

Arenaria interpres oahuensis Bloxham. PACIFIC TURNSTONE.—Abundant on both islands, everywhere. It was a decided surprise to us to find waders in bushes feeding upon berries, and yet this was the case here. Again and again we flushed bunches of Turnstones from the dense *Scaevola* thickets and watched them circle about for some time, only to re-alight in the tops of another clump of bushes. Specimens shot on Sand Island were filled with *Scaevola* berries. On Eastern Island we saw them running on the beaches following the waves and feeding in the orthodox manner.

Asio flammeus sandwichensis (Bloxham). SHORT-EARED OWL.—A single specimen was flushed from a *Scaevola* covered sand dune on Sand Island. We marked the place where it alighted near the middle of the western shore, but the bird was very wild and left long before we came within gun-range, flying far out to sea before swinging to the southern point of the island. A further attempt to add it to our bag proved equally unsuccessful.

Telespiza cantans Scott Wilson. YELLOW FINCH.—I was told by Mrs. Florence McDerfee Nevin, the wife of Lieut. J. D. Nevin, who was in command of the Marine detachment at Midway at the time of our visit, that the birds locally called Canaries were brought to Midway from Laysan Island. They are not very abundant; we saw only three small flocks, probably twenty-five specimens in all, on Eastern Island, where they frequent the shrubbery. Like most of the other birds of the islands they are exceedingly tame and curious; rather sluggish in their movements and quite stupid. The only note heard was a half subdued squeak. They appear to be equally at home on the ground and in the shrubbery. Mr. H. Palmer says in Rothschild's 'Avifauna of Laysan' that Capt. Walker's son liberated a Finch on the island. It would be very interesting to get definite data of subsequent importations which made the present colony possible, for Palmer does not list it as a resident on Midway.

U. S. National Museum, Washington, D. C.

THE FALL MIGRATION OF HAWKS AS OBSERVED AT FISHERS ISLAND, N. Y.

BY A. L. FERGUSON AND H. L. FERGUSON

FISHERS ISLAND, N. Y., lying as it does at the eastern entrance of Long Island Sound, is a connecting link between Rhode Island and Long Island, N. Y., and with the other two islands, Gull and Plum, affords stopping places for birds of all kinds on their migration southward each fall.

Thirteen species of hawks have been collected on the Island though only six are classed as "common" by us. By far the most common is the Sharp-shinned Hawk, and then, according to numbers come the Pigeon Hawk, Marsh Hawk, Sparrow Hawk, Osprey, Duck Hawk, Cooper's Hawk, Red-tailed Hawk, Red-shouldered Hawk, Rough-legged Hawk, Broad-winged Hawk, Goshawk, and one record of a Gyrfalcon. The last was shot October 10, 1915, and identified by Dr. F. M. Chapman, as *Falco obsoletus*. This is the only record of this bird from the Island. The Buteos rarely come over Fishers Island, and at the most, it would be safe to say that not more than ten of each kind are seen in any year. Possibly the instinct of these hawks keeps them over wooded countries, but why they should like a different route from the Sharp-shinned Hawk, which is a wood-loving bird also, is difficult to figure out. Owing to their small numbers, the Buteos, Cooper's Hawk, and the Goshawk are classed as rare birds with us at the Island, and only notes on what we feel were remarkable flights of Sharp-shinned Hawks, Marsh Hawks, Pigeon Hawks, and Duck Hawks are given separately.

When the migrating instinct grows strong enough to call them southward, the hawks come in great waves. Whether or not weather conditions affect all birds we do not know, but it is a certainty that the necessary weather conditions must exist in order for a large flight of hawks to come over Fishers Island. If conditions are not suitable, the flight does not come, though occasional hawks may be observed, but when the conditions are right, they fly in great numbers. As a general rule we get several flights each fall. The first about September 13; the second about September 20, which has always been the main flight; and the last flight, which is much smaller, near the end of September, or early in October.

The favorable conditions for a flight follow, but it must be borne in mind, that a flight day is chiefly a Sharp-shinned flight, though many Marsh Hawks and others are seen; thus making the large total. On any date after September 5, if a decided change of weather occurs, and is followed by a clear, bright day with a north-west wind and large white clouds, we invariably get a flight. That the wind plays the most important part we know from our

records. On some days we have had the flight commence early in the morning, only to have it stop completely when the wind changed from north-west to north or north-east. For the last six years we have made notes of the hawks passing over Fishers Island, and have found that with only a few exceptions the flight has come when the wind was from the northwest. The days when these exceptions occurred the surface wind was northeast, and the hawks were flying at a great height, and at a level where we believe the winds were moving from the northwest, though this could not be determined, as there were no clouds. This belief in a north-west wind being necessary for a flight was studied by the late Prof. C. C. Trowbridge, who published his observations in 'The American Naturalist.' From our own observations we agree with him, for we had reached the same conclusion before he sent us his article in 1918. In his article were given tables showing the wind and weather conditions on flight days, and as similar tables may be of interest we give below tables showing the weather conditions, kindly furnished by the Weather Bureau at Providence, lying to the north of Fishers Island, together with the local conditions at the Island, with notes on each day's flight.

Date	Wind at Fishers Island	Wind at Providence R. I.	Character of day	Temperature change last 24 hours	Notes
Sept. 16/16	N. W.	N. W.	Pt. Cloudy	-12°	Small flight of Sharp-shinned and Marsh Hawks.
Sept. 19/16		N. W.	Clear	- 2°	Small flight of Sharp-shinned, Marsh, and Pigeon Hawks.
Sept. 25/16		N. W.	Pt. Cloudy	- 4°	Small flight of Sharp-shinned, Marsh and Pigeon Hawks.
Sept. 26/16		W.	Clear	+ 1°	Slightly larger flight of mixed hawks.
Sept. 30/16		N. W.	Clear	-15°	Large flight of mixed hawks.
Oct. 1/16		N.	Clear	- 3°	Small flight of mixed hawks.
Sept. 10 17		N. W.	Pt. Cloudy	- 8°	Few Marsh, Sharp-shinned, and Pigeon Hawks.
Sept. 11/17		N. W.	Clear	0°	Small flight of Marsh and Sharp-shinned Hawks.
Sept. 18/17		N.W.	Pt. Cloudy	+10°	Small flight of Marsh and Sharp-shinned Hawks.

Sept. 22/17		N. W. & N	Clear	-13°	Good flight Marsh, Sharp-shinned, and Pigeon Hawks and a few Cooper's Hawks.
Oct. 4/17		S. W.	Cloudy	+ 4°	4 Duck Hawks shot. Some Pigeon Hawks.
Oct. 8/17		S. W.	Pt. Cloudy	+6°	2 Duck Hawks shot. Few Pigeon Hawks seen.
Sept. 7/18	N. W.	N. W.	Pt. Cloudy	-10°	Small mixed flight.
Sept. 9/18	N. E.	N.	Cloudy	+2°	Good flight, Birds very high, 269 hawks seen.
Sept. 11/18	N. E.	E.	Clear	-12°	Good flight, Birds very high, 351 hawks seen.
Sept. 22/18	N. W.	N. W.	Cloudy	-11°	Small mixed flight.
Sept. 22/18	N. W.	N. W.	Clear	- 2°	Large mixed flight.
Sept. 23/18	N. W.	W.	Pt. Cloudy	+ 4°	Flight diminishing.
Sept. 30 18		N. W.	Clear	- 5°	Small Pigeon Hawk flight.
Oct. 1/18		N. W.	Clear	0°	Small mixed flight.
Oct. 14/18		N. W.	Clear	-11°	Small Pigeon Hawk flight. A few of other species seen.
Sept. 12/19	N. W.	N. W.	Pt. Cloudy	+ 1°	Small flight of Sharp-shinned, and Pigeon Hawks.
Sept. 13/19	N. W.	N. W.	Clear	- 1°.	Fairly large mixed flight.
Sept. 14/19	N. W.	N. W.	Pt. Cloudy	+ 1°	Flight diminishing,
Sept. 17/19	N. W.	N. W.	Pt. Cloudy	+ 5°	Large mixed flight, many Sharp-shinned and Pigeon Hawks.
Sept. 18/19	N. W.	N. W.	Clear	- 6°	Very large flight, mostly Sharp-shinned Hawks.
Sept. 26/19	N. W.	N. W.	Clear	- 8°	Fairly large mixed flight.
Sept. 2/20	N. W.	N. W.	Clear	- 6°	Small flight of Marsh, Pigeon and Sharp-shinned Hawks.
Sept. 3/20	N. W.	N. W.	Clear	+ 4°	Small flight of Marsh, Pigeon and Sharp-shinned Hawks.
Sept. 4/20	N. W.	N. W.	Clear	+ 2°	Small flight of Marsh Pigeon and Sharp-shinned Hawks.
Sept. 9/20	N. W.	N. W.	Clear	+ 2°	Increasing number of Sharp-shinned Hawks.
Sept. 13/20	N. W.	N. W.	Pt. Cloudy	+ 2°	Small Pigeon Hawk flight, others mixed in.
Sept. 14/20	N. W.	N. W.	Cloudy	- 7°	Increasing number Sharp-shinned, Pigeon and Marsh Hawks.
Sept. 17/20	N. W.	N. W.	Clear	- 3°	Small Pigeon Hawk flight.

Sept. 19/20	N. W.	N. W.	Clear	-13°	Very large Sharp-shinned Hawk flight. 2000 Hawks estimated.
Sept. 20/20	N. W.	N. W.	Pt. Cloudy	- 1°	Large flight but diminishing.
Sept. 21/20		S.	Pt. Cloudy	+ 5°	Very large flight of Marsh and Sharp-shinned Hawks.
Sept. 26/20	S. W.	W.	Clear	+ 2°	Small Pigeon Hawk flight.
Sept. 28/20	S. W.	S.	Cloudy	- 3°	Large Pigeon Hawk flight.
Oct. 4/20	S. W.	S. W.	Clear	+ 4°	12 Duck Hawks seen. Also a few Marsh and Pigeon Hawks
Oct. 5/20	N. W.	N. W.	Pt. Cloudy	-10°	3 Duck Hawks shot. A good many Pigeon and Sharp-shinned Hawks.
Oct. 6/20	N. W. & N. E.	N. W.	Pt. Cloudy	0°	Large flight of Sharp-shinned Hawks over by 9.30 A. M.

From the above it will be seen that of the 42 flights noted,—

- 31 of these were on a N. W. wind
- 23 of these were on a falling temperature
- 22 of these were on clear days
- 15 of these were on partly cloudy days.
- 5 of these were on cloudy days.

It is evident from the tables that the hawks are retarded on their flight by adverse winds. They gradually drift south until they reach the ocean's edge, and when the weather becomes favorable again, start on their south-westerly flight. That the northwest wind aids, is due to the wind helping to raise the bird, and making flying easier. This is readily seen along a mountain range when the hawks are seen to be flying, in most cases, on the windward side. The reason for this is that the winds striking the mountain side are deflected upward, which exerts pressure from below and makes flying much easier. Hawks, when flying with a favorable wind, travel much more regularly, and do not stop to circle in order to gain elevation, as is noted on days when the wind is not suitable. When the wind is not favorable, wind currents are found at certain spots, and hawks, reaching these points, will commence to circle around, gaining elevation at each turn, until they reach the desired level where the wind is suited to them, and then again they take their desired course.

The Sharp-shinned Hawks, as stated, come in great numbers and when migrating do not pay much attention to what is before them, but keep on their general course, regardless of anything that would ordinarily frighten them. If a decoy owl is used, they will change their course at times, and fly near it, but will seldom make more than one dart at it. How little attention they pay to people, was learned one day when at least eight or ten in our party were having lunch, for the Sharp-shins continued flying by, over and past us, though we had no owl up, and were plainly in view. The Sharp-shins are affected more than any of the hawks by weather conditions, and to get a great flight the day must be just right in every respect. The young birds are the first to come, and late in the flight season the adults are met with. It is most interesting to watch a good flight. Some birds will be high up, sailing straight along, keeping up their momentum with occasional beats of their wings. Others will be flying close to the ground, taking advantage of hollows and hillsides, to get the most favorable wind currents, while others may be seen darting through the patches of woods, hunting for small birds.

The Sharp-shinned Hawk, with his light build, rounded wings and long tail, finds that flying is easier when he is headed a little to the west of the northwest wind, which helps to support him and allows him to slide along slightly sideways on his desired course. During this past September, 1921, we had no Sharp-shin flight. At the general time for a flight,—September 10, to September 25,—we did not have a single day when the wind was favorable; in fact for the entire month the weather conditions were adverse. On a few mornings the wind appeared to be from the northwest, but would soon veer to the north and east. Not until October 6, did the correct conditions occur, but most of the Sharp-shins had by that time drifted along the Connecticut shore.

The Pigeon Hawk is very common at the Island during migration. These small falcons prefer a southwest wind to fly on, though numbers come along on a northwest wind. They feed early in the day, and rarely is one collected that is not found to be packed full of birds. They are very savage, and are ready to fight at any time, either with another Pigeon Hawk or a decoy owl. At the decoy we have seen one return seven times, dashing

in and squealing, but never striking. They decoy better than the Sharp-shins, and when once near the owl are not afraid of a person. The young birds migrate first, and the adults later, like the Sharp-shinned Hawk. Like their big relation, the Duck Hawk, they are compactly built and feathered and have not the feeling of a Sharp-shin, which seems loose and fluffy when handled. They are strong fliers, and do not hesitate to move along even if the wind is strong and directly against them.

The Marsh Hawk commences his southward flight about August first, and some come along nearly every day regardless of weather. Of all the hawks, these are the shyest and most suspicious, and a person must be well concealed if he wishes them to come close, as they see a man nearly as soon as a Crow would, and fly off. These hawks are not fast fliers compared with some other species. While hunting they sail about the open fields and patches of bayberry, until they come across something to their fancy, when they pounce upon it. We have seen them coursing over open fields where many pheasants were feeding, and apparently paying no attention to them. At other times they have suddenly glided over the field and made a kill of a nearly fullgrown English Pheasant. At the decoy owl they at times dash in with feet out, and strike, giving a low squeal, but seldom return again. The adult birds, as with the Sharp-Shinned and Pigeon Hawk, are the last to come.

Of all the hawks, the Duck Hawk, similar to the Peregrine Falcon of Europe, is the most interesting species we see at the Island. Nowhere is it common, though widely distributed, but a number visit us each fall. A few come on the regular flight days, but, like the Pigeon Hawks, they prefer a southwest wind to any other. A strong wind is no hindrance to them, and we have come to feel that a typical Duck Hawk day is one when the wind is blowing from the south-west, with almost a hint of bad weather. When the decoy owl is seen by a Duck Hawk, it at once flashes up to the attack, but after the first dash usually goes on its way. At the nesting time, however, the attack will be kept up for a long time, and we have had a female continue to strike even after the decoy was headless, and all resemblance to an owl was lost. The adults come mixed in with the immature birds during the migration,

but late in the season adults are still seen after the last of the young have gone by.

It is a recognized fact that the Duck Hawks are killers, but they are such wonderful fliers and make such a fine appearance that it is a great pleasure to watch them. Only this fall a cock Pheasant came flying nearly over us, and close in pursuit came a large female Duck Hawk, gaining rapidly. Seeing us, she veered off, and the Pheasant escaped into the brush. It is not to be wondered that this bird with its speed, strength and courage, was such a favorite in the days of falconry.

The little Sparrow Hawk is a courageous fighter and comes back time after time with his "Killy-Killy" call, to dash in on the decoy owl, but at the last moment veers off and never strikes. Five of these hawks have been seen about the owl at one time, and with their darting in and out, and squealing, afford an interesting study. While they take a few birds, they prefer insects, and are "good hawks."

The Ospreys while breeding in great numbers on Gardiners Island, about twelve miles to the westward, and also along the Connecticut shore, notably near Niantic, have not been known to breed on Fishers Island since 1890. Just why this is so is hard to explain, as they are never molested, and have good fishing grounds in every direction. They begin to migrate about September 1, and come in numbers, and we have seen one as late as November 22. but this must have been a straggler. At the decoy owl they often strike and squeal, and would damage it if not frightened away, for they return often to the attack.

At the request of the U. S. Biological Survey, we collected the stomachs and crops of the Sharp-shinned, Pigeon and Marsh Hawks for several years, and give below a table showing the contents. It will be found interesting, especially the report on the Marsh Hawk, which shows that whatever he does at other times, he is a killer of birds during the migration.

MARSH HAWK	SHARP-SHINNED HAWK	PIGEON HAWK
119 Stomachs sent	483 Stomachs sent	298 Stomachs sent
107 Birds	530 Birds	318 Birds
52 Mammals	16 Mammals	4 Mammals
2 Amphibians	38 Insects	967 Insects
8 Insects		
1 Fish		
11 Reptiles		

So few of the adult Pigeon, Sharp-shinned and Marsh Hawks do we see in comparison with the numbers of young birds, that we have come to the conclusion that the majority of the adults must follow a different course. Certainly we never see more than one adult for every ten young birds. In the spring we see scarcely any hawks, so it is evident they have different routes which they follow as they work their way back to their nesting localities.

Fishers Island, N. Y.

ADDITIONAL DATA REGARDING THE FAMOUS ARNOLD ARBORETUM MOCKINGBIRD.

BY CHARLES L. WHITTLE.

IN the 1921, July-August issue of 'Bird-Lore,' there is a short article by C. H. Early, entitled 'The Mockingbird of the Arnold Arboretum,' pp. 179-181 inc.; and in Vol. XXXVIII of 'The Auk' (1921) there is an exhaustive account of the Mockingbirds that have been recorded in New England and Canada, by Horace W. Wright, pp. 382-432 inc. In this article Mr. Wright deals at length with the history and imitative abilities of the same Mocker, a male, of which Mr. Early wrote in 'Bird Lore,' and commonly refers to him as the "Resident Mocker," since, for a number of years, the bird appears not to have left the Arboretum or nearby grounds at any season of the year.

So much has now been written about this more than locally-celebrated songster (*Mimus polyglottos polyglottos*), whose reputation for vocal ability promises to rival that of any bird of this