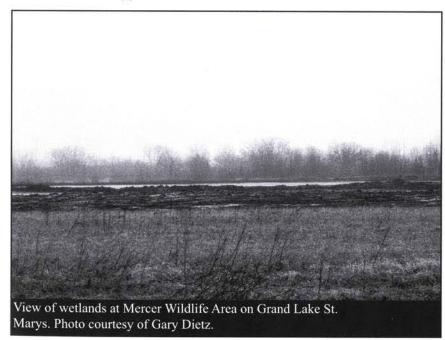
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Contributions to the Ecology of St. Lake Marys, Ohio

by Charles Dury

Charles Dury, renowned among the Cincinnati area's naturalists, delivered this text as a talk to the American Association for the Advancement of Science at its Cincinnati meeting in 1930. Dury, then 83, was president of the Cincinnati Society of Natural History. It appeared in the Proceedings of the Junior Society of Natural History 1930. 1(10-11):3-12, as "Contributions to the Ecology of St. Lake Marys, Ohio"[sic]. Dury's most important work concerned birds, as well as insects, particularly the Coleoptera. The most recent reference to him in these pages involved his rescue of one corpse of the Cincinnati black-capped petrels of 1898. —Ed.

Previous to 1837, this artificial lake did not exist. The land was black mucky soil, partly covered with large oak trees. There were no fishes, no waterfowl—nothing.

It is located partly in Auglaize and partly in Mercer County, Ohio, in the west central part of the State. The highest land or summit of Ohio is in the form of a low elevation that begins in the northeast corner and crosses the State, passing through these counties. It is on this summit that Lake St. Mary's is situated. Approximately the southern two-thirds of Ohio drains into the Great Lakes, and thence, through Niagara and the St. Lawrence, into the Gulf of St. Lawrence. Lake St. Mary's or St. Mary's Reservoir, as it was called at the time of completion, was then the largest artificial body of water in the world. It was constructed as a feeder to supply water to the Miami Canal. It was commenced in 1837 and was completed in 1854. The contour of the land, flooded from east to west, was a shallow valley. By building an embankment four miles long across the west end, and one two miles long across the east end, the lake was formed. When filled with water, it made a lake 9 miles long by from two to four miles wide, and contained about 17,000 acres, and when full, averaged 10 feet deep. The flooded land was one-half prairie, and the remainder heavy timber, mostly oak. When the water was introduced the trees died, but remained standing for many years. The smaller branches were soon broken off and fell into the water. The waste or spill-way is at the southwest corner and the water flows into the old Beaver Channel and thence into the Wabash River, finally reaching the Gulf of Mexico. The water that feeds the canal flows into the feeder through the Bulkhead, which is located at the south-east corner, and enabled the Canal to carry its traffic, very considerable at that time. The Ohio Legislature originally appropriated \$20,000 to pay for the land and to cut out the timber, but the money was squandered by officials and land speculators. Situated as it is, directly in the pathway of the flight of waterfowl in their spring and fall migrations from their winter homes in the South, to their breeding homes in the North, this fine body of water has an irresistible attraction as a resting and feeding place for countless myriads of aquatic birds of the many species whose range includes Ohio, and created a safe breeding place for a number of species. On my first visit to this sportsman's paradise, in 1867, I was amazed at the seemingly endless swarms of Geese, Cormorants, Ducks, Gulls, Terns, Herons, Coots, and other aquatic birds, that filled the air in flight, rested on the water or perched on the standing dead trees. The south side, with shallow, marshy shores, densely overgrown with aquatic plants, was an ideal breeding place for Ducks, Gallinules, Coots, Rails, Swamp Blackbirds, Marsh Wrens and other species. The shallow water along the shores of the south side were soon densely overgrown with Willows, called "Black Brush", and many other species of plants adapted to such an environment. In these protected waters, fishes

had their spawning beds. The most valuable food fishes, at that time, were the Large Mouthed Bass, Micropterus salmoides, Blue Gilled Sun Fish, Lepomis pallidus, and "Pumpkin Seed", Eupomis gibbosus, the latter called "Roach" by the people. The Bass attained a large size; I captured one on a trolling spoon that weighed 7 lbs and 14 ozs. Three and four pounders were common. A point of land that projected into the lake in the town of Celina was called Roach Point. Around this point Sunfish swarmed. Using a small rod with worms for bait, one could catch as many as desired. In the spring and fall these were delicious pan fish, and the supply seemed inexhaustible. Fishes under such favorable conditions are so very prolific, that the smaller ones, with water snails, aquatic insects, and plants, furnished abundant food for the water birds and game fishes. The standing dead trees were utilized as nesting places for Cormorants, Phalocrocoras dilopus, Bald Eagles, Haliaetus leucocephalus, and very rarely Osprey, or Fish Hawks, Pandion haliaetus carolinus, and other tree nesting species. The few Fish Hawks were industrious fishermen, but were frequently the victim of the Eagles, who systematically robbed them. It was a remarkable sight to see an Osprey drop like lightning into the water and emerge with a struggling fish in its claws and fly up high into the air, with a screaming Eagle in pursuit. If the Eagle got too close, the Osprey dropped the fish, which the Eagle darted after and sometimes seized before it touched the water.

The Cormorants (called "water turkeys" by the people) nested in colonies or rookeries. The nests, composed of twigs and reeds, were placed in forks of branches or saddled on broad limbs in the high trees. Four eggs was the usual number laid in each nest. One day, June 1st, 1867, I climbed one of the trees and brought down specimens of the eggs in my cap, which I held in my teeth. They were oblong and of a greenish white color, and thickly covered with a calcarous coating. At this time some of the eggs had hatched. The young were odd looking little creatures that resembled small black rubber balls with a head and feet attached. The parent birds always kept the babies well supplied with half digested fish, which they regurgitated into the gaping mouths. These Cormorants were wonderful fishermen. Their dense coat of oil feathers was so smooth, compact, and impervious to water, that the bird, propelled by its powerful webbed feet, shoots through the water at such speed as to enable it to sieze the fish that form its food. The upper mandible, hooked at the end, is well modified for holding a slippery fish. There is an uncanny, snakelike look about these birds when swimming on the surface of the water, with their bodies almost submerged, only the head, neck and top of back being visible. The eye of the adult is bright emerald green. The largest rookery was near the mouth of "Chickasaw", called at that time "Cranetown". Here great numbers congregated. Some trees had as many as ten nests in them. The number of fished consumed by them was enormous. Quantities were shot for their feathers, to be used in making that sanitary abomination, feather beds, that had a very fishy smell.

In shallow bays and open water, the American Coot, both in Spring and Fall was fat and in fine condition. No one used them for food at that time, because Ducks were so plentiful and easy to obtain. No one seemed to know that the American Coot, when properly prepared and cooked, was an excellent food bird. Day after day, I observed these birds in flocks of thousands swimming ahead of the boat or rising a few feet in the air, and flying short distances, barely keeping out of gun range. Late in November or early December, if the weather turned suddenly cold, the Coots disappeared over night as though by magic.

Flocks of Gulls and graceful Terns were frequent, and most of the species that visit Ohio were secured. If a Tern was shot from a flock and only wounded, the others circled around in an effort to help their comrade and as many could be secured as desired before they would fly away. In early Spring, their plumage was at its best. Nothing could surpass the grace and elegance of their movements, or endurance in long continued flight.

The Night Heron, Nycticorax naevius (Bodd.) at times occurred in numbers. One morning, in May 1871, a shot was fired from the boat in which I was going to the Montezuma Channel, and scores of Night Herons flew up out of the brush, and circled around before alighting again. They made a novel sight. A few days later at the same place, I suddenly came upon an old female "Hooded Merganser" Lophodytes cucullatus (Linn.), who had eight freshly hatched ducklings with her. She was out in the open water, and only a few yards away. She instantly began a series of gyrations, flapping her wings, and acting as though wounded, at the same time going rapidly away from her babies, making every effort to entice us to follow her. The ducklings scattered and began diving towards the cover of the brush and though we tried our best to secure specimens of them, they baffled us completely, and we did not get any. When the young ones were safely in the brush, the old bird rose from the water and flew swiftly back into the marsh, leaving us completely beaten. The old boatman, who was paddling, remarked, "Did you ever see anything to beat that?" This is the only instance where I have positive evidence of the breeding of the Hooded Merganser in Ohio. The male of this species is one of the beautiful and striking objects of the Duck tribe. After seeing such mother love and skillful tactics displayed by that bird, I am glad my collection has gone without specimens of young Hooded Mergansers to this day. Late in the Fall, the large Merganser, or Goosander, Mergus merganser, was very abundant. The people called them "Saw Bills" and considered them uneatable, because of their fishy flavor, but I found if the breasts were cut from freshly killed ones, and broiled over a hot fire, they were delicious. The fishy flavor of a fish-eating duck is largely caused by its not being drawn when first killed. Three species of Merganser came to the lake and remained until the water was frozen over. The breast feathers of a "Saw Bill" are colored a delicate pink in life, but in the stuffed specimen, this color fades to white after a time. Small fishes are their food, and they seem able to catch all they require.

Mallard and Wood Ducks nested frequently and several other species more rarely. The holes and cavities in the old dead trees made secure nesting places for Wood Ducks and Hooded Mergansers. I have several times seen an old Wood Duck with her brood of young ducks and once caught a specimen, which the old mother duck had just brought down from her nest and placed in the water. Beaver Channel, a swampy stream at the west end of the lake, had some dead trees with cavities in them, where the beautiful Wood Duck nested. I never saw the old bird fly down with a duckling in her bill, but close observers say she holds them by the wing or foot. After all have hatched, she brings them down one at a time. I have several times come suddenly upon a brood, who were all of the same size, and just out of the shell. The Hooded Merganser has a similar habit, but her bill, being serrated, is better adapted for such a purpose. The note of the Wood Duck is very un-ducklike, being more of a shrill squeak than a quack. The beautiful Wood Duck, not surpassed by the Mandarin Duck of China, has been so sought after by Hawks, Owls, Raccoons, Minks, and worst of all, human hunters, that it is no wonder that it nears extinction. Some measures have been taken to save this feathered gem from following the path of the Passenger Pigeons, which at one time were far more numerous than Wood Ducks ever were. Save these distinctively American birds before it is too late! The rights of posterity demand it.

The old Beaver Swamp was densely overgrown with Cat Tails, Skunk Cabbage and other aquatic plants. Here the swamp loving species nested in numbers. Gallinules, Rails, Least Bitterns, Marsh Wrens of two species, and Swamp Blackbirds were noisy in their protest if their breeding places were invaded.

Along the Swamp's edges, the American Woodcock hatched its young. Their eggs were laid so early that the birds were generally fully grown by July 1st. The soft black mucky soil was perforated with their borings. I never saw a finer breeding ground for this prince of American game birds.

The Ohio Cardinal

The Gallinules made their nests by piling a mass of dead reeds together until they floated sufficiently to hold up the sitting bird. The nest had a shallow cavity on top, in which the 7 or 8 eggs were deposited. I have a set dated May 22nd.

The Least Bittern made a somewhat similar nest, but fastened it to the standing reeds. She laid four greenish eggs, about the size of domestic pigeon eggs. When these waders hatched, they scampered around, through, and over the aquatic plants like rats, but they were so elusive and skillful at hiding that they were seldom seen from the shore. June 18, 1871, when collecting specimens of eggs in this swamp, I found the muck under the water so soft and deep that I could not wade through it without becoming engulfed, so was obliged to push a small boat ahead of me and cling to the stern for support. Nests were everywhere, and specimens of the eggs of a number of the marsh nesting species were secured.

The Long-billed Marsh Wren was abundant. Its nest was a ball of cat-tail leaves and marsh grasses woven together, and fastened to standing cat-tails. A hole on one side furnished entrance and exit. The inside was lined with soft material on which 6 or 7 coffee brown eggs were deposited. The entrance hole was hidden and difficult to find. The song of this wren was a medley of odd sounds. The Short-billed Marsh Wren, *Cistothorus stellaris* (Licht.) was much less common, and owing to its mouse-like habit of slipping through the reeds, one rarely ever got a glimpse of the active midgets. I never procured a specimen of it, because when seen, it was within four or five feet from the muzzle of the gun, and it was impossible to flush it. Floundering around in the mucky marsh, under the rays of a scorching sun, almost suffocated by the sickening odor of skunk cabbage and decaying vegetation, required all of the enthusiasm of a naturalist. No one should begrudge these beautiful little feathered dwellers the right of tenancy in such a habitat.

Very small blackish Rails rose and fluttered over the tops of the reeds, quickly dropping out of sight. Although I did not procure any specimens, I am sure they were the Little Black Rail, *Porzana jamaicensis* (Gm.). I did not positively identify and secure this as an Ohio bird until May 17, 1890, and again May 30, 1891, when a dozen specimens were taken in Cincinnati, Hamilton County. This Rail was formerly more abundant than has been supposed, but has not been seen, because of its being such an adept at hiding.

A charming denizen of these swamps was the bright colored Prothonotary warbler, *Prothonotaria citrea*, with its vivid orange colored head and neck. Holes excavated in dead willow stubs by woodpeckers furnished these charming little songsters with nesting places. A nest examined in May, 1872, was lined with the bright feathers of a wood drake; evidently this pair had an eye for beauty. The sounds of bird notes coming from such a swamp were very different from those heard in more terrestrial situations. At dusk, huge Bull-Frogs assisted the Gallinules and Rails in making the coming darkness worthy of her traditions.

In the early days I made headquarters in Celina, on the north-west corner of the lake. I became well acquainted with many of the people, whose chief recreation was hunting and fishing. They had a vernacular of their own for many of the birds. The Night Heron was called "English Kingfisher". The Coots and Gallinules were "Mud Hens". Cormorants were "Water Turkeys". The Mergansers were "Saw Bills." Scoter Ducks were "Muscovies". The Grebes were "Hell Divers", or "Die Dippers". The Large Pileated Woodpeckers they called "Woodcocks", and the real Woodcock was a "Snipe". The Spotted Sandpiper was a "Tip-up". Gulls and Terns were "Sea Gulls". The Buffle Head Duck was a "Dipper Duck". The Ruddy was a "Go-Devil". The Dusky Duck was called "Black Mallard". The Great Blue Heron was always a "Crane", etc. The Land Birds bothered them. Their name for the Baltimore Oriole was "Marygold". Names for the great army of warblers, sparrows, and thrushes was beyond my boy companions, some of whom were very good and accurate observers. I tried to impress upon them the desirability of conserving Bird and Fish life, but the

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general opinion was that it was inexhaustible.

One of the most deadly enemies of the smaller Ducks, was the Duck Hawk, Falco communis anatum. This Falcon's daring and rapid flight is not surpassed by any of the American Hawks. Fortunately for the Ducks, it was not numerous. When it went in pursuit of Ducks that were flying high, it was almost certain to capture one. The surest way for a Duck to avoid capture was to drop to the water, dive and get into the cover of the brush as quickly as possible. On Oct. 8, 1874, I secured three specimens of Duck Hawks. One was shot while in the act of chasing, and very close to, a Teal Duck. Mr. Geo. B. Ellard, who shot the Hawk, preferred to kill it to securing the Duck, which escaped. I never missed an opportunity of trying to kill these Hawks. They were more numerous in 1874 than I ever saw them. I have no record of its nesting in Ohio. They were evidently migrants from the north as they came in with a great flock of Ducks. One came into Cincinnati and captured Pigeons from a flock at the City Hall. It carried the victims to the cross on the top of the Cathedral across the Street and devoured them. Each day it took a Pigeon from the flock, until it was killed by a policeman with a rifle ball.

The Great Northern Diver, or Loon, Gavia imber (Gunn.), was more abundant on the lake in the Fall than in the Spring, though the Spring birds were much more conspicuous because of their full and beautiful plumage. The feats of diving performed by these powerful birds may well command our admiration. I have started after one as fast as I could row, the bird diving when I got too close. Coming to the surface to take a survey, it would again dive and that would be the last I would see of it. I have seem them sink beneath the water without tipping up behind, as a diving bird usually does. When in the open water and hard pressed, they come to the surface and only project the beak out of the water, take air, and sink again, without making a ripple. I saw one stick up its head, behind a small snag, with it kept between its head and the boat, so that it was impossible to shoot it. I spent hours trying to secure specimens, but got but one, and that was a young bird in the Fall. For several days, one early spring, two boats went together from Celina across the open waters to fish, and every morning came onto about a dozen Loons, nearly in the same place. Each time a rapid chase ensued, with a fusilade of shots, but we never got a specimen. They outwitted us every time. I never found a nest, though, early one fall, I saw a half grown young one, which must have been from a late brood. The iris of full plumaged birds in Spring is bright carmine red, but young birds in the Fall have a light hazel. The construction of the Loon for swimming and diving is perfect. It is clumsy in taking flight, though very swift after starting. Its dense coat of breast feathers is almost impervious to shot. One flying down the Ohio River on a foggy night struck the smoke stack of an ascending steam-boat, with an impact that caused the boat to quiver. The Captain thought his boat had struck a snag, but later found the bird lying dead on the deck. When I skinned it, preparatory to mounting, I found its bones broken to pieces, though its tough skin had not been perforated.

About three miles northwest of Celina was a dense woods of very tall trees. The land was flat and poorly drained, and covered with shallow water. Here the Great Blue Heron, Ardea herodias (Linn.), had established its rookery. In the early summer of 1871, I was piloted to the place by some boys, who called the place "Crane flats". There were Heron nests in the high trees by scores, and the parent birds were constantly coming and going. The squawking and cackling was deafening. The old birds made a flight of miles to secure a crop full of fish, which they brought and regurgitated into the open mouths of the hungry, insatiable young. Each bird knew its own nest, and each brood seemed to recognize their own parents, even at some distance away, because when they saw them approaching they would redouble their clamor. How they could recognize their own, when all looked so exactly alike, was another of nature's mysteries. Both sexes work on the feeding job. As the young get larger, to keep them satisfied takes work of the most constant

kind. I never heard of a Heron laying down on its job of feeding and caring for its helpless brood. It does not require any court of domestic relations to compel these devoted birds to do their duty, as is frequently the case with human hoboes, who start a family, and leave it for some one else to care for and raise. That glorious parental instinct is better developed in birds than it is in some males of the genus Homo, I am sorry to say.

These wild and swampy woods were the home of the great northern Pileated Woodpecker, Ceophloeus pileatus, though as long ago as 1870 it was a rare bird in Ohio. Its loud shrill notes echoed through the woods and its habit of hammering on a dead hollow limb could be heard a mile away. I got a beautiful male bird once in mid-winter, while tracking wild turkeys in the snow. I did not get any turkeys, though I shot a fine Ruffed Grouse. I occasionally saw Ravens flying over the tree tops, uttering their dismal croaking. They made their nests in high trees, in the deepest and most swampy forests. The Canada Lynx, Lynx canadensis, and Wild Cats, Lynx rufus, were scarce. Foxes and Racoons were abundant. The Virginia Deer was almost extinct. In the fall of 1871, the water was very low in the lake. I crossed to the south shore and passed the night in a house-boat that was stranded in the mud. At daybreak, we went out to the edge of the brush, and took stations, sending a boatman back along a channel. At a signal, he hammered on the gunwhale of his boat, and I never will forget the sight of the waterfowl as they rose in the air. I got a Canada Goose with each barrel, from a flock that passed within fifty feet over my head. Ducks came out in countless droves, all flying pell-mell for the open water. Other hunters joined in the shooting, which sounded like the firing line of a battlefield. Market shooters killed great quantities of Ducks and Geese for the market. As many as 100 Ducks in one day were bagged by one man, and when the weather turned warm, many birds spoiled or were wasted. In 1872, a party of Cincinnati hunters killed 960 Ducks in two weeks, but they only shot part of the time and not for the market. In those days there was no limit to the bag and what crude laws there were lacked enforcement. Now we have more comprehensive laws, with a strong attempt at their enforcement. The stable door is locked after the horse is stolen. One of the best features of our game laws is the prohibition of the sale of Game or any other wild birds.

In June 1919, I made a visit to Lake St. Mary's and looked for the birds species of former years, but they were mostly gone. A few Great Blue Herons were seen, but hardly anything else. In talking with good observers, who live near the Lake, I elicited these facts. Canada Geese yet visit the Lake in Spring and Fall in considerable numbers. Ducks are generally scarce; very few breed here. Most of the other water bird swarms are gone. Fishes are scarce, and consist mostly of Crappies and introduced Carp. The diminution of water birds is inevitable, because of changed conditions of environment, but much can yet be done to preserve some of them from extinction, by giving them proper protection and encouragement. Wild birds soon learn to know where they can obtain food and are protected. Wild Ducks on Lake Worth, Florida, in the town of Palm Beach, become so tame that they will almost eat out of one's hand, but out side of that protected area, they are as wild and wary as usual. The value of such a resort, as a bird refuge to the State of Ohio, can hardly be over-estimated. If stocked with food fishes, it is a valuable asset, and provides a resort where tired humanity can spend a few days close to nature. It will also furnish a safe resting and feeding place for the thinning ranks of water fowl in their long journey from their winter homes in the south to breeding places in the north.

An Ornithological Reconnoissance of the Grand Reservoir, Ohio, in 1904

by W. F. Henninger

Readers will remember the publication in the Cardinal of Lynds Jones's "Licking Reservoir Trip" (28:2(81-88), which describes a two-day birding outing in what we now call Buckeye Lake Here his contemporary the Rev. Henninger, at the time a resident of New Bremen in Auglaize County, reports rather different results for an expedition two years later to another large artificial reservoir that had replaced a natural Ohio wetland, now known as Grand Lake St. Marys. It was published later that year in Jones's Wilson Bulletin 16(3):74-76. Henninger was a respected amateur ornithologist and collector of the day, with many publications and records. In his final sentence, Henninger refers to communications he must have had with Charles Dury about the latter's experiences at the reservoir decades earlier, the published account of which appears above. --Ed.

The fact that in former years the Grand Reservoir, in Mercer and Auglaize counties, Ohio, was an interesting place for birds, as also that in Dawson's recent investigations¹ it received but scant attention, induced Mr. Karl Heilmann, of Tiffin, and myself to take a summer trip to the Reservoir, to find out what the conditions of bird life would be at the present time. Along the northern side of the Reservoir is the pike from St. Marys to Celina, the tracks of the Lake Erie & Western R.R. and the Western Ohio Traction Co. It is obvious that this part of the Reservoir showed nothing of interest concerning birds. The western part from Celina to the southeast showed us one interesting species, the Yellow-bellied Sapsucker, for the finding of this bird at this time of year would tend to strengthen Mr. Oberholser's only breeding record for this species in the state.² The basis of our work and supplies was Montezuma, on the southwest end of the Reservoir, a quiet little village, the monotony of which is changed only by the advent of a stranger, or an occasional dog fight in which most of the citizens participate with great glee. There we heard that the oil wells in the Reservoir had driven the nesting birds out quicker than anything else.

The Cormorants had ceased to nest since 1886, the Gadwall even before that. One of the natives told me he had not seen a young duck for the last four years, though Mallards and Blue-winged Teal were supposed to nest there still. This did not seem very encouraging and the first day on the water, which was higher than for the last 13 years, only confirmed this. We saw great numbers of the Great Blue Heron, flocks of 18 and 25, and one Coot, the only one seen on the trip, and one bird which by elimination was thought to be the Sandhill Crane, but identification was not as satisfactory as it should have been. As soon as we reached the oil derricks bird life was extinct.

We rowed back in a fierce gale and concluded to start out bright and early the next morning on the pike to St. Marys. So 6 a.m., July 2, found us out on the road with hip boots, gun and camera. After walking nine miles to the east we turned off to the Reservoir, and three miles east of the oil wells struck a place which was promising. The trees fringing the Reservoir were standing in about three feet of water, mostly willows, water ash and a few oaks. With their green arches they were keeping almost every ray of sunlight away from the oozy recesses beneath. Spotted Sandpipers

¹Dawson, L. 1903. The Birds of Ohio. Wheaton Publishing Co, Columbus. ²Oberholser, H.C. 1896. A Preliminary List of the Birds of Wayne County, Ohio, Ohio Agricultural Experiment Station, Wooster, OH. The author reported four immature birds near Wooster 7/12/91.