7
Starling		1	43	91				11							9
House Sparrow		1100	2090	3263	20	12	378	609		18		167		322	35
Rusty Blackbird			38	5											3
Brewer's Blackbird							1								1
Common Grackle															1
Evening Grosbeak	12			24							3				5
Purple Finch				4											2
Pine Grosbeak		7	43	186	4	3	11				10	1			21
Hoary Redpoll		1			1							2			9
Common Redpoll		8	74	318			3					33			22
Pine Siskin				20											2
W-winged Crossbill		1	38												3
Dark-eyed Junco				3		1									3
Tree Sparrow				2								1			3
W-throated Sparrow				1											1
Snow Bunting		27	127	39				26		19		115		92	24

Joe Miller, Helen Morrison, David Phillips, John Pilling, Connie Pratt, Bob and Karen Rafuse, Brian Rainey, Susan Rockwood, Diane Seeoy, Allan Smith, Frank Switzer, Bob Tegart, Dorothy Tegart, Elisabeth Wagner, Jeanie Wagner, Janie Wilhelm, Rita Wilhelm.

32. SASKATOON. Dec 26; 45 mi. in 46-1/2 hrs. on foot, 227 mi. by ear in 34 hrs. and 15 mi. on skis in 8-1/2 hrs., temp. 17° to 22°, wind W 10-15 mph, 15 in. snow; 39 species, 7474 individuals. (Add: Red Crossbill, White-winged Crossbill).— Murray Akre, Moira Atkinson, Bob, Jeff and Joan Besant, Bernard, Ed, Raymond and Timothy Bisha, Ron Bobowski, André Bouthillette, Joseph E. Daly, Erie, Heather, Margot and Susan Diehl, Tom Donald, Alan and Hartley Fredeen, Betty and John Gerrard, J. B. Gollop, M. F. Gollop, Scott Hale, Danny Heffernan, Clarenee J. Houston, David, Donald, Mary, Stan and Stuart Houston, Shelley Laird, Dave and Richard Male, David and Pat Maloney, Jaeob Masligah, Don, Elizabeth, Joanne and Norman MeRobbie, Anna Miller, Alan Moulin, Arnold Nijssen, Lynn Oliphant, Stuart Rasmussen, Adam Sehmidt, David Schmidt, John and Stan Shadiek, Jim Slimmon, Alan, Edward, Gary and Karen Smith, Peter Tassie, Miehael Tyrrell, Sharon E. Wardle.

33. SOMME. Dec. 26; 3 hrs. on foot and 1 hr. by ear for 35 mi., temp. 25°, calm; 13 species, 62 individuals. — Donald and Ronald Hooper.

34. SORENSON BEACH. Dec. 26; 3 hrs. by snowshoe, snowing, temp. 15°; 11 speeies, 45 individuals. — Hanna and Heinz Ueberschar.

35. SPIRIT LAKE. Dec. 26; 2 mi. on foot in 2 hrs., 58 mi. by ear in 4 hrs. and 7 mi. in 1 hr. by snowmobile, temp. 20°, overeast with snow flurries, wind light, 13 in. snow; 18 species, 510 individuals. (Add: Great Horned Owl, Pileated Woodpecker, Common Raven, Evening Grosbeak, Snow Bunting). — Bill and Joyee Anaka.

36. SPRING VALLEY. Dec. 27; 28 mi. by ear and 1-1/2 mi. on foot in 5 hrs., temp. 15°, overeast with light snow, wind 10-25 mph, 2-1/2 feet of snow; 10 species, 833 individuals. (Add: Great Horned Owl, 1, Dec. 23; Rusty Blackbird, 1, Dec. 22; Common Redpoll, 15, Dec. 16). — Allan Bogdan, Larry Bogdan, Mr. and Mrs. Niek Bogdan, Gilbertha Liebelt.

37. SQUAW RAPIDS. Dec. 29; temp. -20°. hoarfrost; 5 species, 29 individuals. — Stan and Gladys Riome.

38. TYNER. Dec. 28; 4 mi. on foot and 20 mi. by ear in 5 hrs., temp. 0°, wind 5 mph; 8 species, 75 individuals. — Bob Godwin. Ken Godwin, Ken Lumbis (eompiler).

39. WASECA. Jan. 3; around yard and feeders; 11 speeies, 134 individuals. (Add: Great Horned Owl). — Christine Pike.

40. WAUCHOPE. Dec. 29; 4-1/2 mi. by snowshoe in 3-1/2 hrs., 35 mi. by ear in 2-1/2 hrs., around farmyard for 1 hr. and 20 minutes, temp. -20° to -10°, wind W at 4 mph, elear, hoarfrost, 9 in. snow; 13 speeies, 387 individuals. — Dale Hjertaas.

41. WHITE BEAR. Dec. 31; 2 mi. on foot and 10 mi. by ear, temp. -20°, elear, ealm; 5 speeies, 117 individuals. (Add: Sharp-tailed Grouse, 6, Dec. 29; Common Redpoll, 20, Dec. 29). — Oran Cates, Leroy Clark, Mike Fowler, Gary Jordheim, Sig Jordheim (eompiler), Kenny Markulla, Danny Schuler (Members of the Conservation Club).

42. WYNYARD. Dec. 24; 57 mi. by ear in 4-1/2 hrs., temp. 22°, wind W 10 mph overeast and some fog; 8 speeies, 570 individuals. — John and Sherry Gulley.

1973 N.W.T. CHRISTMAS BIRD COUNT

FORT SMITH, N.W.T. Dec. 26; 50 mi. by ear and about the town of Fort Smith in 3 hours, temp. -2°, overeast, ealm, 1 foot of snow; 7 speeies, 191 individuals, Willow Ptarmigan, 7; Rock Dove, 79; Gray Jay, 2; Common Raven, 65; House Sparrow, 14; Pine Grosbeak, 11; Common Redpoll, 13. (Add: Ruffed Grouse, 2, Dec. 24; Black-capped Chiekadee, 1, Dec. 27). — Elsie, Ernie, Jonathan and Pamela Kuyt, Sandra, Don, Jon-Liv Gaque, Brenda and Claire Beaulieu, Margaret Lepine.

* * * * *

The *perfect book has been published by the Honolulu Zoo.* The 20-page volume, "*Snakes of Hawaii*," is said to be "completely devoid of zoological, grammatical, and typographical errors." Small wonder! All the pages are completely blank. There are no snakes in Hawaii. *Conservation News*. March 1, 1974.

POPULATION STATUS AND MANAGEMENT OF TRUMPETER SWANS IN SASKATCHEWAN

by D. J. NIEMAN and R. J. ISBISTER*

Once ranging as a breeding bird over a large portion of the central Great Plains, the Trumpeter Swan has been virtually eliminated from most of its former range by destruction of habitat.[1 2 14] From a population of several dozen in 1916 this magnificant bird has made a remarkable comeback in North America and probably exceeds 4,000 individuals at present.[9 5]

In the United States, Trumpeter Swans are restricted to several northwestern states and southern Alaska. In Canada this species winters in British Columbia and breeds in small numbers in Alberta and Saskatchewan.[2 8 12] The status of the Trumpeter Swan in Saskatchewan from the first recorded sightings in the province (1914) until 1971 was reviewed in an earlier paper.[12] Since then, additional investigations have changed our knowledge of the status of this species in the province.

In 1972, the Canadian Wildlife Service implemented a program of research and management on Saskatchewan Trumpeters. Management is aimed at providing complete protection and collecting annual population data.[10 11] Investigations into breeding biology, habitat relationships, mortality, migration routes and wintering grounds of Saskatchewan Trumpeters are underway. The objective is to assist in their preservation and to expand their present breeding range in Saskatchewan.

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Methods and Objectives

To provide protection, special posters were erected around all known breeding areas, warning against the killing or molestation of these birds. These signs are maintained through twice annual checks by Canadian Wildlife Service personnel. Information provided to landowners, federal and provincial enforcement personnel and other government officials served to provide additional protection.

Annual aerial surveys have been conducted in the Cypress Hills and other areas of Saskatchewan where Trumpeter Swans have been reported during the breeding season. These surveys have provided data on the location and size of the breeding population, the number of cygnets fledged, brood movement and fall distribution.

Breeding pair surveys were carried out May 31 and May 25 and the brood surveys July 24 and August 10 in 1972 and 1973, respectively. One fall aerial survey was conducted on September 5, 1972, and a search for new breeding areas on August 10, 1973. Investigations into the breeding biology and an evaluation of habitat requirements were conducted on the ground on June 6, 1972, and May 28, 1973. Information was collected on nest location, size and construction,

Trumpeter Swan nesting habitat in the Cypress Hills, Saskatchewan. D. J. Nieman

clutch sizes and the physical characteristics of the water areas used for breeding.

Cygnets and adults (flightless during the moult) have been banded and colour-marked for the past 2 years to obtain information on mortality, migration routes and wintering grounds, so far undetermined. This information may explain, partially, why this population has not expanded in recent years. Yellow plastic neck collars and matching leg bands with identifying numbers and letters were applied in addition to the standard metal leg bands.

Results

Three Trumpeter Swan nests were located in the Cypress Hills on May 31, 1972. They were on the same areas as in 1971 — two lakes and a beaver pond. No non-breeding swans were observed during this survey.

Clutch of 6 and 7 eggs and 5 recently hatched cygnets were observed during ground investigations on June 6 and 7. On a July 24 aerial survey, broods of two, two and four were seen with the adults. We banded one adult female and four cygnets. None was colour-marked.

All 10 young and 6 adults were alive and flying on September 5. The 1972 population of 16 Trumpeter Swans in the Cypress Hills region was the same as the previous year and equal to the highest population recorded in Saskatchewan.

The Cypress Hills population dropped to two pairs in 1973. An aerial survey on May 25 was again unsuccessful in locating sub-adult swans. The reasons for this are not clear, as Trumpeter cygnets reportedly return to their natal marshes each breeding season until they attain maturity believed to be four years.[1] Ground investigations conducted on May 2 revealed two nests with 6 and 5 eggs on a lake and beaver pond used in the previous two years.

Two pairs of Trumpeters, each with a brood of three cygnets, were located during an aerial survey on August 10. On August 21, one adult female from

dult Trumpeter Swans near the nest. R. H. MacKay

ach family group and all six cygnets ere banded. These eight birds were lso colour-marked with plastic neck llars and tarsal bands. It would ap- ar that there were 10 Trumpeter wans in the Cypress Hills in the fall of 973, six fewer than the previous 2 ars.

On August 17, 1973, we found nother population of Trumpeter wans on three isolated lakes in the pen parklands between Meadow ake and North Battleford. There ere one pair of adults with a brood of o cygnets and two non-breeders, lieved to be sub-adults.

scussion

First reported in Saskatchewan in 914 and first recorded as breeding in e Cypress Hills in 1951,[13 7] this pulation of Trumpeter Swans fluc- ated between one and two pairs (plus an occasional non-breeder) until 1971.[3 6] The breeding population remained at three pairs during 1971 and 1972 when 9 and 10 cygnets, respectively, were fledged. In 1973, the breeding population dropped to two pairs. Six cygnets probably migrated south with them.

The banding and colour-marking program will hopefully reveal which factors are limiting the size of this isolated breeding population. The loss of even one nesting territory or breeding pair will seriously jeopardize the survival of this group unless there is sufficient recruitment. However, the population is not expanding and, although this species requires large breeding territories, there seems sufficient habitat in the Cypress Hills to support additional pairs.[4]

Cygnet mortality may be high during migration and on wintering grounds,

R. H. MacKay.
Newly hatched Trumpeter Swan cygnets on the nest.

or young from the Cypress Hills may be contributing to some other population. Banding and colour-marking may provide important answers.

This research indicates that differences do exist between this and other breeding populations. Saskatchewan swans have a shorter breeding season than some of the more southerly populations and clutch sizes average slightly larger. The shorter breeding season is probably a factor of the latitude of the breeding areas, and the larger clutch sizes could be an indication of unsaturated breeding habitat. Our observations have shown that Saskatchewan Trumpeters will tolerate Canada Geese and non-breeding Trumpeters on their territories and they appear to lack the brood attentiveness exhibited elsewhere.

Prior to 1973, only two relatively stable breeding populations of this species were known in Canada — at Grande Prairie, Alberta, and in the Cypress Hills of Saskatchewan.[12] The discovery of breeding swans in west-central Saskatchewan indicates that additional suitable habitat exists and that perhaps recruitment from the Cypress Hills flock to other areas of the province is occurring. Continuation of the colour-markin scheme could substantiate this.

The Canadian Wildlife Service i presently considering the possibility o a transplant program involving th relocation of Trumpeter Swans fro established breeding populations int suitable habitat in Saskatchewan However, a successful introductio program should not be implemente until basic population data, includin a determination of the winterin grounds, migration routes and factor limiting the population size of th existing swans in Saskatchewan ar known. A successful introductio program also would depend upon th protection given these birds o breeding and wintering grounds.

Acknowledgements

The authors wish to express thei gratitude to the Jim Leslie and C Harley Bryan families of the Cypres Hills for their genuine hospitality an full cooperation in our field activitie Their special interest in the Cypres Hills Trumpeter Swans, which has er sured the protection of these birds o their breeding areas, is deeply ap preciated.

Paul Pryc
Trumpeter Swan cygnet with plastic colla

Special thanks go to John Worthington, Royal Canadian Mounted Police, for assistance during several aerial surveys. We gratefully acknowledge the contributions of Cliff Matthews, Canadian Wildlife Service, Ross Hanson, U.S. Bureau of Sport Fisheries and Wildlife, and Wayne Renaud who were instrumental in our discovery of the Trumpeter breeding area in west-central Saskatchewan.

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MORE HUDSONIAN GODWITS IN SASKATCHEWAN

by WAYNE C. HARRIS*

The Hudsonian Godwit has been considered an uncommon migrant in Saskatchewan. Until 1969 it was listed in the Red Data Book as being a rare species.[3] Even before they were removed from the rare and endangered species list, Hudsonian Godwits migrated through Saskatchewan, but always in small numbers and infrequently. Most previous dates are of spring migrants. Fall migrants were considered rare. In fact, until 1970 numbers of Hudsonian Godwits over a flock of 15 had not been reported during fall migration. In 1970 and 1971 Gollop reported concentrations of Hudsonian Godwits for July and August and summarized all previous fall records from the Prairie Provinces to central Texas.[1] The following note reports more recent fall observations of Hudsonian Godwits in Saskatchewan.

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Hudsonian Godwits Fred W. Lahrm

In 1972 concentrations were not so spectacular as in 1971. On July 20, J. B. Gollop counted 89 Hudsonian Godwits with 122 Marbled Godwits on Porter Lake (11 miles east-northeast of Saskatoon) and on August 20, Wayne Renaud counted 67 Hudsonian Godwits with 176 Marbled at the same locality.

In 1973, numbers reached the highest ever on Porter Lake. The author and V. J. Lieffers counted 850± Hudsonian Godwits with about 200 Marbled Godwits, on July 6. By July 9 their numbers had increased to 1,150± individuals. On July 14, in the early morning, Gollop counted 133 Hudsonian with 36 Marbled, but by mid-afternoon of the same day numbers had jumped to more than 600 when counted by S. J. Shadick. Shadick visited Porter Lake again on July 18 and estimated 300 remaining Hudsonian Godwits. On July 22, Gollop counted 120± with 45± Marbled Godwits. By this time the lake was almost dry. The godwits were last seen here on July 24 when the author, D. G. Hjertaas and J. E. Polson counted 111 Hudsonian with 30 Marbled. On July 28, Porter Lake was completely dry and no godwits remained.

Until 1973, Porter Lake was the only area in the entire Great Plains region (Saskatchewan to Texas) where over 50 Hudsonian Godwits had bee seen and reported. This concentratio on a single area is amazing; did all the godwits migrating from the arcti breeding grounds via the "plain route" find this area? Only an oc casional bird or more infrequently flock of 20 was recorded anywher else on the Great Plains. In 1973, fo the first time, numbers of Hudsonia Godwits were reported elsewhere tha at Porter Lake.

At Foam Lake (approximately 12 miles east of Porter Lake), on th evening of July 17, a flock of 135 Hud sonian Godwits, associated with 3 Marbled, were counted by the auth and V. J. Lieffers while employed b the Canadian Wildlife Service. Just hours earlier this particular flat ha not a single godwit. By mid-mornin of the next day their number had rise to 394 with about 70 Marbled.[2] W then left the area and no further obse vations were made.

On July 28, 1973, the author ar Wayne Renaud found a loose flock 78 Hudsonian Godwits with 45 Ma bled, on a small lake, locally calle Catherwood Lake, approximately miles south of Perdue (approximate 50 miles west of Porter Lake). Th next day 4 Hudsonians with 5 Marbled Godwits and 5 Long-bill Curlews were seen on Vanscoy Lake Perdue.

Other observations of Hudsonian Godwits during 1973 included 12 with 30 Marbled counted by Gollop at Blucher (about 15 miles south-southeast of Porter Lake) on July 28 and 7 on August 3, again at Blucher. The author also saw a single bird at St. Denis (10 miles east of Porter Lake) on August 21.

The peak in godwit numbers at Porter Lake seemed to be on or around July 9. After this date a steady decrease occurred. At the same time smaller concentrations began appearing at other locations. Were the birds at Porter Lake dispersing to other locations? If this were true, several interesting questions arise: 1) Why did they disperse in several directions instead of all going approximately the same direction as they apparently had done in coming to Porter Lake? 2) Why did they not continue southward?

Another interesting point arises when considering the July 14 counts at Porter Lake; in the early morning only 133 Hudsonian Godwits were observed compared to more than 600 in the afternoon. This seems to indicate that more birds had arrived in the area presumably from the north. If this were true, then migration was still under way and flocks seen at other locations could easily have been new migrants. The fact that godwits were at the same latitude and 175 miles apart (Perdue to Foam Lake) seems to favour the theory that these birds were new migrants rather than birds dispersing from Porter Lake.

If so, then the number of birds migrating through Saskatchewan, in 1973, numbered over 2000. This probably represents approximately 1% of the estimated population of Hudsonian Godwits in North America. A. Hagar in a letter to J. B. Gollop, dated August 10, 1971, estimated the total population of Hudsonian Godwits at 30,000 absolute minimum, more probably 40,000 to 50,000 individuals.

The habitat used by these birds appears to be extremely variable. Gollop described Porter Lake as "an alkali flat about two miles long and averaging less than half a mile in width. It does not always have water through August . . . The lake is more than 99% devoid of emergent (and probably submergent) vegetation".[1] It is an example of an extremely alkaline lake. Catherwood Lake is much less alkaline. It is about 2 miles long and averages about 500 yards in width. The dominant vegetation was Water Milfoil (*Myriophyllum exalbescens).* The water was very shallow and the milfoil was a mat in both water and along the shore. Foam Lake, on the other hand, is entirely different. It is a large lake (approximately 15 square miles) choked with cattail (*Typha latifolia*) and bulrush (*Scirpus spp.*), with the deeper, centre portion being open water. It has a very low salinity. The site where the godwits were found was again a flat open area, the only one on the lake. It was about 1-1/2 acres in size and had been formed by a mound of dirt pushed up to form a dike between this area and the main lake in a year of low water. When water levels are normal this pond is part of the lake. This year by mid-July it contained water about 6 inches deep at its deepest point. The dominant vegetation in this small area was Needle Spike-rush (*Eleocharis acicularis)* which formed a mat both under water and on the shoreline. This diversity of habitat suggests that habitat is not likely the only factor determining where godwits stop. Why they are not seen elsewhere in fall between here and Texas is a good question. Possibly they do stop at other small lakes on the plains which are not frequented by competent observers at the appropriate time.

I would like to thank C. S. Houston and W. E. Renaud for their comments on the manuscript, the Canadian Wildlife Service for permission to use data collected during the past summer and J. B. Gollop for his assistance in obtaining data.

[1]GOLLOP J. B. 1971. *Summer records of Hud sonian Godwits near Saskatoon, Saskatchewan* Blue Jay 29(3):132-134.

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[3]VINCENT J. 1966. *Red Data Book, Volume The Aves.* International Union For Conse vation of Nature and Natural Resources.

ROCK WREN AT SPRAGUE, MANITOBA

by DAVID R. M. HATCH and HERBERT W. R. COPLAND*

On the morning of October 11, 1972, a Manitoba Museum of Man and Nature field party consisting of Dr. Robert Wrigley, Jack Dubois, Calvin Cuthbert and the authors identified a Rock Wren (*Salpinctes obsoletus*) at the farmhouse of Dr. George Lammers, 9 miles north of Sprague, Manitoba. The junior author's attention was attracted by the melodious song, which was unfamiliar to him, however he did not locate the bird. Approximately one hour later Cuthbert observed the bird and called the authors. The bird was wary but reluctant to leave the immediate locale of the farm buildings. Cuthbert and the authors, using binoculars and a telescope obtained excellent observations of the wren and the following details were noted. The bird was the size of a White-breasted Nuthatch. The tail, which was finely barred with grey and brown throughout its length, had a broad terminal band of black, bordered on the outside by orange buff. Besides th key distinguishing feature, the rum was rusty, the breast finely streake the crown and back grey-brown ar the bill about 1/2 inch long and curv slightly downward.

The bird kept returning to a pile scrap lumber; however, it als frequented a derelict binder and tw deserted buildings. All five observe had the bird under observation ar were able to verify details. The seni author was previously familiar wi the species having observed Ro Wrens in Saskatchewan and t western United States. The bird, bei seen so far east of its normal range ar at such a late date, was collected substantiate the presence of the speci in the province and is specimen N MMMN 3236 in the study skin colle tion of the Manitoba Museum of M and Nature. It proved to be an adu male. Godfrey in listing the e tralimital records for this species Canada gave Churchill as the mo easterly record.[3] Since th publication, there have been two C

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R3B 0N2

tario reports. One of which was at Ear Falls and, like the most recent Manitoba record, the specimen was obtained in October, 1972, (Laura Howe, pers. comm.). The other was of a specimen collected at Port Weller on Dec. 7, 1964.

There are three additional records of Rock Wrens in Manitoba. One was initially seen on June 29, 1956, at Churchill, Manitoba, by Dr. David Sergeant and John Crosby.[1] Crosby saw the bird subsequently on July 4 and July 7 and Eva Beckett saw and heard the bird daily between July 5 and July 23. On July 18, two Rock Wrens were seen by Beckett. She observed one of the birds carrying food on August 1 and August 2. "On August 3 the bird appeared to be in a state of great anxiety at Beckett's approach, but no young were found. No wrens were seen in the area on August 4 or thereafter."[1] Although no actual nest was found, there is every indication the birds were nesting (pers. corres. Crosby and Beckett, 1972).

Rock Wrens were again recorded at Churchill when a "pair returned to Churchill on 23 May, 1957, but were seen only once. This disappearance may have resulted from a severe snowstorm a few days later."[4] This observation was originally made by Mike Stefishyn and confirmed by Mrs. Eva Beckett. Mrs. Beckett's records show the date was May 24, and not May 23 as reported by Jehl and Smith (Beckett, pers. corres. 1973).[4]

On May 7, 1970, Mr. and Mrs. Angus H. Shortt saw a Rock Wren in their houseyard at 101 Morier Avenue, Winnipeg, Manitoba. Shortt wrote: "it was busily engaged in probing openings and crevices in a pile of lumber stacked against our garage. Movements were typically wren-like with at times, the agility of a nuthatch . . . The outstanding feature was the bold terminal bands of buff (almost an orange-buff) and black on the tail."[3] This bird was observed for approximately 8 minutes through 8X binoculars at distances of 20 to 50 feet.

The Rock Wren is a western species which normally frequents hot, dry, rocky habitat; however, the Manitoba records are all from areas atypical of the bird's normal habitat requirements. The species has now been recorded four times in Manitoba (Fig. 1) and on the basis of the above records must be considered an occasional wanderer to the province.

[1]CROSBY, J., and E. BECKETT. 1957. *Rock Wren at Churchill, Manitoba.* Can. Field-Nat. 71:82-83.

[2]GARDNER, K. 1970. *Wild Wings.* Winnipeg Tribune. May 30, 1970.

[3]GODFREY, W. E. 1966. *The birds of Canada.* National Museum of Canada. Bull. 203, Biol. Series No. 73, Ottawa, 428 pp., 69 colour plates.

[4]JEHL, J. R. Jr. and B. A. SMITH. 1970. *Birds of the Churchill region.* Special Publication No. 1, Manitoba Museum of Man and Nature, Winnipeg, Manitoba.

Gary W. Seib

Western Canada Violet

BLUEBIRD PROJECT AT LANGHAM

by JAKE KARGUT*

Three miles directly north of Langham where the road joins a little-travelled winding trail eastwards, a view of the North Saskatchewan River has few equals for beauty. Level pastureland gives way to rolling river banks. Here on the approach of spring, Mountain Bluebirds turn the snow-free areas blue with their numbers. For this is now the Langham project, the heart of which extends east one mile over a rocky winding prairie trail, then north for one mile of graded road and another two neglected miles. The area is, for the most part, native pasture; stones in piles and along fences and abandoned building sites are mute reminders of unrewarded effort by early settlers.

Bluebirds were once seen here each spring, but fewer in number with each passing year, until there came a time when there were none. Could the bluebirds be induced to return? The efforts of men like Dr. Lane, Lorne Scott and Dr. Houston were known. A quotation attributed to Luther seemed to fit the prospect: "A good work should seldom be undertaken or accomplished through wisdom or foresight — everything must be accomplished in the midst of error or ignorance."

A heap of salvaged tongue-and-groove siding and rough one-inch sheathing would be a start. The twine-box on a derelict binder suggested the size of a bluebird entrance. An afternoon of trial and error resulted in a nesting-box considered adequate and which with minor changes is still used. The goal would be one hundred houses in the winter of 1970-71.

The important factor in mounting them was the choice of sound fence-posts, long enough to leave the upper strand of wire clear in case of fence

Mountain Bluebird at one of Jake Kargut houses.

Robert J. Lor

repairs. The number per mile depe ded on available posts, with an averag of 10 per mile. The territoral theor wasn't taken too seriously and, in ar case, it would be put to the test (sinc most other trails limit boxes to thr or four per mile — Ed.). In tot ignorance, nesting boxes were place in scrub, against poplar bluffs, ar along fence lines with no road acces Some could not be located when hi den by new growth of foliage. Th errors were dearly paid for.

The bluebirds arrived in 1971 ar soon settled down to the task housekeeping. There were 13 nesti pairs with a total of 69 eggs and youn

In 1972, another 100 units were a ded, including 3 miles of trail in t sandhills south of Langham, an exte sion east and north and a third we along Highway 5 to Borden. Forty-fi pairs produced 262 eggs and young.

In 1973, another 135 units filled t gaps between Langham and the san hills, where my trail joined an exte sion of the Saskatoon Juniors' tra and completed a total of 69 miles Highway 5, from Saskatoon Denholm. There were 55 pairs bluebirds with 253 eggs and young.

Ten miles of quiet trails am pasture-land, away from main hig

*Langham, Saskatchewan.

ways, accounted for all but one pair of bluebirds. Yet vandalism is the factor that threatens the whole project. Of the first 12 nesting units, half were destroyed without ever being used. Of 27 units in the sandhills, only 15 remained at the end of the second year. Altogether, 35 units have disappeared without trace. Along 10 miles of highway, the tops were systematically removed from every unit. Endless repairing has been necessary. Bare earth where there was grass; a box with eggs abandoned; a box twisted out of line and the piteous remains of six young swallows in the adjacent box; a dead bluebird beside her three doomed young. Human harrassment is no small factor but competition from House Sparrows is also important.

In September, I returned to the bluebird trail, abandoned by its occupants. There was a feeling of melancholy, longing and loneliness. Once again the recurring question "Where have all the bluebirds gone?" Then a turn in the road — and ahead was a sight that only a birder can appreciate: bluebirds, my bluebirds, adults and young on posts and wire as far as the eye could see! How will those darting, hovering, chittering bits of life survive the long way ahead? May all the days and nights be kind to them until their return.

Throughout the ages, man's deepest aspirations and longings, as expressed in religion, art, literature and music have centered around what my modest bluebird venture has left me with this day. With love and effort expended in the preservation and perpetuation of life and beauty, there may have been found a faint glimmer of immortality.

He who from zone to zone
Guides through the boundless sky
Their distant flight
In the long way that I must tread alone
Will lead my steps aright.

INDIAN HEAD BLUEBIRD TRAIL IN 1973

by LORNE SCOTT*

Over 2,000 miles were driven along the bluebird trail between mid-May and mid-July of 1973, and 685 Mountain Bluebirds, 15 Eastern Bluebirds and 1,800 Tree Swallows were banded.

Perhaps the highlight of the year was having three pair of Eastern Bluebirds nesting. Two pair raised five young each and three were fledged from the third nest. This is the largest number of Eastern Bluebirds I have had nesting in one year. Two pair nested in 1966 and again in 1969. With the exception of 1971 Eastern Bluebirds were not observed during the other years.

Disaster struck the Mountain Bluebirds in early June. A two-day rain with winds up to 70 mph, resulted in up to 80% of the nests in some areas being deserted. Many nests containing eggs and newly hatched young were abandoned. Over half of the bluebirds renested after the storm, but some lost their nest boxes to the more aggressive Tree Swallow.

One Mountain Bluebird nest contained nine eggs when checked in June. A later visit to the nest revealed eight half grown young and the one egg which failed to hatch. This is the first time that I have ever found nine eggs in a Mountain Bluebird nest, and only the second time in 11 years that eight young have been raised in one clutch.

House Sparrows continue to be very destructive along the trails. At least 18 adult Mountain Bluebirds and 57 adult Tree Swallows were killed by sparrows in the houses during 1973. Some boxes contained up to four dead adult Tree Swallows, while on three occasions both male and female

*Indian Head Saskatchewan.

bluebirds were found dead in nest boxes beneath sparrow nests.

On one occasion I saw a male House Sparrow leave a nest box containing six young bluebirds. While I approached, the male bluebird flew nervously about. On removing the box top I discovered the female and one of the young dead. Two other young had several feathers missing from around their eyes and were bleeding from the bare skin. I took the remaining five young and put them in three other nest boxes with young Mountain Bluebirds about the same size. I am happy t report that they were all successfull fledged. Fortunately, House Sparrow seldom attack young bluebirds an swallows in the nest, as they are bus raising their own families at that tim of year.

Tree Swallows had a successfu nesting season. More than 180 of th 200 houses set out in the spring 1973 were occupied by Tree Swallow

The following table gives the num ber of Mountain Bluebirds and Tre Swallows retrapped in 1973.

MOUNTAIN BLUEBIRD

Year Banded	No. Retrapped in 1973
1969	1
1970	3
1971	7
1972	22
Total	33

TREE SWALLOW

Year Banded	No. Retrapped in 1973
1969	3
1970	6
1971	16
1972	38
Total	63

CALGARY BLUEBIRD TRAIL

by HAROLD W. PINEL*
and CAROL J. ROBINSON**

In March and April of 1973, the Calgary Bluebird Trail was established by the authors. We constructed 191 nesting boxes with the help of members of the Calgary Field Naturalists' Society. The Trail begins approximately 1 mile north of Turner Valley, Alberta, and continues in northerly direction skirting t western city limits of Calgary, th passes through Cochrane and Cremo to Elkton where it turns eastward a terminates about 11 miles east Didsbury (Fig. 1). Total length about 115 miles. The boxes were ere ted on fenceposts at approximately mile intervals.

The houses were set up betwe March 29 and April 5, 1973. Eve house was checked four tim throughout the spring and summer a the contents of each were record Houses numbered 1 through 60 we inspected on May 23, June 11, June and August 1, while houses 61 throu 191 were checked on May 24, June July 4 and August 3.

RESULTS — Of the 191 hou

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Calgary, Alberta.

Table 1. Summary of Nesting Success by Species, Calgary Bluebird Trail, 1973. (Numbers in parenthesis are losses from the previous stage.)

Species	*Nests started*	*Nests completed*	*Eggs laid*	*Eggs hatched*	*Young fledged*	*Young left nest*
Mountain Bluebird	30	30 (0)	152	113 (39)	113 (0)	113 (0)
Tree Swallow	91	88 (3)	516	374 (142)	294 (80)	293 (1)
House Sparrow*	25	25 (0)	111	40 (71)	2 (38)	0 (2)
House Wren	10	10 (0)	32+	26+ (6)	22+ (4)	22+ (0)
Black-capped Chickadee	1	1 (0)	7	0 (7)	0 (0)	0 (0)
TOTAL	157	154 (3)	818+	553+(265)	431+(122)	428+(3)

*Destroyed by investigators.

erected, 34 were vandalized before nesting began, 16 after nesting started and 23 were empty on all visits. In the 118 houses used, 154 of 157 clutches were completed. Eighty-five percent of the houses available, i.e., excluding 34 vandalized before the nesting period, were occupied. The majority of the 50 vandalized houses were the result of road construction in the area between Cochrane and Bottrel. The other area of heavy vandalism was along the southwestern city limits of Calgary. It is interesting to note the difference between the number of houses used (118) and the number of completed nests (154). This difference is due to a) the 16 houses vandalized after nesting had begun, and (b) 20 houses in which second broods occurred or in which more than one species nested.

Table 1 presents the nesting success and analysis of losses at different stages. In its first year the trail had 30 Mountain Bluebird nests which is excellent, especially in view of the number of houses. The average clutch size for the Mountain Bluebirds was 5.07, while it was 5.75 for Tree Swallows. The largest clutch was 8 eggs (in four boxes) for swallows and seven eggs (in four boxes) for bluebirds. In five nestboxes, there was evidence of two or more broods by the same species. Two were occupied by Mountain Bluebirds, one by Tree Swallows and two by House Sparrows. In one house a different clutch of sparrow eggs was found on each of four visits. Two species nested in the same house in 15 instances, as follows: sparrow then swallow, 5; sparrow then wren, 1; sparrow then bluebird, 1; chickadee then wren, 1; bluebird then wren, 2; bluebird then swallow, 2; swallow then bluebird, 2; swallow then wren, 1. In 7 of these instances House Sparrow nests had been destroyed on previous visits.

All House Sparrow nests, eggs, and young were destroyed. The pair of Chickadees was unsuccessful due to an invading pair of House Wrens. A nestbox containing six House Wren eggs was vandalized and four young were found dead in another box, apparently as a result of desertion by the adult birds. The only losses by Moutain Bluebirds occurred prior to hatching of the eggs. A few eggs were infertile, while other losses were due to a strong wind storm which damaged some boxes and to competition with Tree Swallows for the houses. Tree Swallows suffered the greatest losses. 142 eggs failed to hatch due to desertion by the adults because of highway construction and, in the Bottrel-Didsbury area, because of flies. Eighty young failed to fledge, all as a result of flies. Both adult flies (presumably blow flies) and maggots were noticed in and on the young.

Throughout the length of the trail,

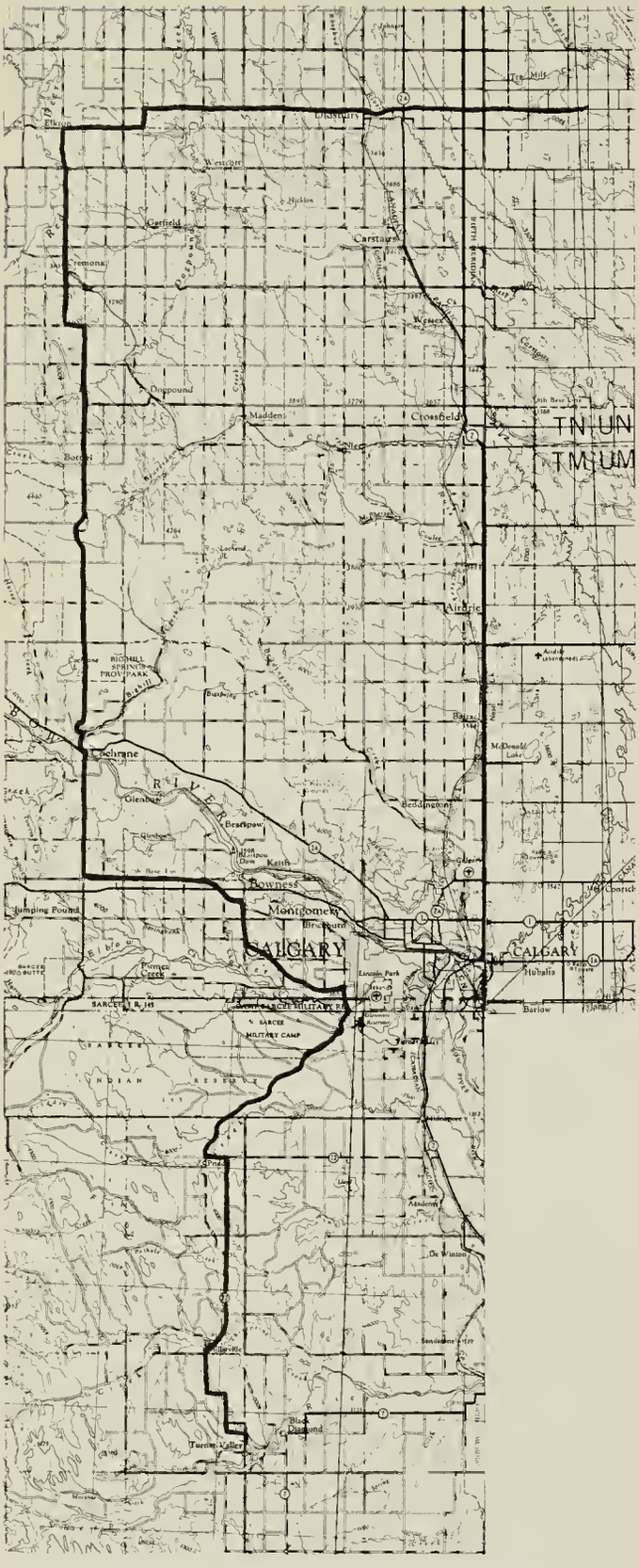

Figure 1. Route of Calgary Bluebird Trail

certain areas were more productive than others for bluebird numbers. Turner Valley to Calgary and Bottrel to Elkton were the areas of highest bluebird density. The areas from near Calgary to Bottrel and from Elkton to east of Didsbury had only one pair of bluebirds between them and this pair did not nest successfully. It is interesting that these unproductive areas are cultivated lands with very few trees, whereas the productive areas were characterized by scattered aspen groves.

INTERESTING PRINCE ALBERT BIRD RECORDS

Compiled from the notebooks of the late E. Derek Beacham

by MARY I. HOUSTON*

†**Harlequin Duck**: A male remained at the mouth of the Sturgeon (Shell) River, 4 miles west of Prince Albert where it was observed by Frank and Elsie Morton from May 23-25, 1966.

Turkey Vulture: One sighted at Round Lake, northwest of Prince Albert, June 22, 1968 (EDB).

Osprey: One observed by Frank Morton, October 24, 1969.

†**Peregrine Falcon**: One observed at close range, flying 10 feet above the river bank near the Prince Albert airport on the morning of September 2, 1969 (EDB).

American Golden Plover: Seen in greater numbers than previously recorded for Prince Albert: seen daily from May 26 to June 1, 1969, with over 300 on the latter date; also four on September 20, 1969 (EDB).

Black-bellied Plover: Two records of eight and nine birds on May 27 and 28, 1969 (EDB).

Ruddy Turnstone: One seen May 28, 1969 (EDB).

†**Whimbrel**: Five individuals were observed at length at the edge of a slough, 8 miles north of Prince Albert. They landed at 9:40 a.m. on May 28, 1969, were seen again that afternoon and the following evening and finally at 4:30 p.m. on May 29 (EDB).

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†**Sanderling**: Two in winter plumage were sighted on rocks in the river near the airport on September 21, 1969, with a single bird present in the same place Sept. 23 (EDB).

†**Glaucous Gull**: Two first-year birds were seen at the Saskatchewan penitentiary, October 23, 1969. One was collected the next day for the Saskatchewan Museum of Natural History and the other remained through October 27 (Beacham, *Blue Jay* 28: 25, 1970). This was the second specimen and only the fourth record for Saskatchewan.

Sabine's Gull: An immature was carefully studied for over one hour on a sandbar in the river near the airport, September 21, 1969. It was first seen at 5:40 p.m. resting on the sandbar with five Ring-billed Gulls. Its black bill, black legs and solid black wing tips were clearly seen. Twice it raised its wings to display its white tail and black terminal "V". When it flew its triangular white wing patches were readily visible. (EDB; Hatch, *Audubon Field Notes* 24: 63, 1970).

Whip-poor-will: Heard at Round Lake, northwest of Prince Albert, on June 15, 22, 29, 30 and July 1, 5, 6, 16, 19 and 25, 1968; it was seen with a flashlight at 11 p.m. on June 21 (EDB).

Great Crested Flycatcher: One seen at Round Lake on June 15, 16, 17, 22 and 29 and two on July 1, 1968. Two were recorded at Clouston hamlet June 29, 1969 (EDB).

Rough-winged Swallow: One was seen northeast of Prince Albert, May 19, 1969 (EDB). This appears to be the furthest north record for Saskatchewan.

White-breasted Nuthatch: One visited the feeder of Frank and Elsie Morton in Hazel Dell subdivision, Prince Albert, October 12 through December 12, 1969, another was seen in Little Red River Park on November 2, 1969 (EDB).

Mockingbird: One was seen by Mrs. Don Austin on November 17 and by Don Austin on November 23, 1969, in their yard at the corner of Fourth Ave. and 20th St. West, Prince Albert. Beacham had a glimpse of what may have been the same bird, flying north towards the river from the corner of Eighth Ave. and Seventh St. East on December 4, 1969. (F. H. Brazier, *Blue Jay* 22: 68, 1964, listed two records by Auguste Viala for this area: October 5 to December 29, 1962, at Prince Albert, with the bird found dead January 2, 1963; and another August 10, 1963 at St. Louis. These were considered to be the northernmost records for the continent.)

Philadelphia Vireo: A pair were observed building a nest, 30 feet up in an aspen at Round Lake, northwest of Prince Albert, on June 2 and 9, 1968, but the nest was damaged by high winds and was deserted on June 15. This is the first nesting attempt recorded in the Prince Albert area. On June 15, two were seen and another heard, all within one mile (EDB).

Chestnut-sided Warbler: Recorded at Round Lake, May 27 through June 22, 1968, with a singing male evidently on territory. In 1969, single males were sighted at Round Lake on May 25 and in the Little Red River Park on June 4 (EDB).

Bobolink: Up to five, all males, were noted at Clouston on May 26 and June 2, 1969, while two males were seen on June 24, 1969 (EDB).

Red Crossbill: Seven records between March 4 and June 7, 1968, including a flock of 200 feeding on spruce cones on May 10, and three records between November 22 and December 21, 1969 (EDB).

Lark Sparrow: One seen May 26, 1969 (EDB).

†**Oregon Junco** (now considered a subspecies of the Dark-eyed Junco): Two males and two females were seen April 19, 1968, one on September 23 and one October 6, 1969 and two on April 10, 1970 (EDB).

In addition to detailed records of 197 species observed in the Prince Albert area, Beacham observed another 11 species elsewhere in

Saskatchewan, including three Whooping Cranes 2 miles west of Marcelin, April 20 and 21, 1968.

†Indicate the ten species new to the Prince Albe area since publication of Houston and Stree *Birds of the Saskatchewan River* in 1969. Th brings the area total to 240 species.

SASKATOON BLUEBIRD TRAIL — 1969 - 1973

Compiled by DAVID HOUSTON*

The following table summarizes data on species and numbers of occupant broods and banded birds for the Saskatoon Bluebird House Trail for the last years.

	1969	1970	1971	1972	1973
Total houses	207	(368)	(412)	(410)	(430)[1]
No. in study area	(115)	182	208	216	224
Tree Swallows	128	130	172	161	147
Mountain Bluebirds	3	8	12	25	35
House Wrens	2	0	0	2	2
House Sparrows	1	11	17	48	52[1]
Total occupied	134	145	191	213	214
Intact, empty	11	15	12	2	6
Damaged, empty	62	22	5	1	4
Used by two species	0	4	10	21	24[2]
Occupancy rate	65%	80%	91%	99%	95%
Tree Swallow					
Young banded	176	266	558	596	334
Brood size	4.5	5.83	5.64	6.08	5.39
Mountain Bluebird					
Young banded	9	18	45	135	126
Brood size	4.50	6.00	5.00	5.87	4.50
Houses - 0 brood fledged	—[3]	—[3]	7	2	13
Houses - 1 brood fledged	—	—	3	16	19
Houses - 2 broods fledged	—	—	3	7	3

[1]After the removal of 30 houses used by House Sparrows previously.

[2]Including one Tree Swallow — White-footed mouse nest.

[3]Late visits for second nests not made.

*863 University Drive,
Saskatoon, Sask.

* * * * *

The Canada Jay's "nickname", whisky-jack, and sometimes whisky-joh comes from the Cree word for him, *weskuchanis*, meaning little blacksmith (fro the bird's sooty color).

Common Merganser

Bob Mitchell

SCARLET TANAGER REPORTED AT KATEPWA

by MANLEY CALLIN*

Two observations in 1973 of this are and beautiful visitor from the outheast have been brought to my at- ntion. The details are as follows:

On May 21, 1973, Bernard De Vries f Fort Qu'Appelle was driving along he highway a short distance east of the illage of Katepwa when he saw a right red bird at the roadside ahead. le immediately slammed on his rakes and quickly realized that he as watching a male Scarlet Tanager nd another bird which was apparently he female. As the birds flew leisurely om one roadside shrub to another, ernie slowly moved the car ahead nd at times was within 15 or 20 feet om them. He states that he followed em in this manner for several inutes before they disappeared into e dense thickets lining the roadside.

On May 28, 1973, Margaret Belcher ndly mailed a note to me to the effect at Elizabeth Cruickshank had otified her that Larry Shaw had cently seen a Scarlet Tanager at atepwa. By telephone and by rrespondence Larry advised me that May 22, 1973, he was driving along the highway a short distance west of the village of Katepwa (north of the Salter's Beach cottages) when he saw a flaming scarlet bird by the roadside. He stopped immediately but the bird flew into the shrubs. As he waited, the bird re-appeared and he had a perfect view as only the width of the road separated them.

The observations by De Vries on May 21 and by Shaw on May 22 were only a short distance apart and this strongly suggests that they had both seen the same bird.

We wish to express our appreciation to those who were involved in the reporting of these records. It would also be appropriate to mention that Larry Shaw is a brother of the deceased Cliff Shaw of Yorkton, whom a large number of members of our Society will remember with affection.

Readers are referred to a review of Scarlet Tanager Records in Saskatchewan by Margaret Belcher in the September, 1965, *Blue Jay* (p. 117-119).

ort Qu'Appelle, Saskatchewan.

SUMMER FLOCK OF COMMON LOONS IN MANITOBA

by ROBERT W. NERO*

Recently, while examining files of the Manitoba Department of Mines, Resources and Environmental Management, I found an unpublished record of a large flock of Common Loons. In view of the considerable interest in the phenomenon of summer flocking in this species (*Blue Jay*, June and December, 1972) this information is worth recording.

Daniel Bushree of Wayne, Michigan, reported that while on a fishing trip he observed and filmed 250 or 300 loons in one flock in the

*546 Coventry Road,
Winnipeg, Manitoba.

southwest corner of Second Cranberry Lake on June 25, 1962. This is less than 25 miles southwest of Flin Flon. As noted above, large numbers of Common Loons have been seen in summer within 50 miles of Flin Flon in 1943, 1946, 1963, 1970, 1971 and 1972. Bushree's record provides further evidence that the lakes in this region attract large numbers of loons.

In correspondence with Bushree dated August 27, 1962, C. H. D. Clarke, then Chief of the Ontario Fish and Wildlife Branch, stated: "During the summer months, loons may be seen along the Hudson Bay coast in groups of ten and fifteen, but none of us has noticed any flocks as large as two hundred and fifty to three hundred birds. Since the mature male and female birds both engage in nesting and brooding of young, it is probable that the birds you saw were non-breeding birds. I do not believe that we are entirely sure at what age the loon becomes active in breeding, but it is possible that they do not breed until their third or fourth year of life and that the flocks of loons which are seen are non-breeding birds of one and two years. During the early spring there are large flocks of loons on the southern portion of Lake Huron but these are birds seen in migration. In addition, the same flocks occur occasionally during the fall."

ALBERTA ORNITHOLOGICAL RECORDS COMMITTEE

The Federation of Alberta Naturalists are pleased to announce the establishment of the Alberta Ornithological Records Committee under the chairmanship of Dr. W. Ray Salt. The Committee is composed of seven members, five from Alberta and one each from British Columbia an Saskatchewan (Dr. C. S. Houston The Alberta members will constitu the main working group of the Co mittee, with the out-of-province me bers being called upon to provide opinion on submitted records wh required.

The Federation believes that t Committee will fill a need and w provide a degree of authenticity records of sighting and breeding birds in Alberta. We wish to encoura Albertan naturalists and visitors to o Province to submit details of obse vations of species of birds seen various areas of Alberta and especial rare and unusual species of birds.

There are two main functions of t Alberta Ornithological Records Co mittee (AORC):

1. The AORC will serve as repository for records of birds fro any and all parts of Alberta. The Co mittee welcomes reports on Alber birds in any form but a report for called by the Committee an Area Li will be printed and will be availab for distribution early in 1974. A records should be sent to: T Secretary, Alberta Ornithologic Records Committee, Provinci Museum and Archives of Alber 12845 - 102 Avenue, Edmonto Alberta, T5N 0M6.

NOTE: It should be emphasized t this form, the Area List, is not inte ded to replace, nor to be used as a su stitute for, the individual reco cards currently being used by sever Societies of Naturalists in Alberta.

2. The AORC, when requested do so, will examine the documentati of records of rare and unusual spec of birds in Alberta. When serving th as an adjudicating body, the Comm tee will place each record in one of t following categories: I. Substantiat Record, II. Documented Observatio III. Documented Nesting Record, I Unsubstantiated Observation, and w advise the observer of its decision.

A list of species and the zones of t Province in which a record would considered unusual will shortly published by the AORC.

SASKATCHEWAN CHRISTMAS MAMMAL COUNTS, 1973

Compiled by WAYNE HARRIS*

This is the beginning of what I hope will become an annual feature in the *Blue Jay*. This year as usual, a few people submitted mammal observations with their Christmas Bird counts. These observations are normally never used and as these would be a valuable addition to our knowledge of Saskatchewan mammals it is hoped that Christmas Mammal Counts will become as popular as the bird counts.

Although mammals, especially the smaller ones, are seldom observed, this may at least serve as an indicator of population trends in some of our larger mammals.

This year observations were submitted from 8 localities and represented 11 species. The only unusual sighting was that of a Gray Squirrel which was visiting a bird feeder daily at Wauchope. For weather, coverage and participants, please refer to the Christmas Bird Counts elsewhere in this issue.

	Gardiner Dam Dec. 27	Kutawagan Lake Dec. 29	Last Mountain Lake Dec. 15	Luseland Dec. 22	Maidstone Ferry Dec. 22	Paradise Hill – Ministikwan Lake Dec. 24	Raymore Dec. 28	Wauchope Dec. 29
ed Fox			1		*		*	
oyote	3				1			
easel sp.	*				*(5)	*(4)	*(3)	
link			*					
ynx					*(1)			
hite-tailed Jackrabbit	*	8	1	2	*		2	
nowshoe Hare				1	8	7	11	
ed Squirrel					3	4		
ray Squirrel								1
rcupine			1	1	*(3)			1
hite-tailed Deer			*		*	1	8	

dentified by tracks (number of animals by tracks in parentheses).

ox 93, Raymore, Sask. S0A 3J0

* * * * *

It is the part of wisdom never to revisit a wilderness, for the more golden the ly, the more certain that someone has gilded it. *Aldo Leopold*. Sketches from ere and there.

Porcupine

Lorne Sc

Porcupine tracks in snow

Lorne Sc

Blue Ja

BOWHEAD WHALES IN THE BEAUFORT SEA

by ERNIE KUYT*

During aerial surveys for sea ducks n May and June of 1972 and 1973, our flights followed the major ice leads n the southern part of Beaufort Sea. This provided an opportunity to observe the large mammals occurring along the leads. We saw Polar Bear *Thalarcticos maritimus),* Ringed Seal *Phoca hispida),* Beluga *(Delphinapterus leucas)* and Bowhead Whale *Balaena mysticetus).* Two or three owheads were seen on June 8, 1972, n deep water between Baillie Island nd Banks Island (approx. 71°N., 27°W.). Between three and five owheads together were sighted on eptember 13, 1973, in ice-free waters bout 50 meters deep (hydrographic harts, Canadian Hydrographic Service, Ottawa) halfway between Herchel Island and Roland Bay (approx. 9°30'N., 139°W.).

Inhabitants of Herschel Island told ne earlier on September 13 that everal bowheads had been in the area, ne of which had torn up a seal net in auline Cove (69°35'N., 139°W.). hese large-mesh nets had yielded onsiderable numbers of Ringed Seal, everal Beluga, one or two Harbour eals *(Phoca vitulina)* and a young bull Valrus *(Obobenus rosmarus).* The Herchel Island hunters indicated they ntended to hunt bowhead and for that urpose some Beluga hunting equipment had been modified.

During an aerial waterfowl survey n August 27, 1973, I spotted a stranded Bowhead Whale about 22 miles

Close-up of baleen, Bowhead Whale. Aug. 27/73.

Ernie Kuyt

northeast of Tuktoyaktuk. Upon closer examination, we found the 54-foot long whale to be resting on its right side. The animal was blackish brown except for a yellow-gray area near the tip of the mandible and near the tail, including the ventral surface of the flukes. I estimated about 200 plates of baleen on each side of the narrow upper jaw, with about one-third of the baleen plates partly hidden by the mandible. The most anterior plates were only a few inches long with a gradual increase in length of the baleen to 7 feet at about two-thirds of the way toward the angle of the jaw. W. Gillies Ross, examining log book records of whaling voyages, reported mature whales yielding baleen of over 10 feet, whereas a "small" whale taken had 5-foot long baleen.[2]

The dead whale had several small wounds: the largest one, about 4 inches across, was located 2 feet anterior to the genital opening, and three smaller wounds were observed in the axillary

Box 508,
ort Smith, N.W.T.

Rear view of Bowhead Whale. Aug. 27/73. Ernie K

region of the left flipper. The origin of the wounds could not be ascertained but birds had been feeding at these sites. About 100 Glaucous Gulls were concentrated at the bowhead's carcass but no mammal tracks were observed, indicative perhaps of a recent stranding of the whale.

E. D. Mitchell gives details on the observation and status of whales but it appears that little is known about the numerical status of the bowhead in the Canadian Arctic.[1]

Other than the above-mentioned whale hunting at Herschel Island, I know of no other bowhead hunt taking place in the Canadian West Arctic. Alaskan Eskimos, usi shoulder-guns and other weapons, s hunt the bowhead (J. Bockstoce, p comm.) but the effect on whale sto of the hunting, including the high r of losses due to wounding is known.[1]

[1]MITCHELL, E. D. 1973. *The status of the w whales, 1973.* Nature Canada 2(4):9-25.

[2]ROSS, W. G. 1974. *Distribution, migration depletion of bowhead whales in Hudson 1860 to 1915.* Arctic and Alpine Resea 6(1):85-98.

ROCKING REGINA

by W. O. KUPSCH*

Reproduced with corrections from the Journal of he Alberta Society of Petroleum Geologists, 957, Vol. 5, No. 9, October, p. 222-223.)

On Saturday night, May 15, 1909, he farmers from the neighbouring istrict had come to Regina to do their sual weekly shopping. The city's night ife was quite different then from what t is now. In many respects it was more iberal: night shopping followed by a rink at the bar was an accepted ustom. It was the time when "Take ne out to the ball game" became a opular hit for the first time, when igh collars by Tooke were the latest ashion, and when a man's "fancy wor- ted suit of splendid quality" could be ought for $15.00. Advertisements in ne paper urged ladies to "iron by lectricity and be up-to-date" and to uy "infants boots for $1.00 to $1.50."

Thoughts of purchases for the family nd home must have filled the heads of ne people who were still in the stores y 10:20 p.m., Mountain Time, when ney ". . . found bundles they were eaching for slipping away from them nd coming back again as though ewitched, while their bodies suddenly wayed backwards and forwards . . .". hose who were already in the bar at e Lansdowne may have swayed too, t thought nothing of it, except the roprietor (who) was in the bar room king stock, and . . . (who) was sur- rised to find the floor suddenly cking and the bottles and glasses ashing together." At the Clayton the anager was in an even greater edicament when he ". . . found his air sliding underneath his desk and wedging him there for a moment then swimming back again towards the office wall." Not only management, but also guests were endangered at the King's when "the safe nearly capsized and the lights were put out for a few moments. The elevator wobbled to and fro and there was generally for a few seconds much excitement. In the newsstand the magazines toppled and fell, the cigars jumped around in their boxes and the floor of the rotunda appeared to rise and drop back again."

To get the full explanation of these and other Saturday night antics in Regina, the residents had to wait for the Monday edition of the *Morning Leader*[1], which heralded the news in a big headline: PRAIRIE PROVINCES ROCKED BY SEISMIC SHOCK; BUILDINGS TOTTER AND PEOPLE RUSH INTO STREETS. From the account readers gathered that the estimates of the duration of the shock ranged from one to four minutes, that rumblings had accompanied the quake, and that this was the first time in recorded history that a shock had visited the Red River or the Saskatchewan Valley. Most of the editorial space was devoted to the earthquake, which had great news value because "the last thing in the world that a resident in the prairie provinces expects to run up against is an earthquake shock." The editor first expressed the belief that the shocks were after-tremblings of a far-away source, but he ended with the supposition that "the shock may have been merely a disturbance peculiar to Saskatchewan and the surrounding territory, and hitherto unknown, and, if so, there is another phenomenon for the scientists to discuss."

irector,
urchill River Study,
3 - 22nd St. East,
skatoon, Saskatchewan.

During the next few days accounts were received from other points on the prairies and it became evident that the shock was felt as far east as Winnipeg. It was strong in Estevan, but slight in Moosomin. In Calgary it was almost not felt at all. In Saskatoon it did not pass unnoticed by the citizens, but no scientific record was kept because no seismograph was then located in that city as there is today. It was, however, recorded on seismographs in Toronto and Ottawa. From the eye-witness reports and the few seismograph records in the United States and Canada it became later clear that the shock was not related to any far away source, but had originated on the prairies. The epicenter was placed at 105°W longitude and 50°N latitude (Heck, 1928, p. 37). This bit of scientific intelligence never hit the readers of the *Morning Leader* as did the quake itself. The location of the actual earthquake remained hidden in a relatively inaccessible scientific publication, whereas the effects of the quake had made the headlines.

If the epicenter is plotted on a map of Saskatchewan it will be seen that is located in front of the Missou Coteau in the Avonlea area, (Hec 1928, p. 37) mentions the strength the earthquake as 9 on the Rossiforr scale, which is an extremely stro shock. This is a compelling argume for the occurrence of tectonic faulti in this area. The shock was apparent much too strong to have been caus by local faulting due to salt-collaps the only type of faulting that sor geologists are willing to accept in t Avonlee area. Whatever the origin some of the structures in this area m be, geologists interested in the stru tural geology of southern Saska chewan in general and of the Missou Coteau in particular should regard t 1909 earthquake as "anoth phenomenon for the scientists discuss."

[1]All quotations are from the *Morning Lea* Regina, Monday, May 17, 1909.

HECK, N. H., 1928. *Earthquake History of United States Exclusive of the Pacific Reg* U.S. Coast and Geodetic Survey, Spec. Pu 1949, 61 pp.

IN REMEMBRANCE — EDWARD DEREK BEACHAM (1916 - 1973)

by C. STUART HOUSTON*

E. Derek Beacham, born in Worcestershire, England, on June 1, 1916, passed away in the Shuswap Lake Hospital, Salmon Arm, B.C. on May 5, 1973, after a lengthy illness.

Derek came to Canada in 1927 and his first notebook entry on May 1 of that year, exactly one month before 11th birthday, recorded a Herr Gull on the Toronto waterfront. Gu were to remain one of his main terests throughout life.

As a young man, his footb prowess was such that he played Balmy Beach and the Toronto Arg He was an ardent fisherman and early bird interests were encoura by Jim Baillie of the Royal Onta

*863 University Drive, Saskatoon, Saskatchewan.

Museum, who sponsored his membership in the Toronto Ornithologists' Club. Derek took part in the Toronto Christmas bird counts and for 15 years assisted H. H. Southam with bird banding.

His family was the oldest manufacturer of fishing tackle in the world, Allcotts of England, and Derek carried on the family tradition in his father's firm, A. Conway Beacham Ltd. of Toronto. Derek began his western business trips in 1938; his first Saskatchewan entry was of two Swainson's Hawks, dark phase, near Spy Hill on September 11, 1938. In 1956, he moved to Calgary to open the western branch of his firm.

True to form, he organized the first Christmas bird count in Calgary in 1957 and compiled this annually until he moved to Prince Albert, Saskatchewan, in late February, 1968. A founding member of the Calgary Bird Club, he served twice as President and also as Treasurer and executive member. With W. Ray Salt and E. O. Hohn, he instituted the *Alberta Bird Report*, acting as editor for Southern Alberta from 1957 through 1962. During these years he wrote a column, "Wingbeats", for the *Calgary Herald*. He contributed to *Canadian Audubon*, the *Canadian Field-Naturalist*, the *Blue Jay*, *The Observer*, and contributed regular observations to the Northern Great Plains region for *Audubon Field Notes*. W. Ray Salt and W. W. H. Gunn have, respectively, acknowledged Derek's contributions to *Birds of Alberta* and the record, *Prairie Spring*. He belonged to the American Ornithologists' Union, the Wilson Club and the Saskatchewan Natural History Society and more recently was founder and President of the Shuswap Naturalists' Club. At the time of his death he was completing a study of the birds of the Shuswap.

During his stay in Prince Albert, which terminated in April, 1970, Derek organized and compiled two successful Christmas bird counts and added another 10 species to the 230 already recorded for the area in *Birds of the Saskatchewan River*. He was believed to be the only man ever to lead a successful gun-bearing expedition into the Saskatchewan Penitentiary at Prince Albert — in this case to collect, with proper authorization by the authorities, the second Saskatchewan specimen of the Glaucous Gull.

Beacham's valuable record books of 47 years of observations have been placed in the Provincial Museum, Victoria, B.C., where they will be preserved for future use by other naturalists. As one of his friends has remarked, "his great knowledge and quiet authority will be sadly missed."

I wish to thank Mrs. Elizabeth Beacham for her assistance and for loan of Derek's Prince Albert notebooks.

30 Years Ago

On April 1 of this year, the Saskatchewan Museum of Natural History passed under the management of a new department of the Government of the Province — the newly-created Department of Tourism and Renewable Resources. This change leads us to speculate on whether there will be a consequent modification in the role of the Provincial museum. Understandably, SNHS members would be concerned if the interest in natural history were lessened to accommodate a growing interest in human history, for we believe that these two branches of museum activity should not compete for money and staff.

In 1974 we are almost 20 years away from the marking of the Province's Golden Jubilee by the erection of the present fine Museum building. So at this time, it is interesting to go back another 10 years to Mrs. Priestly's editorial comment in the *Blue Jay* on the need for a suitable Museum building:

> Two briefs were submitted in February to the Saskatchewan Reconstruction and Rehabilitation Council, by the Saskatchewan Archaeological Society and the Regina Natural History Society on the need for the erection of a suitable building to house the Provincial Museum.
>
> According to the brief presented by the Archaeological Society, the collections in the Provincial Museum comprise some 20,000 objects. These however have never had a permanent, or sufficient home. The brief states that 'since the first collections were put on display more than 30 years ago, the Museum has been moved from place to place, each move reducing its influence and value to the public. After various periods when it was located in the Parliament Building; a Regina downtown trading company building; the Normal School; an automobile parts building in the wholesale section, it has now been in storage for the past two years.'
>
> In 1919 the Provincial Legislature sanctioned the erection of a War Memorial and Museum Building to cost in the vicinity of $400,000.00. The sum of some twenty-eight thousand dollars was actually spent on plans and research in connection with the proposed building, including prize money for a competition among the architects of Canada for a suitable plan. In 1924 the appropriation ($200,000.00) was dropped from the estimates and since then no further steps have been taken in the matter.
>
> Of the need for a worthy Provincial Museum and the place it should take in the life of our province there is no need to elaborate in the *Blue Jay*.

MAN AND RESOURCES SUMMER, 1974

This summer Environment Saskatchewan and the Department of Tourism and Renewable Resources will be conducting community meetings to discuss the national Man and Resources guidelines. These meetings will give interested persons an opportunity to relate local environmental concerns to the national guidelines. In the two-year Man and Resources program, over 2,000 people in 17 Saskatchewan communities participated.

Review meetings will be scheduled for the following localities: Estevan, Swift Current, Kindersley, North Battleford, Meadow Lake, Uranium City, Cumberland House, Hudson Bay, Nipawin, Yorkton, Saskatoon, Moose Jaw and Regina.

Dates of meetings will be announced in newspapers and on posters.

For further information please contact:

Mr. F. A. Heal,
Public Information and
Education Division,
Environment Saskatchewan,
11th Floor,
Saskatchewan Power Building,
Regina. Phone 523-9676.

DVENTURES IN BIRDING

y Jean Piatt
lfred A. Knopf, Inc.
ew York City 10022
68 pp. 1973. $7.95

Adventures in Birding has been writ-n primarily for birders, whether they e young or old, neophyte or rofessional, but it is also a book for rmchair travellers who enjoy poking to every nook and cranny of moun-in and valley, desert and wetlands, rairie and forest, seaside and even the a itself. Dr. Piatt and his wife, larybelle, both inveterate listers and embers of the 600 Club, have avelled all over America including laska and parts of Canada in search their beloved birds and enjoyment nature as a whole. One's interest is eld by this man's deep feelings and reat thought.

Dr. Piatt writes with touching ten-erness about all wildlife and his escriptive passages are so vivid that e reader is drawn right into the pic-re to share the infinite beauty of any areas, the bleakness of some and most always utter peace.

The author is a preservationist, cologist and philosopher with emendous understanding of man's ailties. He is blessed with a most elightful sense of humour which per-ades the whole book except when an's stupidity towards nature ecomes apparent. "Extinction of a ecies is a terrifying finality" is one bject upon which our author gives nt to his anger and disgust. His views e interesting and give food for ought to all of us.

At times the reader begins to feel mewhat satiated with the almost incessant bird listing but our clever author has already anticipated this reaction and he suddenly lifts us into a different line of thought — a little philosophy, perhaps — a new area of travel — a humorous anecdote or an altogether different subject such as the section of the book on well known birder's clubs, publications, etc. Dr. Piatt does not hesitate to make a derogatory remark when he feels circumstances warrant it.

One particularly amazing section of the book is a humorous dissertation on birders — we are all there! We can recognize our friends as easily as though the good Doctor knew each one personally — yes, I found myself there, too!

Dr. Piatt is an anatomist by profession — a birder by obsession and an author whose work can be read and enjoyed by persons from every walk of life who have any awareness of the world of nature around us.

The following few lines of poetry are a fitting conclusion to this review. A lover of all wild nature, John Masefield wrote:

"And over them flew birds of every kind
Whose way, or song, or speed, or beauty brings
Delight and understanding to the mind."

— *Pat O'Neil*,
1125 Elliott St.,
Saskatoon, Sask.

* * * *

Outside your kitchen window there may be a spider spinning his web. Lift up your child to see it, and tell him that this shining silk drawn out of the spider's body has a greater tensile strength than steel. If he learns admiration instead of disgust for the tiny spinner, he will have learned one of the greatest lessons in nature — that all life is sacred. *Donald Culross Peattie.*

HELPFUL HINTS FOR NATURE ACTIVITIES AND SUMMER FUN

by DIANE WEIR*

ANGIER, Bradford. *Skills for taming the wilds*. 1967. A handbook of woodcraft wisdom for the camper, vacationer, hunter, fisherman, hiker and anyone who might like to live next to nature.

796.5 A588s

BARANET, N. N. *Bicycling*. 1973. A guide to bicycling for the amateur or professional cyclist including information on history, buying a bicycle and activities using a bike.

796.6 B225

BORLAND, H. G. *Beyond your doorstep*. 1962. A handbook to the country for anyone who walks the woods and fields and wants to learn about the living things he has often looked at but never seen.

500.9 B735

BRAINERD, J. W. *Nature study for conservation*. 1971. A handbook for environmental education which stresses what an individual can find out about nature with little or no fancy equipment.

500.1 B814

BRANDWEIN, P. F. *Invitations to investigate*. 1970. An introduction to scientific exploration through experiments with step-by-step instructions, diagrams and photographs.

Y 501 B821

BROWN, Vinson. *Knowing the outdoors in the dark*. 1972. Numerous illustrations, maps and charts are an integral part of this excellent guide to nature's night life in which Brown explains how to heighten the perceptions of the senses and how to identify birds and animals by their silhouettes, activities and sounds.

Y 574 B881

CLARK, Gregory. *Outdoors with Gregory Clark*. 1971. A Canadian naturalist, story-teller and newspaperman shares his observations, anecdo and knowledge in this selection tak from "Packsack" columns written daily newspapers between 1948 a 1962.

574.971 C5

COLBY, C. B. *The art and science taking to the woods*. 1970. E cyclopedia of woodslore and outdo living with all the shortcuts, ba skills and advanced techniques need to feel confident about outdoor livi and traveling.

796.54 C6

CUTLER, K. N. *From petals pinecones*. 1969. A nature art and cr book with instructions for making g and decorations using such natural jects as pine cones, nuts, flowers, dr wood and stones.

Y 745.5 C9

ELMAN, Robert. *Discover the o doors*. 1969. Well illustrated guide the outdoors — camping, hiki fishing, hunting, discovering — North America filled with woodslo and practical tips.

796.5 E

Family Book of Hobbies. 19 Detailed in this volume are a vari of hobbies including numerous natu and outdoor ones which will appeal any age group.

790.13 F1

FRANKEL, L. B. *Bike-ways*. 19 New and exciting things to do wit bike ranging from tours and trips organizing a bike rodeo or bike clu

Y 796.6 F8

ICKIS, Marguerite. *Nature recreation*. 1965. How to inject fun i a recreation program by introduc nature through the activities of ca ping, handicraft, games, dramati music, the dance and aquatics.

574.07 I

MUSSELMAN, V. W. *Learning ab nature through indoor gardening*. 19 To grow and care for 74 of the m familiar house plants and thus le

*Saskatoon Public Library, 23rd St. and 4th Ave., Saskatoon, Saskatchewan.

bout nature's miracles is the subject this book for both children and lults.

635.965 M989

RINGLE, Laurence. *Discovering the utdoors*. 1969. A nature and science uide to investigating life in fields, rests and ponds and suggesting scienfic experiments and investigations at can be conducted on each site.

Y 574 P957

CHEFFER, V. B. *The seeing eye*. 971. Well illustrated book with lour photographs in which a turalist shows you how to see the arvellous forms, textures and lours of nature.

Y 500.9 S317

CHOENFELD, C. A. *Cabins, conservtion and fun*. 1968. A complete guide leisure time living in the country th the pleasures and pitfalls encounred in finding and developing a rural treat.

333.76 S365

CHOENFELD, C. A. *Everybody's ology*. 1971. A field guide to easure and perception in the out-of-ors.

574.5 S365

CHWARTZ, Alvin. *How to fly a kite, tch a fish, grow a flower and other acities for you and your child*. 1965. A rents' do-it-yourself guide to creation, athletics and nature.

790.0192 S399

OANE, E. A. *The complete book of ycling*. 1970. Comprehensive guide all aspects of bicycles and bicycling buying, history, maintenance, cycle competitions, cycle camping d touring trips (another copy in eference and at the Circulation esk).

796.6 S634

MARIDGE, N. A. *The teen-ager's ide to collecting practically anything*. 72. Aimed especially at teen-agers, s book suggests the traditional llectibles as well as those from new eas such as ecology, the environment d American arts and crafts.

Y 790.132 S636

Letters

ONE MAN'S MEAT. . .

I agree with the views expressed by Robert Page concerning the rights of predators *(Blue Jay,* March 1974). In this connection I would like to draw attention to portions of two articles which have appeared in the *Regina Leader-Post*. The first (Jan. 19, 1973) was discussing the permits to be issued by the Saskatchewan Department of Natural Resources for hunting coyotes and foxes:

"Snowmobile hunting by special permit requires hunters to chase down a coyote or fox until it is exhausted. Once the animal is exhausted or cornered, the hunter can dismount from his machine and kill it."

The second (Mar. 22, 1974) relates to a court case in Winnipeg:

"Maximum fines and jail sentences have been imposed on two Manitoba men who used a snowmobile to run a fox into a state of exhaustion and then shot the animal".

How can two neighbouring provinces with similar governments have so vastly different predator policies that one promotes a practice which brings severe punishment in the other? — *Nora M. Stewart,* Craven, Sask.

Coyote Fred Lahrman

THE PAST AND THE FUTURE OF OUR WILDLIFE

(The following is a condensed version of a letter that appeared in the Meridian Booster (Lloydminster) on Oct. 24, 1973. We thank Mrs. F. W. Parker of Blackfoot, Alberta, for sending it to us.)

In 1972 I went back to Holland after an absence of 27 years and my sisters showed me the letters I had written home since 1930 . . .

The letters written in the winter always mentioned wolves howling outside. I never used the name coyote, as "wolves" sounded so much more exciting and, I reasoned, they did not know the difference anyway!

One letter told of a trapping experience about the first coyote we trapped that winter . : . Another episode I had written about when I went coyote hunting with a professional hide hunter who had a winter camp somewhere in one of the coulees of the Battle River . . .

A letter dated one winter later recounted an episode of a big dog coyote caught in one of our traps. When we first approached him he fought madly to escape, but when approached, he lay down in the snow and looked at us for all the world like a dog who had just had a licking. For me, that little scene was the turning point, I became fed up with the whole trapping business and never set a trap again.

In those depression days, however, trapping was still a necessity, as some families depended on the father's ability as a trapper for little extras in the way of food and clothing. It is interesting to note that the market value of hides in the depression days were not much lower than they are today. The animals most commonly trapped then were coyotes, weasels, badgers and a few lynx.

There were only a few mule deer in those days. I never saw a whitetail until after World War II. For the information of those people who think that we have to control coyotes to save our precious deer population, I would like to point out that there were twice as many coyotes then, when t whitetails started their increase.

In a later letter, I told how the b coveys of Hungarian partridge pair off at the end of February. This, to u was always the first sign that spri was on the way . . .

A letter written in the spring me tioned the drumming of bush pa tridges which carried on day a night, and the big dancing ground prairie chicken not a quarter of a mi from the house. From sun-up until a.m. and again in the evening, y could hear the cackling and cooing hundreds of chickens.

I must have been a budding conse vationist then already, because remember severely reprimanding group of native people who ha covered my chicken playground wi dozens of number 0 weasel traps, ea nicely staked to a little willow p driven into the ground.

Last summer, a granddaughter the people I wrote those letters t visited us here on the ranch with h husband and little daughter. Th were both born and raised in one the most densely populated areas Europe . . .

Like many urban people, they we anxious to see our wildlife. It is tr they saw beaver and deer, but we ha to go as far as Alberta's foothil before they saw a live coyote. (home we found some coyote carcass the result either of poison or skido hunters.) They never saw a shar tailed grouse or an Hungarian pa tridge.

For years we had had denni coyotes on our lease, right amongst o precious cattle, and I know it wou have been an experience of a lifetim for them to have gone there son sunny summer evening and seen t pups play around the den as I ha done many times myself. No such luc somebody deemed it necessary to pu whole 1080 poisoned sheep within quarter of a mile of our land bou dary. It was still there on May 6 a carelessly buried, so it probably ha its deadly effect on our wildlife a summer. What about the few beautif

agles that stay till early winter and ust live partly on carrion? Why pread poisoned baits all over unicipalities where there are very w sheep raised, and where farms with ose-running chickens are scarce in- ed?

I think part of the answer is that it is ade too easy. A casual trip to the unicipal office and the poison bait is t out in the middle of nowhere, iles away from where there are, or er will be, any sheep or poultry.

If you ask people why they want ison bait put out, you get the most rprising answers: "Because the ggers keep me awake, howling at ght" or "To maintain the balance of ture". One even suggested that we ould get rid of all our beaver cause they chewed off poplar stumps hich might hurt the udders of their nge cows!

What about organized coyote skidoo nts? Is their purpose to provide uch needed warm clothes for school ildren? Or is it to save the hard- essed sheep herder's livelihood? hat about the trucks you see all er? Are those highpowered, scoped les used in the war against cattle stlers, or to fight our innocent- oking road signs?

Is all this inevitable? Surely not . . .

The few dedicated conservation of- cers we have, have such huge rritories to cover that they cannot ssibly be everywhere at the right ne.

I will end this letter by quoting a rden of one of the many well-run tional parks in South Africa, where ere is little or no wildlife left outside e parks. I told him the way I saw the uation in Northern Saskatchewan d had difficulty explaining to him hat a skidoo is (we settled on motor- igh). I then asked him about the me laws in South Africa. He smiled d said that they did not need them ymore and added, "I do not think t you will need them either in the r 2,000."

I hope he is wrong — *Hans de Vogel,* O. Box 219, Neilburg, Sask. S0M 0.

MARSH HAWK CAPTURES MEADOWLARK

In spring, among the earliest birds to arrive are Western Meadowlarks and Marsh Hawks. The bright yellow plumage and cheerful notes of the first Meadowlark delight the eye and ear; Marsh Hawks coursing over the fields are silent but graceful harbingers of warm days.

Though the Marsh Hawk has occasionally been mentioned as a predator of young waterfowl, I still think of them in terms of mice and voles. Thus, when we saw a male Marsh Hawk hover and drop down into a damp meadow we were sure it had taken a vole (meadow mouse). We stopped driving to get a closer look and when it flew up we were surprised to see it clutching a Meadowlark to its breast. After flying about 50 feet it dropped its legs full length, still holding the bird, but apparently laboring with the weight. It flew a few hundred feet further away from us, dropped down onto the ground and shortly began plucking its prey. This was about 4:30 p.m. on a bright day, March 25, 1973, near Meadows, Manitoba.

Presumably, a Meadowlark foraging in deep grass would make a fairly easy target for a low flying Marsh Hawk, though the Meadowlark's protectively colored back plumage would make it difficult to see. A. C. Bent's perennially useful series of *Life histories* lists meadowlarks as a food item of the Marsh Hawk, along with many larger birds, including ducks, grouse and pheasants. B. R. Wolhuter observed a much smaller raptor, the Sparrow Hawk (Kestrel), killing a Western Meadowlark *(Bird-Banding* 42:221; 1971). — *Robert W. Nero,* 546 Coventry Road, Winnipeg, Manitoba. R3R 1B6.

* * * * *

The mouse is a sober citizen who knows that grass grows in order that mice may store it as underground haystacks. *Aldo Leopold*, A Sand County Almanac.

Location of the two parts of the proposed national grassland park. Wayne Renau

LOOKING BACK

To date much energy has been expended by many individuals an organizations both to inform the public and to demonstrate public support for national grassland park. Looking back on these efforts, one cannot help but b disturbed that one consequence of the federal election should be a delay in par negotiations between the provincial and federal governments. It will be pa ticularly important to reaffirm our support as soon as possible after the electio

If you have never visited the area, why not plan on spending at least a weeken there this summer? Even if you manage to miss seeing sage grouse, antelop prairie dogs, burrowing owls, prairie falcons, ferruginous hawks, a ferret, kit fo or short-horned lizard, the landscape and flowers will be sufficient to ensu your participation when support is needed again. (Maps and other informatio on prairie dog colonies appeared in the March, 1971, and June, 1972, *Blue Ja* and on the badlands in the June, 1973, issue.)

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