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THE MAMMALS OF INGHAM COUNTY  
MICHIGAN


Thesis for the Degree of B. S.  
Thomas L. Hankinson  
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on

"THE MAMMALS OF INGHAM COUNTY, MICHIGAN."

by

  
T. L. Hankinson,

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THE MAMMALS OF INGHAM COUNTY, MICHIGAN.

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It is my purpose in this paper to give a list, as complete as possible, of the mammals of Ingham County. Under the name of each species I give notes regarding its distribution in the County, and, in most cases, in the State. Besides these notes, I have added, in a few instances, information that I think may be of interest regarding the habits, economic value, or any peculiarity of the species that I have observed.

I regret that I have been able to present so few notes from personal investigation of the mammal life in this region. But as I began to collect facts on mammals 1st fall, my work could be carried on only during the cold season, and thus I have been working under a disadvantage. By means of traps I have obtained a number of specimens of those mammals that may be found during the winter, but the hibernating species I could not study. It is perhaps for this reason that I have not been able to record the Jumping Mouse and a few other species that should be found here. I have placed an asterisk at the left of the scientific name of each species that I have seen or taken in this County, and I make myself personally responsible for the fact that they occur here.

A large portion of the information that I have obtained upon the mammals of the County was given to me by other observers, and for this I am greatly indebted to J. E. Nichols,

Chas. Davis and W. S. Wright, all of Lansing. These gentlemen have done much hunting in this locality, and they are good observers. Their notes have been of great value to me in preparing this list. I have also been greatly favored by Dr. Morris Gibbs, of Kalamazoo, who sent me some excellent notes from that keen observer of nature, Dr. H. A. Atkins, who formerly resided at Locke, in this County. Prof. W. B. Barrows has given me much information upon the mammals of this County, besides allowing me access to the specimens in the Museum and the catalogue of the Zoological Department. Dr. Beal, the botanist here at K. A. C., who has long resided in this locality and has been a careful observer of nature, has given me some very valuable notes, especially on our larger mammals. I have also been aided by notes from L. J. Cole, B. O. Longyear and Prof. C. F. Wheeler.

Besides the notes received from observers in this County, I have been greatly assisted by notes that I have received from those who have observed mammals in other parts of the State. For these notes I desire to thank Dr. J. B. Steere and N. A. Wood of Ann Arbor, Percy Selous of Greenville, R. H. Wolcott formerly of Grand Rapids, A. B. Durfee and W. E. Mulliken of Grand Rapids, L. W. Watkins of Manchester and E. L. Mosely of Sandusky, Ohio. Dr. Morris Gibbs has greatly assisted me by sending a large number of notes. He sent me not only his own but those of other observers in many parts of the State, as well. Besides Atkin's Notes for Ingham County, he lent me notes from the following observers in other parts of Michigan: E. E. Brewster of Iron Mountain, I. S. Cooper of Cheboygan, A. B. Covert of Ann Arbor, James Herring of Rockland, M. J. Magee of Sault Ste Marie and

Ed. Van Winkle of Van Harbor. He also sent me a list of the Mammals of Michigan, written by G. B. Sudworth in 1883.

Aside from the notes received from the above mentioned observers, I have made use of the following publications: "A List of the Indigenous Mammals of Michigan," by J. B. Steere, published in the "Game Warden" for January 1893; "A List of the Mammals of Michigan," by Dr. Manly Miles, included in the Report on the Zoology of Michigan for 1861; "The Rodent of Michigan," by Dr. Morris Gibbs, published in Vol. I. of the Museum. I also obtained help from Butler's "Preliminary List of Indiana Mammals," published in the Proceedings of the Indiana Academy of Science for 1893 and Jordan's "Manual of the Vertebrates of Northern United States."

In my arrangement I have followed closely the one given by Jordan in his "Manual of the Vertebrates." I have also used his nomenclature to a large extent.

Ingham County, the locality here considered, is situated in the southern part of the State, and lies, approximately, between the parallels 42 23' and 42 45'. The region in the vicinity about Lansing, where most of the observations have been made, is mostly of low, rather level, well wooded country. The land is not well drained by streams, and there is much swamp land.

## ORDER GLIRES.

Family Leporidae.

## # LEPUS SYLVATICUS Bachman.

Gray Rabbit.

This Rabbit is our most common game mammal, and is undoubtedly hunted more than any other quadruped in Southern Michigan. It is abundant in every locality that I am acquainted with, and they have been reported common in every county that I have heard from in the southern part of the Lower Peninsula. L. W. Watkins and N. A. Wood each report them common in Washtenaw County; Percy Selous says they are common about Greenville, Montcalm County; L. J. Cole reports them as common in Kent, Ionia and Allegan Counties. They are certainly common here in Ingham County, and I have also seen many in Hillsdale County. They have, however, decreased rapidly in this latter locality within the last few years. They were very abundant up to 1891. In the fall of 1892 they became perceptibly more scarce, and in the fall of 1893 and during the winter of '93 and '94 they were very scarce. I saw but three or four during this time. although I went on several rabbit hunts, and I noticed but few tracks on the snow during the winter. Few hunters were ever well rewarded for their efforts during the season, except those who used a dog or ferret. I have hunted some about Hillsdale since then, and have reason to believe that the rabbit has not increased much in numbers. Dr. Morris Gibbs notices this sudden decrease of rabbits in many parts of Southern Michigan, and he attributes it to the introduction of the ferret, with

which the rabbits have been hunted so much in the last few years.

LEPUS AMERICANUS Erxleben.

White Rabbit, or Northern Hare.

If this mammal is found in Ingham County at all at the present time it is certainly very rare. Charles H. Davis, of Lansing, says that he saw one two or three years ago in Towar's Swamp, which is a low piece of ground, covered by spruce and tamarack, about two miles north of the Agricultural College. It was in the winter, and the rabbit was in its white pelage. J. E. Nichols, of Lansing, says that he has taken this mammal in Ingham County. Dr. Beal tells me that the White Rabbit is often taken by hunters in a large swamp in Jackson County, Mich. From the reliability of these observers, I have little hesitation in listing this species as one of the mammals of Ingham County.

Mr. A. B. Durfee tells me that this rabbit was formerly very common in Wayne, Washtenaw, Oakland and Livingston Counties. Dr. J. B. Steere reports that he has killed them in Ionia County. Percy Selous says: "It is rare near Greenville, Montcalm County, but common twelve miles north. I got three here this fall and winter," ('97 and '98.) This species is not given in Butler's list of the Mammals of Indiana.

Family Hystricidae.

ERETHIZON DORSATUS (L)

Porcupine.

The Porcupine, although once found throughout our State, is certainly very rare at the present time in the



settled portions of the Southern Peninsula.

This mammal was once found in Ingham County. J. E. Nichols knows of its being taken here, and Chas. H. Davis and W. S. Wright each tell me that they know of many being taken in this County, in years past. There is one in the College Museum at M. A. C. that was collected by W. Kedzie in this locality.

The Porcupine at present is very common in the Northern Peninsula, and is found in the northern part of the Southern. Percy Selous says that they are now common in Missaukee County. Dr. Morris Gibbs, in his "Rodents of Michigan," says that it is now scarce south of the 43'd parallel, and is abundant north of the 45th.

The range of the Porcupine in the past extended south of Michigan. A. W. Butler records it from six counties in Indiana. The most southern of these is Randolph County, which lies partly north of the parallel of 40 . E. L. Mosely gives me a note of one that was killed in Wood County, Ohio, which is just south of Toledo.

Family Muridae.

# FIBER ZIBETHICUS (L)

Musk-rat.

This mammal is common in this County, and is probably found all over the state, in every favorable place. Every observer from whom I have received notes gives it as common in his locality.

I have often seen these animals in the swamp about a quarter of a mile north of the Agricultural College. In the

spring of the year, while going along the road that passes this place, when the water is high it is not infrequent to hear a loud splash made by a Muskrat as it springs from some log or other support into the water. In this swamp I found several of their houses while I was walking around on the ice last winter. These were large, rude, dome-shaped affairs, composed of sticks and pieces of swamp plants. I made a hole in the wall of the house, and found that it had a rather spacious room, with a floor of ice. The rats entered this room through three or four holes in the ice that were placed around the edge of the floor.

A number of Muskrats were caught last fall in the pools of the wild garden here at M. A. C. They did much damage to the aquatic plants that were grown there.

I obtained a specimen of this species from the wild garden this spring. It had been caught in the brook by a dog.

The Muskrat often does great injury to dams in streams and rivers by burrowing in them. It also does some damage to crops in fields that are close to its haunts.

# ARVICOLA AUSTERUS. Le Conte.

Short-tailed Meadow Mouse.

One of the best specimens that I have taken since I came to M. A. C. was an Arvicola Austerus, in a piece of oak woods just north of the College grounds. I was walking along a lane in these woods one day in August, 1895, when I saw a small mammal running over the ground toward a large oak tree. I easily overtook it and captured it. I made a skin of this specimen, and presented it, with the skull, to the

College Museum. Prof. Barrows identified this mouse as the *Arvicola Austerus*.

In appearance and color this mammal resembles the common mouse, but it may be readily distinguished from *A. riparius* by its much smaller size.

As far as I can learn, there is no other record of this species being taken in Michigan. Dr. J. B. Steere says: "Not found at Ann Arbor, Mich., belongs further south and west." A. W. Butler gives records of its being found in only two counties in Indiana - Franklin and Vigo.

# *ARVICOLA RIPARIUS* Ord.

Meadow Mouse.

The Meadow Mouse is one of the most abundant, and certainly the most destructive, of all our mammals. It is found in great numbers about all our fields, where they do much damage to grain and grass crops.

Since last November (1897) I have caught about a dozen of these mammals in cyclone mouse traps, set in places where they are found. All these specimens resembled each other closely in color of pelage, but they varied much in size. Cheese was the bait that seemed best to bring them to the trap, although I caught four or five by using raw, fresh meat. I caught one in a trap baited with a piece of walnut meat. The traps in most cases were set in the runways, in the grass, or in the snow. Specimens were taken in various places, upon high, dry ground as well as upon that which was low and wet. They seemed to be found wherever there was grass.

I discovered a peculiar habit of this mammal this winter. Mr. Gunson, the florist here at M. A. C., went to his violet

bed, which was in a large hot house, and found that all the flowers from his violet plants had been picked and placed in a neat little pile upon the earth at one side in the house. It looked like the work of mice, so he notified me. I set a cyclone trap near this pile of violets, and the next day I found an arvicola of this species in it. The mouse undoubtedly took these flowers for a nest, but what caused him to pick just the flowers, and touch nothing else, is a mystery to me.

The Meadow Mouse is probably abundant in all favorable localities throughout our State. A. W. Butler says that it is common in every locality from which he has received reports in Indiana.

     CALOMYS AMERICANUS (Kerr).

    White-footed Mouse.

The Deer Mouse, as this species is commonly called, is an abundant mammal all over Michigan. It is reported as common by every observer that has sent me notes. David Starr Jordan, in his Manual of Vertebrates, says that it is abundant everywhere in North America.

I have caught a good many in traps since last fall, and have used for bait raw fresh meat, cheese, rolled oats and yolk of a boiled egg. They were taken in all kinds of regions, on low as well as high land, in the open fields as well as in the thick woods.

Last February I set one of those small box traps for catching mice alive at the edge of a swamp, a short distance north of M. A. C. On visiting it the next morning it was

found to contain two mice of this species. They were both dead; they probably died from cold. One of these mice had eaten the flesh from the side of the head of the other, and had eaten out its brains. Whether or not it is a natural habit of these mice to destroy each other for food I do not know. They certainly are partially carnivorous, as they seem to be more easily led to a trap when meat is used for bait than anything else.

# MUS DECUMANUS Pallas.

Brown Rat.

This too abundant mammal is well known to everybody as a great pest and nuisance about buildings. It was introduced into America about 1775, and rapidly increased in numbers until it was found everywhere in the Country.

Before this rat was introduced the Black Rat (*Mus rattus*) was the common species, but the Brown Rat soon exterminated this species, and at present specimens of *Mus rattus* are very rare.

# MUS MUSCULUS.

House Mouse.

The House Mouse is another pest with which we are all familiar. It is found about dwelling houses, where it does much damage unless it is very carefully guarded against. It is also found in barns and granaries. In such places their depredations cannot be so easily checked, and they therefore do much harm. The cat and the mouse trap are the chief agents in keeping this little mammal from running out humanity entirely.

This mouse is not confined to buildings and their vicinity I have caught many about corn shocks and hay stacks, far out in the fields. I have also caught them in the woods. I found one in a trap last fall that I had set on low, mucky ground on the edge of a ditch beside the road that runs through Chandler's Marsh, three miles north of M. A. C. This was about a mile from any house or cultivated field.

Family Castoridae.

CASTOR FIBER L.

Beaver.

I do not record the Beaver as a mammal that is found at present in Ingham County, but as one that once occurred here and is now extinct. They were certainly found here many years ago, but there is little evidence in proof of this to be found here at present. J. E. Nichols of Lansing says that he has seen Beaver dams in this county. Dr. Beal tells me that there are dams in Lenawee County. Dr. Robert Wolcott says that "they must certainly have occurred at Lansing." Dr. Manly Miles, in his list published in 1861, says: "At no remote period the Beaver was found throughout the State, as is shown by the numerous remains of their dams in localities that are now deserted by them. Percy Selous says that it was certainly found in Montcalm County years ago.

Mr. E. E. Brewster, in some notes sent to Dr. Gibbs in 1895, says: "The Beaver is increasing rapidly in some localities. Not uncommon in Dickinson, Marquette, Gogebio and probably all counties in the Upper Peninsula where trapping has been discontinued, and lumbering also." Prof. Barrows tells me that the Beaver is at present found in localities



in the northern part of the Southern Peninsula.

Family S<sup>1</sup>œuridae.

# ARCTOMYS MONAX (L.)

Woodchuck.

The Woodchuck is an abundant mammal throughout our State. It is reported as common from every locality from which I have received notes, in both the Southern and the Northern Peninsulas. Dr. Atkins, writing in 1883, says that this species "was scarce at an early day." Mr. E. E. Brewster, of Iron Mountain, in some notes written in 1895 says of the Woodchuck: "Seldom seen ten years ago, but is now common." Mr. G. B. Sudworth, who prepared a list of Michigan mammals in 1883, gives this species in his list as "Not common." From these notes I should judge that the Woodchuck was formerly less abundant in Michigan than it is at present. It is one of the few wild animals that is increasing with the settlement of the country.

As far as I have observed, the Woodchuck always stays in the vicinity of its hole, to which it hurriedly retreats when any person approaches. As its burrow is often found in clover fields, much damage is done by its tramping down the clover within a large area about its hole. For this reason, and because the woodchuck devours much corn and other grains when growing near its burrow, it is a great enemy to the farmers, and every means is sought to destroy it. Probably the most successful method is by the use of bisulphide of carbon, which is placed in its burrow, and, the fumes being breathed by the mammal, kills it.



## # SPERMOPHILUS TRIDECIMLINEATUS (Mitchell)

## Striped Gopher.

It has always been a wonder to me why the Striped Gopher is so rare in this region about M. A. C., while it is so common in other places in the State in regions of the same character. I have received notes from the following localities and the Gopher is reported as common in all of them: Ann Arbor (Steele and Wood), Greenville, Montcalm County (Selous), Manchester, Washtenaw County (Watkins), Grand Rapids and Lowell in Kent County (Cole). E. L. Mosely says that he has found it in Calhoun County. I have seen many about Hillsdale, in Hillsdale County.

In speaking with Chas. Davis, W. S. Wright and J. E. Nichols, of Lansing, I find that neither one of them ever saw a Gopher, or heard of one being seen, in this County. I have taken one specimen here, and, as far as I know, this is the only record so far for this vicinity. Prof. Wheeler told me that he saw a Gopher on the College farm. He directed me to the place, where I set a steel trap at the entrance of its burrow; and the next day, May 20th., 1898, my trap contained a genuine *S. tridecemlineatus*. It has been my experience to always find this mammal living upon sandy soil, but this one was caught in low, black muck ground - a rather unusual place for this species, it seems to me. Dr. H. A. Atkins, formerly of Locke, in this County, says in his list, written in 1883, that he has seen but one specimen. He probably refers to the region about his home in Ingham County. Mr. B. O. Longyear reports them from near Leslie, which is in the southern part of this County, about twenty miles south of the Agricultural College.

# TAMIAS STRIATUS. (L.)

Chipmunk, or Striped Ground Squirrel.

The Chipmunk is a common little woodland mammal in this County. While walking through the woods about the College on any pleasant day, from the beginning of the warm days of spring to late in Autumn, the loud chip of this little animal often suddenly attracts our attention to some place near, and we hear a scampering over the dried leaves as a Chipmunk hastens to its hole. On reaching its burrow it will usually sit perfectly still beside it until you approach too near, or make some suspicious move, when it will instantly disappear.

The Chipmunk seems to me to be an exclusively woodland species. I have never seen it far from wooded localities.

This species is probably found all over our State. I have not learned of a locality where it is rare, although I have not received notes from every part of the State. Dr. Robert Wolcott, who has travelled much in both Peninsulas, says that "it is very common everywhere in the State, as far as I have visited."

The Chipmunk remains in its burrow throughout our winter, and feeds upon the food it has stored up during the fall. It rarely comes out, even during mild weather. I have never seen one in winter, although I have been about the woods much during that season, in places where they are found very abundant in the warmer seasons. The habit of digging up corn after it has been planted has often been attributed to this mammal. It is thus said to be injurious to the farmer. I have never heard this complaint made by any of our farmers in Michigan, and Prof. Barrows says that he never has.

# SCIURUS HUDSONICUS Embleton.

Red Squirrel.

This squirrel is the most abundant of the Sciuridae in this County. There are a great many about the College campus here, where they are little molested, and therefore are quite tame. They are found in great numbers about the woods near here, and they are undoubtedly common all over our State. Every observer in both Peninsulas from whom I have received notes reports them as common in his locality.

The Red Squirrel often does great damage in corn fields that are near woods. There is a field just north of the College which is bounded on two sides by large open woods. The shocks of corn were left standing there all winter. When the snow was on the ground squirrel paths could be seen coming from various directions from the woods to the shocks. Husks, cobs and kernels were scattered all over the ground about these shocks. There were places where the squirrels had entered to the heart of the shock and had fed upon the corn in its interior. It was evident that much damage had been done in this field. I have often seen damage done in other corn fields, and this squirrel is certainly a great pest to the farmer.

There is a family of partial albino squirrels upon the campus here at M. A. C. White specimens of this species are not rarely found. Mr. A. B. Durfee, of Grand Rapids, says that he has seen as many as five or six albinos. Of these he has taken four. There is an albino specimen in the College Museum.

SCIURUS CAROLINENSIS Gmelin.

Gray Squirrel.

The Gray Squirrel is a mammal that I am little acquainted with. I have seen none in Ingham County, and very few in Hillsdale County. Charles Davis, of Lansing, tells me that they used to be abundant here, but are very rare at present. The Gray Squirrel seems to be decreasing generally in Michigan, as nearly every observer reports it as once abundant but rare now. By some this scarcity of the Gray Squirrel is attributed to the Red Squirrel, which is said to run out other species. It is my opinion that the hunter is about as large a factor towards the destruction of this species as any, for these squirrels are certainly much sought after by every gunner, as they are fine game animals. This is the most beautiful of all our squirrels, to my eye, and it is a pity that it should become exterminated, while the less desirable species - the Red Squirrel - should survive.

It is probably known to all those who are in the least acquainted with our mammals that the Black Squirrel is but a color phase of this same species. Dr. Beal tells me that he once found a brood of four young Gray Squirrels in which two were gray and two were black.

# SCIURUS NIGER L.

Fox Squirrel.

With the exception of the Red Squirrel, the Fox Squirrel is our most common arboreal species. They are more shy than the Red Squirrel, and are much less often seen.

From the notes sent me I should judge that this species has not been found in our State before the last thirty or

forty years. Dr. Atkins, writing in 1883, says that it has been found here about twenty years. Dr. Peal tells me that the Fox Squirrel was not in Lenawee County before forty years ago, and that there were no squirrels there but the Gray and Black before that time.

The Fox Squirrel is a fine game animal, and it usually requires much skill and experience to hunt him successfully, The best season for hunting them is during September and the first part of October. The flesh of the Fox Squirrel is excellent for eating during this season.

This squirrel seems to be somewhat aquatic in its habits, as I have often heard of their being seen swimming bodies of water, from woods to woods. In August, 1898, while I was camping at Spring Lake, near Grand Haven, Michigan, some boys brought me a Fox Squirrel that they had caught in the water while it was swimming across the neck of the lake.

#### # SCIUROPTERUS VOLANS (L).

##### Flying Squirrel.

From this mammal's being largely nocturnal in its habits it is seldom seen by the ordinary observer, and it is therefore usually considered as rare. However, those who have kept close note of this species find it to be common; and it is undoubtedly not a rare mammal in most localities in this part of the State. There have been a good many seen about the College. Last fall a large maple was cut down near the hospital, on the campus, and a Flying Squirrel ran from a hollow in it to a little plum tree, where it sat in a crotch part way up among the branches till I came and caught it in my insect net. I know of a few being seen and killed

about the dormitories here.

ORDER INSECTIVORA.

Family Soricidae.

# BLARINA BREVICAUDA (Say).

Mole Shrew.

This is a very common mammal in the region about the College. I have caught a number in my traps during this last winter. Raw fresh meat was used as bait in my small traps, and in large traps that I have had baited with whole mice I have often caught this shrew. They seem to be found everywhere. I have taken them in the thick woods, and in the open fields. I caught one in a runway in the sphagnum moss in a low, wet spruce and tamarack swamp, and I also found one in a trap that I had set under a corn shock. They are often caught in runways made by mice, where the shrew is probably following the trail of some other little mammal, to make it its prey.

The great capacity that the shrew has for food is certainly remarkable. I have repeatedly known them to devour mammals much larger than themselves. Last January I had a rat trap set on the river bank for a weasel. It was baited with a good sized carcass of a White-footed Mouse. I visited the trap after leaving it over night and found a shrew of this species caught in it, and nothing but the skin, with only one or two small bones of the mouse, was found in the trap. The shrew had completely eaten the mouse before the trap had sprung. On another occasion I caught a shrew when the trap had sprung as soon as the mouse used as bait had

been seized. The teeth of the dead shrew had pierced through the mouse's ear, to which the dead shrew was clinging. On several occasions when I visited a mouse trap I have found but the skin of a Meadow Mouse or White-footed Mouse in it. A shrew had evidently come along and devoured the specimen. By resetting the traps and baiting them with meat I have in almost every instance caught the shrew.

From the great voracity of this little mammal it certainly must be of great economic value, for to satisfy its enormous appetite it must destroy many injurious mice and insects.

Family Talphidae.

#### 77 SCALOPS AQUATICUS (L)

##### Ground Mole.

In every locality with which I am acquainted the Ground Mole is an abundant species. It is common in all places in the State from which I have received notes. We seldom see the mole, but we know of its presence by the long ridges that it makes along the ground, caused by its tunneling just below the surface. On this account the mole does great injury in lawns and gardens, and it is thus considered a great pest. Mole traps of various contrivances are made for the purpose of exterminating this animal in places where it does damage.

There are a great many about the campus here at this Agricultural College. Their "hills," consisting of small piles of dirt, are seen in many places about the lawns. Prof. Wheeler showed me a place last January where the moles had been working beneath the snow, and a pile of dirt was thrown up upon the surface of the snow.

COMYLURA CRISTATA. (L)

Star-nosed Mole.

I have only one record of the Star-nosed Mole being taken in Ingham County, and that was by Chas. Davis, of Lansing who found one upon his lawn a year or so ago; he now has it mounted in his collection. It is reported from other localities in this part of the State, and it is probably found here in more or less numbers. As there has been little scientific research in the mammal life of this County, this mole could have been easily overlooked. I have set traps in many places where it seemed likely this species might occur, but in no instance was a specimen secured.

Ed. Van Winkle, of Van Harbor, Mich., reports it from his locality (Delta Co.) in the Upper Peninsula. E. L. Mosely, of Sandusky, Ohio, gives it as having been found in seven counties in Ohio, and A. W. Butler records it from one county, (Miami) in Indiana.

ORDER CHIROPTERA.

Family Vespertilionidae.

VESPERTILIO <sup>u</sup>SUBLATUS Say.

Little Brown Bat.

As nearly all my work studying and collecting mammals has been done during the winter, I have not secured any bats, and so cannot testify personally to this species occurring here. I have seen many bats here in the past, but it is impossible to distinguish species at night while they are flying swiftly about. I have taken the species in other localities, but never happened to take one here. However, from



the notes obtained from other observers, I have no hesitation in recording this as one of our common species. It is reported as common in Washtenaw County by Dr. Steere and H. A. Wood. Percy Selous gives it as common in Montcalm County. G. B. Sudworth in 1883 says: " It is abundant everywhere." Dr. Morris Gibbs says: " It is our most abundant species. It is found in a state of activity from about May 1st., to Oct. 1st. I have captured nearly a hundred in one visit in summer to an old saw mill where they lived in clumps and crannies about the structure."

♯ VESPERUGO NOCTIVAGANS (Le Conte)

Silver Black Bat.

This is another species of bat with which I am little acquainted. I have taken one specimen here on the night of August 8th., 1895. This I caught in my insect net after it flew into my room. I find very little information upon this species in the notes sent to me by observers. Prof. Barrows tells me that it is "Abundant at K. A. C; several specimens are in the College Museum."

♯ ATALAPHA NOVEBORACENSIS (Emmerleben)

Red Bat.

This is a very common species in this County, and it is probably found all over Michigan. David Starr Jordan, in his Manual of Vertebrates, gives it as abundant everywhere in the United States. Every observer from whom I have heard gives it as common in his locality in Michigan. L. J. Cole says that he has taken as many as eight in a net in one evening at Grand Rapids, and that he could have gotten more. There was a specimen brought to me by a student a few days

ago. He had caught it about the electric lights in Lansing, on the night of May 26th., 1898.

ORDER UNGULATA.

Family Cervidae.

CARIACUS VIRGINIANUS (Boddaert)

Virginia Deer.

Deer hunting at present is one of the most popular sports in Michigan, and every fall hundreds of sportsmen flock to the northern parts of our State to engage in hunting this noble game animal. Notwithstanding the great raid that is made upon this species every year, the Deer is still common in Northern Michigan. Were it not for our strict game laws, I believe that the number of deer in our State would decrease rapidly, and it would not be long till this species would become extinct, or nearly so, in Michigan. As it is, the law places a limitation upon the so-called "game hogs", and the Deer manages to hold its own, and is still common in many of the unsettled parts of our State.

At present, in Ingham County, the deer is extinct, and if one were ever found here now it would be accidental. It probably has been about forty years or more since the Deer inhabited this region. Norman A. Wood, of Ann Arbor, says that it was common in Washtenaw County up to 1850. Dr. Morris Gibbs says that it was abundant in Kalamazoo County up to about forty-five years ago, and that many were seen as late as 1850. He also says that the last one seen in that County was in November, 1874. Mr. N. A. Wood tells me that there are a few in Monroe County, Michigan, at the present

time. Dr. Beal also informs me that he has heard of their being found in that locality lately.

CERVUS CANADENSIS Erxleben.

Wapiti or Elk.

The Elk was certainly an inhabitant of this County many years ago, for a number of horns have been found here. Dr. Atkins, in his List of the Mammals of Michigan, says of the Elks: "Once abundant, judging from the horns that were strewn over the ground when the County (Ingham) was new." Chas. Davis, of Lansing, tells me that Elk horns have been found in this County. There is one of these horns here in the College Museum that was taken in Ingham County in 1884 by James Troop. There are also two that were found in Clinton County (the next county north) by this same person. One was found in 1877, and the other in 1878.

I find many records in the notes that I have received from other localities of Elk's horns being found, and I have no doubt but that the Elk was once a common mammal in our State. Dr. Manly Miles, in his list published in 1861, says: "The Elk is found in abundance in the counties of Huron and Sanilac, about the head-waters of the Cass River." Dr. Beal tells me that it used to exist in the "Thumb" of Michigan. Mr. I. S. Cooper, of Cheboygan, Mich., in a letter written to Dr. Gibbs on Feb. 24th., 1895, says: "The last Elk killed in this State that I have knowledge of was fourteen years ago. Sanilac and Huron Counties held the last ones."

ORDER FURAN.

Family Procyonidae.

PROCYON LOTOR (L)

Raccoon.

During all my rambles about the woods in this locality I have not yet met with a 'Coon', although I havn't the slightest doubt that this animal is common here, as it is in all heavily wooded regions throughout the State. Dr. Beal tells me that he has often heard of their being taken here, and that they are very common in Ingham County, at present.

Albinism is not infrequent in this species, judging from the number of white specimens that are taken. There are one or two in the Museum here at M. A. C., and Dr. J. B. Steere reports that they have been taken several times at Ann Arbor. Norman A. Wood also says that albino forms are found <sup>commonly</sup> every year at Ann Arbor.

Family Ursidae.

URSUS AMERICANUS Pallas.

Brown, Black or Cinnamon Bear.

The Bear is at present a resident of the wild regions of the northern parts of our State. Like many of our other mammals it has been driven northward on account of the settlement and clearing up of land to such a large extent in Southern Michigan.

The Bear has left this region within a comparatively recent time. It lingered here much longer than the Deer, and it was probably the last of our large mammals to disappear. Dr. Atkins records one as being shot in 1883 in Ingham

County. Dr. Morris Gibbs says the last one shot in Kalamazoo County was on Dec. 15th., 1835. Dr. Beal tells me that one was killed near the site of the present Harrison Hall, just off the College grounds, about 1878. At the present time a bear occasionally wanders far south, and it seems to me that it would not be impossible for a straggler to get as far as Ingham County. I read of one being killed near Corunna, about twenty miles north of here, in Shiawassee County, last fall, and upon inquiring of a reliable person from there I found the report to be true. It was stated that the bear was with her cubs when shot.

Family Mustelidae.

LUTRA HUDSONICA (Lacepede)

American Otter.

The only information that I have obtained regarding the Otter in this County was received from Mr. W. S. Wright, of Lansing. He tells me of his seeing one from the Washington Avenue bridge, in Lansing, in 1837. He says that there used to be an Otter slide on the Red Cedar River, near Lansing.

From the notes that I have received on this species, I should judge that the Otter may be found in any part of the State at the present time, but it is exceedingly rare in most places. Before the State was so thickly settled the Otter was much more common than it is at present. Neither Dr. Steere nor N. A. Wood give any recent records of the species being found at Ann Arbor. L. W. Watkins says that individuals are still to be met with in Jackson County. Percy Selous, of Greenville, says: "It was formerly common here, but rare now." Rob't H. Wolcott says: "Found near Grand Rapids,

but rare." Dr. Morris Gibbs says: "It is a rare species now; once not uncommon along the banks of the Kalamazoo River." I have evidence from good sources of Otters being seen and taken about Hillsdale, in Hillsdale County.

# MEPHITIS MEPHITICA (Shaw)

Skunk.

Judging from the fragrant (?) odors that are so often afloat upon the breezes in this locality, I should consider the Skunk a common mammal here, although I have not chanced to meet one while on any of my woodland excursions in this County. This is perhaps simply because I haven't taken pains to look one up. I have seen a number in Hillsdale County, where they are also very common.

Jordan, in his Manual of Vertebrates, gives the Skunk as abundant from Hudson's Bay to Mexico. They are given as common by every observer who has sent me information on mammals. I have little doubt but that the Skunk is found in abundance all over Michigan.

The fur of the Skunk is rather valuable, and many of these mammals are killed for their skins. N. A. Wood says that they are becoming less common in the vicinity of Ann Arbor on this account. Skunk raising is sometimes made a business, and many of these animals are often raised for the income that might be obtained by selling their skins. There was a skunk farm near Hillsdale, owned by a gentleman by the name of Bates. He raised skunks for a few years, but he soon abandoned the business, as his skunks became infested by a disease that caused their hair to fall out, hence their hides were ruined for market purposes.

## TAXIDIA AMERICANA.

## Badger.

Badgers are occasionally found in Ingham County at the present time. Dick Harrison, the herdsman here at M. A. C., took one upon the College farm about four years ago. Chas Davis and J. E. Nichols both tell me that the Badger is found here. There is a specimen in the Museum labeled "Lansing."

I know of a few being taken in Hillsdale County within the last few years, and I have often heard of their being found in other places in this part of the State. N. A. Wood writes me from Ann Arbor that he had two brought him in the summer of 1896. He says the species is rare about Ann Arbor. Dr. J. B. Steere also gives the species as rare about Ann Arbor, but still exists there. Robert H. Wolcott writes me that it is occasionally seen in the woods north of Grand Rapids. Percy Selous says: "It is rare; I have taken three specimens two miles from Greenville, Montcalm County, nevertheless." L. J. Cole says that he has been told of its occurrence in Ionia County. It is undoubtedly very rare in Kalamazoo County, as Dr. Gibbs does not know of a specimen being taken there in recent years. The last one captured, to his knowledge, was on May 14th., 1877. E. E. Brewster, of Iron Mountain, says: "It is rare; one was killed near Norway, Dickinson County, in 1883." From the notes received, I should judge that this species may be found at present in any favorable locality anywhere in this State, but it is very rare in most places.

MUSTELA PENNANTI (Erxleben)

Fisher or Pekan.

I record the Fisher as a mammal of Ingham County on the authority of Dr. Atkins, who, in his notes given in a list written in 1883, tells of a specimen being taken in Ingham County in 1882. He says that it was a male, and weighed twenty pounds. I can find no other record, besides this of Dr. Atkins, of the Fisher's being found in this locality.

This mammal is probably extinct in all of our southern counties at present. According to notes received, it is more or less common in various localities in the Northern Peninsula, and it is probably found in places in the northern part of the Southern Peninsula. Percy Selous, of Greenville, says: "It is not rare North, but Rare South; taken in Misaukee County.

PUTORIUS VISON (Schreber)

Mink.

The Mink is a common mammal all over our State in all favorable localities where trapping has not been carried on to too great an extent. I have seen them in Ingham County, on a few occasions. They have been taken along the Red Cedar River here, and I have no doubt but that they are common along this stream. I have seen a number in Hillsdale County. They are trapped quite extensively in this locality, especially along the streams and lakes near Hillsdale.

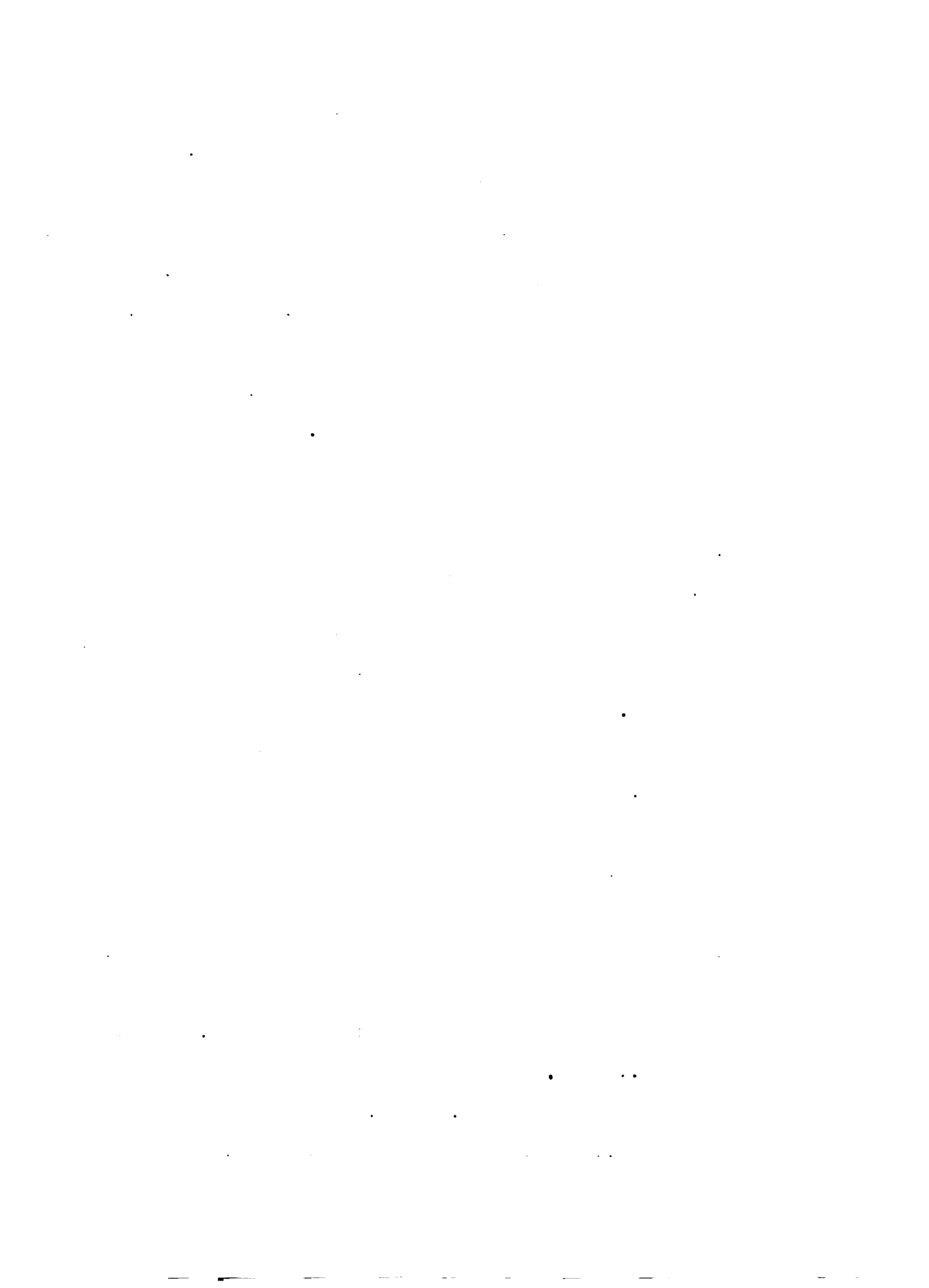


## \* PUTORIUS NOVEBORACENSIS De Kay

Weasel or Ermine.

This is the common Weasel of our State. I have caught four of these mammals in rat traps in this County during the last winter, and I caught one in Hillsdale County. The traps were a kind known as the slayer rat trap, manufactured by the Lovell Manufacturing Co., of Erie, Pa. They were set close to a rail fence in three cases, and near a wire and picket fence in the other instance. A carcass of a mouse of any species answers as bait. The best places for catching these mammals I have found to be along the rail fences that border swamps or low pieces of bushy or wooded land. The rail fence is evidently used as a highway by this animal, and a trap properly set and baited in his path is almost sure to attract and catch him.

Of the five specimens secured, two were males and three were females. All were in a white pelage, except two females. These were in their regular summer pelage - brown above and white below. I cannot come to any definite conclusion regarding the color changes of this species from the few specimens obtained, but it is certainly a fact that the change does not come to all individuals of this species at the same time. Some either do not become white in winter at all, or else the change is much delayed. These two brown females were caught on the following dates: January 3rd., 1898, and January 6th., 1898. The white female was obtained about a month later, February 12th., 1898. The males were obtained December 11th., 1897, and January 10th., 1898. From these few facts it might look as if the change was much slower in



the female than in the male, and that the white pelage of the female does not come till late in the season. But it is not safe to draw any conclusions from these few specimens. It would be well for every trapper and student to keep accurate notes regarding the color, with the date and place of taking of every specimen that comes under his observation. In this way some interesting facts may be found regarding the color change in this species.

Family Canidae.

VULPES VULPES (L)

Red Fox.

Beyond a doubt the Red Fox is found here in Ingham County at the present time, although, from its great shyness, it is seldom seen. Nearly every observer in the southern part of the State mentions it from his locality, but gives it as rare. In the northern part of Michigan, however, it is more common. Mr. James Herring, of Rockland, Ontonagon County, writing in 1895, gave it as plentiful in his locality. E. D. Brewster, of Iron Mountain, Dickinson County, in this same year wrote Dr. Gibbs that it was "abundant everywhere." Before Southern Michigan was so thickly settled the Red Fox was undoubtedly common everywhere in this region. J. E. Nichols, of Lansing, tells me that he has taken it in this County, and that they are here at present. Chas. Davis, of Lansing, also tells me that they are found in this locality.

The only Red Fox I have ever seen in a wild state was about eight years ago. I was riding in the country near Hillsdale one mild winter day when a fox of this species crossed the road but a short distance before the buggy.

This was in an open, well settled region and not far from a farm house.

UROCYON CINEREO-Argentatus (Schreber)'

Gray Fox.

Although once a common species in many parts of our State, the Gray Fox is recorded as rare in every locality in Michigan from which I have received notes. In Washtenaw County Dr. J. B. Steere considers it as extinct. He says that the last one was killed some fifteen years ago. Norman A. Wood, of Ann Arbor, says: "The last one I ever saw was brought to me to mount in 1882 - killed four miles south of Ann Arbor." Percy Selous gives it as formerly common at Greenville, but rare there now. Dr. H. A. Atkins, writing in 1883, says: "This species was more abundant in 1842 than the Common Red Fox; now it is scarce." I have no information regarding this species in the Northern Peninsula, except from one locality. Mr. Van Winkle, of Van Harbor, Delta County, in some notes sent to Dr. Gibbs in 1895 gives it as "rare" in his locality.

The only authority that I have for giving this as a mammal of Ingham County, except Dr. Atkins in the note given above, is Charles Davis, of Lansing, who tells me that skins are sometimes brought into Lansing markets from animals taken in this vicinity.

CANIS LUPUS L.

Wolf.

The Wolf certainly used to be found in abundance in Ingham County, but it has long been extinct here.

Mr. J. E. Nichols is sure that they used to be found in abundance near Lansing.

The Wolf at present is found only in the wild region of the Northern Peninsula, and possibly in a few localities in the Southern. Dr. Morris Gibbs says that it positively occurred in Kalamazoo County up to 1840. He also says, regarding this species in Michigan: "Not very rare north of the 44th. parallel, and not common anywhere."

Family Felidae.

LYNX RUFUS (Guldenstadt).

Wild Cat.

The Wild Cat is another mammal that has been nearly exterminated in the southern part of Michigan. It is found but rarely in this part of the State, and is common only in the wilds of the North. It was found in Ingham County many years ago. Dr. Atkins says in his notes written in 1883: "It was common when the county was new."

Occasionally a Wild Cat is found in this part of the State at the present time, but they are very rare. Percy Selous tells me of one being killed three miles east of Groenville on January 9th., 1895. It was a male, and weighed 38 lbs.

#### HYPOTHETICAL LIST.

In this list I include those species that might be found in Ingham County, but of their occurrence here I have been unable to obtain information. Any one of the species here listed probably occurs, or has occurred, in this locality, and it may be established by future investi-

gation as properly being placed upon the list of the mammals of Ingham County.

ORDER MARSUPIALIA.

Family Didelphididae.

BIDELPHIS VIRGINIANA Shaw.

Common Opossum.

It has been found in Washtenaw (Wood, Sudworth and Watkins), Lenawee (Boies, Beal), Hillsdale (Boies), Wayne (Durfee) and Genessee Counties in Michigan. It may have wandered as far north as Ingham County. Dr. Atkins in his list written in 1883 says: "I never saw but one in the State- 25 years ago." As he lived in Ingham County it may be that he saw this individual here.

ORDER GLIRES.

Family Zapedidae.

ZAPUS HUDSONIUS (Zimmermann).

Jumping Mouse.

This species is recorded in Washtenaw County by Dr. J. B. Steere, N. A. Wood, R. H. Wolcott and L. W. Watkins, and also in Wayne County by A. B. Durfee. Sudworth, in his list written in 1883, says of the Jumping Mouse: "Not uncommon; chiefly in Central and Southern parts of the State." Dr. Morris Gibbs records taking a specimen in Kalamazoo County, on low bottom land on the Kalamazoo River, in 1884. I think that this mammal is found in this County, but information to that effect is lacking at present.

## Family Muridae.

## SYNAPTOMYS COOPERI Baird.

## Lemming Mouse.

This species has been found in only one locality in Michigan, as far as I can learn. Mr. J. B. Steere records it in Washtenaw County. He says: "It exists at Ann Arbor, but it is rare and apparently in detached colonies."

## CALOMYS MICHIGANENSIS (And. and Bach.)

This species is recorded as occurring in Washtenaw County by R. H. Wolcott and G. B. Sudworth. Dr. Miles includes it in his list, published in 1860, but he gives no notes on the species.

## MUS RATTUS L.

## Black Rat.

I have little doubt but that this is an extinct species in Michigan at the present time. A. B. Covert tells of one being caught in the Michigan Central depot at Ann Arbor. This is the only specimen that I can find record of being taken in Michigan.

This species was introduced into America about 1544, but the Brown Rat (*Mus decumanus*) which came later soon exterminated it.

## Family Sciuridae.

## SPERMOPHILUS FRANKLINI (Sabine)

## Gray Gopher.

This is a very rare species in Michigan. Two specimens have been taken in Oakland County; one was obtained by Mr. Robert Potter at Austin, and the other was found by

Mr. J. W. Anderson, of Lakeville. It would be very accidental if one of these mammals were found in Ingham County.

ORDER INSECTIVORA.

Family Soricidae.

SOREX PLATYRHINUS De Kay

Common Shrew.

This is given as "~~not~~ rare" at Ann Arbor by Norman A. Wood.

BLARINA EXILIPES Baird.

Dr. H. A. Atkins, in his list of the Mammals of Michigan for 1833, says: "This species was taken by me in 1874; accidental."

ORDER CHIROPTERA.

Family Vespertilionidae.

ATALAPHA CINEREA (Beauvais).

Hoary Bat.

This species is probably found in Ingham County, as it is recorded from other localities in this part of the State. They are given as rare by most observers.

ORDER UNGULATA.

Family Bovidae.

BISON BISON (L.)

Dr. J. B. Steere writes me that he found a horn at Ann Arbor that was apparently a Buffalo's. *Prof Russell told me next. It was* Percy Selous says that there are spots in Michigan still called Buffalo wallows. It may be that in the remote past that this animal



was found in Michigan. If so, it may have existed in Ingham County.

ORDER FERAÆ.

Family Mustelidae.

MUSTELA AMERICANA Turton.

Sable or Pine Martin.

This species is found North at present, and is given as common by some observers. Percy Selous says that it is "common in Missaukee County." Before the county was settled, the Martin may have been found in Ingham County, though it was probably rare.

PUTORIUS LONGICAUDA Bonaparte.

Long-tailed Weasel.

Percy Selous writes me that he has taken one specimen of this species at Greenville.

PUTORIUS NIVALIS (L.)

Least Weasel.

Norman A. Wood says that a few have been taken at Ann Arbor. <sup>(mistake) no record in 1/2 li. 2nd. 1910</sup> Percy Selous gives it as "not rare" at Greenville. Robert H. Wolcott writes me that it has been found at Grand Rapids.

Family Felidae.

LYNX CANADENSIS (DeMorest).

Canada Lynx.

This Lynx is undoubtedly a rare mammal in any part of Michigan at the present time. It may have been found in Ingham County years ago.

FELIS CONCOLOR L.

American Panther.

I can find no record whatever of the Panther ever being found in Michigan. There is but a slight possibility of its existing in Ingham County, many years ago.





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