The passenger pigeon. Volume 40, No. 4 Winter 1978

Madison, Wis.: Wisconsin Society for Ornithology, Winter 1978

https://digital.library.wisc.edu/1711.dl/E7VMCRO5KPRJT9A

The Passenger Pigeon

Winter 1978
Volume 40, No. 4

A MAGAZINE OF WISCONSIN BIRD STUDY

PUBLISHED QUARTERLY BY

The Wisconsin Society For Ornithology, Inc.

IN THIS ISSUE

Volume 40 No. 4 **Winter 1978**

Cover Photo: Young Saw Whet Owls by William Robichaud.

THE PASSENGER PIGEON, official publication of the Wisconsin Society for Ornithology, is published quarterly at 16 Taylor St., Chippewa Falls, WI 54729. Classes of membership and annual dues: Active $6.00. Family $8.00. Sustaining $15.00 to $74.00. Life $100.00. Patron $500.00. Library $5.00. At least $5.00 of each annual membership is set aside to cover subscriptions to the *Passenger Pigeon.* Send membership dues to the membership chairman, Alex F. Kailing, W. 330 N. 8275 West Shore Drive, Hartland, WI 53029. Send change of address to the membership chairman. Manuscripts are invited. Send them to the editor, Charles A. Kemper, 733 Maple Street, Chippewa Falls, WI 54729. Back issues are available at one dollar per single issue. Send request to W.D. Brown, 225 W. Lakeside Street, Madison, WI 53715.

(Publication Number ISSN 0031-2703)

THE DISTRIBUTION OF THE THREE- TOED WOODPECKERS IN WISCONSIN

By Richard P. Thiel

The three-toed woodpeckers, inhabitants of the boreal forests of North America, are geographically the farthest north in distribution of the family Picidae (Bent, 1964). Barger, et. al. (1975) lists them as rare in the state of Wisconsin. This is not at all surprising since the Lake Superior region of northwestern Wisconsin forms the southern boundary of the boreal forest in the state (Curtis, 1959). In 1976, while compiling information in old field notes from a Wisconsin Conservation Department (now Department of Natural Resources) research crew, several observations of Black-backed Three-toed Woodpeckers (**Picoides articus**) and the Northern Three-toed Woodpecker (**P. tridactylus**) were discovered. Much of this information has never been published. The discovery of these recorded notes stimulated a study on the distribution and status of these intriguing woodpeckers. Unfortunately record keeping by WSO is not of sufficient detail to provide the necessary information required to determine status of these species, hence this paper deals with the distribution of these two members of the genus **Picoides**.

METHODS

In order to obtain a thorough understanding of the distribution of these species several types of records were consulted. Inquiries were directed to 16 museums in an effort to obtain information on specimens. The museums contacted were as follows: Milwaukee Public Museum (MPM); UW systems — Madison (UWZ); Milwaukee (UWM); Stevens Point (UW-SP); River Falls, Superior, La Crosse, Stout, Green Bay, Platteville and Oshkosh; Marquette University; Milton College; Oshkosh Public Museum (OPM); Viterbo College (VC); Field Museum of Natural History (FMNH); and the National Museum of Natural History (NMNH). *Passenger Pigeon* volumes 1 to 40(2) (excluding Vol. 1 issues 3-12) and some WSO files were consulted. Miscellaneous notes from the Milwaukee Public Museum and a UW-SP mimeo entitled, "Wisconsin's 'Undetermined Status' Wild Vertebrate Species" were reviewed. Finally the reports from the Wisconsin Conservation Department W-4-R project crew (Table 5) were utilized in preparing this report.

RESULTS and DISCUSSION

Enough information was obtained on the distribution of the two species in Wisconsin to separate the information into two time periods for convenience. The former distribution covers the period in Wisconsin's history prior to 1939. The recent distribution is concerned with the period following the formation of WSO (1938), from which the largest majority of records were obtained. Two seasonal periods are utilized from observations since 1938. Winter encompasses the months October through March and summer covers the months April through September. The distribution of each species is treated separately below.

Picoides arcticus — Black-backed Three-toed, or Arctic Three-toed Woodpecker.

Former Distribution Hoy (1852) first mentioned that specimens of the Arctic Three-toed Woodpecker had been shot near Racine. Similarly, Schorger (1944), in reviewing Hoy's life as a pioneer ornithologist, noted that Hoy recorded this species as a winter resident up to the year 1874 within 15 miles of the city of Racine. King (1883) indicated taking them near Worchester (Price County) in July. Grundtvig (1894-5) stated that one was shot at Black Creek (Outagamie County) but did not mention a date. Kumlien and Hollister (1903) mention their presence in the Merrill and Wausau area in June and near Oconto in early August. Schorger (1940) discovered from information housed at the Chicago Academy of Sciences that Schoenebeck found a nest in Oconto County in 1894 (see below). Cory (1909) recorded their presence in northeastern Illinois up to 1894.

Gilbert O. Rausch (MPM) found Black-backed Three-toed Woodpeckers near Eagle River, Vilas County in August, 1918. Jung (1927) noticed them at Star Lake and one at Razorback Lake in Vilas County in August, 1920. Jung (1928) also reported one on March 25, 1928 from Calhoun, Waukesha County. Gilbert O. Rausch (MPM) recorded one on July 29, 1931 from O'Brien Lake in Iron County.

Although no records were found from the southwestern Wisconsin region, this species probably occurred there. Kemper (1977) mentioned that the Black-backed Three-toed Woodpecker has not been recorded in neighboring Iowa for 50 years. The Mississippi River bottoms may have been a corridor used by migratory individuals. Historically this species, though rare in southern Wisconsin, was an inhabitant, at least seasonally, throughout the whole state.

Early Museum Specimens — Table 1A lists the data obtained from museums that have specimens dated prior to 1939. Generally, distributions of specimens obtained before 1939 are similar to distributions of sight records made during the same time period. Black-back Three-toed Woodpeckers were taken during the summer months in Vilas (9); Oconto (1); Iron (2); Douglas (1); Ashland (1) counties. Winter specimens were collected in Wood (2); Iron (1); Dunn (4; Ashland (1); Forest (1); and Shawano (1) counties. Localities were not listed for three specimens.

Recent Distribution — A count of 174 woodpeckers was obtained during the period 1939 - 78 in 166 observations where the number of birds were recorded. Figure 1. shows the summer and winter distribution of Black-backed Three-toed Woodpeckers in Wisconsin as reported in the various sources exclusive of museum specimens. Douglas, Vilas, Forest, Iron, Oneida, Price, and Sawyer counties had six or more observations during the 39 year period and also had the highest incidence of summer reports. Douglas county, with its boreal forest influence, leads the state with a total of 37 observations during the 39 year period. The summer distribution of the Black-backed Three-toed Woodpecker is limited to the northernmost tier of counties in Wisconsin but extends south into Waupaca County. Winter distributions are restricted north and eastward but extend down to the Wisconsin-Illinois border in extreme southeastern Wisconsin along Lake Michigan. The winter distribution is closely alligned with the 'Curtis' tension zone (Figure 1).

Figure 2. shows the fluctuations in yearly reports of the Black-backed Three-toed Woodpecker. This represents an average of four reports per

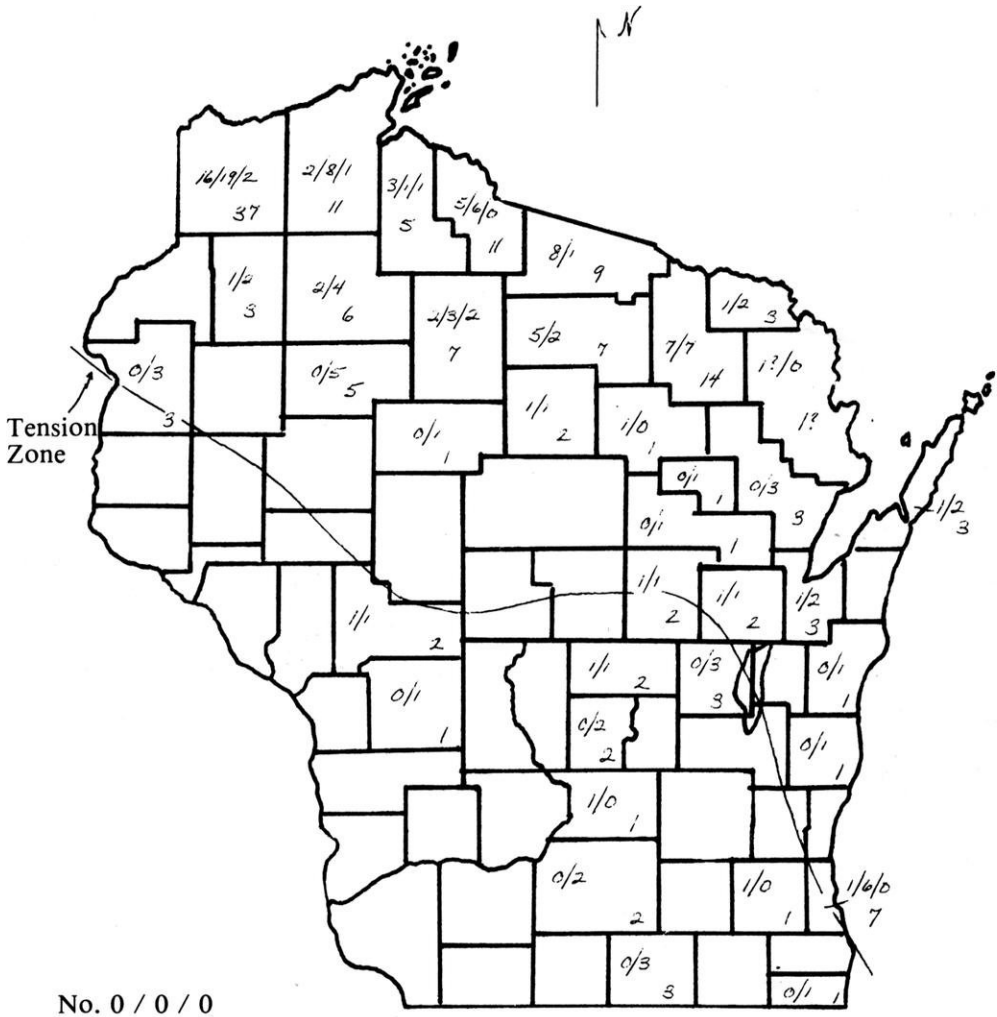


Figure 1. Distribution of **P. arcticus** observations in Wisconsin 1939-1978.

Table 1A — P. arcticus specimens prior to 1939

Date	Location	Museum	Sex
TC	Wis.	VC	M
TC	Wis.	VC	M
23 July 1917	Mamie Lk. Vilas Co.	UW-Z	F
13 June 1918	Mamie Lk., Vilas Co.	UW-Z	M
13 June 1918	Mamie Lk., Vilas Co.	UW-Z	F
Jan. 1877	Wood Co.	MPM	F
27 Mar. 1877	Wood Co.	MPM	M
13 Dec. 1890	Meridean, Dunn, Co.	MPM	F
25 Sept. 1898	Iron Co.	MPM	M Ad.
30 Sept. 1898	Iron Co.	MPM	F Ad.
4 Oct. 1898	Iron Co.	MPM	F Ad.
20 Jul 1909	Douglas Co.	MPM	M
22 Nov. 1919	Ashland Co.	MPM	M Ad.
9 Jan. 1938	Crandon, Forest Co.	MPM	M
Dec. 1901	Cataline, Wis. (?)	UW-M	M
23 June 1908	Woodruff, Vilas Co.	FMNH	F
30 June 1908	Woodruff, Vilas Co.	FMNH	M
30 June 1908	Woodruff, Vilas Co.	FMNH	F
30 June 1908	Woodruff, Vilas Co.	FMNH	F
30 June 1908	Woodruff, Vilas Co.	M Juv.	
30 June 1908	Woodruff, Vilas Co.	? Juv.	
8 May 1896	Oconto Co.	UW-SP	2 eggs
6 Dec. 1925	Shawano Co.	UW-SP	M
6 June 1919	Ashland Co.	NMNH	F
24 Nov. 1889	Meridean, Dunn Co.	MPM*	F
21 Jan. 1891	Meridean, Dunn Co.	MPM*	M
12 Nov. 1899	Meridean, Dunn Co.	MPM*	M

TC - Turn of Century

*MPM records, probably housed at UW-Eau Claire Biology Department

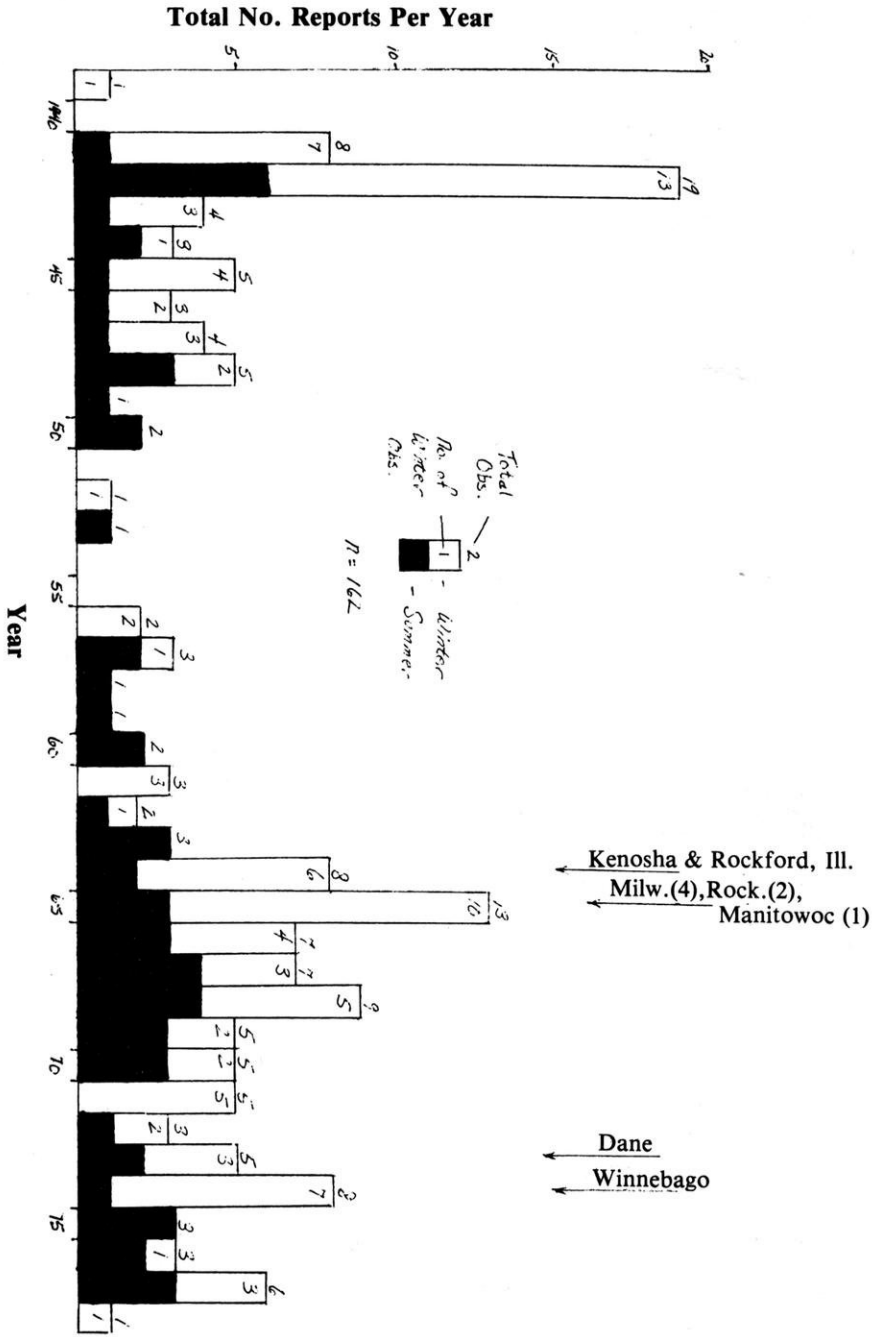


Figure 2. Yearly fluctuation in reports of P arcticus in Wisconsin 1939-1978. Does not include museum specimens.

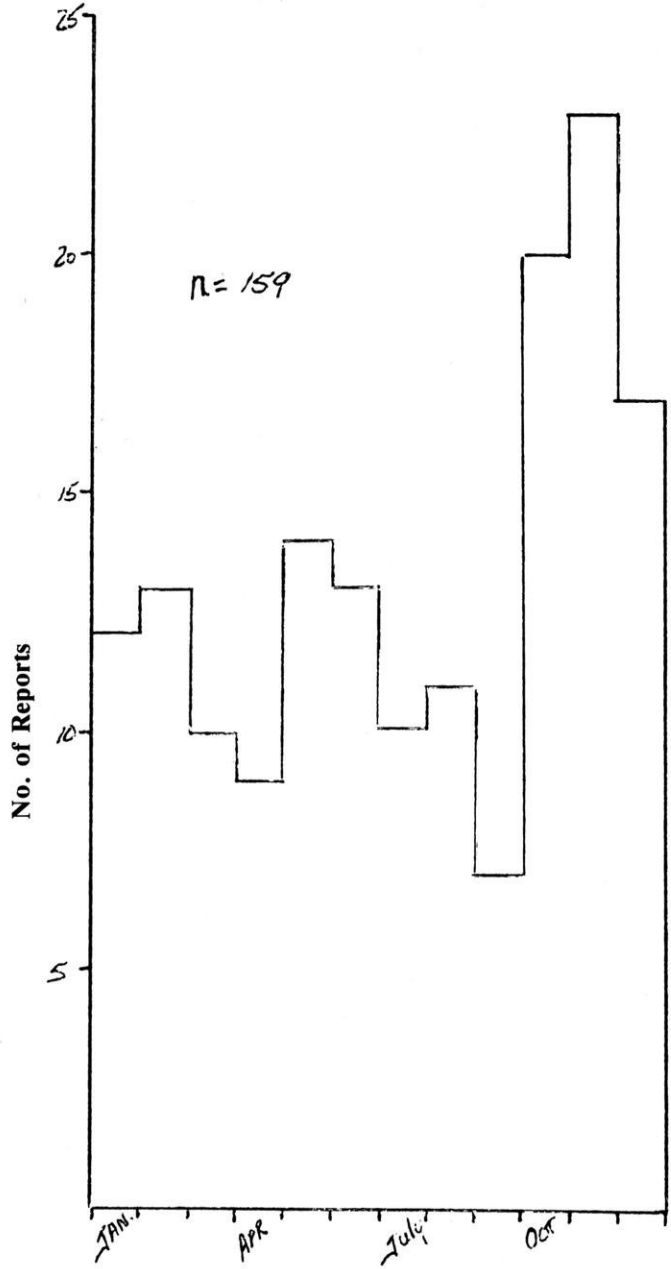


Figure 3. Reports of **P. arcticus** by month of year from Wisconsin 1939-1978. Data includes 5 museum specimens.

year during the 39 year period with a range of 0 to 19 per year. There is only a slight correlation in Wisconsin's peak years when compared to other areas of the northeastern United States (West and Speirs, 1959). Monthly fluctuations (Figure 3.) reveal an increase in observations during the autumn months of October, November, and December. These months accounted for 37 per cent of the total observations.

Recent Museum Specimens — Table 1 B. yields information on specimens of **P. arcticus** taken in Wisconsin after 1938. Summer specimens were obtained in Sawyer (1) and Price (4) counties, and winter specimens were taken in Waushara (1) and Dodge (1) counties.

Reproductive Activity — A 50:50 sex ration was observed in 28 museum specimens and 36 observations of Wisconsin Black-backed Three-toed Woodpeckers for which sex was recorded (Table 2.). Table 3. lists data on 13 nests. The average clutch size (includes eggs and/or young) for five Wisconsin nests was 3.4. This compares favorably with the clutch size of 2-6 reported by Bent (1964). Egg dates from three Wisconsin nests range from May 8 to June 12 compared to a range of May 19 - June 12 for three nests from Maine (45° parallel) and May 18 - June 10 for five nests from New York (Bent, 1964). Schorger (1940) mentioned that Schoenebeck and Guss found two nests in 1893 and one nest in 1894 in Oconto County. Schoenebeck also collected two eggs from a nest in Shawano County in 1896. These areas may still harbor breeding pairs as a nest was discovered in

Table 1B — P. arcticus specimens after 1938

Date	Location	Museum	Sex
29 Nov. 1940	Waushara Co.	OPM	M
25 June 1947	Teal Lk. Sawyer Co.	UW-Z	M
9 Dec. 1939	Dodge Co.	MPM	F
29 May 1940	Long Lk. Price Co.	MPM	F
12 June 1940	Springstead Cr. Price Co.	MPM	F
12 June 1940	Springstead Cr. Price Co.	MPM	M
12 June 1940	Springstead Cr. Price Co.	MPM	2 Young & 2 eggs

Table 2. Sex ratio of P. arcticus from 28 museum specimens and 36 reports.

Source	Male	Female	Total
Table 1A	12	10	22
Table 1B	3	3	6
WSO Reports	6	12	18
PR W-4-R	9	9	18
Total	30	34	64
Sex Ratio	.468	.531	

nearby Waupaca County in 1970 (Cornell Nest Records). Nests have been found in Douglas (1964, 1968, 1977), Ashland (1919), Vilas (1908, 1918), Price (1940), and Iron (1946) counties.

Picoides tridactylus — American, Ladder-backed, or Northern Three-toed Woodpecker

Former Distribution — Cory (1909) mentioned that Thure and L. Kumlien killed about a dozen Northern Three-toed Woodpeckers between 1860 and 1870 in the "large tamarack wood near Jefferson". Schorger (1944) stated that Hoy found the Northern Three-toed Woodpecker during winter months up to the year 1874 in the vicinity of Racine. The Reverend Francis Dayton observed a male on March 6, 1898 on the Lake Michigan shore south of Glencoe, Illinois in a spruce grove (MPM). One was observed in Forest County on February 9, 1930 (MPM).

Museum Specimens — Five specimens of Northern Three-toed Woodpeckers were located during this period (Table 4A). The only summer specimens (2) were obtained in Sawyer County near Connors Lake in August, 1919. Another two specimens that might have been summer residents were collected from Iron County in 1898. Buss and Mattison (1955) list a specimen collected by Clark near Merridean, Dunn County, around the turn of the century. The most recent specimen was collected in Douglas County in December, 1945.

Table 3. Next records of P. arcticus in Wisconsin

Date	Location	Source	Description
1893	Oconto	Schorger (1940)	2 nests
16 May 1894	Oconto Co.	Schorger (1940)	4 eggs
8 May 1896	Shawano Co.	UW-SP	2 eggs
30 June 1908	Vilas Co.	FMNH	2 Juv. & 3 eggs
13 June 1918	Mamie Lk, Vilas Co.	UW-Z	2 ad.
12 June 1919	Ashland Co.	Jackson (1942)	Nest & Young
12 June 1940	Springstead Cr. Price Co.	MPM	2 eggs & 2 AD.2 Yng
13,15 June 1946	Iron Co.	MPM 3440-45	Pr.& Yng.
25,26 June 1964	Brule Riv. Douglas Co.	Pass. Pigeon	2 Ad. & 5 Juv.
1 Jul 1968	Douglas Co.	UW-SP Comp.	Nest
8-10 Jn 1979	Waupaca Co.	UW-SP Comp.	Nest
16 June 1977	Brule Riv. Douglas Co.	Pass. Pigeon	Pr. & Yng

Table 4 A. Picoides tridactylus specimens from Wisconsin

Date	Location	Museum	Sex
23 Sept. 1898	Iron Co.	MPM	F Ad
30 Sept. 1898	Iron Co.	MPM	M Ad
TC	Meridean, Dunn Co.	UW-EC	?
9 Aug. 1919	Connors Lk. Sawyer Co.	UWZ	M
9 Aug. 1919	Connors Lk. Sawyer Co.	F	

TC - Turn of Century: from MPM notes and Buss Mattison (1955)

Table 4 B. Observations of Picoides tridactylus in Wisconsin

Date	Location	Source	#Birds
24 Mar.1944	Douglas Co. (Brule Riv.)	Berner WCD*	1 M
30 Oct. 1945	Douglas Co. (Catherine Lk.)	Hartmeister	WCD
10 Mar. 1968	Douglas Co.	Granlund PP**	1
21 Dec. 1968	Douglas Co.	Benube PP	1
	Douglas Co. Total = 4		
21 Feb. 1941	Vilas Co. Land O' Lakes	Miles PP	1
30 Mar. 1945	Vilas Co. Land O' Lakes	Miles PP	1 M
No Date	Vilas Co. Deerskin Riv.	MPM	1
	Vilas Co. Total = 3		
6 Feb. 1956	Winnebago Co. Oshkosh	MPM Talbati	1 M
7-8 Mar. 1956	Winnebago Co. Oshkosh	MPM Talbati	1 F
	Winnebago Co. Total = 3		
9,14 Mar. 1975	Polk Co.	Faanes PP	1 M
	Polk Co. Total = 2		
24 Dec. 1966	Forest Co. Pine Riv. Campgrd	PP	1 M
	Forest Co. Total = 1		
30 Nov. 1969	Oneida Co. Rhinelander	Compton PP	1
10 Feb. 1972	Taylor Co.	Evrard PP	1
11 Jan. 1946	Rusk Co. T35NR9W Sec. 25	Stollberg WCD	1
	Total = 16		

*WCD - Wisconsin Conservation Dept. PR Project W-4-R Field Notes

**PP - Consult appropriate Passenger Pigeon Issues.

Table 5. Observations of Arctic Three-Toed Woodpeckers made by personnel of the Wisconsin Conservation Department PR W-4-R work crew, 1941-47.

Date	Location	Observer	# Birds	Sex
1941				
19 Mar	T38NR13E:2-3 Forest Co.	Allen	1	M
21 Mar	T38NR14E: 21 Forest Co.	Dahlberg & Ruegger	2-3	Unk
21 Aug.	T39NR17E Patten Lk. Florence	Feeney	Found	Sign
1942				
29 Jan.	T44NR1E:25:R2E:30 Iron Co.	Hopkins	a pair	
8 Feb.	T43NR2E:11 Moose Lk Iron Co.	Unk.	1	Unk
19 Feb.	Brule Pierce Estate to Brule Ran-Station, Douglas Co.	Stevens	1	F
20 Feb.	T49NR12W:36 Mouth of Amnicon River	Unk	1	F
23 Feb.	T47NR10W Down Lk.Bayfield Co.	Stevens	1	M
3 Mar.	T41NR2E:7,8,17,18 Iron Co.	Mitchell	1	M
26 Mar.	T44NR1E Pleasant Lk. Iron Co.	Mitchell	1	Unk
23 Apr.	T36NR15E:6 Forest Co.	Unk	1	F
12 Aug.	T38NR12E Forest Co.	Unk.	1	M
20 Oct.	T39NR16E Savage Lk. Florence Co.	Unk.	1	F
18 Nov.	Price Co			
1943				
16 Feb.	Cedar Rapids Rusk Co.	Berner & Barger	1	F
23 Mar.	Flambeau Forest Rusk Co.	Berner & Feeney	1	M
1944				
7 Apr.	Pleasant Lk Tower, Iron Co.	Searles & Feeney	1	Unk.
11 Jul.	T37NR5W:20 Sawyer Co.	Berner	1	Unk.
19 Nov.	Jump River Rusk-Price Co.	Unk.	1	M
1945				
3 Feb.	Town of Knight Iron Co.	Feeney	1	Unk.
4 Feb.	Town of Knight Iron Co.	Feeney	1	F
4 Feb.	O'Brien Lk. Iron Co.	Feeney	1	F
20 Apr.	Pine Riv. Forest Co.	Hartmeister	1	Unk
27 Dec.	T39NR13E Jones Cr. Forest Co.	Bradle	1	Unk.
1946				
12 Mar.	T41NR3W:33 Ashland Co.	Unk.	1	M
23 Sept.	Elk River Chequamegon N.F. Price Co.	Bradle	1	F
1947				
11 Dec.	T35NR9W:25 Rusk Co.	King	1	M

Recent Distribution — Table 4B. lists 14 observations involving 16 individuals of **P. tridactylus**. The statewide winter distribution is similar to that for **P. arcticus,** extending from extreme northwestern Wisconsin east and southward. There are far fewer observations, however. Milwaukee Public Museum notes list one summer observation from Iron County on June 20, 1946. This was the only summer report for this species. The reported sex ratio of four museum specimens was two male : two female; and of eight observations was six male : two female. No nests have been reported from Wisconsin.

Conclusions:

The Black-backed Three-toed Woodpecker is a summer resident in northern Wisconsin. The remoteness and relative inaccessibility of its breeding habitat precludes more observations on its reproductive status in Wisconsin. Future researchers may find breeding areas in the following regions which have consistent summer observations:

The Brule River area has been a very active area in Douglas County. Other areas in that county that might reveal three-toed woodpecker activity are the region of the extensive 1977 Minong burn in south-central Douglas County, and the region of spruce swamps north and west of Moose Jct.

The Town of Knight in the area bounded by Moose Lake, O'Brien Lake, Pleasant Lake and Duck Lake, Iron County, should be surveyed since much activity has been reported there.

The upper reaches of the Pine River watershed from Tipler upstream in Forest County have provided some interesting reports.

In Florence County, the Savage and Robago Lakes area is a likely spot for three-toed woodpecker activity.

There are other areas where breeding is suspected in this state, but it is felt that the above mentioned areas offer the greatest oportunity for observing small populations of the Arctic Three-toed Woodpecker.

The Northern Three-toed Woodpecker is a rare winter resident and, rarer still, summer resident. Whether or not this species breeds in this state is not known.

LITERATURE CITED

Barger, N.R., R.H. Lound and S.D. Robbins. 1975. Wisconsin birds — Checklist with migration charts. WSO

Bent, A.C. 1964. Life histories of North American woodpeckers. Dover Publ. Inc. New York 334 pp.

Buss, I.O. and H.M. Mattison. 1955. A half century of bird changes in the lower Chippewa River. Milw. Public Museum Publ. in Ornithology No. 1. 319 pp.

Cory, C.B. 1909. The birds of Illinois and Wisconsin. Field Museum Nat. Hist. Publ. 131 Zool. Series IX. 764 pp.

Curtis, J.T. 1959. The vegetation of Wisconsin. UW Press, Madison, Wis. 657 pp.

Grundtvig, F.L. 1895-95. On the birds of Shiocton in Bovina, Outagamie County 1881-83. Trans. Wis. Academy Sci. Arts and Letters. 10:112.

Hoy, P.R. 1852. Notes on the ornithology of Wisconsin. State Agr. Soc. 2:341-64.

Jackson, H.H.T. 1942. Summer birds of northwestern Wisconsin. Pass. Pigeon. (4)2):11

Jung, C. 1927. Additional notes on birds of Vilas County, Wisconsin. Wilson's Bull. 39:172.

_____. 1928. Winter notes from southeastern Wisconsin. Auk. 45:384.

Kemper, C. 1977. Comparison of Iowa and Wisconsin checklists. Pass. Pigeon. 39(4):345-46.

King, F.H. 1883. Economic relations of Wisconsin birds. Geology of Wisconsin. 1:574.

Kumlien, L. and N. Hollister. 1903. The birds of Wisconsin. Bull. Wis. Nat. Hist. Soc. Milwaukee, WI. 143 pp.

_____. 1944. Philo Ronayne Hoy. Pass. Pigeon 6(3): 55-59.

West, J.D. and J.M. Speirs. 1959. The 1956-57 invasion of three-toed woodpeckers. Wilson Bull. 71(4): 348-355.

ACKNOWLEDGEMENTS

I wish to extend appreciation to the museum staffs of the respective institutions that were surveyed. Their assistance is graciously acknowledged. I especially wish to thank Dr. Max Nickerson and the staff of the Milwaukee Public Museum for generously donating xerox copies of museum notes. He also provided bibliographies of works I otherwise never would have located. Finally I extend a thanks to James Hale and William Creed of the Wisconsin Department of Natural Resources for giving permission to publish the valuable notes of the Pittman-Robertson W-4-R project crew.

Forest and Campground Bird Communities of Peninsula State Park, Wisconsin

By Robert W. Guth
Department of Biological Sciences,
Northwestern University, Evanston, IL 60201

Recent studies of bird communities in forest habitat suggest that logging or other habitat disturbance greatly alters the community (Whitcomb 1977, Whitcomb et. al. 1977). Hooper et. al. (1973) demonstrated that bird density and diversity varied with vegetation structure in forest recreational areas in the Southern Appalachians. I counted birds in June, 1977, in Peninsula State Park, Door County, Wisconsin, in order to compare bird populations of mature forests, forest edge, and altered campground sites. I attempted to answer two questions:

1. How do bird density and diversity vary between mature forest and campgrounds?
2. Are there differences in the guilds or types of species which live in campgrounds as opposed to forest?

Study Area and Methods

Peninsula State Park is located on the western shore of the Door Peninsula near Fish Creek, Wisconsin. I counted birds along trails and drives of the park from June 14 to June 17, 1977. Areas studied included parts of Nicolet Camping Area, Welker's Camping Area, Shore Road, Sentinel Trail, Hemlock Road, Nicolet Bay Trail, Sunset Trail (NE end), and Trail Tramper's Delight Trail, as determined from park publications. Forests were composed of sugar maple, basswood, beech, hemlock, and red oak, with some white cedar along Lake Michigan. Campgrounds were intensely used areas of deciduous and coniferous trees with much understory and some areas of grass. I recorded bird use of 91 m x 91 m segments of the habitat, traversing each segment in 4 minutes (Geis 1974). This technique is not a bird census, but an index to bird use which allows comparisons between sites. I recorded the presence or absence of forest understory, an estimate of the extent of conifer species in the segment, the presence of grass, and whether the site was mature forest, forest edge, or campground. The segments were divided into 8 major habitats as follows: deciduous forest with little or no understory, deciduous forest with understory, mixed deciduous forest with conifers and understory, hemlock forest, edge habitat with grassy vegetation and large conifers, forest-like campground sites with deciduous trees, trees, forest-like campground sites with deciduous trees and conifers, and campground sites with both grass and trees. The number of segments counted in each habitat are indicated at the bottom of Table 1. Common and scientific names of birds follow American Ornithologists' Union (1957) and supplements.

Results

In Table 1, I present the list of species encountered, bird density index, number of species, and computed bird species diversity (Simpson 1949) index of number of equally common species. The density of birds was low (2.50-3.27 birds/segment) for the forest and forest edge sites, slightly higher in mixed sites with understory (3.88), and greatly increased in camp grounds (7.67 - 10.00 birds/segment). The number of species encountered

was smallest in deciduous forest, and greater in mixed and hemlock forest as well as campgrounds. The number of equally common species was likewise greater in mixed forest, hemlock forest, and campground sites with grass and trees. Equibility (Simpson's index D/number of species) was lower for each campground category as compared with its forest counterpart, although equibility was also low for mixed forest with understory. Thirty-three species were found in campground sites (31 segments counted), and thirty-two species were found in forest sites (62 segments counted). I conclude that bird density was increased and diversity declined in campgrounds as compared to forests. Table 1 also illustrates changes in the species composition between forests and campgrounds.

Discussion

I examined the results to determine if the larger bird density in campgrounds was due to richer soil type or proximity to Lake Michigan. I found that some forest areas which I counted were also on similar soils at the same elevation, but had low bird densities. Although some of the increased bird density in campgrounds may be due to the location of the campgrounds, the contrast between forest and campground appears to be the major factor for density differences.

Hooper et. al. (1973) showed that the presence of understory in forest-like recreational areas increased bird density, that mixed forest sites with both deciduous and coniferous trees had greater numbers of species, and that parklike recreational areas with grass sometimes had larger bird densities than expected from understory cover alone. I did not directly test these conclusions, but the results of Table 1 do not contradict them. Campgrounds have a patchwork of open and closed canopy, a mixture of deciduous and coniferous trees, and many clumps of shrubs and understory vegetation which are maintained by the frequent habitat disturbance. Species which use this habitat appear in greater density, with great variety of species.

The composition of the bird community in campground sites represents a different component of the community. There were 14 species found in forest habitats which were not in campgrounds, and 14 species found in the campground counts, but not the forest counts. The fourteen species absent in campgrounds included 5 warbler species, 2 thrush species, 2 large species (Ruffed Grouse and Pileated Woodpecker), 3 rare hemlock forest species (Winter Wren, Red-breasted Nuthatch, and Brown Creeper), and 2 widespread species (Black-capped Chickadee and Indigo Bunting). These species are mostly insectivores. The fourteen species gained in campgrounds included 2 warblers, 2 vireos, 3 swallows, and 7 widespread species (Common Flicker, House Wren, Brown Thrasher, Starling, Common Grackle, American Goldfinch, and Song Sparrow). Graber and Graber (1976), using Faunal Index point values for northern Illinois, weighted 8 species absent in campgrounds at 550 points, with the other 6 species off-scale or not listed for Illinois, but 13 species gained by campgrounds at only 180 points (1 species absent in Illinois). Some of this increase in widespread species may be attributable to the patchy matrix of campgrounds which resembles the patchy habitat of urban and agricultural areas in the central United States. These widespread species appear abundantly in urban and in agricultural habitat, and do not appear to need additional preservation.

Table 1. List of bird species, bird density index, number of species, and computed bird species diversity for 8 habitat types in Peninsula State Park, June, 1977. Habitat types are abbreviated as follows: DF, decicuous forest with no understory; DFU, deciduous forest with understory; MFU, mixed forest with understory; HF, hemlock forest; GCE, grass and conifer edge; DFC, deciduous forest campgrounds; MFC, mixed forest campgrounds; CGT, campgrounds with grass and trees.

Species	DF	DFU	MFU	HF	GCE	DFC	MFC	CGT
Black-capped Chickadee	x	x	x	x	x			
Ovenbird	x	x	x	x	x			
Least Flycatcher	x		x			x	x	x
American Redstart	x		x	x		x	x	x
Eastern Wood Pewee	x	x	x			x	x	
Red-eyed Vireo	x	x	x	x	x	x	x	x
Great Crested Flycatcher	x	x	x	x	x	x		
Scarlet Tanager	x	x	x	x	x	x	x	x
Rose-breasted Grosbeak	x	x	x		x	x	x	x
American Robin	x	x	x	x		x	x	x
Downy Woodpecker	x	x	x			x	x	
Blue Jay		x	x	x	x	x	x	
Mourning Warbler		x		x				
Mourning Dove			x				x	x
Gray Catbird			x					x
Veery			x					
Blackburnian Warbler			x	x	x			
Indigo Bunting			x		x			
Pine Warbler			x				x	x
Chipping Sparrow			x		x		x	x
Yellow-bellied Sapsucker			x				x	
Brown-headed Cowbird			x		x	x		x
Ruffed Grouse			x	x				
Cedar Waxwing			x		x		x	x
Black-throated Green Warbler			x	x				
Wood Thrush			x	x				

Table 1 — Continued

Species	DF	DFU	MFU	HF	GCE	DFC	MFC	CGT
Red-winged Blackbird			x				x	x
Black and White Warbler				x				
Winter Wren				x				
Pileated Woodpecker				x				
Red-breasted Nuthatch				x				
Brown Creeper				x				
Northern Oriole					x	x	x	x
Common Grackle						x	x	x
Yellow Warbler						x	x	x
Tree Swallow						x	x	
Common Flicker							x	
Brown Thrasher							x	x
Barn Swallow								x
Rough-winged Swallow								x
Warbling Vireo								x
Song Sparrow								x
Black-throated Blue Warbler								x
Starling								x
American Goldfinch								x
House Wren								x
Yellow-throated Vireo								x
Density Index	2.50	3.00	3.88	3.10	3.27	8.00	7.67	10.00
Number of Species	11	11	26	18	13	15	21	26
Number of segments censused	12	9	31	10	11	9	9	13
Computed bird species diversity	7.89	6.94	12.44	11.58	8.64	8.18	9.54	11.36

The campground habitats in this study had a greater density of birds than forest habitats, with slightly greater variety but lowered equibility of species. The species which inhabitated campgrounds represented a greater percentage of widespread species, whereas numerous rare forest species were absent. The benefit of increased density and variety of birds in campgrounds must be balanced against the loss of rare forest species which may need conservation.

Acknowledgements

I thank E. Raymond Heithaus for advice and encouragement in this study, and Northwestern University for funds.

Literature Cited

American Ornithologists' Union. 1957. Checklist of North American birds. (Fifth Edition). Port City Press, Baltimore. 691 pp.

Geis, A.D. 1974. Effects of urbanization and type of urban development on bird populations in Wildlife in an urbanizing environment: a symposium. Coop. Ext. Serv., Univ. of Mass., U.S. Dept. of Agri. and County Ext. Services. P. 97-105.

Graber, J.W., and R.R. Graber. 1976. Environmental evaluations using birds and their habitats. Ill. Natur. Hist. Surv. Biol. Notes 97:1-40.

Hooper, R.G., H.S. Crawford, and R.F. Harlow. 1973. Bird density and diversity as related to vegetation in forest recreational areas. J. of Forestry 71(12):766-769.

Simpson, E.H. 1949. Measurement of diversity. Nature 163:688.

Whitcomb, B.L., R.F. Whitcomb, and D. Bystrak. 1977. III. Long-term turnover and effects of selective logging on the avifauna of forest fragments. Amer. Birds 31(1):17-23.

Whitcomb, R.F. 1977. Island biogeography and "habitat islands" of eastern forest. Amer. Birds 31(1):3-5.

Play Behavior In Northern Ravens

By Charles C. Bradley
Baraboo, Wisconsin

During 1944-45 I was part of the U.S. Army's North Pacific Combat School in the Aleutian Islands. Among the many perpetually interesting and amusing sights was the behavior of the Northern Raven (**Corvus corax**) — aerobat, acrobat, clown, scoundrel, tease, and daredevil.

Raven play is well known to ornithologists. Bent in his **Life Histories of North American Birds** describes behavior similar to several of my observations. As a geologist I am well aware that these observations may be scientifically redundant, but since I have never seen such elaborate antics in any other bird, including those of the same species in the northern Rocky Mountains, I write these notes primarily to share the entertainment **Corvus corax** provided for me.

My first important encounter with **Corvus** took place during a tactical exercise on a high fog-bound ridge near Dutch harbor, June, 1944. Visibility was limited to a few feet but varied with the density of the fast-moving clouds. First we heard what sounded like hilarious laughter. As we moved forward to investigate, we finally could make out a group of four Ravens taking turns sliding down an old snow bank. One would slide, mainly riding on tail feathers, feet forward, half-spread wings touching the snow for stability. As he gathered speed, he spread his wings and became airborne, circled the updraft and landed at the top of the snow bank to become one in the line of spectators. Throughout there was a great deal of "Haw! Haw!

Haw!" especially from the spectator ravens. We watched this game through the wavering veil of fog for perhaps 2 to 3 minutes before our own uncontrollable hilarity brought the party to an end.

From then on we all kept our eyes on the Ravens. The most common stunt was performed in the air — a "barrel roll," or more accurately, a half-roll and return. While in straight and level flight the bird would slowly roll to an upside-down position and then roll back. The stunt was usually punctuated by a single "Haw" as the bird righted itself. I never saw this maneuver except when Ravens were paired, so I presume it may have courtship significance. However the Ravens usually travelled in multiples of two, four being perhaps the most common number. Further, I believe I saw the half-roll performed in all seasons except possibly winter. Occasionally a full roll was completed. On several occasions we saw a practical application of the half-roll. A Raven, pursuing another Raven that was carrying something, would swoop in from behind, execute the half-roll beneath his intended victim and attempt to steal the prize. In the ensuing struggle they generally both appeared to forget all about flying and would fall for sometimes a thousand feet, pulling out just in time to avoid crashing.

In July 1944 with an aircraft tracking telescope I watched a Raven do two loops. The first was nicely executed. On the second he appeared to stall as the loop was being completed and went into a floppy spin which he allowed to continue until he was a scant few feet above the sea.

During the winter of 1944-45 we lived on Adak. The Ravens were our constant companions. Far from being disturbed by man the Ravens took pleasure in the association, becoming quite tame and making use of our communication network as though it was their private jungle gym. They particularly enjoyed using the wires as horizontal bars with the "giant swing" and the "kip" as favorite stunts. A bird would land on the wire and, clutching the wire, would fall forward in an apparent attempt to go all the way around and upright again. Occasionally they were successful. More often they would fall short, swinging upside down, attempting and sometimes completing what a gymnast would call a kip. By action of tail and wings the Raven would increase the arc of his swing until he was once more upright on the wire. Several times we saw Ravens slide down the diagonal guy wires on the telephone poles. The slide was terminated by braking with the feet or by taking to the air just before hitting the ground.

Our big malamute mascot, "Mike", was a continuing target for Raven rough-house at all times of the year. As we walked the tundra, two to four birds would sidle down the wind to a point about two feet over Mike's head and would hover there making low conversational noises. Mike would pay strict non-attention for several minutes, but finally it got to him and his psyche would explode. He would suddenly leap high in the air snapping and yelling, his temper in shreds. The Ravens with nice precision would rise just barely beyond his reach and when the explosion was over would settle down above his head once more.

Most of the Ravens looked as though they could do with a bit of preening. Their feathers tended to have an untidy wind-blown look. Aleutian winds can be fierce and the Ravens loved the updrafts on ridges and off of cliff faces. On the north side of Kuluk Bay, Adak is the Palisades — a vertical cliff several hundred feet high. One day in November, 1944 during a

typhoon when anything loose was sailing through the air and smart creatures were holed up, we watched two ravens having fun (?) with the screaming sheet of air rising along that cliff. The Ravens would approach from the landward side and deliberately fly into the updraft. It must have been deliberate because they did it several times. As they came over the edge of the cliff, they were literally blasted end over end into the sky, sometimes losing feathers in the process. It was difficult to watch this and not wonder how many Ravens get killed in their pursuit of fun.

And I think most of it was in fun. To my unpractised eye there was little of the activity which seemed to have a strong seasonal rhythm. Very little seemed to have any survival significance. Some, like the last-described activity, seemed almost antisurvival. If they were showing off, for whom? I at least was most impressed.

IN MEMORIAM — FRANK HOLMAN KING

Frank H. King was a native son of Wisconsin: born at Green Bay on June 21, 1915, he died at home in Madison on October 17, 1978. He secured a B.S. degree in biology from the University of Michigan in 1939 and two years later began his career with the Wisconsin Conservation Department (later DNR). He was a biologist, game manager and natural resources administrator for about three and a half decades.

Frank was a lover of the outdoors and preferred the field to the office any day — rain or shine. He frequented the swamps and bogs where rare orchids could be found and searched them out every year. He followed the seasons with all wildlife and studied their ways in order to understand their needs. The finest naturalists in the state were among his friends and his companions on wilderness canoe trips. He developed one of the finest personal libraries on wildlife, the fur trade and the early explorers of North America. He also was a first-rate nature photographer.

The year after he graduated from Michigan, Frank joined the fledgling Wisconsin Society for Ornithology and sent regular reports on the birds seen near his home at Manitowoc. He continued this interest and support for 38 years, during which time he served as chairman of the membership committee (1950-51), chairman of the first land purchase committee (1952) and vice-president (1956-57). In addition, he was circulation manager for the **Passenger Pigeon** for eight years. The record shows his professional field work included assignments at Ladysmith, Horicon, Spooner, Appleton and Oshkosh, during which time he conducted numerous surveys, including aerial waterfowl counts. In 1956 he came to the Madison office where he served as assistant director of the bureau of game management from 1962 to 1975. He retired in 1975.

In addition to presenting papers at interstate wildlife conferences on habitat management, Frank published several of significance. His 1949 survey of the American Egret in Wisconsin was the first presented by WSO's formally organized research committee (see Pass. Pigeon, vol. 9, no. 1,). Three of his articles in the **Wisconsin Conservation Bulletin** reflect his strong sense of relationship between people and wildlife: "The Management of Man" (Sept. 1948), "For Wildlife — and People" (Jan.-Feb. 1966) and "Bounties That Count!" (Nov.-Dec. 1966). The latter article tells of the new program for habitat restoration and management using funds once assigned exclusively for bounties.

Frank became a member of the Wisconsin Academy of Sciences, Arts and Letters more than two decades ago and participated actively in their meetings. He also supported several historical organizations, the Nature Conservancy, Wilderness Society, Friends of the Arboretum, and The Ridges Sanctuary. In addition, he belonged to the Mendota Brigade—Ouisconsin Voyageurs, and the Association of Retired Conservationists. He is survived by his wife Charlotte and three Children. A memorial fund has been established for the Nature Conservancy, Wisconsin Chapter (2809 Sylvan Avenue, Madison 53705).

— Walter E. Scott

IN MEMORIAM
MRS. ALICE WEBER

With deep sorrow, I report the death of Mrs. Alice Weber on August 23, 1978. She was a member of the Green Bay Art Colony and the Friends of Art. St. Norbert's College honored her on November 13, 1977 by exhibiting many of her naturalistic and impressionistic still life paintings. The paintings were left on exhibit for several weeks.

She was a charter member of the Green Bay Bird Club and a member of the Northeastern Wisconsin Audubon Society. She helped the late Clara Hussong organize the Green Bay Bird Club 42 years ago. She was president of the club several times and served on its Board of Directors for many years. She and her late husband Andrew were always ready to be field trip leaders, a feat they performed countless times.

She was also a member of the Ridges Sanctuary, Inc., the Women's Relief Corps and the Wisconsin Society for Ornithology. She won many national and local awards throughout the years.

She will be remembered as a person whose whole life had been dedicated to serving and loving her fellow men. Their problems and their future were her deep concern all through her compassionate and dedicated life. We extend our heartfelt sympathy to her bereaved family.

Edwin D. Cleary

IN MEMORY OF ALICE WEBER
— (Artist and Friend) —

August days are ending now
And soon the leaves shall fall. . .
and gently will their beauty rest
Upon her like a shawl. . .

She painted of the natural world
In glory — as it were,
And now the beauty of it all
Returns to honor her!

Her garden was a canvas, too,
Of deep sincerity. . .
She gathered up the bounty there
And gave with charity. . .

Oh, how much there is to learn
Of life in its endeavor
And some accomplish it so well
As did our Alice Weber!

(Remember us to Clara, now;
She'll greet you on the way. . .
Glorious is your heavenly home!
A painting to portray!)

Bernard Chartier

FIELD NOTES

by John Bielefeldt

The Winter Season **December 1, 1977 to February 28, 1978**

Seacoast and sunbelt birdwatchers might suppose, as they tote up the auklets and egrets on those incredible Christmas counts of 150 and more species, that winter in Wisconsin is unbearably dreary, suffered perhaps only on the long chance of some monster blizzard delivering a few half-frozen ptarmigan. I doubt that many San Diego or Miami observers are really quite that parochial (although they don't seem to realize, as all Wisconsinites do, that Minnesota winters are much worse), but some illusions do creep into our judgments about a season and its birds. Wisconsin observers are not immune, even in looking at their own winters.

Last year, for instance, almost everybody saw fit to revile the endless cold weather, and many blamed it for "birdless" fields and feeders. No such laments were heard this winter even though cold was in fact longer lasting and snows were deeper. One reason is clear enough: a giant invasion of winter finches made the weather seem friendlier. It's of course obvious, too, that each new invasion tends to become the "biggest ever." We forget that there are more birdwatchers, more feeders, and better communications in 1978 than there were in 1958 let alone 1938. Both these sorts of small delusions are natural enough and may be needed to keep up spirits during a 3½ month winter, but the point is that we often tend to look for change on too spectacular and too simple a scale.

Great rarities are easy culprits in these matters. The most exciting novelties are those farthest from normal range and those with least precedent; they are also the ones that mean almost nothing because they are pure accidents, part of no pattern. It could of course be that the pattern has not yet been recognized, and systematic search for seemingly rare birds can do much to refine knowledge of distribution. Rare birds can be precursors of range expansion, outliers of invasion, and possible clues to wider environmental change in Wisconsin and elsewhere. Commoner birds, however, do that last and most significant job better. Spectacular hints might be traded for more reliable signs of change if part of the time and effort spent on rarities were reassigned — and if some overly simplified views about common birds could be avoided. The presence or absence of a few birds at feeders is not much indication of swings in abundance. Not every short-term decline in abundance, real or apparent, is necessarily a portent of catastrophe. The causes or even the correlates of changing bird numbers are seldom clear and conspicuous and must often go unidentified.

If the preceding paragraph seems to belabor some plain facts, get ready for a still more trifling reminder — Wisconsin winter weather is not a single uniform event. We slip into convenient generalities about a "cold winter" or a "long snowy winter" and may sometimes out of habit start to think that winter birds live and die within that abstract world of constant weather. Some specific ways in which weather's effect on birds may get misinterpreted are mentioned later.

This short tour into the behavior of birdwatchers is intended to set the stage for some speculations about the patterns behind bird sightings in the winter of 1977-78. It has probably set some pitfalls as well, into which spectacular and oversimplified speculation will stumble. A winter writer analyzing (or divining) patterns and trends is lucky to have the Christmas counts. The summaries for individual species will often refer to highest or lowest counts for the 1970s, occasionally to record-breaking counts, and so on, but inferences of real fluctuation in numbers are strictly preliminary and suggestive. Unless the year-to-year differences are very well marked for carefully selected species, interpretation can be clouded and misdirected by the boom in Christmas count popularity. There were 66 counts in Wisconsin in 1967 and 72 counts, just a few more, in 1977. In that same 10-year period, however, the state's total counting effort measured in party-hours has nearly doubled. New observers are putting in more time, mainly at traditional count areas. Wisconsin needs indexes of regional and statewide count abundance of about 30 species for the last 25 years, although party-hours are not always the best indexing device and are certainly not the only factor to be considered. For all their flaws and biases, Christmas counts can be an important source of quantitative data for some species when cautiously handled.

Nevertheless, the core of a winter season and so far as possible a winter report is January and February, "midwinter" in the shorthand of this summary. December's Christmas counts are prefatory information. An individual observer working a minute fraction of the state may despair of duplicating the effort involved in a big Christmas count, getting anything beyond sketchy ideas of midwinter bird numbers, discovering anything but the simplest and most sensational events. Yet despite the limits of time and perspective, and apart from the cumulative virtues of individual records, the lone observer does have undervalued chances to document presence and movements and likely numbers of winter birds. See the Cedar Waxwing for a perennial case in point, or notice how very few data there were on the timing of the huge midwinter build-up of Common Redpolls. People who can cover the same area on a regular weekly basis (maybe 200 to 500 acres of typical habitats) are especially well placed to get such pieces of information. The evidence for seasonal, annual, or longer-term patterns among Wisconsin's winter birds is often ambiguous and usually insufficient. Qualifiers — perhapses and probablies — will abound in these pages, but it is hoped that attempts to suggest some patterns will help observers find better evidence for or against them.

The showpiece of the 1977-78 winter for most birdwatchers in Wisconsin and eastern North America was certainly the massive invasion of winter finches, particularly Pine Grosbeaks, Common Redpolls, and Pine Siskins. White-winged Crossbills and Evening Grosbeaks were numerous, briefly at

least, all across Wisconsin, and northwestern counties had more Red Crossbills than most other parts of the nation.

The irruptions had a great collective breadth. Every state east of the Rockies found at least one winter finch species, usually two or three, remarkably common by local standards. Some Pine Siskins reached the Florida Keys and extreme south Texas; a few Common Redpolls got as far as North Carolina, Tennessee, and Oklahoma; and a flock of 3000 Evening Grosbeaks was reported from Louisiana. In size, scope, and number of species involved, the collective flight fits recent models of alternate-winter irruptions, largely simultaneous, among eight boreal seed-eaters (winter finches plus Red-breasted Nuthatch). The synchrony among the birds has been statistically correlated with a similar synchrony of seed crop recessions among boreal trees of several species, especially conifers (except pines) and birches. The grand sweep of that model does not and never claimed to deny variation, within a given flight year, in the timing and strength of individual species' movements. Later accounts for each winter finch will show that "migrations" were going on all winter long in Wisconsin. No part of the state saw the same mix of numbers from one week to the next. The finches' invasions were not a single static event, and they may not have been separately or collectively the "biggest ever," but they will form a standard against which invasions are judged for a decade or two and considerable space will be spent describing them.

Several other northern invaders were also well represented in Wisconsin. Red-breasted Nuthatches set a record Christmas count total but 40 percent of those birds were seen on just two relatively small counts in Barron and Douglas/Bayfield counties, where more than eight Red-breasts per party-hour were recorded. Most southern counts, in contrast, listed only 0.1 to 0.2 per party-hour. If Madison had been seeing them at the same rate as the Brule census, its raw count total would have been just over 1400 Red-breasts. Northern Shrikes (again), Snow Buntings, and Rough-legged Hawks were numerous this winter too.

A Ferruginous Hawk reported from Columbia county was probably the most unexpected bird of the winter and was apparently the eighth state record. However, a western invader — the Varied Thrush — might have been the most striking rarity of the season. It seemed an almost certifiable case of best ever numbers. Although Wisconsin's eleven birds were only marginally more than the seven of 1968, sightings east of the normal Pacific coast range tripled the record established last year. A few reached Nova Scotia, New England, Maryland, and Virginia. Whatever it was that brought this eastern overflow is presumably linked to extraordinary numbers in California winter range, Arizona spillovers, and high midwinter counts in Alaskan breeding range.

Early to mid-December records of Turkey Vulture, Osprey, and Franklin's Gull, and an overwintering Harris' Sparrow, were not quite unprecedented, but a February Black Scoter off Manitowoc county may be Wisconsin's first in midwinter. A Spruce Grouse sighting is always noteworthy too. Twenty-odd reports of Hoary Redpolls were received but wrangles over identification of Hoaries continue in other states. General paleness and rump characteristics are said to be inadequate marks; scrutiny of these and other features at very short range is advised. Observers should see the

discussion and photos in **American Birds** 32:316, 330-331, 404 (May 1978). None of this winter's Wisconsin reports appear to meet the identification criteria suggested there.

Winter weather in 1977-78 began with a replay of late November and early December 1976 — statewide sub-zero cold, statewide snow cover, and another quick freeze of the big inland lakes by December 7-10. A 12-month drought, however, had been broken by heavy late summer and autumn rains, and Wisconsin entered the winter with adequate soil moisture, after lush farm harvests, and brimming rivers. Southern and eastern parts of the state had brimming snowdrifts too. Following the first major fall on November 23, frequent storms piled up 18-24 inches of snow, especially in the southwest, by December 9. In contrast to usual proportions, central and northern counties had less than half that much on the ground at the time. Even so the average Wisconsin snow cover was the deepest for early December since weekly surveys started in 1961. A weeklong warm spell in mid December melted all the southern and most of the northern snow by the 18th, but replenishments came the next day, Christmas Eve, and New Year's Eve, leveling depths at roughly one foot across the whole state. The variable holiday temperatures crept above freezing, with drizzle, on January 6-7, then settled down for this winter's run at the weather record books. Cold never got quite so intense as it had the year before (-38° F at Mason, Bayfield county, on February 3 was apparently the worst report) but 47 consecutive sub-freezing days at Madison fell just one day short of the 1911-12 record and beat last year's much berated cold spell by two days. Not until February 24 did Wisconsin again see readings above 32° F.

Except in the usual lake squalls along Superior and Michigan shorelines, midwinter snows were light and accumulated depths very near the 1961-77 average until January 26, when a true blizzard struck southern and eastern counties. Strong winds and 6-12 inches of new snow left monumental drifts and once more, as in early December, reversed the typical pattern of snow cover. Counties hit by the storm ended with 12-20 inches on the ground, about twice as much as the area north or west of La Crosse, Stevens Point, and Ashland. February snows, again excepting the lakeshores, were much below average but so were temperatures; there was almost no melting and a wide region in the south and east kept its unusual eminence in depths. Snow cover in the state as a whole averaged 12-14 inches, about 2-4 inches above the 1961-1977 norm, for most of the month.

Finally, in the brief and weak thaw of February 24-25, cold and snow receded a little. The reporting closed, however, with a return to midwinter conditions. Bare ground and warming days would wait until mid March to appear.

Last year's summary of the weather laid considerable stress, perhaps too much, on the persistence of harsh weather — unremitting cold, minimal open water, prolonged snow cover. Virtually the same could be said of this 1977-78 winter, and those few words may be as useful as the longer description above, because either serves mostly to recall the weather for birdwatchers' benefit. That is not an unworthy aim; by the time this is read the 1977-78 winter will be 12 to 15 months in the past. For wintering birds, however, a persistent "cold" spell of 47 days is a vast and not very momentous abstraction. "Cold" is relative to the chances of maximizing calorie in-

take and minimizing energy demands. A sunny, sheltered, food-rich microenvironment when official thermometers read zero is a weather-world away from some windy barrens on a cloudy 20° day.

In this winter, with relative north/south depths more or less upended, the idea of an average snow cover for the state as a whole is even more of a statistical fiction than usual. That February's "average" was 2-4 inches above the "norm" might really mean, for instance, that ground-feeding birds in southern and eastern Wisconsin were more than ordinarily dependent on small patches of windswept ground, on roadsides, on feeders, and on other fragments of habitat were food happened to be peculiarly available. More-than-ordinary dependence need not translate into more-than ordinary death rates; accessible food supplies could be entirely adequate supplies. Birds also have the theoretical option of flying elsewhere, although long-range dispersal in search of uncertain benefits is not a costless option. However many die or depart, remaining local birds must concentrate where there is food and gross effects on bird counting are unmistakeable. This year's rather simple pattern of snow melt and accumulation dramatized snow's substantial, perhaps staggering, influence on bird consipcuousness (see Horned Lark, meadowlarks, and especially Snow Bunting). In other years, of course, snow falls and melts are much more irregular in both time and space, and averages tell still less about food accessibility, about how conspicuous birds are apt to be, or about what censuses may say — if anything — of real numbers.

Even when snow conditions can be matched, year to year comparisons are complicated by regional, local, and ultra-local disparities in the size of food crops. The sources of those disparities can run counter to easy assumptions. In the corn croplands of southeast Wisconsin, for example, the 1976 summer drought probably supplied more midwinter weed seeds than the luxuriant growing season of 1977. Some resistance to drought and lessened competition from the stunted corn might have given cropfield weeds a better than normal growth in 1976, but more importantly, many acres of corn were not worth harvesting. Untrampled by the combine and supported by the cornstalks, many weed seedheads still poked above winter snows. Quite the reverse was usually true after the fine corn crop of 1977.

River ice may be something of an exception to these weather uncertainities. Water is either frozen or it isn't. There is no definitional question as to what constitutes open water; thick and thin ice, unlike deep and shallow snows, have almost identical implications for winter birds. It takes only "ordinary" winter weather to freeze most parts of most rivers, but it takes a fairly long run of very cold or very mild temperatures to make a really major change in the "ordinary" extent of river ice. Midwinter habitat for birds obliged to find open water is some more or less specifiable proportion of a fixed total amount, rivers provide much of the annual variety in that proportion, and observers tend to know exactly where to look for open water and water birds. Given such conditions, it is probably not too surprising that a rough estimate of river ice correlates with counts and sightings of certain birds over the last three winters (see Bald Eagle, American Coot, Belted Kingfisher). This year most inland lakes froze by December 10. Rivers, at least in southern Wisconsin, were free-running during the mid December thaw but started to ice up again at Christmas. By late January only spring

fed stretches and strong currents were still open; in mid February even some of those were frozen. At the very least, midwinter open water was no more extensive than last winter, certainly less extensive than in many recent winters. This quick assessment relies mostly on personal experience in southeastern counties, and more explicit notes on open water's extent in all parts of the state are desirable. Besides rivers, artificially aerated ponds and warmed wastewaters can be locally important, especially for waterfowl. The Great Lakes are of course a largely separate case and, it ought to be mentioned, a case in which many potentially productive shorelines (see the scoters) are underworked.

Hilsenhoff has charted 1977 Christmas count and count periods in **Passenger Pigeon** 40:358-370 (Spring 1978). Only those December reports needing special emphasis will be noted here, and contributors are asked to omit Christmas count data from their winter report forms.

Forty-five observers in 36 counties provided extensive January-February reports in an effort, by this rough measure, a little greater than that of 1976-77 and just about equal to that of 1975-76. Fragmentary reports and occasional sightings came from 21 additional counties. The Ned Hollister Bird Club again sent the worthwhile results of its February rerun of the Beloit Christmas count in Rock County. Several observers made weekend trips to northern Wisconsin this winter but regular annual coverage is still missing in Washburn, Sawyer, Rusk, Douglas, Ashland, Oneida, Lincoln, Langlade, and Florence Counties. As usual a block of southwestern counties — Green, LaFayette, Iowa, Grant, Richland, Crawford, and Monroe — got almost no reported attention.

Seasonal Summary

Pied-billed Grebe and **Great Blue Heron:** No post-Christmas count reports.

Mute Swan: As usual, resident birds in Bayfield Co. (on the Christmas count) and/or Ashland Co. (four Dec. 26 and Feb. 26 — Korotev).

Canada Goose: Wintered in Brown Co. (up to 570 — Cleary, Columban) and Ozaukee Co. (2 — Cutright). Other midwinter reports Jan. 13 Milwaukee (2 — Frank), Jan. 20 Columbia (3 — Tessen), Feb. 5 Adams (100 — Tessen), Feb. 9 Waukesha (Curtis), Feb. 12 Racine (13 — Louise Erickson), and Feb. 27 Walworth (Bintz) Counties. Late February's feeble thaw might have moved those last birds north to Wisconsin skies, but this season's weather gives no grounds for calling earlier sightings anything except winterers or winter vagrants.

Snow Goose: Four or fewer overwintered in Brown Co. (Cleary, Columban).

American Black Duck: The five reports which gave peak midwinter counts for both species totalled 3194 Mallards and 326 Black Ducks (300 of the latter at Green Bay) in Rock, Dane, Waukesha, Ozaukee, and Brown Cos.

Gadwall: Reported present all winter in Dane (max. 35), Waukesha (2), Ozaukee (2), and Marquette (8) Cos.

Common Pintail: One all season Brown Co. only midwinter report.

Green-winged Teal: Single birds seen Jan. 1 Winnebago Co. and Feb. 3 Milwaukee Co.

American Wigeon: Outagamie and Milwaukee Cos. had single birds Jan. 1 and Jan. 14, respectively.

Northern Shoveler: Apparently wintered Dane Co.

Wood Duck: Wintered in Milwaukee (at least 2), Dane (at least 1), Brown (1), and Winnebago Cos. Seen Waukesha Co. Jan. 28 (1) and Rock Co. Feb. 19 (2).

Redhead: Wintered Winnebago and Brown (1) Cos., and seen after Feb. 25 Milwaukee Co.

Ring-necked Duck: One lingered until Jan. 5 La Crosse Co.

Canvasback: Reported Jan. 23 Ozaukee Co. (1), Jan. 25 Racine Co. (9), and Feb. 19 Rock Co. (15).

Lesser Scaup: Reported only from Winnebago Co., where it wintered.

Bufflehead: Wintered on Lake Michigan at least as far north as Kewaunee Co. (Feb. 4).

Harlequin Duck: The Christmas count period report from Racine Co. involved 3 meticulously described birds, a male and 2 females, Dec. 19-21 (Louise Erickson).

White-winged Scoter: Three seen Feb. 4 Kewaunee Co. (Korotev).

Black Scoter: Single females Racine Co. Dec. 1 (Louise Erickson) and Ozaukee Co. Dec. 5 (Cutright) were no doubt remnants of a strong fall flight. A male in Manitowoc Co. Feb. 27 (Bro. Columban) may be, however, the first documented midwinter record. See **By The Wayside**.

Ruddy Duck: For the second straight year no midwinter reports.

Hooded Merganser: The five mid and upstate reports last year may have been just good luck; one wintering Winnebago Co. was this year's only approach to that range. Also wintered Ozaukee Co. (at least 1). Seen Jan. 4 Racine Co., Jan. 15 Kenosha Co., and Feb. 18 Waukesha Co.

Red-breasted Merganser: The usual Lake Michigan records included birds north to Door Co. Feb. 4 (Korotev) and Feb. 18 (20 — Lukes), and 90 off Milwaukee Co. Feb. 11 (Epstein). One La Crosse Co. Jan. 5 was the only midwinter report away from the lake.

Turkey Vulture: Steve and Penny Thiessen saw an adult in Dane Co. Dec. 10 "about 10 yards off the highway."

Northern Goshawk: Six Christmas count birds and single midwinter birds from each of eight counties — Douglas, Chippewa, Pierce, Marathon, Wood, Portage, Adams, and the sole southern report, Milwaukee — matched last year's poor showing.

Sharp-shinned Hawk: Midwinter reports from Milwaukee, Walworth, Rock, Dane, Columbia, Marquette, Manitowoc, Brown, La Crosse, Buffalo, and Chippewa Counties, plus northerly Door (Feb. 9 — Lukes), Sawyer (Jan. 22 — Robbins, Tessen), and Bayfield (Feb. 7 — Bratley) Counties. These are twice the typical midwinter results, or better, but an average Christmas count undermines any notion of unusual numbers. Probably Sharp-shins were drawn into view by small birds' abundance at feeders. See Cooper's Hawk.

Cooper's Hawk: Midwinter listings in Racine, Milwaukee, Waukesha, Marquette, Portage, Outagamie, and Brown Cos. plus a non-Christmas count report from Columbia Co. in December. It is still hoped that appropriate restraint in identifying "Cooper's" will be exercised but not even minimal assurances to that effect were received.

Red-tailed Hawk: Reported midwinter range limits continued very stable on the west (Barron Co.) and west (Brown Co.) but once again shifted at midstate — this year, in the Luepke's observations, one or two counties above last winter to Portage, Wood (max. 5 on Feb. 1), Clark (1 on Jan. 29), and Marathon (max. 3 — "above normal"). Although Christmas count numbers were somewhat higher than last year, there has not been any really substantial variation in raw count totals in four years.

Red-shouldered Hawk: Midwinter reports from Waukesha Co. Feb. 4 (1 — Tessen) and Feb. 18 (the same? — Bielefeldt), Manitowoc Co. Jan. 27-Feb. 17 (Woodcock), and Marquette Co. Jan. 29 (deBoor). Early winter sightings in Milwaukee Co. Dec. 3-10 (1 — Epstein) and Buffalo Co. Dec. 3 (1 — Hoffman) came from areas which also listed Christmas count birds.

Rough-legged Hawk: Christmas counts fell well short of the decade's 1974 peak but they tripled last year's low count, and midwinter range was much bigger than last year's. Winter-long Rough-legs were seen in most contributing counties north to Door, Marinette, and Barron, and even farther in numbers that seemed to surpass reported southern maxima — Marathon Co. (9 on Jan. 23 — Luepke) and Burnett Co. (8 on Jan. 22 — Evrard). Finally, Bayfield Co. had one on Jan. 22 (Korotev) and a road-kill was found in Douglas Co. in February (Bernie Klugow).

Ferruginous Hawk: One reported from Columbia Co. Feb. 17, and described by Hoffman in **By The Wayside**.

Golden Eagle: Single bird(s) Dec. 15 and Jan. 31 Burnett Co., where it winters annually (Evrard). Single adults Dec. 3 Buffalo Co. (Hoffmann — where a Christmas count adult was also seen) and Jan. 22 Ashland Co. (Tessen, Robbins, Safir, Louise Erickson, Charles Kemper, Carl Hayssen.)

Bald Eagle: It was suggested last year that a peak count of one in Burnett Co. might represent a habitat shortage, with waters mostly frozen in the northernmost stretches of the state's big rivers. Evrard's peak was again one in Burnett Co. in an equally icy winter this year. The occasional Lake Michigan individuals of midwinter came this year from Ozaukee Co. in early January (Badger Birder), Outagamie Co. Feb. 11 (upstream from the lake on the Fox River — Lee Hammen), and Jan. 28-Feb. 18 — "until the Peshtigo River froze" — in Marinette Co. (Lindberg).

Northern Harrier: The Christmas count total was as good as any in the 1970s, and much better than last year, yet midwinter reports were still sparse: wintered Ozaukee Co. (at least 2 — Tessen, Louise Erickson, Epstein) and seen Jan. 1 Walworth Co. (Bintz), Feb. 5 Waushara Co. (Ziebell), and Feb. 26 Winnebago Co. (1 — Ziebell).

Osprey: One seen Dec. 3 in Sheboygan Co. by Dan Berger.

American Kestrel: Christmas counts maintained the consistently high numbers of the three preceding years, with northern midwinter limits in Brown, Juneau, and St. Croix Cos., plus one in Marathon Co. Feb. 24.

Spruce Grouse: Three in the northeastern part of Sawyer Co. in February (Bernie Klugow).

Common Bobwhite: Midwinter reports from Grant, Iowa, and Marquette Cos.

Gray Partridge: Listed from Ozaukee, Waukesha, Dodge, Columbia, Winnebago, Manitowoc, Outagamie, and Brown Cos. in midwinter.

American Coot: Midwinter reports in the same 5 counties as last year (vs. 11 counties in 1976): Dane (Laura Erickson), Waukesha (24 vs. 8 in 1977 vs. 61 in 1976 — Bielefeldt), and Winnebago (at least 1 — Ziebell, Tessen) all winter long, plus Walworth Co. Jan. 15 (Tessen) and Rock Co. Feb. 19 (2 — Hollister recount). Those observations seem consistent with last winter's conclusion, in similar weather, of limits imposed by an early freeze and icebound rivers.

Common Snipe: Three or four in January and February Waukesha Co. (Curtis, Safir, Bielefeldt) and one Feb. 18 Dane Co. (Korotev, deBoor) were the only midwinter reports.

Glaucous Gull: Second-winter birds were described from Ozaukee Co. Feb. 22 (Cutright) and Milwaukeee Co. Feb. 28 (Epstein). An unaged bird was also seen Jan. 2 in Milwaukee Co. (Tessen).

Iceland Gull: A carefully-described adult in Kenosha Co. Jan. 15 was attributed to the "Kumlien's" race because of a tiny bit of pale gray scalloping the tips of the second, third, and fourth primaries, very similar in color to illustration 2b in Godfrey's **Birds of Canada** ... the paleness of the gray markings and their extremely limited extent would preclude the Thayer's Gull" (Louise Erickson). An adult white-winged gull in Douglas Co. (Feb. 27 (Hoffman) was "the same size if not slightly smaller" than two adjacent Herring Gulls but no direct mention was made of bill size or other marks which might rule out a small Glaucous Gull.

Ring-billed Gull: Midwinter reports only from Lake Michigan counties of Kenosha, Milwaukee, Ozaukee, Sheboygan, and possibly Brown.

Bonaparte's Gull: The late stages of this gull's fall migration are well-appreciated along Lake Michigan but may be less familiar elsewhere. They are numerous enough on the lake in early December, with nearly 200 reported in Racine, Milwaukee, and Ozaukee Cos. on Dec. 2 this year. Christmas counts get a few, totalling 9 at Racine, Milwaukee, and Sheboygan this winter, but later records (none this year) are most unusual.

Franklin's Gull: Painstaking descriptions and drawings were provided for a breeding-plumaged adult Dec. 19 in Sauk Co. (Libby and Jim Zimmerman).

Mourning Dove: 4,000 Christmas count birds was the "poorest" total since the early 1970s. Reported midwinter limits, like last year's, in Door, Oconto, Marinette, Marathon, Clark, Chippewa, and St. Croix Cos.

Common Screech Owl: After Christmas counts, reported from Racine, Milwaukee, Walworth, Waukesha, Dane, Marquette, Fond du Lac, Winnebago, Brown, La Crosse, St. Croix, and Barron Cos.

Snowy Owl: Christmas counts yielded an exceedingly poor 4 birds in accord with a near-lack of Snowies all across the northern US, although the scope of January-February reports in Wisconsin was very much like that of the past three winters — Racine (1), Milwaukee (1), Waukesha (1), Winnebago (at least 1), Brown (1), Door (1), Oneida (1), Columbia (1), Wood (at least 2), St. Croix (1), Burnett (at least 1), and Douglas (at least 4) December sightings added no non-Christmas count locales. Duluth observers suspected January arrivals, which could account for the small (and spurious?) divergence in early and midwinter reports.,

Long-eared Owl: Pre-dawn work and tape recordings, clear sources of growing Christmas counts for Great Horned and Screech Owls, seem unlikely to boost Long-ear totals very much. There were, however, the best Christmas count and most midwinter reports since the 1970-71 and 1971-72 seasons. Minnesota also had unusually many Long-ears. In Wisconsin, they wintered in Ozaukee (1 — Cutright) and Waukesha (1 — Safir) Cos. Also seen Racine Co. Jan. 11 (3 — Louise Erickson), Brown Co. Feb. 9-12 (1 — Cleary, Columban), Dane Co. Feb. 14-18 (deBoor), Rock Co. Feb. 19 (1 — Hollister recount), Milwaukee Co. Feb. 12 and 26 (Epstein, Seegert), Sheboygan Co. Feb. 22 (1 — Cutright), and St. Croix Co. Feb. 23 (1 — Faanes). Early December sightings in Dodge (Seegert) and Pepin (Hoffman) Cos. were not repeated on local Christmas counts.

Short-eared Owl: The few data are contradictory, perhaps because of snow effects (see Horned Lark). A quite unremarkable Christmas count was followed by the most midwinter reports of the decade. Short-ears were allegedly numerous in several nearby states too. Wintered in Ozaukee (at least 6 — Cutright, Louise Erickson, et al.), Walworth (Bintz), and Waukesha (3 — Safir) Cos. Seen Racine Co. Feb. 19 onward (at least 2 — Ed Prins, Fred Faraca), Milwaukee Co. Feb. 25 (Seegert), Columbia Co. Jan. 22 and Feb. 20 (at least 2 — Hoffman, deBoor), Marathon Co. Jan. 29 and Feb. 26 (3 — Luepke), and Burnett Co. Jan. 4 (1 — Evrard). Also Dec. 1 Dodge Co. (Seegert) where not found on the Christmas count.

Expanding interest in owls, observer density, and traditional wintering spots may furnish most of the southern records but the Marathon and Burnett Co. observations come from northern sections where midwinter Short-ears are not often reported.

Saw-whet Owl: Two in Dane Co. Feb. 10-26 (Al Shea, Korotev) were the only midwinter birds reported.

Belted Kingfisher: Wintered in Waukesha (at least 2), Dane (1), Columbia, La Crosse, Pierce, St. Croix, and Barron (2) Cos., plus a Jan. 14 bird on the lower Wisconsin River (Iowa Co.?). These 8 midwinter counties or the 5 counties last year seem another instance of numbers contracting along with unfrozen habitat; compare the 14 midwinter counties in the mild winter of 1975-76.

Common Flicker: Except for a Jan. 28 record in Pierce Co. (Faanes), all midwinter reports came south and east of Dodge, Marquette, Columbia, and Dane Cos.

Pileated Woodpecker: Edge-of or out-of-range individuals mentioned for early December by Badger Birder had follow-up reports in Ozaukee Co. (Newburg Christmas count for the second straight winter at Cedarburg Bog) and in Waukesha Co. (Jan. 20 — Tessen) but not in Washington Co.

Red-bellied Woodpecker: At the typical northern limits were Barron, Chippewa, Wood, and Brown Co. birds. Less regular perhaps were winterers in Door (Lukes) and Marinette (Lindberg) Cos. and a Jan. 25 bird from Oconto Co. (Ziebell).

Red-headed Woodpecker: The unimpressive Christmas count total can be laid, at least in part to deficiencies in the east/southeast where many counts had but one bird and Milwaukee's two counts had none at all. Except for a few in Ozaukee and Racine Cos., midwinter reports were completely lacking in a wide region south and east of Lake Winnebago, including well-watched Milwaukee, Waukesha, and Dane Cos. There seemed no shortage of sightings in central and western counties; two Feb. 11 in Marathon Co. were a bit farther north than some winters' reports.

Horned Lark: Probably overwintered as far north as Brown, marathon, and Barron Cos. Seen Feb. 27 Douglas Co. (Hoffman). Christmas counters know their Horned Lark tally will depend mostly on snow cover, and this year provided an uncomplicated demonstration. Within lark range in the state's lower half, counts split neatly into 26 nearly snowless ones Dec. 17-23

(mostly 0-1" depths) and 27 very snowy ones Dec. 26—Jan. 2 (7" average depth). Corresponding lark counts were 120 and 657 birds, or 0.1 and 0.9 per party-hour.

Maybe snow does explain why the state's biggest Christmas count of 115 at Augusta, Eau Claire Co. on Jan. 2 superceded a previous high of 1 bird there, and why Beloit's February recount found 507 where zero were seen Dec. 18, but see also Snow Bunting.

Gray Jay: Midwinter reports from Ashland, Bayfield, Douglas, Price, Sawyer, Rusk, and Barron Cos., all within normal range.

Northern Raven: Wintering south to Door Co. is annual (Lukes). Birds in Eau Claire Co. Jan. 5 (Robbins), Wood Co. Feb. 19 (1 — Luepke), and Jackson Co. Jan. 24 (1 — Harmer) were pressing range limits, and one Juneau Co. Jan. 19 (Hoffman) had gone a little past the usual limits.

Boreal Chickadee: Price Co. all winter (Hardy), Douglas Co. Feb. 27 (Hoffman), and Sawyer Co. Dec. 27 (Korotev) were the only midwinter reports.

Tufted Titmouse: Midwinter reports from Waukesha, Rock, Dane, Eau Claire, and Chippewa Cos. only.

Red-breasted Nuthatch: The introduction comments on the strong-to-immense Christmas count numbers in far northwest/north-central counties. Quick analysis of birds per party-hour suggests that this abundance was restricted to a 13 or 14 county zone within 70 or 80 miles of a geographic center near Park Falls. Midwinter counts imply that abundance persisted (30+ on Feb. 25 Sawyer Co. — Tessen) and spread a little (59 on Jan. 8 St. Croix Co. — Faanes). Red-breasts wintered statewide but no extraordinary numbers were reported elsewhere in Wisconsin.

Northern Mockingbird: Two on Feb. 14 Washington Co. (Norma Schmidt).

Brown Thrasher: One through January and another all winter in Racine Co. (Louise Erickson).

American Robin: Wintered north to Brown and St. Croix Cos. Seen in midwinter even farther north in Door Co. Feb. 27 (Lukes) and Marinette Co. Feb. 28 (Lindberg) — dates that might be suspect had wintry weather abated — as well as Bayfield Co. until Jan. 27 (Bratley).

Varied Thrush: The Christmas count bird at Appleton appeared in early December and stayed until mid January (Tessen); another bird was seen on the Shawano count. Non-count birds were one Waupaca Co. early December (William Hanson); one Bayfield Co. Dec. 27 (Bratley); one Marquette Co. early January until about Feb. 20 (Ernest Kuster and many others); two Door Co. appearing Dec. 17 and Jan. 26, respectively, and remaining into March (Lukes); and two Chippewa Co. seen from Jan. 1 and Jan. 28, respectively, into March (Robbins).

These 9 birds plus 2 more in November (see the introduction) are surely a small base for speculation, but why did none of these reports come from the really populous southeastern counties where bird feeders must be more numerous? How many go unreported? (Two descriptions, by then unconfirmable, surfaced in Waukesha — a southeastern county — in spring.) Is it simply random chance that all 7 birds whose sex was reported were males?

At least 8 of these birds were at feeders; only 1 (in autumn) was definitely reported from the "wild". Is the proportion of Varied Thrushes wintering in swamps, streamsides, and orchards, far from feeders, anything like that of the robin, so similar in habits, winter reliance on fruit, and appearance? Bratley's feeder bird came and went in the company of a Robinon the one day it was seen, and the two are said to mix in the West.

Golden-crowned Kinglet: The Christmas count did no better than last year's dismal total. Migration banding in the eastern US and other evidence seem to support the thesis that harsh weather in 1976-77 killed many Golden-crowns within their primary winter range (Tennessee, for instance). However, that does not necessarily mean that kinglets which winter (or would have wintered) in Wisconsin were affected. Westward emigration was offered as one possible explanation of last year's December shortage in Wisconsin, before the severe weather, and irruptions often prove fatal for a large share of the emigrants. That alternative source of death could in turn account for this winter's scarcity in the state. Winter kinglets are also prone to observer oversight. Much supposition, few data.

Wintered Waukesha Co. (Bielefeldt). Seen Jan. 7 Milwaukee Co. (Frank), Jan. 10 Door Co. (Lukes), Feb. 18 St. Croix Co. (Faanes), and Feb. 20 Columbia Co. (Hoffman).

Cedar Waxwing: As usual, an ill-defined batch of reports attributable either to overwintering or to one of the frequent February influxes. Explicit note of January presence and comparative mid and late winter counts are needed.

Northern Shrike: The 1977 Christmas counts did not approach last year's superlative total but still edged out the short-lived record of 1975, making this the fourth consecutive high count. Once again midwinter observations from practically all contributing counties and quite literally every corner of the state — Kenosha, Grant, Douglas/Bayfield/Ashland, and Marinette/Door Cos.

Meadowlark spp?: A Columbia Co. road-kill on Jan. 29 could be identified as a **Western Meadowlark** (Hoffman) but all others were indeterminable. Midwinter birds, singles except as noted, all season in Marathon (Luepke) and Ozaukee (3 — Cutright) Cos., and seen Jan. 2 Kenosha Co. (Fred Faraca), Jan. 5 La Crosse Co. (Lesher), Jan. 7 Portage Co. (2 — Tessen), Jan. 29 Dane Co. (Korotev), Feb. 19 Rock Co. (Hollister recount), and six dates Columbia Co. (Hoffman et al.). These are rather many after the lowest Christmas count since 1967. Very likely snow cover's effect on roadside observations can once more be credited (see Horned Lark).

Red-winged Blackbird, Common Grackle, and **Brown-headed Cowbird:** The too-familiar blackbirds are not winter reporters' chief object of attention, but trips to the far north in search of various boreal birds do have side benefits — three Douglas Co. redwings on Jan. 22 (Tessen) and four Ashland Co. grackles plus a cowbird on Feb. 26 (Korotev, deBoor).

Rusty Blackbird: Midwinter listings only on Jan. 27 Racine Co. (1 — Louise Erickson) and Jan. 3 Ozaukee Co. (1 — Cutright).

Northern Cardinal: Reported midwinter limis reached north to Barron, Chippewa, Door, and perhaps Marathon Cos., as usual, but a statewide Christmas count total 25-35 percent below any of those of the preceding four years may support comments from Lukes, who called it "below normal" in Door Co., and from Faanes, who could find almost none in favored St. Croix Co. spots.

Evening Grosbeak: Some observers in Racine, Milwaukee, Ozaukee, Rock, Waukesha, Dane, Vernon, Winnebago, and Brown Cos. had their peak counts or even their only sightings in the first two weeks of December. Those stragglers and most other autumn birds in southern and eastern Wisconsin were on their way farther south, perhaps to Arkansas, Louisiana, Tennessee, Georgia, or the Carolinas, in all of which states Evening Grosbeaks were numerous.

However, they remained abundant in northern and central Wisconsin in late December. Christmas counts there averaged 7 or 8 times as many per party-hour as counts in the lower state did. The limits to abundance were sharply delineated in the west (Burnett, Barron, Eau Claire, and probably Jackson Cos.), fuzzy at midstate (probably northern Sauk to eastern Waushara Cos.), and nebulous in the north/northeast where censuses are few. This distribution is hardly surprising. Vegetational differences follow much the same lines and Evening Grosbeaks were finding some food source — not sunflower feeders — in a northern abundance that paralleled their own. Pine Grosbeaks and Common Redpolls showed similar regional contrasts and the pattern is a broadly familiar one for winter finches in other years.

At least some Evening Grosbeaks were present all winter in nearly every contributing county. Evidence that northern counties kept (or lost) their many birds in midwinter is lacking.

Purple Finch: Raw Christmas count totals have been approximately stable since 1973. Christmas and midwinter ranges were co-extensive this year, with northern limits in Door/Marinette, Shawano/Outagamie, Wood/Junau, and Chippewa/Barron Cos. Although maxima of 78 and 60 were noted Jan. 28 and Feb. 24 in St. Croix and Columbia Cos., respectively, all other midwinter "peaks" were 2-15 birds.

Pine Grosbeak: The Christmas count total overwhelmed the previous record (apparently 1969), partly because of the count contribution from birds which had reached southern Wisconsin in strength by late November. Count birds were nonetheless concentrated in a north/northwestern zone (see Evening Grosbeak) where average number per party-hour was about 3 to 5 times that of the rest of the state. Midwinter maxima were not widely reported and except for 250 in Brown Co. on Feb. 1, there were no signs that early winter's zone of abundance expanded much. Peak one-day counts for January or February in six south/southeast counties below Manitowoc and Columbia were mostly 5-20 birds although Horicon had 75 on Feb. 6. There were 40-50 on several dates in Barron Co. and 100 in Clark Co. Feb. 12.

Common Redpoll: The Christmas count total was impressive but not substantially greater than those of 1975 or 1971. One-quarter of all count birds were seen on a single Douglas Co. census but even with that count put aside the vast majority of Wisconsin redpolls spent late December in central to northwestern parts of the state (see Evening Grosbeak) where numbers per party-hour averaged 20 times those of southern and eastern regions.

The major share of the redpoll flight, however, was yet to come. All sections of the state had their highest counts in midwinter, usually February: Feb. 20 Pierce Co. (2,000); Feb. 19 St. Croix Co. (960); Feb. 5-15 in Barron, Chippewa, Marathon, Clark, Jackson, Juneau, and Adams Cos. (215-400); Jan. 23 in Wood Co. (220); Feb. 24-26 in Columbia Co. (260-1000); Jan. 30 in Ozaukee Co. (210); and Feb. 2-25 in Dane, Washington, Waukesha, Racine, Milwaukee, Manitowoc, and Winnebago Cos. (25-100).

It is obvious that the same central and northern counties still had most of the birds, and that redpolls were still arriving in Wisconsin in February (similar late winter maxima were noted in New England, New York, Ontario, and Michigan as well as more southerly states). Although some late autumn redpolls had in fact appeared in southeastern Wisconsin, some observers there had first sightings Dec. 26-Jan. 4 (excluding Christmas counts). It seems improbably that upstate birds were abandoning food supplies that would soon support additional redpolls, so these dates might represent the leading edge of late winter arrivals.

Hoary Redpoll: Reported Feb. 2-3 Racine (2), Milwaukee (2), Feb. 28 Waukesha (2), Jan. 20 Washington (1), Feb. 26 Manitowoc (1), Feb. 11-12 Outagamie (4), Feb. 19 Rock (3), Jan. 26-Feb. 14 Dane (2), Feb. 17-20 Columbia (4), Feb. 5 Adams (1), Feb. 11-12 Juneau (2), Feb. 26 Jackson (1), Feb. 4-26 Chippewa (3), Feb. 20 Pierce, Dec. 26-Feb. 12 St. Croix (at least 3), Jan. 22 Barron, Feb. 1-28 Price, and Jan. 22 Bayfield Counties — but see introduction for cautions about identification. Collateral surges in reports from several other parts of the US and Canada might well signify a real invasion but that kind of confidence cannot underwrite specific observations.

Pine Siskin: Another Christmas count record was obliterated by this year's siskin total, better than twice the previous high of 1971. December distribution, compared to some northern invaders', was relatively general. No single Christmas count had as much as 10 percent of the total, although half of all count birds (4 times as many on a party-hour basis) were jammed into a 50-mile wide east-west band at midstate, through Manitowoc, Outagamie, Portage, Wood, Eau Claire, St. Croix, and parts of adjacent counties. In the same zone at the same time, but not on a Christmas count, were an estimated **4,500** feeding in unharvested sunflower fields in southeastern Clark Co. Dec. 26 (Luepke). Such titanic bird feeders — and a chance to assess any effects on winter bird populations — seem sure to occur in other parts of the state as sunflower cropping for oil and seed becomes increasingly popular.

In midwinter, there were reports from 35 counties statewide but no good clues to relative regional numbers.

American Goldfinch: A statewide midwinter distribution — Jan. 21 Douglas Co. (Robbins), all season Bayfield Bo. (max. 18 on Jan. 18 — Bratley), Feb. 2 Iron Co. (Butterbrodt), and all season Marinette Co. (Lindberg).

Red Crossbill: They were nowhere very common but west/northwest Wisconsin seemed the most reliable place in the US for Red Crossbills this winter. West of a line from La Crosse through Chippewa Falls to Ashland, all but 2 of 13 Christmas counts had Reds; they were also scattered among some midstate, Lake Winnebago, and Lake Michigan shoreline censuses. The 11 non-count reports this winter, with the exception of 6 in Dane Co. Dec. 11, yield a nearly identical pattern: Ashland Co. Dec. 26 (3), Sawyer Co. Jan. 22 (2), Barron Co. until Jan. 22, Chippewa Co. until Feb. 4, Pierce Co. Dec. 21, Price Co. Dec. 6 (1) Winnebago Co. Jan. 22, Brown Co. Dec. 2 and/until Jan. 12, Sheboygan Co. Dec. 15 (1), and Milwaukee Co. Dec. 28 and/until Jan. 24 (10). The southeastward hook apparent in sightings along Lakes Winnebago and Michigan is often present in winter finch distribution. It probably depends on the finger of northern forest — conifers in this case — which follows the same pattern.

White-winged Crossbill: Yet another extravagant Christmas count — the 1977 total more than doubled the old record of 1971, but 1/3 of this year's birds were tallied at Wausau (17.9 per party-hour) and another 1/3 on the side by side censuses at Woodland Dunes NE and NW (4.7 per party-hour). These two areas are 100 miles apart, and the 33 other counts seeing White-wings averaged just 0.4 per party-hour. Other instances of White-wings' concentration on locally abundant cone resources pervade this winter's big invasion. It is probably no accident that White-wings were present on all Christmas counts in a north/northwestern zone coincident with the extraordinary abundance of Red-breasted Nuthatches (and spruce or fir cones?), or that they showed a stronger version of the southeastward hook also seen in the Red Crossbill (and hemlock cones?) at Christmas time.

White-wings arrived in late November in southern counties but eluded many observers there by mid or late December, perhaps as the few cones of ornamental spruce groves were exhausted. Milwaukee County's many sightings probably came in its parks, liberally planted to conifers and favored spots of local observers.

Several counties in or near the zone of consistent Christmas count abundance had their last White-wings between mid January and mid February, and in northern Minnesota ". . . the cones were cleaned out by the end of January . . . None were seen in Duluth after Feb. 4" (**American Birds** 32:356). Invasions were also obvious from New England/New York/New Jersey through the middle Appalachians and Illinois to South Dakota, mostly in terms of "scattered birds or "modest" numbers, words that may say more about temporary food supplies than about real numbers of crossbills.

Reported, excluding Christmas counts, from these counties: Milwaukee Dec. 2-Feb. 5 (max. 14-40), Waukesha until Dec. 13, Dane Dec. 3 (1) and Jan. 4, Ozaukee Dec. 12 (1), Washington Dec. 3, Dodge Dec. 16 (10), Sauk Dec. 4, Columbia Dec. 11 (35) to Feb. 18, Sheboygan Dec. 15 (9), Fond du Lac until Jan. 16, Manitowoc Dec. 8 (5) to Jan. 29, Brown, Outagamie, Winnebago Dec. 4 (18) to Feb. 11, Door after Feb. 17 (2), Marinette Jan. 3 (24) to Jan. 10, Portage Jan. 7 (20, Marathon Dec. 3 (5) to Jan. 14, Oneida Dec. 17, Buffalo Jan. 28, Pepin Dec. 3, Pierce St. Croix, Barron, Chippewa until Jan. 20, Price Dec. 14-Jan. 5 (10), Sawyer Dec. 27-Jan. 22 (8), Douglas Jan. 28, and Bayfield (max. 32 Dec. 12).

Northern Junco: Bratley had wintering birds (max. 3 on Dec. 27) in the far north in Bayfield Co.

Field Sparrow: The Christmas count bird in Outagamie Co. stayed all winter (Tessen).

Harris' Sparrow: A Jan. 25 to March bird in Washington Co. (Haseleu et al.) is one of the state's few winter-long records. One seen Dec. 3 Pepin Co. (Hoffman).

White-crowned Sparrow: Once more wintered at a Kenosha Co. feeder (max. 9), reports Louise Erickson, who also saw one Dec. 15 Ozaukee Co., where unrecorded on the Christmas count.

White-throated Sparrow: In midwinter, seen Milwaukee Co. Jan. 16 (Epstein) and Jan. 30 (Hanbury), Rock Co. Feb. 19 (1 — Hollister recount), Dane Co. Feb. 5 (deBoor), Adams Co. Feb. 5 (Ziebell), Brown Co. Feb. 20 (1 — Cleary, Columban), and Marinette Co. until Jan. 2 (1 — Lindberg).

Fox Sparrow: One wintered well upstate in Marinette Co. (Lindberg). Milwaukee Co. Jan. 10 (Frank) and Feb. 8 (Hanbury) were the only other midwinter reports.

Swamp Sparrow: Reported only Jan. 28 Dane Co. (2 — Korotev).

Song Sparrow: Except for 6 all season in Brown Co. (Cleary, Columban,, reported in midwinter only from southeastern counties — Manitowoc, Fond du Lac, Washington, Waukesha, Ozaukee, Milwaukee, Racine, Dane, and Rock — a pattern not inconsistent with Christmas count distribution.

Lapland Longspur: Birds in Bayfield Co. Dec. 11 (1 — Bratley) and Milwaukee Co. Dec. 20 (48 — Epstein) did not appear on Christmas counts there, and 150 Manitowoc Co. Dec. 22 (Woodcock) far outnumbered any on the local Woodland Dunes counts. Wintered in Ozaukee Co. (80 Dec. 4 and 260 Jan. 16 — Louise Erickson; 85 Feb. 22 — Cutright) and in Columbia Co. (20-30 throughout February — Hoffman, Tessen). Other midwinter reports Jan. 1 Outagamie Co. (1 — Tessen), Jan. 15 Dane Co. (deBoor), Jan. 17 Kenosha Co. (1 — Louise Erickson), Jan. 28 (Korotev) and Feb. 18 (deBoor) Iowa Co., Feb. 4 Walworth Co. (1 — Tessen), Feb. 11 Winnebago Co. (30 — Tessen), and Feb. 19 Rock Co. (**1,125** — Hollister recount). Ordinarily three or four midwinter reports are received; see Snow Bunting.

Snow Bunting: Midwinter reports from 27 counties including Douglas, Oneida, Oconto, and Door in the north and Grant to Kenosha in the south. Non-Christmas count maxima of **2,500** Dec. 11 (Clark Co. (Luepke), 900 Jan. 2 Brown Co. (Cleary, Columban), 675 Jan. 15 Kenosha Co. (Louise Erickson), **1,800** Jan. 15 Columbia Co. (Hoffman), 300-375 Jan. 22-Feb. 1 Marathon and Wood Cos. (Luepke), 150 Feb. 4 Barron Co. (Goff), 250 Feb. 24 Winnebago Co. (Ziebell), 556 Feb. 19 Rock Co. (Hollister recount), and **3,375** Feb. 22 Ozaukee Co. (vs. 200-400 in January and 750 early December — Cutright et al.).

All three boldfaced figures exceed anything reported in either of the two preceding winters, and Snow Buntings were also exceptionally conspicuous and/or abundant in Ontario and all northern US states from New York and Pennsylvania on the east to Wyoming and Colorado on the west, including all of Wisconsin's neighbors. The 1977 Christmas count total, however, was an average one for the decade, down 40 percent from either 1976 or 1975. Lower counts could easily be laid to insufficient snow cover in the week before Christmas (see Horned Lark), and the explanation could be reversed to account for high midwinter (and early December) numbers during deep snows. Indeed, deep snows were a midwinter fixture in every one of the 12 or more states and provinces reporting bunting abundance, and parallel

distribution of "good" to "outstanding" midwinter numbers of Horned Larks and Lapland Longspurs bolsters a snow theory.

Beloit's Feb. 19 rerun of its Dec. 18 Christmas count is a case study in itself. With a foot and a half of snow on the ground, the February recount totalled almost 2,200 larks, longspurs, and buntings where none were seen in December with a 1" snow cover. If this contrast does not simply demonstrate the power of deep snow in forcing ground feeders to roadsides, it must mean that Wisconsin was within a zone of truly unusual abundance of all three species, that typical late winter migrations will proceed in the absence of a thaw, or that some combination of these three factors was working. Robbins' comment (see Horned lark) may give a glimmer of evidence for the true abundance view, and the timing of Ozaukee Co. counts of buntings may provide faint support for the migration proposal.

CONTRIBUTORS

Marjorie Albrecht, James Anderson, John Bielefeldt, Tom & Carol Bintz, David Bratley, Mary Butterbrodt, Edwin Cleary & Brother Columban, Ralph Curtis, Noel Cutright, Tom deBoor, Eric Epstein, Laura Erickson, Louise Erickson, James Evrard, Craig Faanes, Jim Frank, Alta Goff, Don Hanbury, Maybelle Hardy, Dorothy Harmer, Don & Judy Haseleu, Randy Hoffman, Rockne Knuth, Randy Korotev, Frederick Lesher, Harold Lindberg, Ken & Janice Luepke, Char & Roy Lukes, Mrs. Joseph Mahlum, Sam Robbins, Linda Safir, Clark Schultz, Greg Seegert, Daryl Tessen, P. Vanderschaegen, Viratine Weber, Melvin Wierzbicki, Richard Williamson, John Woodcock, Thomas Ziebell.

By the Wayside...

Black Scoter in Manitowoc County

Brother Columban gave me the following information about the Black Scoter observed by him February 27, 1978.

Smaller in size than mallard. Color all black, a male bird, plump short-necked appearance. Very short bill with yellow swelling on bill. Distance about 80 to 90 feet from shore at Manitowoc harbor. Glass power 7x35; weather cold, windy, and clear. He has observed this bird before in New Jersey.

— Edwin D. Cleary

Ferruginous Hawk in Columbia County

Date: February 17, 1978
Place: Fields east of Mud Lake in Columbia Co.
Length of observation: 10-12 minutes
Habitat: Cropland with a few scattered trees
Distance: 150 to 1,000 feet
Glass power: 7x35 binoculars and 48x scope

Description: A large hawk was seen perched on top of a large elm . . . Stopping the car and getting my scope on the bird, I saw the bird facing me. The

entire front was white and the underside of the tail was white. Knowing that red-tails show marked plumage changes and many times their tails appear white at rest, I wouldn't have been too concerned except that the head was a very light grayish color.

Having seen Ferruginous Hawks several times in Colorado and Wyoming, I knew that I would have to wait until the bird flew before I could make a concrete conclusion. After an extended period the hawk took off. I kept my scope on it as long as I could. On take off I noticed that the upper parts were quite brown. After several meters the bird banked and I noticed the upper tail was mostly white except for a rufous band near the tip. Switching to my binoculars I watched it circle for a minute or so; then it flew toward me. Now the undersides could be seen. They were all white except the extreme wing tips were black and there was a light brownish spot at the elbow. The belly and tail were white but I could now see the brown legs against the all white background, the final conclusive proof that this was indeed a Ferruginous Hawk.

— Randy Hoffman

COMMON LOON BREEDING ACTIVITY IN THE SANDHILL AND MEADOW VALLEY WILDLIFE AREAS

By Richard P. Thiel
DNR, Babcock, WI

Common loons (**Gavia immer**) breed in suitable habitats throughout the northern one-third of Wisconsin, however, they are rare breeders in west-central Wisconsin. This note reports on the 1978 breeding activity of Loon pairs in the Sandhill and Meadow Valley Wildlife Areas located in southwestern Wood, northwestern Juneau, and northeastern Monroe Counties, Wisconsin.

Sandhill Wildlife Area — A pair of Loons frequented the Gallagher flowage during the summers of 1976 and 1977. Two Loons were first observed on the South Gallagher Flowage on April 12, 1978. DNR personnel subsequently observed this pair throughout the spring and summer months. The pair was last seen on the flowage on August 17.

A nest was discovered among a mass of emergent vegetation in the South Gallagher Flowage in late May. Repeated observations of both adults without a brood during the week June 25-30 led us to suspect nest failure. The nest site was inspected on June 30. One egg was discovered in shallow water approximately 15 cm from the nest edge. The egg was chipped open on one end, but, the contents were still intact. An embryonic spot was present. This nest probably contained a single egg since no other egg fragments were found. The destruction of this Loon nest was most likely caused by crows (**Corvus brachyrhynchos**). The nest was similar in fashion to a muskrat (**Ondatra zebethica**) hut and was located on the edge of open water. Approximately 90 m west of the nest, across open water, was a road, and 110 m to the northwest was an upland oak island. Water depth at the nest varied from 60 cm on the side facing open water to less than 12 cm on the portion lying in emergent vegetation. The nest was constructed of **Carex** spp. and was approximately 45 cm in diameter and 12 cm above the water surface. The vegetation surrounding the nest site consisted of **Carex** spp., **Ziaania** sp., and **Sagittaria Engelmanniana**.

Meadow Valley Flowage — A pair of adults and two young Loons were observed throughout the summer of 1978 by DNR employees. When last seen in mid-August the pair was accompanied by one young.

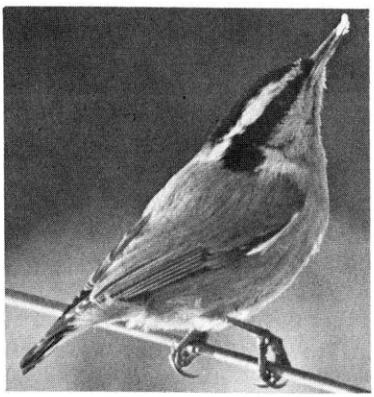
Monroe County Flowage — Three adult Loons were observed flying over the flowage on July 14, 1978.

Other possible breeding areas in west central Wisconsin include flowages on the Necedah National Wildlife Refuge and numerous privately owned flowages used as reservoirs on cranberry bogs.

Acknowledgements: The author wishes to thank Joe Haug, Les Nowicki, and UW-SP work intern student, Dave Work, for their assistance.

NORTH WOODS OBOIST

by Roy Lukes



That stylish, trim, tiny gnome of the northern spruce forest entertained me royally a few days ago. I had found out from past experience in feeding birds that, even though the Red-breasted Nuthatch sounds like the miniature oboe player of the boreal forest, it plays "second fiddle" to the Black-capped Chickadees.

The suet feeder had been emptied by the birds. Now with a fresh supply of food brought suddenly into their frigid "touch-and-go" winter lives, frenzied activity could be expected as soon as they discovered the handout.

Chickadees found it first and soon a regular cafeteria line was established. Within minutes two Red-breasted Nuthatches arrived on the scene and darted continuously back and forth from the small jack pine to the hanging feeder. No sooner would they alight on a perch than they would be unceremoniously chased away with a loud commanding "chik-it" note (meaning SCRAM in chickadee language!).

The longer I watched them the more I came to feel the persistent nuthatches weren't about to be kept away from the suet. Now one arrived at the very top of the feeder, landed on the plastic-covered wire and did a neat half-summersault gripping the wire while hanging headfirst, just able to reach the top suet hole. As long as he remained in this precarious position the chickadees appeared to tolerate this stubby, agile, feathered brother of theirs.

Ordinarily I consider them to be lower on the "totem pole" than the chickadees. Now they were at the very top! Frequently in the past I have observed chickadees display what appears to be a very impatient, intolerant, condescending attitude toward the Red-breasted Nuthatches.

People seeing these 4-inch feathered bundles of perpetual movement for the first time wonder how the word red ever came to be a part of this bird's

name. One could never liken it to that of the Red-headed Woodpecker for example. Tawny or rusty would be a more fitting description. However, its field marks are easy to see — black cap and eye stripe, blue-gray back, rusty flanks and belly (more so on adult males than on females), and a stubby tail.

Should you be so lucky as to examine one's feet their proportionately large size will surprise you. Surely some of you are wondering, "How could I possibly ever get to see their feet?" Easy! Lure one to food in your outstretched hand, fingers held together and straight outward. Watch closely to see which feeders they are using. Allow them to go empty, then put the food in your hand and stand very quietly and motionlessly next to the empty feeders. Be patient. You will be amazed at how they will confide in you.

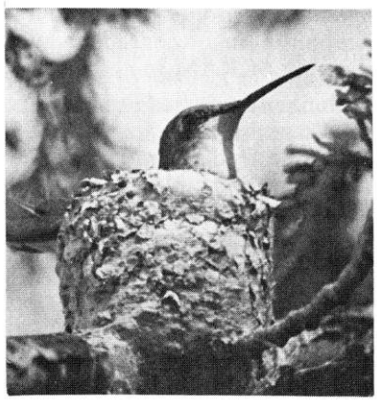
The first time one ever ate from my hand was on a January sub-zero day. I had removed my mitten, placed a couple dozen sunflower seeds in my hand and soon the chickadees were dining. Suddenly a bird with a different feel to my fingers landed, a Red-breasted Nuthatch. I marvelled at its trusting tameness, and how cold its feet were.

One thing many birders enjoy about this gymnastic "upside down" bird is its never-ending call. Other birds become quite silent once the nesting season has ended. Not so the Red-breasted Nuthatch. Its oboe-like call, from my observations, is made without any movement of the mandibles whatsoever, produced entirely in its throat. The call is not at all like the more twangy, nasal, "ank-ank-ank" call of the White-breasted Nuthatch. It is considerably more mellow and subdued.

The isolated boreal forests of northeastern Wisconsin claim this "piping red" as a permanent resident. It is strictly a migratory or winter resident in other parts of the state. Locate a large stand of pines, spruces, or other conifers this winter and you stand an excellent chance of seeing one of the most irrepressible, talkative, charming birds of the forest, the red-breasted oboist!

SUGARHOLIC

By Roy Lukes



Have you ever seen a sugarholic? One, just a little longer than three inches, has been entertaining us since early June. It's the Ruby-throated Hummingbird. We have observed this sugar-water-loving female many times from within inches and are convinced that she is the only individual coming in to feed. She amazed us recently by emptying the feeder, which holds four ounces of liquid, in two and one-half days.

I have calculated that she emptied the glass bottle feeder in approximately 40 hours of daylight time. Here is what is so amazing. Her total body weight is about nine-hundredths of one ounce! This means that she was removing her

own weight in liquid food every hour. One would almost have to presume that she has been feeding some of this to young in her nest. Whether this is true or not, and if so, how she does it is a complete mystery to me.

Some friends called several days ago with the exciting news that they had discovered a Ruby-throated Hummingbird's nest in their front yard. Upon arriving there, I was supplied me with an eight foot step ladder and a small soft rug on which to "pillow" my camera at the top of the ladder.

The nest is about 20 feet above the ground in an arbor vitae tree. It is a beautifully constructed, walnut-sized nursery made entirely by the female. Two white eggs, approximately 12.9 by 8.8 millimeters were laid. She will incubate them for as many as 19 days before they hatch. The young, naked at birth, may remain in the nest for up to 25 days before leaving to develop their food-finding skills.

This sparkly, dark-eyed female scrutinized me suspiciously as I tried to be as unobtrusive as I could balanced at the top of an 8-foot ladder. Frequently she perched near the nest and either preened herself or glared at me. If she moved one-half inch to one side or the other, as she nervously did, she flew that short distance.

Once she took off from the nest at what appeared to be top speed, calculated to be around 30 M.P.H., and flew directly across Kangaroo Lake. At first this surprised me but then I remembered reading that they are known to migrate nonstop across the Gulf of Mexico, 500 miles. Some difference!

Not once did she flinch when I clicked the shutter. Each time she came onto the nest she sat in the same direction, head facing east, tail toward the west. My camera, with a 500 mm mirror telephoto, handheld , was focused and ready for action the instant she landed.

Very soon my friends should be seeing two tiny beaks above the edge of the nest. Finally, just before leaving, the young will be sitting quite high, ready to fly without lessons. As I looked at this tiny nest, a work of art, I sensed that it was about three-eighths of an inch higher than the nest I collected at the end of summer several years ago. That one, the outside covered mostly with bits of Parmelia sulcata lichens, measures one inch high and one and one-half inches wide from edge to edge. It is slightly longer than it is wide. A common bottle cap will cover the opening.

Whenever we watch the "hummer" at our feeder we notice very little movement at the wrist and elbow joints of her wings. It appears as though the bird is hovering, helicopter-style, with its wings in a plane parallel to the ground. High speed cameras have proven that this needle-billed dynamo has a wingbeat of 50 to 70 times per second. No wonder this miniature marvel needs so much fuel!

Unlike what most people think, the majority of its food, as much as three-fourths, consists of insects. These winged gems, the hummingbirds, find their daily fat and protein especially inside reddish blossoms. They also gather some nectar, frequently transferring pollen at the same time.

Imagine my wife's surprise recently as she leaned out of the kitchen window, was in the process of placing the newly-filled hummingbird feeder back on the hook, to have the female hummer fly directly to the feeder and feed right out of her hand!

Sometimes, just for the fun of it, we count the bubbles that rise in the glass bottle as our dainty friend removes the sweetened liquid. A 5-bubble drink is a big one! Her long tongue, tubular at the tip, darts in and out rapidly all the while she is feeding.

The dropping air temperatures this fall will perhaps help to trigger the southerly migration, as much as 2,000 miles, of these deft blossom probers. They will have left us with the same thought as in previous years, that the most precious, inspiring, fascinating bird in all of the eastern United States is the Ruby-throated Hummingbird.

Out of the Past

DESTRUCTION IN MIGRATION

From Forest & Stream
December 6, 1888

It is now well known to ornithologists that thousands of birds are annually killed by flying against light stations, telegraph wires and other obstructions, but I have never before had opportunity to learn what a great mortality a single storm will bring among our smaller species during their migration. In Chicago, May 11 was a bright, clear day, the temperature reaching 64°, but early the following morning a cold wave from the northwest reached us accompanied with a gale of wind, which attained a velocity of thirty-four to thirty-eight miles an hour, continuing with gradually less force till the 13th. As the gale approached the thermometer sank rapidly until it reached 44°, and the following two days touched 35° and 38°.

On the morning after this sudden cold snap I was surprised to see Redstarts, Black and Yellow Warblers and Black and White Creepers hopping about on the window sills and doorsteps of my house, which is situated in a somewhat thickly settled locality. They appeared half stupefied and could almost be taken in the hand. Later in the day I saw several in the heart of the business portion of the city, flying about as if lost and hunting for food.

A few days following all the daily papers had short articles on the subject, one paper stating that "hundreds of small birds had mysteriously fluttered to the earth hereabouts benumbed with cold, many of them dying."

I visited the shops of several taxidermists and found that for some days specimens of Redstarts, Canada Flycatchers, Black, Yellow and Black-throated Blue Warblers, Wilson Blackcaps, Black and White Creepers and other species, had been brought to them to mount, having been picked up dead in gardens and on the streets, in a few instances caught alive in houses, having flown in through the open door or window.

My friend, Mr. G. Frean Morcom, informed me that in Lincoln Park, situated on the north side of the city, he saw for several mornings a large number of warblers of several species searching for food on the ground and in the low bushes.

In the Chicago *Evening Journal* of May 15 I read the following:

"A dispatch from Racine, Wis., dated May 14, says: 'A farmer arrived in this city from North Point, a few miles distant, this morning, having with him a large box completely filled with dead birds of a species unknown in this locality. The birds are of a dozen different varieties, and the farmer states that the ground at North Point is covered for miles with thousands of the dead bodies. The strange birds have a very fine plumage; red and yellow breast with black wings. The supposition is that the birds were driven here by the wind storm Friday night, and, being overcome with the cold, perished. Where they came from is unknown, none of their kind ever having been here before.' "

I then addressed a letter to Dr. P. R. Hoy, of Racine, Wis., situated about sixty miles north of Chicago, referring to the above note, and asking if his attention had been called to this unusual devastation of birds, and his reply in detail is most interesting, from which I quote the following:

"Friday, May 11, was a beautiful day. A cold wave, however, reached us at midnight, accompanied with a high wind from the west, which continued unabated until Sunday morning. During this gale the thermometer sank rapidly into the thirties; the lowest recorded was 34°, the highest 42° during the gale. This remarkably cold wind occurred just at the time when the greatest number of small birds were migrating north. It is not necessary to say that nearly all land birds and many waders migrate only during the night, resting and feeding during the day. On Saturday morning the 12th hundreds of birds, mostly warblers, were found on the ground, they not being able to remain on the trees; they were suffering from cold and hunger, and many were caught with hands alone. They entered houses of every description, regardless of noise or confusion. The ignorant many supposed they were blown here from some unknown region, that they were newcomers such as had never been seen here before, when in fact they are always found in numbers at this season during the May migration, but as they remain on trees, they were not noticed by them. On Sunday morning, May 12, hundreds of birds were found dead; they were brought to me by the basketfull by several persons. I give the name and number of each species so far as I personally saw and inspected them:

Scarlet Tanagers 8 specimens, Golden-crowned Thrush 30, Ruby-crowned Thrush 40, Least Flycatcher 20, Wood Pewee 10, Redstart 60, Canada Fly-catcher 30, Maryland Yellow-throat 25, Nashville Warbler 30, Wilson's Blacklegs 20, Black-throated Blue Warbler 125, Black-throated Green Warbler 75, Black and Yellow Warbler 50, Bay-breasted Warbler 20, Golden-winged Warbler 10, Tennessee Warbler 8, Blackpoll Warbler 35, Cape May Warbler 6, Yellow Warbler 15, Chestnut-sided Warbler 6, Yellow Redpoll Warbler 15, Yellow-winged Warbler 2, Black and White Creeper 5.

In addition to these were a few sparrows and swallows and doubtless many other specimens which I did not see. Nearly all were males in perfect plumage, the females not yet having arrived, as in most birds the males precede the females. This disaster, which destroyed so many thousands of these birds, is interesting; nature has been cruel to these beauties, and may such a calamity never again be known."

From several localities along the lakeshore I learned that numbers of small birds had been found dead, washed up on the beach, having been overtaken

by the storm while migrating across the lake, beaten to the surface and drowned. Yet this is not unusual, and several similar instances have already been recorded.

By Ruthven Deane
Union Club, Chicago

BANDING CORMORANTS

From Vol. 21 No. 6, Dec. 1949 p. 15 of IBBA News

Cormorant banding is a sport for people with strong stomachs and weak noses. Strictly old clothes and a brimmed hat constitute the proper accoutrement and, above all, a trip must be followed with a good long soak in the tub.

Early in the morning of June 26 we loaded a boat on the car and set out for a nesting colony located by one of us the previous week on a tract of flooded timber in central Wisconsin. The colony proved to be a large one containing some 300 nests of Cormorants and 150 of Great Blue Herons. Trees covering six or eight acres and standing in from ten to fifteen feet of water supported as many as fifteen of the great bulky nests in their upper branches. Lashing our boat to a tree we raised our ladder and scrambled up to one nest after another. The young birds greeted our visits with squawks and cries that suggested a small boy calling for help. Showers of watery excrement followed as we came up under a nest; and finally as a climax to our reception an avalanche of partially digested fish was regurgitated over our backs and heads. Accepting this peculiar form of hospitality we worked all morning in the hot sun and by two o'clock had banded 68 Cormorants and 34 Great Blues.

THE PIGEONS IN PIERCE COUNTY, WISCONSIN

From "The Rod and The Gun", June 5, 1875

In company with Geo. Martin, we went out on a pigeon shooting expedition, Friday and Saturday of last week, visiting the "pigeon roost," near Beldenville, in Pierce county, about twelve miles above River Falls. In about four hours' shooting we bagged a full buggy load of pigeons, 174 in number. We had often heard of "pigeon roosts" (which is the place where they congregate to build their nests and raise their young.) but had never seen one before. The stories we have heard, have evidently greatly exaggerated the truth. We had often heard that the pigeons, where they nested, would be in such numbers, and would build their nests so thickly upon the trees as to break off large limbs. There is nothing like this one at Beldenville. We should judge there was an average of a dozen nests to each tree. The roost is said to cover an area of not less than 15 to 20 square miles, and, as the trees are very thick, it will be seen that there must be a great many of the birds. When we left, the nests were generally built, and perhaps a few of them contained eggs.

Hudson Star and Times, WI

Letters to the Editor

Dear Dr. Kemper:

I'm sending you a few records that are quite unique. I don't send anything unless I feel the records are of considerable interest and value, hence you rarely hear from me!

Goshawk — A nesting pair was found in the "Wilderness Area" of Peninsula State park, Fish Creek, WI, by our seasonal naturalist Ms. Mary Bratz, in July 1977. I visited the nesting site with her that same month and verified the identification.

Goshawk — I "squeaked" in a nesting pair just west of Clear Lake in Oneida County (T39N-R7E-S17), on June 28, 1978. At 8:30 a.m., just before I led a guided nature walk, I squeaked in the male. About 11 a.m., at the end of the hike and with about 10 people present, I squeaked in the male who was soon followed by the female. He boldly *kyahhed* over the crow, but she stayed some distance off. I'm certain they were nesting nearby, but I didn't have time to check. I'll try this winter.

Black-backed Woodpecker — On August 3, 1978 my son Jeff and myself saw three in one group. No yellow cap, so presumed to be three juveniles, or one female and two juveniles. Then on August 21 or 22, 1978 my son Jeff saw a male in the same area. This must be a nesting record. Location was in Douglas County, (T43N-R13W-NWNW Section 32). This area is nearly a monotype jackpine stand with scattered black oaks.

Nighthawk — On August 24, 1978 (about 5 p.m.) on Interstate Highway 90-94, I saw the largest migration of nighthawks I've **ever** seen in all my years of field observations. From New Lisbon to about 2 miles northwest of Wisconsin Dells, I passed under, or near, at least **20** loose flocks of nighthawks. The flocks had from 30 to in excess of 100 birds. Then, from about 2 miles northwest of the Dells to about 3 miles south of the Dells (at least 5 miles) I was under one continuous loose flock of nighthawks. They were over I-90-94, and to both sides as far as I could make them out. Within the general, loose flock were many quite dense concentrations of birds (100-300 per flock), presumably in good "bugging" habitats. I'm certain that I was within my sighting distance of a minimum of 10,000 nighthawks along this route, based on what I considered a group of 100 birds, and comparing their aeriel extent to the total area that I could see containing birds!

Very truly yours,
George J. Knudson,
Chief Naturalist DNR
Box 7921
Madison, WI 53707

Dear Dr. Kemper:

On Oct. 27, 1977 at 5:00 p.m., Mr. Ed Butzen, my wife Inez and I observed an unusual bird. We were at North Point in Sheboygan and saw a slender bird about 6 inches long walking among the rocks at shoreline. It had a long tail with white outer tail feathers, two wingbars and a white eyestripe. The head and back were dark grey, the belly was lemon yellow and the breast was lighter yellow. The bill was black and slender much like a warbler's. The legs appeared black. When flushed the flight was undulating and the bird twittered "tweep" as closely as I can describe it.

We watched this bird about 8 to 10 minutes. We were all using 7 power binoculars and observed the bird from 40 to 150 ft. The light was bright sunlight with excellent

lighting underneath. The next morning Mr. Butzen observed it again about 6:45 at the same place. My wife, two daughters and Mr. and Mrs. Harold Koopman checked from about 10:30 a.m. till after 3:00 p.m. with no success on the same day. They reported only snow buntings and the Koopmans spotted a water pipit. The beach was quite busy as it was teachers' convention and a beautiful day.

After carefully checking our books we can find only one bird that matches our description: a Yellow Wagtail. After checking "Wisconsin Birds; A Checklist with Migration Charts" I find the bird has never been seen here before.

I'll try to keep you posted on anything new and would appreciate any other sighting in other states if you can get this information.

Yours truly,
Robert Triebensee
220 Plymouth St.
Plymouth, WI 53073

P.S. Did you know that we also had a Wheatear at Sheboygan from early June till late August? I wrote to Mr. Daryl Tessen but don't have a copy to send you.

Dear Dr. Kemper:

We were beginning a quick inventory of fall warblers in anticipation of our Sunday bird walk. No sooner had we left the Interpretive Building when Paula exclaimed "HAWKS". At first only 5 or 6 birds were in view but it soon became obvious that they were only a small portion of a kettle containing over 100 birds. Mike Scheiwe of Gordon Buboltz Nature Preserve had reported a similar sighting over the Appleton area preserve the previous day.

With excitement, we climbed to the top of our 30 ft. roof to count the passing raptors. Our field of view covered approximately 300° of horizon from this height. We both used 7x35 Bushnell binoculars and counted as accurately as possible from 9:15 to 10 a.m. as kettle after kettle passed overhead. At times, as many as 6 kettles were in view at one time; each group averaged 150 individuals. During the 45 minute time period, we counted over 2500 birds.

It is impossible to give an accurate count for the entire day. We don't know the exact time the movement began or ended. Shortly after 10, the skies cleared causing thermals to rise extremely high. This in turn carried kettles aloft and nearly out of sight, even with the aid of binoculars. The migration continued throughout the afternoon.

99% of the raptors identified were Broadwings with a few Red Tails mixed in at times. Several large unidentified accipiters, Sharpshins, Kestrels, and a probable Merlin were also observed. It is most likely that 10,000 or more individuals passed over this northwest corner of Outagamie County during the day. According to Dr. Jack Kasper, U. of Wisconsin-Oshkosh ornithologist, we witnessed the largest INLAND raptor migration he is aware of.

It was a thrill to observe this phenomonen at Mosquito Hill Nature Center; hopefully, other birders in central Wisconsin were as fortunate as we.

Sincerely,
Jim Anderson
Paula Minkebige

Dear Dr. Kemper:

Why were the Baltimore and Bullocks Orioles lumped into one species called the Northern Oriole? They have quite a few noticeable differences in plumage. And before they spread their ranges to the Great Plains they were a thousand miles apart.

Just because they interbreed does not mean they are "one species". The females and songs are very similar, and birds can make mistakes too. I don't see the A.O.U. lumping the Rose-breasted and Black-headed Grosbeaks into one species, and they interbreed in the Great Plains too. Same thing with tte Yellow shafted and Red shafted Flickers. They should be considered two species also. I think these so called "two species" should be four species again. Thank you.

Yours sincerely,
John Dixon
Rt. 1, Box 159A
Kansasville, WI 53139

Editor's note: The Baltimore Orioles and Bullock's Orioles have been lumped into one species because they so frequently interbreed. Actually the fact that their songs are similar is further evidence of their conspecific status. This is true of the three North American flickers also. Your question about the Grosbeaks raises a question of consistency. I asked Chandler Robbins this question and his reply was that the AOU committee did consider lumping these species together but felt that there is not sufficient evidence published yet to establish such a definite change. As a matter of fact, there is study being done by some investigators now on this subject. I have collected one dead hybrid at the TV tower and hybridization does occur — but apparently it is quite rare.

Now remember — the AOU does not own the English language. You have a right to use whatever name you wish. And also these determinations are arbitrary to some extent. For example, when is a subspecies a separate species? As amateurs we are following the leadership of the professional specialists.

C.A.K.

Book Review

The World of Roger Tory Peterson, An Authorized Biography, John C. Devlin and Grace Naismith, Times Books, New York 1977, 266 pp., $14.95.

Everything you always wanted to know about Roger Tory Peterson and much, much more. Certainly a biography of the great wildlife painter, photographer, conservationist, and father of modern day birding is one that should have been written, but should it have been written in this way and by these people? No detail, however trivial or personal, is overlooked; no relative, however distant or boring, escapes mention. One can almost hear the endless hum of cassette players recording endless interviews. The question is, is it all there so that we the readers can piece together the presumably elusive secret of Peterson's remarkable career, or is it all there to make a book long enough to justify the high price dictated by the inclusion of expensive color reproductions of the artist's work? It is tempting to guess the latter.

Of course there is much of interest in this book — the man has had a fascinating life and career — but the first half is murder nevertheless. Not only is it generally dull reading, it is laden with intimate blow by blow descriptions which would make anyone squirm with embarrassment: Roger's inconsiderateness, Roger's "collossal" temper, Roger's marital fights (and here the authors inexplicably lapse into a peculiar "child's primer" sing-song narrative form), and quite literally, Roger's dirty underwear. But why, I ask again.

In the second half the pace picks up somewhat, and we learn those things that we really did sort of want to know about Peterson: how he paints and photographs, his travels, his involvement in the conservation movement, and his association with other "big names" in ornithology. Also, the fifteen color plates of his bird paintings are exquisite.

It is interesting, or perhaps depressing, that this badly written, long-winded book should be Peterson's "authorized" biography, but then perhaps all the loving, corny detail will be appreciated by his very greatest fans, of which he himself is unabashedly one.

Linda Safir

The Hen Harrier, Donald Watson. 1977. T & D Poyser, Berkhamsted. 307 pp., 116 illustrations, 4 in color. American distributor, Buteo Books, Box 481, Vermillion, SD 57069. $20.00.

Donald Watson has written an engaging and to some extent personal account of the Hen Harrier: It shows what an avid birdwatcher, with a gift for writing, can accomplish by following the behavior at a mere handful of nests of a species that almost became extirpated on the Scottish mainland. Many birders may be put off by the first 47 pages dealing with harriers of the world and never suspect that there is good reading ahead for the amateur. The author's sketches add to the charm of this unpretentious, carefully researched volume. I hope this book will encourage others to write non-stuffy books about the bird species that fascinates them most.

Frances Hamerstrom

The Steenbock Award

A Steenbock award of $100.00 is offered annually to encourage research on Wisconsin birds or to help make available usual opportunities for an individual to otherwise further the purposes of the Wisconsin Society for Ornithology.

The Committee feels that an applicant should be able to state on a single page -- typed -- what he wishes to do. He may add an appendix if additional information seems necessary. Applications are due April 1.

Francis Hammerstrom
Chairman Steenbock Committee
Plainfield, WI 54966

PLEA FOR HELP

BLACK TERNS — What's Up

The graceful Black Terns dipping and swooping over wetland ponds and marshes are an indelible part of the Wisconsin countryside. And yet - - are we seeing as many as we used to? Maybe we sometimes take the "common" birds for granted! At any rate the statistics that we have are showing a decline. In his analysis of the first ten years of Breeding Bird Surveys in Wisconsin, Sam Robbins noted a 14% decline in Black Tern populations from 1966 to 1975 (Pass. Pigeon 39 (2):225-247). Craig Faanes (unpublished) reported a 57% decline in the number of breeding pairs of Black Terns at seven marshes in Saint Croix and Polk counties between 1975 and 1977.

In order to detect any further changes in Black Tern numbers, we need to know how many Black Terns we have in Wisconsin. We want to survey as many Black Tern marshes as possible this summer -- will you help? We need the experience and knowledge of local birders in each county to identify those marshes which usually have Black Terns throughout the summer. We would like to get local tern watchers to visit each of these marshes in June and note the approximate number of Black Terns using each marsh. If you would be interested in "tern-watching" this summer, please contact:

Nancy Tilghman
Wisconsin Department of Natural Resources
Bureau of Research
Box 7921
Madison, Wisconsin 52707

Let's help this seemingly "common" acrobatic flyer before it too is a thing of the past.

WSO BOARD MEETING HIGHLIGHTS

July 15, 1978, Honey Creek

Attendance: Ed Peartree, Gordon Cox, Chuck Gilmore, Mary Donald, Linda Safir, Alex Kailing, Sam Robbins, Harold Kruse, Charles Kemper, Jim Severance, Fred and Fran Hamerstrom, Carl Hayssen, Tom Erdman, and Daryl Tessen.

Treasurer: Linda Safir reported that $25,000 worth of U.S. Treasury Notes have been purchased. This amount comprises the Endowment Fund of about $14,000, plus other savings. In addition, $7,500 remains in a general savings account.

Convention: A report from the chairman of the 1978 convention at Madison was read. There were 358 registrations. Of the $300 advance given the local committee, $281.73 was returned. $60 worth of unused award ribbons will be passed on to succeeding conventions.

WSO Convention Questionnaire: As vice-president Louise Erickson was absent, discussion of the responses she received was postponed until the October meeting. President Tessen did read a few of the comments to the Board, most of which dealt with minor inconveniences, complaints, or suggestions about the convention or WSO services.

Membership: Alex Kailing distributed a full report. Total membership is currently 1124. Alex agreed to produce and make available updated membership lists and revised membership brochures.

1979 Convention: Tom Erdman will chair the convention at Green Bay, May 18 - 20. It will be co-sponsored by UW-Green Bay.

Research: The Hamerstroms wish to find someone to study the current nesting sites of Northern Orioles. They also hope to be able to increase the Steenbock scholarships from $100 to $200. No scholarship was awarded in 1978.

Honey Creek: Jim Severance reported that the ceiling is in and tables and benches have been made. Some stonework and electrical work need to be completed.

Bookstore: Harold Kruse has caught up with his work at the bookstore and has done some streamlining by not replacing certain books when sold. Jim Severance agreed to be head of a yearly inventory committee.

Associate Editor: Daryl Tessen will send reminder cards to field notes contributors this fall to see if doing so increases reporting. Daryl also tentatively expects to have 1000 supplements and indexes to **Wisconsin's Favorite Bird Haunts** printed. Copy should be at the printer's by January.

Badger Birder Editor: Mary Donald noted that WSO has no historian to keep the scrapbook of WSO-related articles and it was decided that a volunteer should be found.

Additional Business: It was decided that minutes of the board meetings be sent to the seasonal editors and circulation manager and that they be invited to attend board meetings.

In order to get more members involved, it was suggested by Linda Safir that the committees, specifically research, education and conservation, be expanded; that they meet independently and the chairmen report back to the board. The committees could design projects at various levels for the membership.

President Tessen re-appointed the nominating committee: Ed Peartree, Chairman, Ruth Hine, and Fran Hamerstrom.

Each committee chairman, officer and board member was asked to write a current job description or summary of duties by the October meeting.

President Tessen read a letter from Dr. David Thompson of West Bend, asking for a WSO letter of support for his petition to the U.S. Fish and Wildlife Service for acquisition of a Great Blue Heron rookery site in southern Kenosha County, under the Unique or Nationally Significant Wild Life Ecosystems Program. The board authorized a letter of support contingent upon evaluation of the issue by Mary Donald, Louise Erickson and Linda Safir.

The next board meeting was set for October 7, 1978, at Stevens Point.

— Linda Safir, from
the secretary's minutes

"Snipe" by Derek Washington

W.S.O. OFFICERS & COMMITTEES — 1978-1979

President: Daryl Tessen,*
2 Pioneer Pl., Elgin, IL 60120 (312—695-2464)
Vice President: Mary Donald*
6918 N. Belmont La. Milwaukee, WI 53217 (414—352-8940
Convention Chairman: Tom Erdman,
P.O. Box 631, Green Bay, WI 54302 (Home 414—435-5030)
(Office 414—465-2713)
Secretary: Carl G. Hayssen, Jr.,*
6917 No. Hy. 83, Hartland, WI 53029 (Home 414—966-2839)
(Office 414—261-3671)
Treasurer: Linda L. Safir,*
18925 Lothmoor Dr. Lower, Brookfield, WI 53005 (414—782-0805)
Membership: Alex F. Kailing,
W. 330 N. 8275 West Shore Drive,
Hartland, WI 53209 (414—966-1072)
Publications: Ruth L. Hine,*
3609 Nakoma Rd., Madison 53711 (608—233-6856)
Conservation: Ray Anderson,*
College of Natural Resources,
Univ. of Wisconsin-Stevens Point, WI 54481
Education: Roy J. Lukes,*
Box 152, Baileys Harbor, WI 54202 (414—839-2045)
Loan of Slides: Steven Lang,
1661 Delaware Blvd., Madison, WI 53704 (608—249-5684)
Endowments and Advertisements: James Severance,*
Rt. 1, Prairie du Sac, WI 53578 (608—544-3552)
Legal Counsel: Robert W. Lutz,*
50 E. Main St., Chilton, WI 53014 (414—849-2355)
Field Trips: Edward W. Peartree,*
46516 Lisbon Rd., Oconomowoc, WI 53066 (414—567-4086)
Publicity: Chuck Gilmore,*
246 North High St., Randolph, WI 53956 (414—326-3221)
Custodian: Walter E. Scott,
1721 Hickory Rd., Madison, WI 53705 (608—233-6140)
Research: Stan Temple,*
Dept. of Wildlife Ecology,
Univ. of Wisconsin-Madison, WI 53706 (Home 608—849-7223)
(Office 608—263-6827)
Steenbock Chairman:
Frederick and Frances Hamerstrom,*
Plainfield, WI 54966 (715—335-4100)
Manager: Harold G. Krusae,*
Hickory Hill Farm, Loganville, WI 53943 (608—727-2941)
Handles orders for books, stationery, etc. Catalog available
10% discounts to WSO members for ornithological supplies.
Assistants: Edward W. Peartree,
36516 Lisbon Rd., Oconomowoc, WI 53066 (Records) (414—567-4086)
Mrs. C. P. Frister
Editor: Charles A. Kemper M.D.,*
P.O. Box 699, 733 Maple St., Chippewa Falls, WI 54729
(715—723-3815)
Circulation Manager: W.D. Brown,
225 W. Lakeside St., Madison, WI 53715 (608—256-2287)
Associate Editor: Daryl Tessen,*
2 Pioneer Pl., Elgin, IL 60120 (312—695-2464)
The Badger Birder Editor: Mary Donald,*
6918 N. Belmont La., Milwaukee, WI 53217 (414—352-8940)
Seasonal Editors:
(spring) Rockne Knuth,
80 N. Berger Pkwy., Fond du Lac 54935 (414—923-3363)
(summer) Mr. and Mrs. Harold Roberts,
530 Old Wausau Road, Stevens Point, WI 54481 (715—344-2870)
(autumn) John Idzikowski,
3242 A S. Illinois, Milwaukee, WI 53207 (414—744-1895)
Vwinter) John Bielefeldt,
1706 Noman Way #217, Madison, WI 53705 (608—233-0947)
File Keeper: Ray Anderson,
College of Natural Resources,
Univ. of Wisconsin-Stevens Point, WI 54481
Historian: Linda Thomas, West Plum Lake,
Sayner, WI 54560 (715—542-3372)

*Member Board of Directors