

ORDS
ZOOLOGY

RHOADS

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George Ord

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A REPRINT
OF THE
NORTH AMERICAN ZOOLOGY,
BY
GEORGE ORD.

BEING AN EXACT REPRODUCTION OF THE PART ORIGINALLY COMPILED
BY MR. ORD FOR JOHNSON & WARNER, AND FIRST
PUBLISHED BY THEM IN THEIR

SECOND AMERICAN EDITION

OF
GUTHRIE'S GEOGRAPHY,

IN

1815

TAKEN FROM MR. ORD'S PRIVATE, ANNOTATED COPY. 7135-2'

TO WHICH IS ADDED AN APPENDIX ON THE MORE IMPORTANT
SCIENTIFIC AND HISTORIC QUESTIONS INVOLVED.

BY

SAMUEL N. RHOADS.

PUBLISHED BY THE EDITOR.
HADDONFIELD, NEW JERSEY.

1894.

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By SAMUEL N. RHOADS.

GEORGE STOKLEY, PRINTER,
Haddonfield, N. J.

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INTRODUCTION.

The history of the "Second American Edition" of Guthrie's Geography, the only edition containing the complete part relating to North American Zoology prepared by George Ord, is involved in strange obscurity. Strictly speaking, this edition is *not* the "Second American," but is third. It is, however, the second of the three editions published by Johnson and Warner, the first appearing in 1809 and the last in 1820. The first of all the American editions of Guthrie's Geography that I can discover is a quarto in two volumes, the first bearing date February 1st, 1794, the second, April 27th, 1795. This edition was also published in Philadelphia, the title page stating it was "printed for Mathew Carey." The edition of 1794 and 1809 contain no attempt at systematic zoology beyond desultory notices of the more striking animal productions of the world. I have been able to find seven volumes of the edition of 1794 and one volume of the edition of 1809 in our principal Philadelphia libraries. Of the edition of 1820, I have been able to find one copy. It was known to Prof. Baird, and Dr. Coues gives its full title in the Bibliographical Appendix to his Birds of the Colorado Valley and remarks that the zoological portion "consists of that given in the *second* ed., 1815, *q. v.*, but with the omission of the systematic list, which represented the whole of the technical value of the matter. Ord's name does not appear in connection with this performance."

Complete titles of these editions and the bibliographic references thereto, made by Prof. Baird and Dr. Coues, will be found in the Appendix to this work. It is hoped that the above facts will stimulate all interested persons in the search for copies of the editions of 1815 and 1820. A strange fatality seems to have overtaken all the Johnson and Warner editions when it is considered that the only known copy of the second edition has just come to light. There is only one copy of the third edition in four of the most important Philadelphia libraries and only half a copy of the first edition. The Carey quarto edition does not seem to be rare.

As long ago as 1857, Prof. Baird characterized the so-called Second American Edition of Guthrie's Geography as "exceedingly rare," adding, "I have never, even in Philadelphia, been able to see a perfect copy. The Library of the Philadelphia Academy has the natural history portion, separate."

It is probably to this copy that Dr. Coues refers in the Bibliographic Appendix to his *Birds of the Colorado Valley*. After giving part of the title of this specimen, Dr. Coues notes, "above title defective after the first two lines, the only copy I ever handled, having part of the title page torn off."

The all-around desirability of such a rare work, and the well known activity of Dr. Coues in his bibliographic researches, seem to have failed in revealing another copy, and, what is more unfortunate, to have resulted in the mysterious disappearance of the copy belonging to the Library of the Academy of Natural Sciences.

The numerous applications from scientists, both at home and abroad, for citations from this historic copy evidenced the extreme scarcity, if not extinction, of this edition of Guthrie's Geography and inspired certain workers at the Academy to renewed diligence in the search for it. In a casual conversation with Dr. Edward J. Nolan, Librarian of the Academy, last November, he suggested to me that Mr. Ord, having presented a quantity of his private books and papers to the Philadelphia College of Physicians, it would be well to ask the College Librarian if they had a copy of the long-lost work. On application, I was informed that their library did not contain it, but as I was leaving, the librarian remarked that I might inquire of Dr. J. Solis Cohen, that gentleman having purchased a number of books and papers not coming within the scope of their library. I visited Dr. Cohen and after a delay of two days received a letter announcing that he had a perfect copy of the book I was after, containing marginal pencil notes on the zoological portion. On comparing these notes with Mr. Ord's letters written at that period, I feel no hesitation in attributing their authorship to him, not only from the chirographic resemblance but from the character of the notes themselves.

As a reward for having identified the work, Dr. Cohen has kindly placed the same in my custody until the present reprint could be satisfactorily completed. For this courtesy Dr. Cohen deserves not only the sincere gratitude of the editor, but of the scientific world, for to his interest in these matters we owe the rescue of an invaluable work from the musty chaos of some old book-store, or a fate even more obscure.

Owing to the worn and imperfect condition of the type and its very small size as used in the tabulated lists, many of the characters are to be distinguished only by closest scrutiny. On this account it was concluded that a photographic reprint was impracticable. As stated in my circular of announcement, as nearly as possible the reprint is an exact reproduction of the style, form, size, paging, paragraphing, typography and inaccuracies of the original. The tables, which contain, with their foot notes, that part of the reprint most requiring absolute accuracy, have, (if that were possible), received greater care than the text.

Apart from its technical value, the work before us has great historic and literary interest. The name of George Ord was long ago immortally associated with that of Alexander Wilson. If the latter is the Father of North American Ornithology, Mr. Ord, in a humbler sense, may be characterized Father of North American Zoology, his contribution to Guthrie's Geography being the first systematic Zoology of America by an American. The limited and concise nature of this production gives only a casual glimpse at the personality of its author: when, however, it does reveal itself, the same lofty and sacred animus which inspired the noblest writings of Wilson and Audubon is unmistakable.

The systematic zoologist of to-day, wearied with the modern technicalities of his profession, does well to recur to the heartfelt delineations of nature by the old school masters, and to consider the present scramble after names and novelties as a mere accessory to a clearer, more spiritual insight and interpretation of life. George Ord was quick to recognize in Wilson and others of his day the traits of true genius for the study of nature, because he possessed these requirements in no small degree himself. To him the study of Natural History was not merely a delight or a hobby, but it became a sacred trust; by it he not only sought to please but to instruct, to correct the crude misrepresentations of foreign naturalists, to truthfully portray the zoological productions of his native land and divert the reader from an abstract view of created things to contemplate the omniscient plan of the Creative Mind.

The modesty of George Ord is noteworthy. In neither edition of Guthrie's Geography containing the North American Zoology does his name appear. In the "Advertisement" preface to the edition of 1815 (vol. 1.) the editor refers to it in the following words:-

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"The article on the Zoology of North America, is, for its extent, by far the most accurate which has ever appeared. The modesty of its author forbids a personal acknowledgement, which the editors would have the highest satisfaction in making."

Only through the recognition of his associates, and, in larger measure, by the citations of Prof. Baird in his work on the Mammals of North America, is the scientific world enabled to accord to the author of Ord's Zoology the honor and distinction which he humbly sought to avoid.

May the following pages not only serve to establish more clearly Mr. Ord's title to a high place among the Zoologists of America, but further those loftier interests which he considered so essential to scientific progress.

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA,
NEW YEAR'S DAY,
1894.

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GEOGRAPHICAL, HISTORICAL,
AND
COMMERCIAL GRAMMAR;
AND PRESENT STATE OF THE
SEVERAL KINGDOMS OF THE WORLD.

CONTAINING,

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| 1. The Figures, Motions, and Distances of the Planets, according to the Newtonian System, and the latest Observations. | 7. Observations on the Changes that have been any where observed upon the Face of Nature, since the most early Periods of History. |
| 2. A general View of the Earth considered as a Planet; with several useful Geographical Definitions and Problems. | 8. The History and origin of Nations, their Forms of Government, Religion, Laws, Revenues, Taxes, Naval and Military Strength, Orders of Knighthood, &c. |
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| 6. The Birds and Beasts peculiar to each Country. | 12. The Longitude, Latitude, Bearings, and distances of principal places from London. |

TO WHICH ARE ADDED,

1. A GEOGRAPHICAL INDEX WITH THE NAMES OF PLACES ALPHABETICALLY ARRANGED. 2. A CHRONOLOGICAL TABLE OF REMARKABLE EVENTS, FROM THE CREATION TO THE PRESENT TIME. 3. A LIST OF MEN OF LEARNING AND SCIENCE.

BY WILLIAM GUTHRIE, ESQ.

THE ASTRONOMICAL PART BY JAMES FERGUSON, F. R. S.

TO WHICH HAVE BEEN ADDED,

THE LATE DISCOVERIES OF DR. HERSHEY, AND OTHER EMINENT ASTRONOMERS,

ILLUSTRATED WITH TWENTY-EIGHT CORRECT MAPS.

THE SECOND AMERICAN EDITION IMPROVED.

IN TWO VOLUMES VOL. II,

PHILADELPHIA :

PUBLISHED BY JOHNSON & WARNER AND FOR SALE AT THEIR BOOK STORES
IN PHILADELPHIA, AND RICHMOND VIRGINIA.

1815,

Zoology America, it is said, contains at least one half, and the United States about one fourth, of the Quadrupeds of the known world. The naturalists of Europe and America, with a commendable zeal, have directed their attention to the zoology of the western hemisphere; and their labours in this interesting and useful branch of natural science have been rewarded with success. But still their nomenclatures of the Quadrupeds of North America are very imperfect. The following catalogue is the best that we can at present obtain. In the sketches which follow, we have been greatly indebted to the works of the ingenious Mr. Pennant. The arrangement of the Orders and Genera, is that of the last edition of Linnæus by Dr. Turton."

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Capuchin
*Ludlow

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ZOOLOGY OF NORTH AMERICA.

CLASS MAMMALIA.

ORDER PRIMATES.

GENUS SIMIA.

Horned Sapsucker	-	<i>Simia maculosa</i> .
Brown Sapsucker	-	<i>Simia apella</i> .
Capuchin Monkey	-	<i>Simia Capucina</i> .
*Lutheous Monkey	-	<i>Simia</i> —

GENUS VESPERTILIO.

New-York Bat	-	<i>Vespertilio norboracensis</i> .
Black Bat	-	<i>Vespertilio Americanus</i> .
Brown Bat	-	<i>Vespertilio fuscus</i> .
Vampire Bat	-	<i>Vespertilio spectrum</i> .
Hang-lip Bat	-	<i>Vespertilio lobialis</i> .
*Red Bat	-	<i>Vespertilio rubra</i> .

ORDER BRUTA.

GENUS MYRMECOPHAGA.

Least Ant-eater	-	<i>Myrmecophaga didactyla</i> .
Striped Ant-eater	-	<i>Myrmecophaga pentadactyla</i> .

GENUS DASYPUS.

Three-banded Armadillo	<i>Dasypus tricinctus</i> .
Eight-banded Armadillo	<i>Dasypus octocinctus</i> .
Nine-banded Armadillo	<i>Dasypus novemcinctus</i> .

GENUS TRICHECHUS.

Arctic Walrus or Morse	<i>Trichechus rosmarus</i> .
Manati	<i>Trichechus anstralis</i> .
Siren or Sea Ape	<i>Trichechus siren</i> .

ORDER FERRE.

GENUS PHOCA.

Maned Seal	-	<i>Phoca jubata</i> .
Sea Calf	-	<i>Phoca vitulina</i> .
Harp Seal	-	<i>Phoca crescoandica</i> .
Rough Seal	-	<i>Phoca hispida</i> .
Crested Seal	-	<i>Phoca creolata</i> .
Hooded Seal	-	<i>Phoca monachus</i> .

GENUS CANIS.

Indian Dog	-	<i>Canis Americanus</i> .
Common Wolf	-	<i>Canis lupus</i> .
Black Wolf	-	<i>Canis niger</i> .
Mexican Wolf	-	<i>Canis Mexicanus</i> .
Large Prairie Wolf	-	<i>Canis</i> —
Small Prairie Wolf	-	<i>Canis</i> —
Large Red Fox	-	<i>Canis</i> —
Small Red Fox	-	<i>Canis</i> —
Varied Fox	-	<i>Canis alopec.</i>
Silvery Fox	-	<i>Canis cinereo-argenteus</i> †
Black Fox	-	<i>Canis lyoim</i> .
Gray Fox	-	<i>Canis Virginianus</i> .
Common Red Fox	-	<i>Canis vulpes</i> .
Arctic Fox	-	<i>Canis lagopus</i> .
Cross Fox	-	<i>Canis cruciger</i> .
Corsak Fox	-	<i>Canis Corsac</i> .

GENUS FELIS.

‡American Panther	-	<i>Felis conpar</i> .
‡Brown Tiger	-	<i>Felis concolor</i> .
Black Tiger	-	<i>Felis discolor</i> .

*Henderson's Honduras, p. 104.

†Described by Mr. Wilson. See American Ornithology, vol. vi, p. 60.

‡These animals are described in the history of Lewis and Clark's expedition.

§Supposed to be the same.

Discovered by Lewis and Clark. This animal is of a yellowish white colour; its feet and end of its tail are dusky. Whether it is a new species, or a variety of one already known, we cannot determine. It is preserved in Peale's Museum.

*§Supposed by some writers to be the same.

**Radiated Mole of Pennant.

††Brown Mole of the same author.

Braslian Tiger	-	<i>Felis onca</i> .
Mountain Lynx	-	<i>Felis montana</i> .
Bay Lynx or Wild Cat	-	<i>Felis rufa</i> .
Common Lynx	-	<i>Felis lynx</i> .
Mexican Cat	-	<i>Felis pardalis</i> .
Mexican Tiger-Cat	-	<i>Felis Mexicana</i> .

GENUS VIVERRA.

Vulpecula Weasel or Squash	-	<i>Viverra vulpecula</i> .
Mexican Weasel	-	<i>Viverra prehensilis</i> .
Striped Weasel or Skunk	-	<i>Viverra zibellina</i> .
White Weasel	-	<i>Viverra albus</i> .

GENUS MUSTELA.

Sea Otter	-	<i>Mustela lutris</i> .
Common Otter	-	<i>Mustela lutra</i> .
Canada Otter	-	<i>Mustela Canadensis</i> .
Mink	-	<i>Mustela vison</i> .
Tawny Weasel	-	<i>Mustela vison</i> .
Fisher Weasel	-	<i>Mustela nigra</i> .
Common Weasel	-	<i>Mustela vulgaris</i> .
Pekari	-	<i>Mustela Hudsonius</i> .
Pine Martin	-	<i>Mustela monax</i> .
Sable	-	<i>Mustela zibellina</i> .
American Sable	-	<i>Mustela Americanus</i> .
Ermine or Stoat	-	<i>Mustela erminea</i> .

GENUS URSUS.

Polar Bear	-	<i>Ursus maritimus</i> .
Grizzly Bear	-	<i>Ursus horridus</i> .
American Bear	-	<i>Ursus Americanus</i> .
Buldog	-	<i>Ursus melas</i> .
American Badger	-	<i>Ursus Labradorius</i> .
Raccoon	-	<i>Ursus lotor</i> .
* Wolverine	-	<i>Ursus luscus</i> .
* Glutton	-	<i>Ursus gulo</i> .

GENUS DIDELPHIS.

Virginian Opossum	-	<i>Didelphis oposum</i> .
Mexican Opossum	-	<i>Didelphis cynagallia</i> .

GENUS TALPA.

Long-tailed Mole	-	<i>Talpa longicaudata</i> .
Red Mole	-	<i>Talpa rubra</i> .

GENUS SOREX.

**Crested Shrew	-	<i>Sorex cristatus</i> .
††Aquatic Shrew or Common Mole	-	<i>Sorex aquaticus</i> .
Fetid Shrew	-	<i>Sorex araneus</i> .
Black Shrew	-	<i>Sorex niger</i> .
Mexican Shrew	-	<i>Sorex Mexicanus</i> .
Pigmy Shrew	-	<i>Sorex erilis</i> .

ORDER GLIRES.

GENUS HYSTRIX.

Braslian Porcupine	-	<i>Hystrix prehensilis</i> .
Canadian Porcupine	-	<i>Hystrix dormita</i> .
Mexican Porcupine	-	<i>Hystrix Mexicana</i> .

GENUS CAVIA.

Gilbeonite or Spotted Cavy	<i>Cavia paca</i> .
Long-nosed Cavy	<i>Cavia aguti</i> .

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GENUS <i>CASTOR</i> .	
Common Beaver	- <i>Castor fiber</i> .
Muskrat	- <i>Castor sibericus</i> .
GENUS <i>MUS</i> .	
Norway Rat	- <i>Mus decumanus</i> .
Black Rat	- <i>Mus rattus</i> .
American Rat	- <i>Mus Americanus</i> .
Water Rat	- <i>Mus amphibius</i> .
*Sand or Earth Rat	- <i>Mus tages</i> .
Louisiana Earth Rat or Gopher	- <i>Mus Louisianaensis</i> .
†Ash-coloured Rat	- <i>Mus musculus</i> .
Common Mouse	- <i>Mus musculus</i> .
Rustic Mouse	- <i>Mus agrarius</i> .
Mexican Mouse	- <i>Mus Mexicanus</i> .
Virginian Mouse	- <i>Mus Virginianus</i> .
Hudson's Mouse	- <i>Mus Hudsonicus</i> .
American Wandering Mouse	- <i>Mus Criniticollis</i> .
Meadow Mouse	- <i>Mus arvalis</i> .
†Pennsylvania Meadow Mouse	- <i>Mus Pennsylvanicus</i> .
GENUS <i>ARCTOMYS</i> .	
Maryland Marmot or Ground Hog	- <i>Arctomys montez</i> .
Canadian Marmot	- <i>Arctomys campestris</i> .
Hairy Marmot	- <i>Arctomys pennsylvanicus</i> .
Tailless Marmot	- <i>Arctomys Hudsonicus</i> .
Earless Marmot	- <i>Arctomys erillius</i> .
Louisiana Marmot or Prairie-dog	- <i>Arctomys Louisianaensis</i> .
Columbia Marmot	- <i>Arctomys Columbianus</i> .
GENUS <i>SCIURUS</i> .	
Large Black Squirrel	- <i>Sciurus amer.</i>
Small Black Squirrel	- <i>Sciurus Pennsylvanicus</i> .
Cat or Fox Squirrel	- <i>Sciurus vulgaris</i> .
Gray Squirrel	- <i>Sciurus cinereus</i> .
Louisiana-Gray Squirrel	- <i>Sciurus Louisianaensis</i> .
Virginian Squirrel	- <i>Sciurus Virginianus</i> .
New-Jersey Squirrel	- <i>Sciurus hickamii</i> .
Vaughn Squirrel	- <i>Sciurus vaughani</i> .
Mexican Squirrel	- <i>Sciurus Mexicanus</i> .
Hudson's Bay Squirrel	- <i>Sciurus Hudsonicus</i> .
Carolina or Chickaree Squirrel	- <i>Sciurus hudsonicus</i> .
Ground Squirrel	- <i>Sciurus arcticus</i> .
Fair Squirrel	- <i>Sciurus hudsonicus</i> .
Flying Squirrel	- <i>Sciurus volucella</i> .
Hudson's Bay Flying Squirrel	- <i>Sciurus Labradoricus</i> .
**Columbia Gray Squirrel	- <i>Sciurus</i> _____
**Red-breasted Squirrel	- <i>Sciurus</i> _____
**Rocky-mountain Ground Squirrel	- <i>Sciurus</i> _____
**Brown Squirrel	- <i>Sciurus</i> _____
GENUS <i>DIPUS</i> .	
Labrador Jerboa	- <i>Dipus Labradoricus</i> .
Canada Jerboa	- <i>Dipus Canadensis</i> .
American Jerboa	- <i>Dipus Americanus</i> .
GENUS <i>LEPUS</i> .	
Common Hare	- <i>Lepus timidus</i> .

Varying Hare	- <i>Lepus variabilis</i> .
American Hare or Rabbit	- <i>Lepus Americanus</i> .
ORDER <i>PERORA</i> .	
GENUS <i>CERVUS</i> .	
Moose	- <i>Cervus albus</i> .
Greater Stag or Elk	- <i>Cervus macr.</i>
Common Deer	- <i>Cervus Virginianus</i> .
Red Deer	- <i>Cervus bairdii</i> .
Mexican Deer	- <i>Cervus Mexicanus</i> .
Spring-bark Deer	- <i>Cervus</i> _____
†Mule Deer	- <i>Cervus</i> _____
††Long-tailed Fallow Deer	- <i>Cervus</i> _____
††Black-tailed Fallow Deer	- <i>Cervus</i> _____
GENUS <i>ANTILOPÉ</i> .	
American or prong-horned Antelope	- <i>Antilope Americanus</i> .
††Barbarian Antelope	- <i>Antilope dorsus</i> .
GENUS <i>OVIS</i> .	
Big-horned Sheep or Argali	- <i>Ovis montanus</i> .
Rocky-mountain Sheep	- <i>Ovis montanus</i> .
GENUS <i>BOS</i> .	
Bison or American Ox	- <i>Bos Americanus</i> .
Musk Ox	- <i>Bos moschatus</i> .
ORDER <i>BELLUCE</i> .	
GENUS <i>EQUUS</i> .	
Wild Horse	- <i>Equus caballus</i> .
GENUS <i>TAPIR</i> .	
Long-nosed Tapir	- <i>Tapir Americanus</i> .
GENUS <i>SUS</i> .	
Mexican Hog or Peccary	- <i>Sus mexicana</i> .
Darien Hog or Warro	- <i>Sus</i> _____
ORDER <i>CETE</i> .	
GENUS <i>MONODON</i> .	
Narval	- <i>Monodon monoceros</i> .
GENUS <i>BALÆNI</i> .	
††Common Whale	- <i>Balæna mysticetus</i> .
Hump Whale	- <i>Balæna gibbosa</i> .
Pike-headed Whale	- <i>Balæna hepca</i> .
Beaked Whale	- <i>Balæna costata</i> .
Fin-fish	- <i>Balæna physalus</i> .
GENUS <i>PHYSETER</i> .	
Blunt-headed Cachalot or Squamcet Whale	- <i>Physeter macrocephalus</i> .
Sharp-nosed Cachalot	- <i>Physeter microps</i> .
Lesser Cachalot	- <i>Physeter catodon</i> .
High-tinned Cachalot	- <i>Physeter turris</i> .
GENUS <i>DELPHINUS</i> .	
Porpoise	- <i>Delphinus phocaena</i> .
Grampus	- <i>Delphinus orca</i> .
Dolphin	- <i>Delphinus delphis</i> .
Beluga	- <i>Delphinus leucas</i> .

*Called by some writers *Georgian Hamster*, though it differs materially from the Hamsters of Europe in its cheek pouches. The animal which follows has similar pouches; but we have not the means of ascertaining whether or no it is the same species.

†Discovered by Lewis and Clark. See history of the expedition, vol. 1, p. 289.

††Described by Mr. Wilson. See American Ornithology, vol. vi, p. 59.

‡This has always been confounded with the foregoing, but it is a different species. It abounds in those parts of Pennsylvania which lie to the westward of the Allegheny ridge.

‡‡This is a nondescript. It is about the size of the *Sciurus cinereus*, of a mixed gray and tawny colour; and has *barred ears*. Inhabits near Little Egg-harbour, New-Jersey.

†††The lower parts of the Chickaree are white; sides of a beautiful gray; along the top of the back a rusty line; its ears are slightly tufted.

**These have been described by Lewis and Clark; but we suspect that the Brown Squirrel is no other than the *Sciurus Hudsonicus*, No. 48 of Pennant, *Arch. Zool.*, sometimes called the Pine Squirrel, from the circumstance of its being found in the Pine Woods.

†††Described by Lewis and Clark.

‡‡†Called also the Gazelle. Vide Henderson's *Hornet*, p. 97. Thus it appears that there are two species of Antelope in North America, notwithstanding the opinions and determinations of the European naturalists, that the New World did not afford a single species of this genus.

‡‡‡A young Whale of this species was taken in the Delaware, in the vicinity of the Falls, in the latter part of the year 1814; and exhibited at Philadelphia.

††††A Pike-headed Whale was caught some years since in the Delaware, near Reedy Island, and shown in Philadelphia and New-York.

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The *Arctic Walrus*, sometimes called the Sea Cow, is a native of the Magdalene islands, St. John's and Anticosti, in the gulph of St. Lawrence. They are, when out of the water, very unwieldy, and move with great difficulty. They crawl upon the islands in fair weather; and if not disturbed will remain, it is said, for several days without food, basking in the sun. They weigh from fifteen hundred to two thousand pounds; and produce from one to two barrels of oil, which is boiled out of the fat that lies between the skin and the flesh. Immediately on their arrival at their summer residence, the females calve, and engender again in two months after; so that they carry their young about nine months. They never have more than two at a time, and seldom more than one. They are monogamous.

In the upper jaw of this animal there are two long tusks, bending downwards. These are used for the purposes of defence; and in the dreadful conflicts which sometimes happen between them and the Polar Bears, arising from the occupancy of the same piece of ice, the advantage is generally on the side of the Walrus.

They are gregarious, and sometimes have been found together in thousands; are very shy, and avoid the haunts of mankind. They are usually seen on the floating ice. They sleep both on the ice, and in the water, and snore excessively loud. They are harmless, unless provoked; but when wounded, or attacked, grow fierce, and are very vindictive.

Morrell. "This animal forms the connecting link between the beasts and fishes. It is a very clumsy creature, with a head thicker than that of an ox; eyes small; and the two feet are placed near the head, for the purpose of swimming. It is of sufficient size to form a load for two oxen. They are about fifteen feet long, and six broad. As this animal has only fore feet, it has obtained the name of *Mamati*, i. e. an animal with both hands. This animal has been found in the rivers which run from Georgia into the Gulf of Mexico."*

"The *Mamati*," says Captain Henderson, "which is described as forming the boundary between quadrupeds and fishes, is an inhabitant of the waters contiguous to the shores of Honduras. The male and female are usually found together; and, whilst sporting on the surface of the different lagoons, are frequently destroyed by the harpoon or dart, in the use of which the slaves of the settlement, and the Indians of the neighbouring Mosquito nation, are wonderfully dexterous. This singular animal sometimes exceeds a thousand pounds in weight. Its flesh, either fresh or salted, is particularly admired, and thought very closely to resemble veal. The tail, which forms the most valuable part of the mamati, after laying some days in a pickle prepared for it with spices &c. and eaten cold, is a discovery of which Apicius might have been proud, and which the discriminating palate of Elagabalus would have thought justly entitled to the most distinguished reward." †

The *Wolf* has a long head, pointed nose, sharp and erect ears, long legs, and a bushy tail which bends down: its hair is pretty long, the colour usually of a pale brown, mixed with dull yellow and black. This destructive animal has fortunately become scarce in the cultivated parts of America. Formerly rewards were offered for killing them, as their ravages among the sheep, calves and hogs of the

* Morse's Geography, vol. i. p. 247.

† An account of the British Settlement of Honduras, p. 37, London 1809. Vol. II.

settlers, tended greatly to impede the progress of husbandry. In the Genessee country, and the western parts of Pennsylvania, they yet occasionally make a sweep among the sheep. But such is the hostility of the inhabitants, that in a short time these animals will entirely disappear from those parts. In Louisiana they are numerous; and commit ravages amongst the Deer and Antelopes, hunting them, it is said, in packs, like hounds, and sometimes relieving each other during the chase, as the game are too swift to be run down by a single Wolf. It is even asserted that they will venture to attack a straggling Bison or Buffaloe. They frequently kill each other in their contests for a carcass.

Indian Dog. Pennant is of the opinion that this animal is the Wolf in a domesticated state. "It still betrays," says he, "its savage descent, by uttering only a howl, instead of the significant bark of the genuine dog. It is singular that the race of European dogs shew as strong an antipathy to this American species, as they do to the Wolf itself. They never meet with them, but they shew all possible signs of dislike, and will fall on and worry them: while the wolfish breed, with every mark of timidity, puts its tail between its legs, and runs from the rage of the others. The aversion to the Wolf is natural to all genuine dogs; for it is well known that a whelp, which has never seen a Wolf, will at first sight tremble, and run to its master for protection: an old dog will instantly attack it."*

Almost all the northern and western Indians employ these dogs, yoked to sledges, for the purpose of transporting their game &c. Mackenzie, in his general history of the fur trade, says, "that the Knisteneaux Indians in the winter, when the waters are frozen, make their journeys, which are never of any great length, with sledges drawn by dogs. † Patrick Gass observes that "the Sioux Indians fasten their dogs to poles, and make them draw them from one camp to another, loaded with skins and other articles."‡ And again, that "they yoke them to a kind of car, which they have to haul their baggage from one camp to another. The dogs," continues he, "are not large, much resemble a wolf, and will haul about seventy pounds each."§

From the Journal of Lewis and Clark we learn that "dog meat is a great dish among the Sioux Indians, and used on all festivals." But it seems that the nations to the westward of the Rocky Mountains, though they possess numbers of these animals, yet they do not eat them. With the last mentioned travellers, dog meat became a favorite food, was found to be a strong healthy diet, preferable to lean Deer or Elk, and much superior to horse flesh in any state.||

With all due deference to the opinion of the respectable Mr. Pennant, we must dissent from him with respect to the origin of the Indian Dog. We do not consider this animal the Wolf. If he be not, as some suppose he is, a collateral descendant of the European family, introduced by the early adventurers into the New World, we have strong reasons to conclude that he is an independent species. However, the result of our inquiries into the history of this animal is very unsatisfactory.

In Barton's Medical and Physical Journal, vol. i, part ii, p. 3, we are

*Arctic Zoology, Art. Wolf.

‡ Gass's Journal p. 47.

†Mackenzie's Voyages, vol. i, p. 120.

|| Hist. of the Exp. vol. 2. p. 239.

‡Gass's Journal, p. 42.

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presented with a highly interesting article on the subject of the *Native Dogs of North America*; from which it is evident that the origin of the Indian Dog is still a desideratum in natural history.

"We are not yet prepared," says the Doctor, "to give an exact genealogical history of the Indian Dog. We are compelled to mix conjecture with fact. The anatomical structure of the animal should be examined. But whatever may have been the origin of this breed of dogs, I am disposed to think, with Josselyn, that the savages found it in the woods, and that it has existed as a distinct species, or breed, for a very long period of time.

"It is highly probable, that the Indian Dog still exists, in a wild state, in the woods of many parts of North America. It is likely that when seen, he has been sometimes mistaken for the Wolf. A very intelligent Indian informed me, that, in the year 1792, when travelling toward the head-waters of the river Miami, which empties into Lake Erie, he had met with Wolves which barked like Dogs, though, in other respects, they appeared to be little different from Wolves. Perhaps, future researches will show, that these were the real Indian Dogs, in their wild state. The subject is worthy of further inquiry."

In the history of Lewis and Clark's expedition, we have an account of two animals, which are termed *Prairie Wolves*, the barking of which, (whether one, or both is not specified) resembles precisely that of the common Cur Dog." *

Thus the story of the Indian is corroborated, and the conjecture of Professor Barton receives additional strength, by the respectable testimony of Lewis and Clark.

The *Arctic Fox* is smaller than the common Fox; its colour a bluish gray, and sometimes white; hair long, soft and silky; legs short; tail shorter than that of the common Fox, and more bushy.

These animals are found only in the Arctic regions, a few degrees within and without the polar circle. They are only migratory in Hudson's Bay, once in four or five years. They are the hardiest of animals, and even in Spitzbergen and Nova Zembla, prowl out for prey during the severity of the winter. They live on young wild geese, and all kinds of water fowl; on their eggs; on hares and smaller animals. They are tame and inoffensive; are killed for the sake of their skins, both in Asia and Hudson's Bay. Their fur is light and warm, but not durable.

Gray, and *Red Foxes* are common throughout North America; but the former are more numerous, especially to the southward. Although universally detested and persecuted by man, yet these animals do not often commit depredations upon the farmer, and then only when urged by necessity. Sometimes the hen-roost will be robbed, or some vagrant turkey or chicken carried off. But in common, these wary animals are not fond of approaching too near the habitation of man, especially if there be a dog near the premises.

Along the coast of New Jersey, Foxes abound, harbouring among the green briars and myrtle bushes of the sea shore. They choose these retreats that they may have the advantage of the salt marshes, which are their principal hunting grounds. An immense number of birds of various kinds, particularly of the *Grallæ* order, breed in these marshes, and on the sand hills, on the eggs and young of which the

* Vol. 2d. p. 429.

Foxes feed; and during the whole of the winter these animals are abundantly supplied with geese, brant and ducks, which, on being wounded by the gunners, either die or are caught by the Foxes. They likewise lie in ambush on the margins of the fresh water ponds, where the ducks came to drink and feed at night, and destroy numbers.

The *Cougar* or *Panther* inhabits Canada and Florida, and is sometimes seen in the states bordering on the lakes, and the Mississippi.

It has become a rare animal. Pennant observes that "it is the most pernicious animal of North America. It lives in forests. Sometimes purrs, at others times makes a great howling. Is extremely destructive to domestic animals, particularly to hogs. It preys also upon the Moose and other Deer; falling on them from the tree it lurks in. It will feed even on beasts of prey. I have seen the skin of one which was shot just as it had killed a wolf."*

The *Lynx* has pale yellow eyes; erect ears, tufted with long black hair; its body is covered with soft and long fur, of a cinereous colour, tinged with tawny, and marked with dusky spots, more or less visible in different subjects, dependent on the age, or season in which the animal is killed; the legs are strong and thick; the claws large. This animal is about three times the size of a domestic Cat; the tail is only four inches long, tipped with black.

The *Lynx* inhabits the great forests of North America. It is called in Canada *le Chat, ou le Loup-cervier*, on account of its being so destructive to the deer. The English inhabitants call it the Wild Cat. It is very destructive to their young pigs, poultry, and all kinds of game. The skins are in high esteem for the softness and warmth of the fur; and great numbers are annually imported into Europe.†

Of that species of the Feline race, named *Catamount*, we have so imperfect an account, that nothing conclusive or satisfactory can be given. The animal described by Pennant under the name of the Mountain Lynx, he supposed was the *Cat-a-mountain* of Lawson. Its length from the nose to the tail was two feet and a half. But in Morse's Geography an account is given of an animal, which is there named *Catamount*, which is said to have been killed in New Hampshire, and measured as follows: the length of its body, including the head, six feet; circumference of the body two feet, six inches; length of its tail three feet, and of its legs about one foot. The colour along its back was nearly black; of its sides, dark reddish brown; its feet were black.

Pike speaks of having seen an animal resembling the Panther, though considerably larger. Is this the Brown Tiger?

Skunk. This justly abhorred, and universally dreaded animal is found over the chief part of North America. Its ears are small and rounded; its general colour is black, marked with lines of yellowish white; its tail is bushy and long.

Nature has provided the Skunk with a singular, and very efficacious means of defence. On being irritated or attacked, it emits from behind a fluid of so intolerably suffocating and fetid a nature, that the boldest assailant will find himself compelled to a precipitate retreat. Should the smallest drop of this fluid fall on one's clothes, no washing will remove the scent; in order to be purified they must be buried in the ground for several days. The stench of the Skunk may

* Arctic Zoology, art. *Puma*.

† Pennant Arc. Zool.

be smelt at the distance of a mile. By accurate dissection, which was made by Dr. Mitchell, it has been found that this ill-scented fluid is entirely distinct from the urine. It is contained in two bags, situate in the posterior parts of the body; and surrounded by the circular muscles in such a manner, that, by their constriction, the fluid is forced out with great velocity. The urinary organs are totally distinct from these bags. A well bred dog, after several attempts, will succeed in destroying this filthy animal; but a common cur will generally run from it with every sign of terror. When the dog receives the fluid, he retreats, runs his nose into the ground, and barks with great earnestness. A sportsman's dog should never be permitted to attack the Skunk, as he will be thereby rendered unfit for hunting for some time; his powers of scent being impaired.

This animal takes up its abode in old holes, and in the holes made in the earth by the foxes and other animals. It feeds upon birds and their eggs; is very fond of a hen-roost, where it makes free with the poultry and eggs. Whenever it approaches the farm-house, the whole fraternity is in an uproar; the name of Skunk enkindles alarm in every breast; the women run, the children scream, the dogs bark. At length with the aid of poles, stones, or guns, the unhappy intruder pays for his temerity with his life.

The writer of this article once caught a Skunk in a steel-trap, and was nearly suffocated with its stench before he could succeed in despatching it by means of a long pole. This animal was roasted for the purpose of ascertaining its agreeable qualities: it tasted sweet; but the idea of its being a Skunk operated so powerfully as to produce an aversion to it.

The Striped Weasel, and that above described appear to be the same. Pennant says that it is often tamed, so as to follow its master like a dog. This is certainly an error, for who ever thought of taming a Skunk?

Sea Otter. These valuable animals are found on the coast of the the north east parts of America: between the Kamtschatkan shores and the isles which intervene between them and America; on the Kurile isles, and on the whole western coast of America, from 28 as far as 60 degrees north latitude. Their skin is extremely thick, covered closely with long hair, remarkably black and glossy, and beneath that is a soft down. The hair sometimes varies to silvery. The hair of the young is soft and brown. Their hind feet resemble exactly those of a seal: their fore feet are covered with hair and webbed. The tail is depressed, full of hair in the middle, and sharp pointed. The length of one full grown, from the nose to the tip of the tail, is about five feet; that of the tail from ten to thirteen inches. The weight of the largest, between seventy and eighty pounds.

They are extremely harmless, and singularly affectionate to their young. It is supposed that they bring forth but one at a time. They run very swiftly; swim sometimes on their sides, on their backs, and often in an erect position.

They never make any resistance; but endeavour when attacked, to save themselves by flight. When they have escaped to some distance, they look back, and hold one of their fore feet over their eyes, to gaze, as men do their hands to see more distinctly in a sunny day; for they are very dull sighted, though remarkably quick scented. They

are fond of those parts of the sea which abound most with weeds, where they feed on fish, sepia, lobsters and shell fish, which they comminute with their flat grinders.

These animals partake very much of the nature of seals, in their almost constant residence in the water, their manner of swimming, fin-like legs, and number of fore teeth. Their skins meet a ready market in China, and command high prices.

The *Common Otters* inhabit as far north as Hudson's Bay, Labrador and Canada; and as low south as Carolina and Louisiana. They also inhabit the western coast of North America. Some few are yet found on the Delaware, below Philadelphia; and on the banks of its tributary streams.

Their fur is fine; of a deep brown colour, with the exception of a white spot on each side of the nose, and another under the chin.

The Otters of North America are larger than those of Europe; and the furs of such as inhabit the colder parts are very valuable. Their food is commonly fish; but it is said that they will attack and devour the Beaver. Lewis and Clark found this animal on their whole route to the Pacific Ocean, even amid the inhospitable regions of the Rocky Mountains.

The *Minx* is a little animal of the shape of the foregoing, but much smaller; its length being only about twenty inches from head to tail; of the tail only four. It inhabits various parts of the United States, and Canada. It frequents the banks of rivers and creeks, dwelling in hollow trees, or holes which it forms near the water. It can swim and dive admirably; feeds upon fish, frogs, &c. and is often found under barns and out houses, sneaking after the poultry and the rats. Along the coast this animal abounds; and it is very destructive to those birds which breed in the salt marshes, surprising them on their nests and sucking their eggs. When irritated, the Minx emits an excessively fetid odour. Its common name, and that whereby it is best known, is Mink.

Weasels are common throughout North America. They are well known to our farmers, who bear them no good-will in consequence of the depredations which they commit among the poultry. But notwithstanding their bad qualities, they are sometimes of great benefit to the husbandman in ridding his granaries of those destructive pests, the rats.

Ermine. This neat and clean little animal, is said to change in the winter, in northern countries, to a snowy whiteness, the end of its tail excepted, which still remains black. In its summer dress it is called a Stoat; it is then of a tawny brown colour above, and white below. It inhabits the northern parts of North America.

The *Polar Bear* almost entirely surrounds the neighborhood of the Polar circle. It is found within it as far as navigators have penetrated; in the island of Spitzbergen, and within Baffin's Bay; in Greenland and Hudson's Bay; in Terra de Labrador; and, by accident, wafted from Greenland, on islands of ice, to Iceland and Newfoundland. These animals affect the utmost severity of the Arctic zone. They are impatient of heat. One that was brought alive into England, some years since, was restless and furious during the warm weather; and its keeper was obliged to pour on it frequently pailfuls of cold water.

The Polar Bear has a long narrow head and neck; the tip of the

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nose is black; its teeth are of great magnitude; its hair is of great length, soft and white, and in part tinged with yellow.

Travellers vary about their size. One measured by order of Lord Mulgrave was as follows:

	Feet.	Inches.
Length from the snout to the tail	7	1
from snout to shoulder bone	2	3
Height at the shoulder	4	3
Circumference near the fore legs	7	
of the neck near the ear	2	1
Breadth of the fore paw		7
Weight of the carcass without the head, skin, or entrails	610 lbs.	

These animals are very ferocious. They will attack, and attempt to board, vessels far distant from the shore; and in some instances, have been with difficulty repelled. They seem to give a preference to human blood. Their usual food is fish, seals, and the carcasses of whales. On land they prey on deer, hares, young birds and eggs, and often on whortleberries and crowberries. They are at constant enmity with the Walrus or Morse: the last, by reason of its vast tusks, has generally the superiority; but frequently both the combatants perish in the conflict.

Grizzly Bear. "This animal," says Mr. Brackenridge, "is the monarch of the country which he inhabits. The African Lion, or the Tiger of Bengal, are not more terrible or fierce. He is the enemy of man, and literally thirsts for human blood. So far from shunning, he seldom fails to attack; and even to hunt him. The Indians make war upon these ferocious monsters, with the same ceremonies as they do upon a tribe of their own species: and in the recital of their victories, the death of one of them gives the warrior greater renown than the scalp of a human enemy.

"He possesses an amazing strength, and attacks without hesitation, and tears to pieces, the largest Buffalo. The colour is usually such as the name indicates, though there are varieties, from black to silvery whiteness. The skins are highly valued for muffs and tippets; and will bring from twenty to fifty dollars each.

"This Bear is not usually seen lower than the Mandan villages. In the vicinity of the Roche Jaune, and of the Little Missouri, they are said to be most numerous. They do not wander much in the prairies, but are usually found in points of wood, in the neighbourhood of large streams.

"In shape, he differs from the common Bear in being proportionally more long and lank. He does not climb trees, a circumstance which has enabled hunters, when attacked, to make their escape."

In the history of the expedition under the command of Lewis and Clark, we have much interesting information relating to this dreadfully ferocious animal. These enterprising travellers made many narrow escapes from the attacks of this monster, who in some instances was not brought to the ground until he had received seven or eight balls through his body. As a wonderful proof of the tenacity of life of this animal, one that was killed the nineteenth of May, 1805, ran at his usual pace nearly a quarter of a mile, after having been shot through the heart.

The Grizzly Bear has been long known to naturalists; but the above mentioned travellers were the first to give us a particular account of this monarch of the American forests. One killed by them near the Porcupine river measured as follows:

	Feet.	Inches.
Length from the nose to the extremity of the hind feet,	8	7½
Circumference near the fore legs	5	10½
of the neck	3	11
of the middle of the fore leg	1	11
Length of the talons		4¾

His weight, on conjecture, was between five and six hundred pounds. But this was not the largest Bear that was killed by the party. They give an account of one which measured *nine* feet from the nose to the extremity of the tail; and the talons of another were six and a quarter inches in length. It is said that this animal when full grown and fat will exceed a thousand pounds.

The *American*, or common *Black Bear* is found all over the unsettled parts of North America. Its cheeks and throat are of a yellowish brown colour; the hair of its body and limbs is glossy and black.

They are inoffensive to mankind, provided they are not irritated; but if wounded, they will turn on their assailant with great fury, and, in case they can lay hold, seldom fail of hugging him to death. They cautiously avoid the hunters; and the smallest dog will fill them with alarm. They climb trees with great dexterity.

The long time which these animals subsist without food is amazing. They will continue in their retreat for six weeks without the least provision remaining either asleep or totally inactive. It is pretended that they live by sucking their paws; but this is a vulgar error. The fact is, they retire immediately after autumn, when they have fattened themselves to an excessive degree by the abundance of the fruits which they find at that season. But when this internal support is exhausted, and they begin to feel the call of hunger, on the approach of the severe season they quit their dens in search of food.

In the lower parts of New Jersey a few of these animals are yet found. Their places of retreat are the thick solitary cedar swamps; through which it is extremely difficult for the hunters to pass, owing to the great quantity of fallen timber, the ruins of ancient forests; and the situation of the soil, which is low and wet. Now and then one of these Bears is brought to the Philadelphia market, and the lovers of good eating are indulged with a delicious repast. The fat of the Bear, like that of the Green Turtle, never cloyes or lies heavy on the stomach, though one eats to excess.

Opossum. This species is found as far north as Canada, where it is called by the French inhabitants *Le Rat de bois*, or the Wood Rat; thence it extends southward, even to the Brasils and Peru.

The Opossum is considered by naturalists as one of the most curious animals yet discovered. On the lower part of the belly of the female is a large pouch, in which the teats are placed, and wherein the young lodge as soon as they are born. She produces from four to twelve at a time. As soon as they come into the world they retreat into the false belly, blind, naked and exactly resembling little fœtuses. They fasten closely to the teats, as if they grew to them. Here they

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remain, adhering as though inanimate, till they arrive at some degree of perfection in shape, and obtain their sight, strength and hair, after which they undergo a sort of second birth. From that time, they use the pouch as an asylum from danger. The female carries them about with the utmost affection, and they may frequently be seen sporting in and out of this false belly.

The Opossum is both carnivorous and frugivorous. It is a great enemy to poultry, of which it is said to suck the blood, leaving the flesh untouched. It climbs trees very expertly; feeds on wild fruits, and also on various roots. Its tail, which is long and round, has the same prehensile quality as that of some species of Monkeys. It will hang from the branches by it, and, by swinging its body, fling itself among the boughs of the adjacent trees. It is a very sluggish animal; and makes scarcely any efforts to escape. When it finds itself on the point of being taken, it counterfeits death; and will endure very severe usage without giving signs of life.

This animal is very fond of ripe persimmons; and in the autumn it is frequently detected, at night, feasting upon this palatable fruit. At such times, if the tree be shaken, the Opossum will drop, and suffer itself to be borne off without a struggle. They become excessively fat; are common in the Philadelphia markets; and when roasted, or baked in the manner of a sucking pig, are an excellent and wholesome dish.

The history of the *Beaver* is so well known, and has been incorporated into such a variety of publications, that it seems not necessary, in this place, to enter into detail on the subject.

Our enterprising travellers, Lewis and Clark, found this valuable animal during their whole route to the Pacific Ocean. Even amid the Rocky Mountains, they were observed in immense numbers; and greatly contributed to the support of the wearied and half-famished pilgrims, in those barren regions, where Nature assumes her wildest and most uninviting form. "The Beaver of this country," says the historian of the journey, "is large and fat; the flesh is very palatable and at our table was a real luxury.* The tail, when boiled, was esteemed the most delicate part; was said to resemble in flavour the tongues and sounds of codfish; and was generally so large as to afford a plentiful meal for two men.

"The Beaver on the upper parts of the Missouri are in greater quantities, larger and fatter, and their fur is more abundant, and of a darker colour than those below. Their favourite food seems to be the bark of the cotton wood and willow, as no other species of tree appeared to have been touched by these animals, and these trees they gnaw to the ground through a diameter of twenty inches.†

The junction of the Rochejaune or Yellowstone river with the Missouri has been recommended as a judicious position for the purposes of trade: the former river and its branches abounding in Beavers and Otters; and the circumjacent country being the grand pasturage of those innumerable herds of Buffaloe, Elk, Deer and Antelopes which have excited the astonishment of the inquisitive and intelligent voyagers of the Missouri.‡

"The Beaver," says Mr. Umfreville, "is of a very docile disposi-

* History of the Expedition, vol. ii. p. 170.

† Idem, vol. i. p. 191.

‡ Id. vol. ii. p. 397.

tion, and when taken young and properly brought up, may be made to discover a very faithful and affectionate regard for his keeper. I once possessed a young male which, after a month's keeping, would follow me about like a dog; and when I had been absent from him for a couple of hours, he would shew as much joy at my return, as one of the canine species could possibly do.*

Muskrat. This well known animal is found all over North America. Its length from the nose to the end of the tail is about twenty-four inches; its eyes are small and dark; ears large, and hid in the fur; upper parts reddish brown; lower fore parts ferruginous; abdomen reddish drab; its feet are five-toed; the hind feet are semipalmate. The weight of one full grown is upwards of three pounds.

Pennant has with great propriety classed the Muskrat with the Beaver; but Turton has arranged it with the genus *Mus*. It is unquestionably a Beaver in its habits. It is never found remote from water: the margins of mill-ponds, brooks, creeks and meadow-ditches are its dwelling places. It feeds on various vegetable substances; on fruit; and, it is said, fresh water muscles.

Great quantities of this animal are caught every year in the United States, by those skilled in trapping; notwithstanding which multitudes yet remain, and occasion much trouble and damage to the proprietors of the meadows and mill-seats, in the embankments and dams of which, the Muskrats are continually burrowing.

In the summer, the Muskrat smells strongly of musk; but in the winter this odour is not perceptible, until the animal is handled.

The *Louisiana Marmot*, commonly called *Prairie Dog* or *Barking Squirrel*, is found in considerable numbers in the vicinity of the Missouri, and throughout the greater part of Louisiana. This animal commonly weighs three pounds. The colour is a uniform bright brick red and grey, the former predominates; the under side of the neck and belly are lighter than the other parts of the body; the legs are short, and the breast and shoulders wide; the head is stout and muscular, and terminates more bluntly, wider and flatter than that of the common squirrel; the ears are short, and have the appearance of amputation; the jaw is furnished with a pouch to contain his food, but not so large as that of the common squirrel; the nose is armed with whiskers on each side, and a few long hairs are inserted on each jaw, directly over the eyes; the eyes are small and black; each foot has five toes, and the two outer ones are much shorter than those in the centre. The two inner toes of the fore feet are long, sharp, and well adapted to digging and scratching. From the extremity of the nose to the end of the tail this animal measures one foot, five inches, of which the tail occupies four inches. Notwithstanding the clumsiness of his form, he is remarkably active, and burrows in the ground with great rapidity. These animals burrow, and reside in their little subterraneous villages like the Burrowing Squirrel. To these apartments, although six or eight usually associate together, there is but one entrance. They are of great depth, and Captain Lewis once pursued one to the depth of ten feet, and did not reach the end of the burrow. He likewise poured into one of the holes five barrels of water without filling it. The *Prairie Dogs* occupy, in this manner, several hundred acres of ground. They generally select a southeasterly exposure, on the side of a hill, for their villages; and they sit with

* Umfreville's Hudson's Bay, p. 171.

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much confidence at the mouth of their burrows, barking at the intruder as he approaches, with a fretful and harmless intrepidity. Their note resembles that of the little toy-dog: the yelps are in quick and angry succession, attended by rapid and convulsive motions, as if they were determined to sally forth in defence of their freehold. When at rest, their position is generally erect on their hind feet and rump; and when alarmed they retreat into their subterraneous apartments. They feed on the grass of their village, the limits of which they never venture to exceed. As soon as the frost commences, they shut themselves up in their caverns, and remain in a torpid state until the spring. The flesh of this animal is not unpleasant to the taste.*

The Wolves are said to be the enemies of the Marmots, and to commit great havoc among them.† The Rattle Snakes likewise frequent their villages to devour the inhabitants. Pike says: "It is extremely dangerous to pass through their towns, as they abound with Rattle Snakes, both of the yellow and black species; and strange as it may appear, I have seen the *Wisstonwisk*, (*Prairie Dog*) the Rattle Snake, the Horn Frog (Horned Lizard)‡ and a land Tortoise all take refuge in the same hold. I do not pretend to assert, that it was their common place of resort, but I have witnessed the fact more than in one instance."§

It is said that the Horned Lizard and a small snake live habitually with the Marmot: the Indians call the snake the Dog's guard, and entertain many superstitious notions respecting these animals.||

Columbia Marmot † From the description which follows, taken from the History of Lewis and Clark's expedition, vol. ii, p. 173, we are inclined to consider the animal a *Marmot*, and have named it accordingly. We have not learnt whether or no a specimen of this animal has been preserved. A stuffed skin of the Louisiana Marmot, is in the Museum of Mr. Peale.

There is a species of Squirrel, which we have denominated the Burrowing Squirrel. He inhabits the plains of the Columbia, and somewhat resembles those found on the Missouri.** He measures one foot and five inches in length, of which the tail comprises two and a half inches only; the neck and legs are short; the ears are likewise short, obtusely pointed, and lie close to the head and the aperture larger than will generally be found among burrowing animals; the eyes are of a moderate size, the pupil black, and the iris of a dark sooty brown; the whiskers are full, long and black; the teeth, and, indeed, the whole contour, resemble those of the Squirrel; each foot has five toes; the two inner ones of the fore feet are remarkably short, and are equipped with blunt nails, the remaining toes on the front feet are long, black, slightly curved, and sharply pointed; the hair of the tail is thickly inserted on the sides only, which gives it a flat appearance, and a long oval form: the tips of the hair forming the outer edges of the tail are white, the other extremity of a fox red, the under part resembles an iron gray, the upper is of a reddish brown; the lower part of the jaws, the under part of the neck, legs

* History of Lewis and Clark's expedition, vol. i, p. 68-ii, p. 175.

† Brackenridge's Views of Louisiana, p. 58.

‡ Lacerta orbicularis.

§ Pike's Journal, p. 156.

|| Description of Ohio, &c. p. 168, Boston. 1812.

** Prairie Dog.

and feet, from the body and belly downward, are of a light brick red; the nose is of a darker shade of the same colour; the upper part of the head, neck and body is of a curious brown gray, with a slight tinge of brick red: the longer hairs of these parts are of a reddish white colour at their extremities, and falling together give this animal a speckled appearance. These animals form in large companies, like those of the Missouri, occupying with their burrows sometimes two hundred acres of land: the burrows are separate, and each possesses, perhaps, ten or twelve of these inhabitants. There is a little mound in front of the hole, formed of the earth thrown out of the burrow, and frequently there are three or four distinct holes, forming one burrow, with these entrances around the base of these little mounds. These mounds, sometimes about two feet in height, and four in diameter, are occupied as watch-towers by the inhabitants of these little communities. The Squirrels, one or more, are irregularly distributed on the tract they thus occupy, at the distance of ten, twenty, or sometimes from thirty to forty yards. When anyone approaches, they make a shrill whistling sound, somewhat resembling *tweet, tweet, tweet*; the signal for their party to take the alarm, and to retire into their intrenchments. They feed upon the roots of grass &c."

North America abounds in *Squirrels* of various kinds; and there are doubtless several species which have not yet been noticed by Zoologists. We have lately discovered that a nondescript of this tribe, inhabits the eastern part of the State of New Jersey, near Tuckerton; as yet, we know not how far it extends. It has a characteristic mark in its greatly bearded ears; and, contrary to the practice of our common Squirrels, it is said not to dwell in hollow trees, but in nests, even during the severity of the winter. From this last mentioned circumstance, we have given it the specific denomination of *humalis*.

Our Catalogue, it will be perceived, is enriched with the names of those animals of this genus, which were discovered by Lewis and Clark, the stuffed skins of which have been deposited in Peale's Museum. The history of their journey gives an account of some others; but as this notice is a mere record of their existence, we are not enabled to determine whether or no they are nondescripts.

The Squirrels of the United States live chiefly upon forest nuts, of which the shellbark appears to be a favourite. The *Ground Squirrel*,* which is the most numerous of the genus, burrows in the earth, and lays up magazines of provisions for the winter, during the severity of which it is seldom seen. The rest chiefly dwell in hollow trees, where their provisions are deposited for the season of scarcity. The large Squirrels generally form their nests, of leaves, in the forks of trees, where they bring forth their young. In those parts of the country where these last mentioned are numerous, they commit great depredations upon the fields of Indian Corn, attacking it while it is in its milky state. In our western forests, partial migrations of these animals sometimes take place; and a few years since many thousands of them were drowned in attempting to cross the river Ohio.

The *Flying Squirrel* of the United States, is perhaps the most generally beloved of the whole tribe. It is a beautiful little animal, easily tamed, and becomes very familiar. It is likewise less mischievous than others. It is of a tender nature, loves warmth, and will creep

*Called by Pennant the *Striped Dormouse*. Arctic Zoology, vol. i, p. 146, edition 1792.

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into the bosom, sleeve, or pocket of any one who will grant it that indulgence.

Squirrels when fat are good eating: their flesh is more juicy than that of the Rabbit, and in every respect it is preferable.

Moose. This celebrated animal has been described by the European naturalists, under the names of *Moose* and *Elk*, from its resemblance to the Elk of the old world. It is even said that it is the same species. Hence, many have supposed that the American animals called Moose and Elk have been confounded, which on due inquiry will be found to be otherwise, except in a few instances, wherein the name has created some confusion in the location of the subject of this article. The Deer known in America by the name of *Elk*, is very improperly designated, it having no resemblance to that animal.

The Moose has horns with short beams, spreading into a broad palm, furnished on the outward side with sharp snags, the inner side plain, no brow antlers; it has small eyes; long slouching asinine ears; large nostrils; the upper lip is square, great, and hanging far over the lower, and has a deep furrow in the middle, so as to appear almost bifid; under the throat there is a small excrescence, with a long tuft of coarse black hair pendant from it; the neck is shorter than the head; along the top there is an upright, short, thick mane of a light brown colour; withers elevated; tail short; the legs are long and those behind are the shorter; hoofs much cloven. The colour of the body is of a hoary brown; tail dusky above, white beneath. The vast size of the head, the shortness of the neck, and the length of the ears, give the beast a deformed and stupid look.

The greatest height of this animal, which Mr. Pennant had heard of, is seventeen hands; the greatest weight twelve hundred and twenty nine pounds. The largest horns which he had seen, are in the house of the Hudson's Bay Company; they weigh fifty-six pounds; their length is thirty-two inches, breadth of one of the palms thirteen inches and a half, space between point and point thirty-four. The female is less than the male, and wants horns.

The Moose inhabits the isle of Cape Breton, Nova Scotia, the western side of the Bay of Fundy and the Northern parts of Canada. In the territory of the United States, it is found at the headwaters of the Mountains of New Hampshire; that range having been formerly celebrated for the residence of these animals.

The Moose resides amidst forests, for the conveniency of browsing the boughs of trees, because they are prevented from grazing with any kind of ease, by reason of the shortness of their necks, and length of their legs. They have a singular gait: their pace is a shambling trot, but they go with great swiftness. In their common walk they lift their feet very high, and will, without any difficulty step over a gate five feet high. They feed principally in the night; and when they graze, it is always against an ascent, for the reason above assigned. They ruminate like the Ox.

They go to rut in Autumn, and are at that time very furious. They bring, in the month of April, two young at a birth, which follow the dam a whole year.

They are very inoffensive, except in the rutting season, or except they are wounded, when they will turn on the assailant, and attack him with their horns, or trample him to death beneath their great hoofs.

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The flesh of the Moose is extremely sweet and nourishing. The Indians say that they can travel three times as far after a meal of this animal, as after any other food. The tongue is excellent, but the nose is perfect marrow, and esteemed the greatest delicacy in all Canada.

Greater Stag, or Elk. Under the name of *Stag*, Pennant has given an account of this animal, which somewhat resembles the Stag of Europe; though the materials whereof the ingenious naturalist composed his history were rather slender.

The early travellers in America mention this Deer, and call it a *Stag*. Kalm says that an Indian living in 1748 had killed many Stags on the spot where Philadelphia now stands.*

By what means this animal obtained the name of Elk, we are at present unable to determine; and it would be of no importance if the point were ascertained. It certainly was an improper appellation; but in compliance to long-standing custom, we shall retain it.

The Elk has an oblique slit or opening under the inner angle of each eye externally, of near an inch in length; which is said to communicate with the nostril. A like opening in the Cervine Antelope, *A. bubalis*, is noticed by Sparrman; and is supposed by him to answer the purpose of facilitating free respiration. The female has no horns. The males drop their horns annually in March, then leaving a pith about four inches in length, which is soon covered and protected by a substance resembling velvet. In eight weeks the horns begin to grow again; they are not palmated; the antlers are round and pointed; the lowermost antler forms a curve downward over each eye, to which it appears a defence.

The rutting season is from the 20th of September, to the 1st. of October. The female is gravid about eight months, and generally brings forth one, though sometimes she has twins.

The hoofs of the Elk are very much cloven; and like the Moose and Rein Deer he makes a great clattering with them in travelling. Though his gait is a trot, yet he is very fleet. The flesh is much esteemed, and the tongue is accounted delicious.

This species was seen by Lewis and Clark, in their route to and from the Pacific Ocean, in immense numbers, often herding in common with the Antelopes, Deer and Bisons. In describing the animals found to the westward of the Rocky Mountains, they say:

"The Elk is of the same species with that which inhabits much the greatest part of North America. They are common to every part of this country, as well the timbered lands as the plains, but are much more abundant in the former than in the latter. In the month of March we discovered several which had not cast their horns, and others where the new horns had grown to the length of six inches. The latter were in much the better order, and hence we draw the inference, that the leanest Elk retain their horns the longest."*

The above travellers killed a male Elk which measured five feet three inches from the point of the hoof to the top of the shoulder.

The *Common Deer* is too well known to require a description. They appear to be found over the chief parts of North America; and in the autumn and winter are quite common in the markets of Philadelphia. Their numbers decrease as population gains ground. In

† Kalm, vol. i, p. 336. † History of the Expedition, vol. ii, p. 167.

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the lower parts of the State of New Jersey many of these animals yet inhabit; they are found in the Pine barrens, among the Ground oaks, on the acorns of which they feed: and afford considerable diversion to the hunters every year. From being much persecuted by man, they have become extremely shy, and evince great sagacity in avoiding their pursuers.

The *Rein Deer* has large but slender horns, bending forward, with brow antlers broad and palmated, sometimes three feet nine inches long, two feet six from tip to tip, and weighing almost ten pounds. The body is thick and square; the legs shorter than those of the Stag. The height of a full grown Rein Deer is about four feet six inches.

The female is furnished with horns, but they are less, broader and flatter, and with fewer branches than those of the male. They bring forth two young at a time. The colour of the hair, at the first shedding, is of a brownish ash; it afterwards changes to a hoary whiteness.

The habitation of this interesting and valuable animal is more limited than that of the Moose: it being confined to those parts where the Winter reigns with the utmost severity. Its most southern residence is the northern parts of Canada, bordering on the territories of Hudson's Bay. Charlevoix mentions a single instance of one wandering as far as the neighbourhood of Quebec. Their true place is the vast tract which surrounds the Bay. They are met with in Labrador, and again in Newfoundland, originally wafted thither across the narrow straits of Belleisle, on islands of ice.

The Rein Deer are found in the neighbourhood of Hudson's Bay in great numbers, columns of eight or ten thousand being annually seen passing from north to south in the months of March and April, driven out of the woods by the moschetoës, seeking refreshment on the shore, and a quiet place to drop their young. They go to rut in September, and the males soon after shed their horns: they are at that season very fat, but so runk and musky as not to be eatable. The females produce their young in June, in the most sequestered spots they can find: and then they likewise loose their horns.

The attachment of the Laplanders to the Rein Deer, and the uses to which they apply this, to them, invaluable animal are well known.

The common name of this animal in Canada is *Le Caribou*. Lewis and Clark describe three Deer, which they call *Mule Deer*, the *Common Red* or *Long-tailed Fallow Deer*, and *Black-tailed Fallow Deer*. Of the last they say: "The Black-tailed Fallow Deer is peculiar to this coast, (Pacific) and is a distinct species, partaking equally of the qualities of the Mule and Common Deer.* Their ears are longer, and their winter coat darker, than those of the Common Deer. The receptacle of the eye more conspicuous, their legs shorter, their bodies thicker and larger. The tail is of the same length with that of the Common Deer, the hair on the under side white, and on its sides and top of a deep jetty black. The hams resemble in form and colour those of the Mule, which it likewise resembles in its gait. The Black-tailed Deer never runs full speed, but bounds with every foot from the ground, at the same time, like the Mule Deer. He sometimes inhabits the woodlands, but more often the prairies and open grounds. It may be generally said, that he is of a size larger

* That is, the Long-tailed Fallow Deer.

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than the Common Deer, and less than the Mule Deer. The flesh is seldom fat, and in flavour it is far inferior to any other of the species.*

It is probable that the above described Deer has been introduced into Spain from California. In Bewick's History of Quadrupeds, † page 145, we have the following information: "The Fallow-Deer, with some variation, is found in almost every country of Europe.

Those of Spain are as large as Stags, but darker; their necks are also more slender; and their tails, which are longer than those of ours, are *black above*, and *white beneath*."

The *Prony-Horned Antelope* is found in great numbers on the plains and the high-lands of the Missouri. It was to Messieurs Lewis and Clark that we were first indebted for a particular account of this beautiful animal. "Of all the animals we have seen," say they, "the Antelope seems to possess the most wonderful fleetness. Shy and timorous they generally repose only on the ridges, which command a view of all the approaches of an enemy. The acuteness of their sight distinguishes the most distant danger; the delicate sensibility of their smell defeats the precautions of concealment; and when alarmed, their rapid career seems more like the flight of birds than the movements of an earthly being. This fleet and quick-sighted animal is generally the victim of its curiosity. When they first see the hunter they run with great velocity: if he lies down on the ground and lifts up his arm, his hat, or his foot, the Antelope returns on a light trot to look at the object, and sometimes goes and returns two or three times till he approaches within reach of the rifle. ‡

The Indians near the Rocky Mountains hunt these animals on horseback, and shoot them with arrows. "The Mandans' mode of hunting them is to form a large, strong pen or fold, from which a fence made of bushes gradually widens on each side. The animals are surrounded by the hunters, and gently driven towards this pen, in which they imperceptibly find themselves enclosed, and are then at the mercy of the hunters. §

The Antelopes go to rut about the 20th. of September; and bring forth two young about the 1st. of June. At this last mentioned season the females herd together, apart from the males.

The great body of the Antelopes spend the summer in the plains east of the Missouri, and in the autumn return to the Black Mountains, where they subsist on leaves and shrubbery during the winter, and resume their migrations in the spring. ||

Big-Horned Sheep or *Argali*. "Certain quadrupeds of this genus," says Pennant, "were observed in California by the missionaries in 1697; one as large as a calf of one or two years old, with a head like a Stag, and horns like a Ram. A second kind was larger, and varied in colour: some being white, others black, and furnished with very good wool. The Fathers called both Sheep, from their great resemblance to them. ¶

In Venega's History of California, they are also noticed; and they were seen by Mr. McGillivray of Canada, who gives the dimensions of a male, taken on the spot where he was killed:

* Vol. ii, p. 166.

† New York edition.

‡ History of the Expedition, vol. i, p. 75. — Id. p. 202.

§ Idem, vol. i, p. 124.

|| Id. p. 110.

¶ Arct. Zool. vol. i, p. 13.

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of the tail		4
of the horn	3	6
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The horn is of the circular kind, proceeding in a triangle from the head like that of the ram. A pair of these horns have been known to weigh twenty-five pounds. In short, this animal appears to be a compound of the Deer and the Sheep, having the body and hair of the first, with the head and horns of the last.

But the animal above described was found in his summer dress, and we have no evidence that this species does not change its coat of hair for one of wool, which will better enable it to sustain the rigours of the Rocky Mountain winter. On the specimens which were brought by Lewis and Clark, and which are at present in Peale's Museum, the wool had made its appearance; and we have every reason to suppose that in the winter this animal exhibits all the appearance of the perfect sheep.

At the Yellowstone river, Lewis and Clark saw the first Argali; and they continued to see them until they left the Rocky Mountains on their journey to the west. These animals generally frequent the highest regions which produce any vegetation; though sometimes they descend to feed at the bottom of the valleys, whence, on the least alarm, they retire to the most inaccessible precipices. They are extremely shy, and possess great speed and activity. They bound from rock to rock with all the facility and confidence of the Goat, and frequently disappoint the hunter by the celerity of their movements.

These animals must bring forth their young at a very early season; as on the 28th of May, on the upper parts of the Missouri, Lewis and Clark saw them in great quantities, with their young half grown.

In volume ii, page 359, they say, under the date of July 29th, "The Bighorns are in great numbers along the steep cliffs of the river, (Missouri) and being now in fine order, their flesh is extremely tender, delicate and well flavoured, and resembles in colour and flavour our mutton, though it is not so strong."

Lewis and Clark give us an account of another animal of the Ovis genus, which we have to lament that they had not the good fortune to see. In volume ii, p. 169, they say:

"The Sheep is found in many places, but mostly in the timbered parts of the Rocky Mountains. They live in greater numbers on the chain of mountains forming the commencement of the woody country on the coast, and passing the Columbia between the falls and rapids."

We have only seen the skins of these animals which the natives dress with the wool, and the blankets which they manufacture from the wool. The animal from this evidence appears to be of the size of our common sheep, of a white colour. The wool is fine on many parts of the body, but in length not equal to that of our domestic sheep.

On the back, and particularly on the top of the head, this is intermixed with a considerable proportion of straight long hairs. From the Indian accounts these animals have erect pointed horns: one of our engagees informed us that he had seen them in the Black hills, and that the horns were lunated like those of our domestic sheep.

We have nevertheless too many proofs to admit a doubt of their existing, and in considerable numbers, on the mountains near the coast."

This account was written while our American travellers wintered on the Pacific. But on their return up the Columbia, at Brant island, an Indian offered two sheep skins for sale: one was the skin of a full grown sheep, was as large as that of a Common Deer; the second was smaller, and the head part, with the horns remaining, was made into a cap, and highly prized as an ornament by the owner. The horns of the animal were *black, smooth and erect*, and they rise from the middle of the forehead, a little above the eyes, in a *cylindrical* form, to the height of four inches, where they are *pointed*. The Clahelallahs informed us that the Sheep are very abundant on the heights, and among the cliffs of the adjacent mountains; and that these two had been lately killed out of a herd of thirty-six, at no great distance from the village.*

"The Indians assert, that there are great numbers of the White Buffalo or Mountain Sheep, on the snowy heights of the mountains, west of Clark's river. They generally inhabit the rocky and most inaccessible parts of the mountain, but as they are not fleet, are easily killed by the hunters.†

The *Bison*, commonly called the Buffalo, has short, black, rounded horns, with a great space between their bases; on the shoulders there is a gibbosity or bunch, composed of a fleshy substance; the fore part of the body is thick and strong; the hind part slender and weak; the tail is about a foot long, and naked to the end, which is tufted; legs short and thick.

The head and shoulders of the Bull are covered with long flocks of reddish woolly hair, falling over the eyes and horns, leaving only the points of the latter to be seen; on the chin, and along the dewlaps, there is a great length of shaggy hair; the rest of the body during Summer is naked, in the Winter it is clothed equally in all parts. The Cow is less, and wants the shaggy coat, which gives the Bull so tremendous an aspect.

Lawson says that the Buffalo grows to the weight of sixteen hundred, or two thousand four hundred pounds.‡ But we think that there must be an error in this statement, as some of our late travellers represent it as weighing, when full grown, about one thousand pounds.

The European naturalists have been at considerable pains to ascertain the route by which these animals migrated from the Old to the New World; as it seems they are very unwilling to consider that the *Creator* has been as bountiful to the Americans, in the primeval distribution of his gifts, as He has been to the favoured of the ancient dominions.

"It is difficult to say," says Pennant, "in what manner these animals migrated originally from the old to the new world: it is most likely it was from the north of Asia, which in very ancient times *might have been stocked* with them to its most extreme parts, notwithstanding they are *now extinct*." At that period there is a probability that the old and the new Continents might have been united in the nar-

* History of the Expedition, vol. ii, p. 233.

† Idem, p. 331.—See also page 49 of the same volume.

‡ A voyage to Carolina, by John Lawson, p. 116.

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row channel between *Tchutkinoss*, and the opposite headlands of America."

Admitting the fact, which Pennant and others have laboured to prove, that the two Continents formerly joined, what evidence have we that these animals did not migrate originally from the New to the Old world? But our limits will not allow a disquisition on this subject; and in spite of all the ingenious hypotheses of the philosophers of Europe, some of whom consider the animals of the Western world mere varieties of their own *single generous stock*,* we are of the opinion that the American Bison differs essentially from that of Europe and Asia, and that it claims to be ranked as a distinct species.

These animals have an extensive range, being found in the countries six hundred miles west of Hudson's Bay, in Canada to the west of the lakes, and in New Mexico. They are not found in South America. The banks of the Ohio, within the memory of some of the present inhabitants of that country, were enlivened with herds of Buffaloes; and the plains of Indiana and Illinois were their places of favourite resort, but encroaching settlements have driven them west.

At the river Kansas the party of Lewis and Clark saw the first Buffalo, and they found them as high as near the dividing ridge, which separates the waters of the Columbia from those of the Missouri. To the westward of the Rocky Mountains they were not discovered.

At Big Dry-river the exploring party found these animals so tame, that they were obliged to drive them out of the way with sticks and stones. It is almost incredible what numbers of Bisons congregate: upwards of twenty thousand have been seen in a group; and the noise they make in bellowing, and trampling on the ear when such multitudes herd together, is said to be undescribable. In winding around the hills which border the Missouri, these animals contribute greatly to the picturesque effect of that interesting river.*

The rutting season of the Bison commences about the first of August. When that period is past, the great body of females separate from the males, and it is not unusual to see many thousand together of one sex only. It has been particularly observed of the females, that when they calve they are removed at a considerable distance from the feeding ground of the other sex.† We may call this instinct, but it is something more. Nature has taught the female to be attentive to the wants of their offspring, to attend them while in a tender state, and to lead them no farther than their strength will admit. They are likewise taught, whether by experience or otherwise, that the ungovernable males are not influenced by the same feelings, and that amidst their overwhelming ranks the poor calves would be as clods of earth, or as the grass of the vallies.

The Indians have various ways of obtaining these animals, which afford them an esteemed food, and clothing of great value. They hunt them on horseback, killing the animals with spears and arrows; attack them in the Spring on the floating ice, and when the herds cross the rivers; and drive them down precipices, which last mode is sometimes attended with great slaughter. For a particular account of all these matters, we must refer the reader to the History of the expedition under the command of Lewis and Clark,‡ and Views of Louisiana by Mr. Brackenridge.§

* Views of Louisiana, p. 263.

† Pike's Exp. Appendix to part ii, p. 5.

‡ Vol. i, p. 175, 235.

§ Page 255.

The *Musk Ox* is numerous between the latitudes of 66 and 73 degrees north. It does not appear that they are found at the head waters of the Mississippi or the Missouri. They first appear on the western side of Hudson's Bay, and continue north. Mr. Hearne, in his journey to the Northern Ocean, saw many herds of these animals. They delight most in the rocky and barren mountains, and seldom frequent the woody parts of the country. They are found in droves of twenty or thirty. They run nimbly, and are very active in climbing the rocks. The flesh tastes strongly of musk; but it is considered wholesome and beneficial to convalescents. The hair of this animal is of a dusky red, extremely fine, and so long as to trail upon the ground, and render the beast a seeming shapeless mass, without distinction of head or tail; the legs and tail are very short; the shoulders are gibbous. In size, lower than a Deer, but larger as to belly and quarters. For a complete description of this animal, illustrated with a good plate, we refer the reader to Pennant's Arctic Zoology, London, 1792.

The *Long-nosed Tapir* has been, by some authors, mistaken for the *Hippopotamus*, which is not found in the New World. The Tapir is about the size of a small cow; its nose is long and slender, and extends far beyond the jaw, forming a kind of proboscis, which it can contract or extend at pleasure; its ears are small and erect; its body formed like that of a Hog; its hair short, and of a dusky brown colour. This animal inhabits the woods and rivers of Mexico; and extends through a considerable part of South America, as D'Azara describes it in his History of the Quadrupeds of Paraguay. It is a solitary animal, sleeps during the day, and goes out in the night in search of food, which consists of grass, sugar-canes, fruits, &c. It is quite inoffensive, avoids all hostilities with other animals, and flies from every appearance of danger.

"The Tapir," says Henderson, "is an inhabitant of the thickest and most retired woods in the neighbourhood of rivers and creeks. It swims, dives, and is considered to possess the property of walking beneath the water. As this animal cautiously avoids the day, it is but rarely met with. The meat of the Tapir, contrary to what has been pronounced of it, is in this country considered exceedingly coarse and rank.*

The *Pecary* is found in Louisiana, at the head waters of the Red River; and extends thence throughout Mexico, and the principal part of South America. In some places it is very numerous, herds of two or three hundred are said to be found together. They live chiefly in the higher parts of the country, and are not fond of wallowing in the mire like the common Hog. Their food consists of fruits, roots, seeds, &c. They likewise eat Serpents, Toads, and Lizards.

The Pecary resembles a small Hog of the common kind. Its body is covered with strong bristles, which, when the animal is irritated, rise up like the prickles of a Hedgehog, and are nearly as strong; they are of a dusky colour, with alternate rings of white; it has two tusks in each jaw; its ears are small and erect; and instead of a tail, it has a small fleshy protuberance, which does not cover its posterior. This animal has a small glandular orifice on the lower part of the back, whence a thin watery humour flows. This humour has been represented by some, as of an extremely fetid smell; but Don

* Henderson's Honduras, p. 103.

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D'Azara says that it is of an agreeable musky odour, though he admits that the food of the animal, or other circumstances, may affect its sensible qualities.

Bewick says, "that although the European Hog is common in America, and in many parts has become wild, yet the Pecary has never been known to breed with it." "The Pecary is very prolific." * This is contradicted by D'Azara, who says, that the female produces her young once a year, and but two at a time.†

"The Pecary and the Warree," says Captain Henderson, "are animals of the Hog kind. The former is the *Sus Tajassu*, of Linnaeus, or the Tajassu of other naturalists. On the back of this animal is placed a glandulous orifice, which has furnished a very common belief, that in this part of it the navel is situated. The flesh of the Pecary is considered particularly good, either fresh or salted; but on killing it, if the glands just mentioned be not instantly removed, the whole carcase becomes tainted with the most noxious and fetid odour. The latter animal has not been so particularly described. It has been denominated the Hog of the isthmus of Darien; and an opinion has been suggested, that it may only be the European Hog run wild. Both Pecary and the Warree usually go in large bodies; and at such times it is not considered at all safe to wound or kill any of the party, by firing on them, unless a retreat or place of security be nigh: for those, which remain unurt, commonly attack the offender in the most desperate way. The approach of these animals may be heard in the woods at a great distance, by the loud and clamorous noise they continually make; and like the domestic Hog, it is asserted that they destroy and eat snakes and reptiles of different kinds."‡

ORNITHOLOGY. . . . The European naturalists, particularly Buffon in his far-famed *Oisoux*, have attempted to give an account of the Birds of North America. But their works evince such a want of correct information, or prejudice, or both, that the American reader who takes them up with the expectation of amusement or improvement, will be apt to find himself miserably disappointed; and will turn with indifference or disgust from pages that generally exhibit merely a dry detail of specific particulars, or what is worse, that are polluted with injurious misrepresentations,§ the off-spring of ignorance or folly.

From the extent of this immense continent, so distinguished by a variety of soil and climate, it is reasonable to conclude that a rich harvest would reward the labours of him who should zealously engage in the study of its natural history. In Europe, though now grown gray in the arts and sciences, yet still retaining the pristine vigour and inquisitiveness of youth, much had been done in this interesting class of animals. But it seemed reserved for America to set the first example of a work, combining elegance of typographical execution and graphical illustration, with accuracy of detail,

* Bewick's Quadrupeds.

† Histoire Naturelle des Quadrupeds de la Province du Paraguay, par Don Felix D'Azara, tome i, p. 38. Paris, 1801.

‡ Henderson's Honduras, p. 97.

§ We are free to explain, that it is principally against the Count de Buffon that our censures are directed. It gives us pleasure to learn that the dogmata of this vain and whimsical philosopher, have lost much of that regard which an imposing name has contributed to attract.

and scientific and moral utility. The "American Ornithology," by the enterprising and ingenious Wilson, has not only immortalized its author, but has greatly increased the stock of useful pleasures, by forcibly directing our attention to a generally supposed unimportant source of gratification; and claims our regard for rescuing a beautiful portion of animated nature from the rude hands of those to whom it had been unfortunately committed.

Anterior to the appearance of the above mentioned magnificent work, several nomenclatures of American birds had been published by writers of America. "But these," says Mr. Wilson, "from the nature of the publications in which they have been introduced, can be considered only catalogues of names, without the detail of specific particulars, or the figured and coloured representations of the birds themselves." It was the intention of Mr. Wilson to furnish a description and coloured representation of every species of our native birds, from the shores of the St. Lawrence to the mouths of the Mississippi, and from the Atlantic Ocean to the interior of Louisiana. A task to which the inflexible mind of that remarkable individual was fully competent. In the prosecution of his plan he had made great progress, having published and prepared, an account of *two hundred and sixty-five* species, *fifty-four* of which were nondescripts, when the Almighty disposer of events saw fit to close his useful labours by death.* May his noble example stimulate some zealous naturalist to complete the design of our ornithologist: a task by no means easy of execution, but if accomplished with the like success, will be attended with honour and fame commensurate to the hazard and difficulty of the undertaking. And may we not hope soon to behold labourers in the other departments of natural history, equally successful in defending the native productions of our country from the attacks of prejudiced foreigners, who have made a merit of depreciating what in truth they do not understand!

"The Ornithology of the United States," says Mr. Wilson, "exhibits a rare display of the most splendid colours, from the green, silky, gold-bespangled down of the minute Humming-bird, scarce three inches in extent, to the black coppery wings of the gloomy Condor of sixteen feet, who sometimes visits our northern regions:—a numerous and powerful band of songsters, that for sweetness, variety and melody, are surpassed by no country on earth:—an ever-changing scene of migration, from torrid to temperate, and from northern to southern regions, in quest of suitable seasons, food and climate; and such an amazing diversity in habit, economy, form, disposition and faculty, so uniformly hereditary in each species, and so completely adequate to their peculiar wants and convenience, as to overwhelm us with astonishment at the power, wisdom and beneficence of the Creator.

"In proportion as we become acquainted with these particulars, our visits to, and residence in, the country, become more and more agreeable. Formerly, on such occasions, we found ourselves in solitude, or, with respect to the feathered tribes, as it were in a strange land, where the manners, language, and faces of all were either totally overlooked, or utterly unknown to us: now, we find ourselves

*He left drawings of thirteen species more. These were given to the public in a supplementary volume. The whole work consists of nine volumes, imperial quarto.

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Ash-colour
Plain Falco
Gentle B.
Cormorant
Chocolate F
St. John's F
Scaup

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White H.
Rough-leg
Marsh H.
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Broad-wing
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Blue H.

Great Owl
Mexican O
American I
Scaly O
Scrub O.
Cassin O.
Cassid O.
New Spain
Tawny O.
Vermont O
White-thr
Snow O.
Great-horn
Long-eared
Barred O.

among interesting and well-known neighbours and acquaintance; and, in the notes of every song-ster, recognise with satisfaction the voice of an old friend and companion. A study thus tending to multiply our enjoyments at so cheap a rate, and to lead us, by such pleasing gradations, to the contemplation and worship of the *Great First Cause*, the Father and Preserver of all, can neither be idle nor useless, but is worthy of rational beings, and doubtless agreeable to the Deity."

ZOOLOGY OF NORTH AMERICA.

CLASS AVES.

LAND BIRDS.

ORDER ACCIPITRES.

GENUS *FALCO*.

Condor Vulture	-	<i>Vultur gryphus.</i>
King V.	-	<i>F. imper.</i>
California V.	-	<i>F. Californianus.</i>
*Columbia V.	-	<i>F. Columbianus.</i>
Turkey-Lizzard	-	<i>F. azar.</i>
Carion Crow	-	<i>F. atratus.</i>

GENUS *FALCO*.

Bald Eagle	-	<i>Falco leucocephalus.</i>
Ring-tailed E.	-	<i>F. talus.</i>
Golden E.	-	<i>F. chrysurus.</i>
White-bellied E.	-	<i>F. leucogaster.</i>
Fish Hawk	-	<i>F. hirtus.</i>
Spack-bird Buzzard	-	<i>F. occidentalis.</i>
American B.	-	<i>F. leucurus.</i>
Ash-coloured B.	-	<i>F. fusces.</i>
Plain Falcon	-	<i>F. borealis.</i>
Gentle F.	-	<i>F. gentilis.</i>
Common F.	-	<i>F. communis.</i>
Cheslate F.	-	<i>F. sparverius.</i>
St. John's F.	-	<i>F. S. Johannis.</i>
Sparc.	-	<i>F. siver.</i>
Newfoundland Falcon	-	<i>F. Nova terrae.</i>
Hudson's Hawk	-	<i>F. Hudsonius.</i>
American H.	-	<i>F. mexicanus.</i>
Dusky Falcon	-	<i>F. chrysurus.</i>
Ruf-tailed Hawk	-	<i>F. borealis.</i>
Black cap H.	-	<i>F. atricapillus.</i>
Winter H.	-	<i>F. tinianus.</i>
Rough-legged H.	-	<i>F. lagopus.</i>
Marsh H.	-	<i>F. albicollis.</i>
Say's red-tailed H.	-	<i>F. tinianus.</i>
Mississippi Kite	-	<i>F. Mississippiensis.</i>
Black Hawk	-	<i>F. nigerr.</i>
Red-shafted H.	-	<i>F. hirtus.</i>
Sharp-shinned H.	-	<i>F. aculeatus.</i>
American Sparrow H.	-	<i>F. sparverius.</i>
Pheon H.	-	<i>F. Colubularius.</i>
Slate-colored H.	-	<i>F. Pennsylvanicus.</i>
Broad-winged H.	-	<i>F. hirtus.</i>
Great-potied H.	-	<i>F. peregrinus.</i>
Blue H.	-	<i>F. mexicanus.</i>

GENUS *STELIX*.

Great Owl	-	<i>Stelix bubo.</i>
Mexican Owl	-	<i>S. Mexicanus.</i>
American O.	-	<i>S. Americanus.</i>
Sooty O.	-	<i>S. scutulatus.</i>
Screech O.	-	<i>S. asio.</i>
Screech O.	-	<i>S. asio.</i>
Screech O.	-	<i>S. asio.</i>
New Spain O.	-	<i>S. Schlegelii.</i>
Tawny O.	-	<i>S. schiobethi.</i>
American O.	-	<i>S. asio.</i>
White-fronted O.	-	<i>S. asio.</i>
Snow O.	-	<i>S. asio.</i>
Great-horned O.	-	<i>S. Virgatus.</i>
Long-eared O.	-	<i>S. asio.</i>
Barred O.	-	<i>S. asio.</i>

Mottled O.	-	<i>S. nortia.</i>
Barn O.	-	<i>S. funnea.</i>
Little O.	-	<i>S. pusilla.</i>
Hawk O.	-	<i>S. Hudsonia.</i>
Short-eared O.	-	<i>S. beryllina.</i>
Red O.	-	<i>S. asio.</i>

ORDER PICAE.

GENUS *LANIUS*.

Crested Shrike	-	<i>Lanius Comadenis.</i>
Northern S.	-	<i>L. septentrionalis.</i>
American S.	-	<i>L. Americanus.</i>
Neotoma S.	-	<i>L. Neotoma.</i>
Great American S.	-	<i>L. excubitor.</i>
Loggerhead S.	-	<i>L. Grobianus.</i>
Black capped S.	-	<i>L. pilatus.</i>

GENUS *PSITTACUS*.

White-fronted Parrot	-	<i>Psittacus leucocephalus.</i>
Dusky P.	-	<i>P. sociatus.</i>
Mexican P.	-	<i>P. Mexicanus.</i>
Blue-headed P.	-	<i>P. cyanus.</i>
Yellow-headed P.	-	<i>P. leucophthalmus.</i>
Red and Blue Manaw	-	<i>P. carolin.</i>
Red and Yellow M.	-	<i>P. carolin.</i>
Carolina Parrot	-	<i>P. carolinensis.</i>

GENUS *RAMPHASTOS*.

Paruline Toucan	-	<i>Ramphastos Pyroninus.</i>
Collared T.	-	<i>R. bicapatus.</i>
Y. Bow T.	-	<i>R. Indus.</i>
Blue T.	-	<i>R. carolinus.</i>

GENUS *CORVUS*.

Stellar's Crow	-	<i>Corvus Stellaris.</i>
Mexican C.	-	<i>C. Mexicanus.</i>
Carolinian C.	-	<i>C. carolinensis.</i>
Zane C.	-	<i>C. Zane.</i>
Raven	-	<i>C. corax.</i>
Common Crow	-	<i>C. corax.</i>
Blue Jay	-	<i>C. cyanocephalus.</i>
American J.	-	<i>C. cyanocephalus.</i>
Park's Crow	-	<i>C. cyanocephalus.</i>
Rock C.	-	<i>C. corax.</i>
Mazze	-	<i>C. pion.</i>

GENUS *CORACIAS*.

Mexican Roller	-	<i>Coracias Mexicanus.</i>
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GENUS *ORIOLEUS*.

Mexican Oriole	-	<i>Orioleus Nova Hispania.</i>
New Spain O.	-	<i>O. ustulatus.</i>
Orange O.	-	<i>O. ustulatus.</i>
Red-winged O.	-	<i>O. ustulatus.</i>
Carolinian O.	-	<i>O. ustulatus.</i>
Black-crowned O.	-	<i>O. ustulatus.</i>
Bonana O.	-	<i>O. ustulatus.</i>
Lesser Bonana O.	-	<i>O. ustulatus.</i>

* Lewis and Clark's expedition, vol. II, p. 133.

St. Domingo O.	-	<i>O. dominiensis</i> .
Melanoholy O.	-	<i>O. melanocephalus</i> .
Olive O.	-	<i>O. capensis</i> .
Yellow-throated O.	-	<i>O. vireidis</i> .
Fork-tailed O.	-	<i>O. forficatus</i> .
Baltimore O.	-	<i>O. baltimorensis</i> .
Orchard O.	-	<i>O. mutatus</i> .

GENUS *TRACULA*.

Boat-tailed Grackle	-	<i>Gracula barata</i> .
Purple G.	-	<i>G. quiscula</i> .
Rusty G.	-	<i>G. ferruginea</i> .

GENUS *TROGLON*.

Red-bellied Curlew	-	<i>Trogon curvirostris</i> .
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GENUS *CUCULUS*.

Laughing Cuckoo	-	<i>Cuculus ridibundus</i> .
St. Domingo C.	-	<i>C. dominiensis</i> .
Yellow-billed C.	-	<i>C. carolinensis</i> .
Black-billed C.	-	<i>C. erythrophthalmus</i> .

GENUS *PICTUS*.

Green Woodpecker	-	<i>Picus viridis</i> .
Varied W.	-	<i>P. tricolor</i> .
Canada Spotted W.	-	<i>P. canadensis</i> .
Ivory-billed W.	-	<i>P. princeps</i> .
Pileated W.	-	<i>P. pubescens</i> .
Gold-winged W.	-	<i>P. auratus</i> .
Red-headed W.	-	<i>P. erythrocephalus</i> .
Hairy W.	-	<i>P. villosus</i> .
Downy W.	-	<i>P. pubescens</i> .
Yellow bellied W.	-	<i>P. varius</i> .
Red-cockaded W.	-	<i>P. picoides</i> .
Lewis's W.	-	<i>P. lucipetens</i> .
Red-bellied W.	-	<i>P. carolinensis</i> .
Gray-spotted W.	-	<i>P. caninus</i> .
*Rocky-mountain W.	-	<i>P. montanus</i> .

GENUS *ALCEDO*.

Belted Kingfisher	-	<i>Alcedo albona</i> .
Chimera K.	-	<i>A. bipunctata</i> .

GENUS *SITTA*.

White-breasted Nuthatch	-	<i>Sitta carolinensis</i> .
Red-bellied N.	-	<i>S. nana</i> .
Brown-headed N.	-	<i>S. pusilla</i> .

GENUS *TODUS*.

Dusky Tody	-	<i>Todus obscurus</i> .
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GENUS *MYIOPS*.

Chimera Bee-eater	-	<i>Myiops carolinensis</i> .
California B.	-	<i>M. californiensis</i> .

GENUS *UPIPA*.

Mexican Hoopoe	-	<i>Upupa mexicana</i> .
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GENUS *CERTHIA*.

Red Creeper	-	<i>Certhia mexicana</i> .
Brown C.	-	<i>C. uminivirens</i> .
Black and white C.	-	<i>C. nana</i> .
Great Carolina Wren	-	<i>C. caroliniana</i> .
Marsh W.	-	<i>C. palustris</i> .

GENUS *TROCHILUS*.

Paradise Hummingbird	-	<i>Trochilus paradisiensis</i> .
Blue-tailed H.	-	<i>T. cyaneus</i> .
Group-throated H.	-	<i>T. maculatus</i> .
Spotted H.	-	<i>T. pusillulus</i> .
Crimson-headed Blue H.	-	<i>T. erulatus</i> .
Mango H.	-	<i>T. mango</i> .
Black-bellied H.	-	<i>T. halcyonensis</i> .
Ruby-throated H.	-	<i>T. colubris</i> .
Ruff-necked H.	-	<i>T. rufus</i> .
Least H.	-	<i>T. minimus</i> .
Little H.	-	<i>T. exilis</i> .

ORDER PASSERES.

GENUS *STURUS*.

Louisiana Starling	-	<i>Sturnus ludovicianus</i> .
Mexican S.	-	<i>S. mexicanus</i> .
Brown-headed S.	-	<i>S. obscurus</i> .
Red-winged S.	-	<i>S. prairie</i> .

GENUS *TURDUS*.

Red-legged Thrush	-	<i>Turdus plumbeus</i> .
Spotted T.	-	<i>T. migratorius</i> .
Hudsonian T.	-	<i>T. hudsonicus</i> .
Labrador T.	-	<i>T. labradoricus</i> .
Mocking-bird	-	<i>T. polyglottus</i> .
Ferruginous Thrush	-	<i>T. rufus</i> .
Wood T. or Wood Rollin	-	<i>T. melodus</i> .
Golden-crowned T.	-	<i>T. auricapillus</i> .
Chipping T.	-	<i>T. chrysides</i> .
Water Thrush	-	<i>T. aquaticus</i> .
Hermitt T.	-	<i>T. sibiricus</i> .
Towhee T.	-	<i>T. ustulatus</i> .
Robin	-	<i>T. migratorius</i> .

GENUS *AMPELIS*.

Chimera-bird or Chatterer	-	<i>Ampelis americana</i> .
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GENUS *LOxia*.

Gray Grosbeak	-	<i>Loxia grisea</i> .
Mexican G.	-	<i>L. mexicana</i> .
Yellow-headed G.	-	<i>L. nova-hispanica</i> .
Canada G.	-	<i>L. californica</i> .
Brown-checked G.	-	<i>L. curvirostris</i> .
Hudson's Bay G.	-	<i>L. hudsonica</i> .
Black G.	-	<i>L. nigra</i> .
Cardinal G.	-	<i>L. cardinalis</i> .
Rose-breasted G.	-	<i>L. rosacea</i> .
Blue G.	-	<i>L. cyaneus</i> .
Pine G.	-	<i>L. pinicola</i> .
Yellow-bellied G.	-	<i>L. virens</i> .
Em-tailed G.	-	<i>L. tulaheya</i> .
Dusky G.	-	<i>L. obscura</i> .

GENUS *CERYLESTES*.

American Gros-bill	-	<i>Ceryle americana</i> .
White-winged C.	-	<i>C. alcyon</i> .

GENUS *EMPEZEA*.

Mexican Bunting	-	<i>Empeza mexicana</i> .
Black-crowned B.	-	<i>E. atricapilla</i> .
White-crowned B.	-	<i>E. leucorhynchos</i> .
Blue B.	-	<i>E. caerulea</i> .
Louisiana B.	-	<i>E. ludovicianus</i> .
Black-throated B.	-	<i>E. amoena</i> .
Towhee B.	-	<i>E. erythrophthalma</i> .
Red-bird	-	<i>E. macularia</i> .
Cow B.	-	<i>E. pecora</i> .
Snow B.	-	<i>E. nivalis</i> .
Painted B.	-	<i>E. ciris</i> .
Bay-winged B.	-	<i>E. graminea</i> .
Black B.	-	<i>E. hiemalis</i> .

GENUS *TANAGRA*.

Gray Tanager	-	<i>Tanager grisea</i> .
Black and Blue T.	-	<i>T. mexicana</i> .
Cerulean T.	-	<i>T. cyanus</i> .
Scarlet T.	-	<i>T. rubra</i> .
Summer Red-bird	-	<i>T. ustula</i> .
Louisiana Tanager	-	<i>T. ludovicianus</i> .

GENUS *FRINGILLA*.

Lapland Finch	-	<i>Fringilla lapponica</i> .
Carthaginian F.	-	<i>F. carthaginensis</i> .
Variagated F.	-	<i>F. montana</i> .
Mexican Siskin	-	<i>F. mexicana</i> .
Black Mexican S.	-	<i>F. caudata</i> .
Greater Red-poll	-	<i>F. cyanoptera</i> .
Lesser R.	-	<i>F. tinaria</i> .
Black-faced Finch	-	<i>F. cristata</i> .
Carolina F.	-	<i>F. carolinensis</i> .

Yellow-bird
Purple Finch
Pine F. or sisk
Sea-side F.
Sharp-tailed F.
Indigo-bird
Snow-bird
Field Sparrow
Tree S.
Song S.
Chipping S.
White-throated
Swamp S.
Savannah S.
Fox-coloured S.
Yellow-wings

Forked-tail F.
Swallow-tailed
Louisiana F.
Solitary F.
Red-eyed F.
White-eyed F.
Tyrant F. or F.
Great-crested
Pewee F.

Wood-pewee F.
Small green F.
Yellow-throat
Blue-gray F.
Canada F.
Hooded F.
Warbling F.
Green black-c
Small-headed
American Red
Striped F. or
Rusty F. or

Louisiana Lau
Meadow L.
Shore L.
Brown L.

Quebec Warb
Belted W.
Louisiana W.
Orange-thro
Spotted-yello
Yellow-pell W.
Hudson's W.

Yellow-thro
Rty-breast-c
Chestnut-sh
Mourning W.
Blue-winged
Golden-wing
Blue-eyed W.
Black-throat
Black-throat
Yellow-rump
Cerulean W.
Pines-pine
Black and ye
Black-burned
Autumnal W.
Fresh-mont
Worm-eater
Tennessee W.
Kentucky W.
Blue-green W.
Nashville W.
Blue-yellow
Yellow-red-p
Black-poll W.
Prairie W.
Connecticut
Blue-mount
Hemlock W.
Pine-swamp
Cape May W.
Marland ye
Blue-bird
Ruby-crown
Golden-crest

* History of Lewis and Clark's expedition, vol. 1, p. 398.

- Yellow-bird - - - *F. tristis.*
- Purple Finch - - - *F. purpurea.*
- Pine F. or Siskin - - - *F. pinus.*
- Sea-side F. - - - *F. maritima.*
- Sharp-tailed F. - - - *F. canadensis.*
- Indigo-bird - - - *F. cyanea.*
- Snow-bird - - - *F. Hudsonia.*
- Field Sparrow - - - *F. pusilla.*
- Tree S. - - - *F. arborea.*
- Song S. - - - *F. coelebs.*
- Chipping S. - - - *F. vesicula.*
- White-throated S. - - - *F. alba.*
- Swain's S. - - - *F. albobrunnea.*
- Savannah S. - - - *F. swainsoni.*
- Fox-coloured S. - - - *F. virens.*
- Yellow-winged S. - - - *F. palmarum.*

GENUS *MUSCIPAPA*.

- Forked-tail Flycatcher - *Muscivora forficatus.*
- Swallow-tailed F. - - - *M. tobachensis.*
- Louisiana F. - - - *M. luteicapilla.*
- Solitary F. - - - *M. solitaria.*
- Red-eyed F. - - - *M. omissa.*
- White-eyed F. - - - *M. omissa.*
- Tyrant F. or King-bird - *M. cyaneus.*
- Great-crested F. - - - *M. omissa.*
- Pewee F. - - - *M. pusilla.*
- Wood-pewee F. - - - *M. caper.*
- Small green F. - - - *M. pusilla.*
- Yellow-throated F. - - - *M. pusilla.*
- Blue-gray F. - - - *M. omissa.*
- Canada F. - - - *M. omissa.*
- Hooded F. - - - *M. omissa.*
- Warbling F. - - - *M. omissa.*
- Green black-capt F. - - - *M. pusilla.*
- Small-headed F. - - - *M. omissa.*
- American Red-start - *M. omissa.*
- Striped Flycatcher - *M. omissa.*
- Rusty F. - - - *M. omissa.*

GENUS *AIAÏDA*.

- Louisiana Lark - *Aianda ludoviciana.*
- Meadow L. - - - *A. meadow.*
- Shore L. - - - *A. alpestris.*
- Brown L. - - - *A. rufa.*

GENUS *SYLVEA*.

- Quebec Warbler - *Sylvia leucocapilla.*
- Belted W. - - - *S. cinerea.*
- Louisiana W. - - - *S. ludoviciana.*
- Orange-throated W. - - - *S. carolinensis.*
- Spotted-yellow W. - - - *S. taylori.*
- Yellow-poll W. - - - *S. taylori.*
- Hudson's W. - - - *S. Hudsonia.*
- Yellow-throat W. - - - *S. discolor.*
- Bay-breasted W. - - - *S. carolinensis.*
- Chestnut-sided W. - - - *S. pensilvanica.*
- Mountain W. - - - *S. philadelphia.*
- Blue-winged Yellow W. - *S. sibilatrix.*
- Golden-winged W. - - - *S. caesia.*
- Blue-eyed W. - - - *S. sibilatrix.*
- Black-throated Blue W. - *S. canadensis.*
- Black-throated green W. - *S. carolinensis.*
- Yellow-rump W. - - - *S. carolinensis.*
- Carolinian W. - - - *S. carolinensis.*
- Pine-creeping W. - - - *S. pusilla.*
- Black and yellow W. - - *S. carolinensis.*
- Blackburnian W. - - - *S. Blackburnia.*
- Autumnal W. - - - *S. autumnalis.*
- Prothonotary W. - - - *S. prothonotaria.*
- Worm-eating W. - - - *S. carolinensis.*
- Tennessee W. - - - *S. carolinensis.*
- Kentucky W. - - - *S. carolinensis.*
- Blue-green W. - - - *S. carolinensis.*
- Nashville W. - - - *S. carolinensis.*
- Blue yellow-back W. - - *S. carolinensis.*
- Yellow red-poll W. - - - *S. carolinensis.*
- Black-poll W. - - - *S. carolinensis.*
- Red-breast W. - - - *S. carolinensis.*
- Connecticut W. - - - *S. carolinensis.*
- Blue-mountain W. - - - *S. carolinensis.*
- Hemlock W. - - - *S. carolinensis.*
- Pine-swamp W. - - - *S. carolinensis.*
- Cape May W. - - - *S. carolinensis.*
- Maryland yellow-throat - *S. carolinensis.*
- Blue-bird - - - *S. carolinensis.*
- Rufous-crowned Wren - *S. carolinensis.*
- Golden-crested Wren - *S. carolinensis.*

- House Wren - - - *S. domestica.*
- Winter Wren - - - *S. troglodytes.*

GENUS *PIPPA*.

- Purple Manakin - - - *Pippa cristata.*
- Mexican M. - - - *P. piceivitt.*
- Snow Spout M. - - - *P. maculiflora.*
- Yellow-breasted Chat - *P. polyglota.*

GENUS *PARTS*.

- Hudson's Bay Titmouse - *Parus Hudsonius.*
- Black-capt T. - - - *P. atricapillus.*
- Crested T. - - - *P. bicolor.*

GENUS *HIRUNDO*.

- Rock swallow - *Hirundo rapaestris.*
- Ash-bellied S. - - - *H. cinerea.*
- Oonahaska S. - - - *H. oonahaskensis.*
- Lawn S. - - - *H. americana.*
- Green white-bellied S. - *H. viridis.*
- Bank S. - - - *H. riparia.*
- Chimney S. - - - *H. phoenicea.*
- Purple Martin - - - *H. purpurea.*

GENUS *CAPRIMULGUS*.

- Chuck-will's-widow - *Caprimulgus Carolinensis.*
- Night-hawk - - - *C. americana.*
- Whip-poor-will - - - *C. vociferus.*

ORDER COLUMBEÆ.

GENUS *COLUMBA*.

- White-crowned Pigeon - *Columba leucocephala.*
- White-winged P. - - - *C. leucoptera.*
- Brown P. - - - *C. fuscus.*
- Blue P. - - - *C. carolinensis.*
- White-shouldered P. - *C. habeli.*
- Black-spotted P. - - - *C. mexicanus.*
- Mexican P. - - - *C. mexicanus.*
- Passenger P. - - - *C. passerina.*
- Canada Turtle - - - *C. canadensis.*
- Turtle Dove - - - *C. macroura.*
- Ground Dove - - - *C. passerina.*

ORDER GALLINÆ.

GENUS *MELEAGRIS*.

- Wild-Turkey - - - *Meleagris gallinaria.*

GENUS *PENELOPE*.

- Grouse - - - *Penelope cristata.*
- Quail - - - *P. carolinensis.*
- Piping Curassow - *P. pipilo.*

GENUS *CRAX*.

- Crested Curassow - *Crax alberta.*
- Colosse C. - - - *C. gabriellana.*
- Cushow C. - - - *C. pinnata.*
- Oxyg C. - - - *C. vociferans.*

GENUS *PHASIANUS*.

- Courier Pheasant - *Phasianus Mexicanus.*
- Crested P. - - - *P. versicolor.*
- *Columbian P. - - - *P. columbianus.*

GENUS *TETRAO*.

- *Sharp-tailed Grouse - *Tetrao phasianellus?*
- Spotted G. - - - *T. canadensis.*
- White G. - - - *T. albus.*
- Rock G. - - - *T. capensis.*
- Plumbeous G. - - - *T. capensis.*
- Blue G. or Pheasant - *T. umbellus.*
- *Brown G. - - - *T. fusca.*
- Partridge - - - *T. lagopus.*

GENUS *PERDIX*.

- Mexican Partridge or - *Perdix mexicanus.*
- Prairie-hen - - - *P. virginiana.*
- Virginia P. or quail - *P. virginiana.*
- Louisiana Q. - - - *P. mexicana.*
- California Q. - - - *P. californiana.*
- Lesser Mexican Q. - - *P. capensis.*
- Hudsonian Q. - - - *P. Hudsonia.*
- Crested Q. - - - *P. cristata.*

*Described by Lewis and Clark, vol. II, p. 180, 181, 182.

WATER BIRDS.

ORDER <i>GRALLÆ</i> .	
GENUS <i>PLATALEA</i> .	
Rosette Spoonbill	<i>Platula ajaja</i> .
GENUS <i>PALAMEDEA</i> .	
Horned Screamer	<i>Palmatoria cornuta</i> .
GENUS <i>MYCTERIA</i> .	
American Jabiru	<i>Mycteria americana</i> .
GENUS <i>CANCRONA</i> .	
Crested Booby	<i>Cancrona costaricensis</i> .
GENUS <i>ARDEA</i> .	
Whooping Crane	<i>Ardea americana</i> .
Night Heron or Quail-bird	<i>A. nycticorax</i> .
Great White Heron	<i>A. egretta</i> .
Dry H.	<i>A. herodias</i> .
Houhou H.	<i>A. herodias</i> .
Great H.	<i>A. herodias</i> .
Louisiana H.	<i>A. louisianensis</i> .
Yellow-crowned H.	<i>A. violacea</i> .
Blue H.	<i>A. herodias</i> .
Rusty-crowned H. or Bittern	<i>A. minor</i> .
Least or Minute Bittern	<i>A. collaris</i> .
Snowy Heron	<i>A. c. diluissima</i> .
Striated H.	<i>A. strigata</i> .
Green H.	<i>A. virescens</i> .
Mexican H.	<i>A. speciosa</i> .
Strawbed H.	<i>A. virescens</i> .
Ash-coloured H.	<i>A. cyanoptera</i> .
Gardentian H.	<i>A. gardenii</i> .
GENUS <i>TANTALUS</i> .	
Wood Bils	<i>Tantalus bicolor</i> .
Scarlet I.	<i>T. alba</i> .
White I.	<i>T. alba</i> .
Lesser I.	<i>T. minor</i> .
Mexican I.	<i>T. mexicana</i> .
White-necked I.	<i>T. alba</i> .
GENUS <i>NUMENIUS</i> .	
Long-billed Curlew	<i>Numenius longirostris</i> .
Esquimaux or short-billed C.	<i>N. borealis</i> .
Hudsonian C.	<i>N. hudsonicus</i> .
GENUS <i>SCOLOPAX</i> .	
Black Snipe	<i>Scolopax nigra</i> .
Nodding S.	<i>S. nodulus</i> .
Stone S.	<i>S. undulata</i> .
Jack S.	<i>S. caudata</i> .
Green-shank S.	<i>S. gallinula</i> .
Red-shank S.	<i>S. collaris</i> .
Spott-1 S.	<i>S. tobiana</i> .
White Red-shank S.	<i>S. collaris</i> .
Hudsonian Godwit	<i>S. hudsonicus</i> .
American G.	<i>S. fallax</i> .
Red-breasted Snipe	<i>S. nivalis</i> .
Semipalmated S.	<i>S. semipalmata</i> .
English S.	<i>S. gallinula</i> .
Tell-tale S.	<i>S. vociferans</i> .
Yellow-shank S.	<i>S. flavipes</i> .
Woodcock	<i>S. minor</i> .
GENUS <i>TRINGA</i> .	
Striated Sandpiper	<i>Tringa striata</i> .
Newfoundland S.	<i>T. nova-terrac</i> .
Green S.	<i>T. ochropus</i> .
Knot S.	<i>T. canutus</i> .
Gray S.	<i>T. squatarola</i> .
Aberdeen S.	<i>T. islandicus</i> .
Ash-coloured S.	<i>T. cinerea</i> .
Boreal S.	<i>T. borealis</i> .

Bairdian S.	<i>T. bairdiana</i> .
Variiegated S.	<i>T. macularia</i> .
Little S.	<i>T. pusilla</i> .
Red-breasted S.	<i>T. erythra</i> .
Ringed S.	<i>T. hiaticula</i> .
Semipalmated S.	<i>T. semipalmata</i> .
Soft-ray S.	<i>T. solitaria</i> .
Spotted S.	<i>T. macularia</i> .
Pigeon	<i>T. cinerea</i> .
Turtl-tong	<i>T. interpres</i> .

GENUS *CHARADEIUS*.

Black-bellied Plover	<i>Charadrius apicicollis</i> .
Golden P.	<i>C. pilularis</i> .
Razzel P.	<i>C. hiaticula</i> .
Wilson's P.	<i>C. wilsoni</i> .
Sunderling	<i>C. colubris</i> .
Killdeer	<i>C. urophasianus</i> .

GENUS *HEMATOPUS*.

Pied Oyster-catcher or Scaupie	<i>Hematopus ostralegus</i> .
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GENUS *RALLUS*.

Spotted Rail	<i>Rallus porzana</i> .
Little R.	<i>R. maculatus</i> .
Clapper R.	<i>R. corympus</i> .
Common R. or Sora	<i>R. corympus</i> .
Red-billed R.	<i>R. virginianus</i> .
Cayenne R.	<i>R. carympus</i> .

GENUS *PARRA*.

Louisiana Jacana	<i>Parra ludoviciana</i> .
Chestnut J.	<i>P. sibilans</i> .
Galfrin J.	<i>P. cyanoptera</i> .
Black J.	<i>P. minor</i> .

GENUS *GALLINULA*.

Purple Gallinule	<i>Gallinula porphyrio</i> .
Moor-hen	<i>G. coloratus</i> .
Crowing Gallinule	<i>G. porphyrio</i> .
Fayoum G.	<i>G. flavo-oculata</i> .
Carthagen G.	<i>G. cyanoptera</i> .
Black-bellied G.	<i>G. cyanoptera</i> .
Yellow-breasted G.	<i>G. occid. leucocoma</i> .

ORDER *PINNATIPEDES*.GENUS *PHALAROPUS*.

Gray Phalarope	<i>Phalaropus lobatus</i> .
Plain P.	<i>P. phalaropus</i> .
Brown P.	<i>P. phalaropus</i> .
Red P.	<i>P. hyperborea</i> .

GENUS *PULICA*.

Common Coot	<i>Fulica atra</i> .
Mexican C.	<i>F. mexicana</i> .

GENUS *POLICEPS*.

Horned Grebe	<i>Podiceps cornutus</i> .
Little G.	<i>P. podiceps</i> .
Louisiana G.	<i>P. lobatus</i> .
Dusky G.	<i>P. obscurus</i> .
Pied-bill G.	<i>P. podiceps</i> .

ORDER *PALMIPEDES*.GENUS *RECURVIROSTRA*.

American Avocet	<i>Recurvirostra americana</i> .
White A.	<i>R. alba</i> .
Long-legged A. or Tilt	<i>R. himantopus</i> .

GENUS *PHENICOPTERUS*.

Red Flamingo	<i>Phenicopterus ruber</i> .
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Wandering Albatross
Coccyzus
Yellow-nosed A.

Laughing Gull
Crested A.
Little G.
Pigeon A.
Puffin
Bonaparte G.
Bonaparte G.

Marsh Gull
Black G.
Fulmar G.

Striped Plover
Red-throated D.
Black-throated
Northern D. or
Speckled D.
Imber D.

Black Skimmer
Shearwater

Sooty Tern
Cayenne T.
Surinam T.
Simple T.
Great T.
Lesser T.
Brown T.
Black T.
Marsh T.
Short-tailed T.
Banded-tail T.

Kittiwake Gull
Common G.
Black-backed
Herring G.
Black-headed
Arctic G.
Skua G.
Esquimaux G.
Ivory G.
Toothed-bill

Dusky Petrel
Stormy P.
Forked-tailed
Black-foot P.
Fulmar P.
Gull P.
Brazilian P.
Glacial P.
Shearwater P.

Crested Merg

*This is an above blue and crossed with black. Weight 11 lbs. Length 11 inches. Tails of blunt tail and lower part.

†See histor.

GENUS *DIOMEDEA*.

- Wandering Albatross - *Diomedea exulans*.
 Chocolate A. - *D. spatula*.
 Yellow-nosed A. - *D. chlorocephala*.

GENUS *ALCA*.

- Labrador Auk - *Alca leucorhina*.
 Crested A. - *A. cristatella*.
 LITTLE - *A. alle.*
 Puffin A. - *A. pomarina*.
 Puffin - *A. arctica*.
 Razor-bill - *A. arctica*.
 Penguin or Great Auk - *A. impennis*.

GENUS *ULIA*.

- Murlet Gull-bill - *Uria lomvia*.
 Black G. - *U. lomvia*.
 Foolish G. - *U. lomvia*.

GENUS *COLYMBA*.

- Striped Diver - *Colymba striatus*.
 Red-throated D. - *C. septentrionalis*.
 Black-throated D. - *C. arctica*.
 Northern D. or Loon - *C. obscura*.
 Spangled D. - *C. arctica*.
 Immer D. - *C. caurina*.

GENUS *REYNOLDS*.

- Black Skimmer or
 Shearwater - *Reynoldsia nigra*.

GENUS *STERNA*.

- Sooty Tern - *Sterna fuscicollis*.
 Cayenne T. - *S. castroensis*.
 Surinam T. - *S. surinamensis*.
 Simple T. - *S. simplex*.
 Great T. - *S. bergii*.
 Lesser T. - *S. bergii*.
 Brown T. - *S. bergii*.
 Black T. - *S. bergii*.
 Marsh T. - *S. bergii*.
 Short-tailed T. - *S. bergii*.
 *Banded-tail T. - *S. bergii*.

GENUS *LARUS*.

- Kittiwake Gull - *Larus delawarensis*.
 Common G. - *L. californicus*.
 Black-bellied G. - *L. californicus*.
 Herring G. - *L. californicus*.
 Black-headed G. - *L. californicus*.
 Arctic G. - *L. californicus*.
 Skua G. - *L. californicus*.
 Esquimaux G. - *L. californicus*.
 Ivory G. - *L. californicus*.
 Toothed-bill G. - *L. californicus*.

GENUS *PROCELLARIA*.

- Dusk Petrel - *Procellaria obscura*.
 Stormy P. - *P. obscura*.
 Forked-tailed P. - *P. obscura*.
 Black-tail P. - *P. obscura*.
 Fulmar P. - *P. obscura*.
 Giant P. - *P. obscura*.
 Brazilian P. - *P. obscura*.
 Glacial P. - *P. obscura*.
 Shearwater P. - *P. obscura*.

GENUS *MERGUS*.

- Crested Merganser - *Mergus cucullatus*.

- Red-breasted M. - *M. serrator*.
 Brown M. - *M. serrator*.
 Blue M. - *M. serrator*.
 White Nun or Snow - *M. serrator*.
 Gosander or Shieldrake - *M. serrator*.

GENUS *ANAS*.

- Wild Swan - *Anas cygnus*.
 Whistling S. - *A. platyrhynchos*.
 Snow Goose - *A. boschas*.
 Gray G. - *A. boschas*.
 Canada G. - *A. boschas*.
 Brant - *A. boschas*.
 Gray-headed Duck - *A. boschas*.
 Velvet D. - *A. boschas*.
 Scaup D. - *A. boschas*.
 Buff-bill or Scaup D. - *A. boschas*.
 Elder D. - *A. boschas*.
 Muscovy D. - *A. boschas*.
 Georgia D. - *A. boschas*.
 Blather D. - *A. boschas*.
 Buff-headed D. - *A. boschas*.
 Western D. - *A. boschas*.
 Surf D. - *A. boschas*.
 Mexican D. - *A. boschas*.
 Spring-bill D. - *A. boschas*.
 Long-tailed D. - *A. boschas*.
 Red-headed D. - *A. boschas*.
 Canvas-back D. - *A. boschas*.
 Harlequin P. - *A. boschas*.
 Brown D. - *A. boschas*.
 Spanish D. - *A. boschas*.
 Red-billed D. - *A. boschas*.
 Pied D. - *A. boschas*.
 Summer D. - *A. boschas*.
 Black-billed Whistling D. - *A. boschas*.
 Dusky or Common - *A. boschas*.
 Black D. - *A. boschas*.
 Tufted D. - *A. boschas*.
 Indigo D. - *A. boschas*.
 Shoveller - *A. boschas*.
 Gadwall - *A. boschas*.
 Slight-tailed Teal - *A. boschas*.
 Green-winged T. - *A. boschas*.
 Blue-winged T. - *A. boschas*.
 Golden-eye - *A. boschas*.
 Wilson or Red-pate - *A. boschas*.
 Mexican Pochard - *A. boschas*.
 Mallard - *A. boschas*.

GENUS *PELLICANUS*.

- Brown Pelican - *Pelicanus fusca*.
 Great White P. - *P. carolinensis*.
 Carolina P. - *P. carolinensis*.
 Rough-billed P. - *P. carolinensis*.
 Frigate P. - *P. carolinensis*.
 Saw-billed P. - *P. carolinensis*.
 Gannet - *P. carolinensis*.
 Lesser G. - *P. carolinensis*.
 Brown Booby - *P. carolinensis*.
 Lesser G. - *P. carolinensis*.
 Carrivent - *P. carolinensis*.
 Slung - *P. carolinensis*.

GENUS *PHALOTON*.

- Common Tropic-bird - *Phaloton aethereus*.

GENUS *PLOTUS*.

- Black-bellied Darter - *Plotus melanogaster*.
 Surinam D. - *P. surinamensis*.

*This is a nondescript. Its length is twelve inches, extent thirty-one; the lower parts pure white; above blue ash; below the auriculars there is a patch of dark slate; the tail is white, short, almost even, and crossed with a dark brown band; a line of brown passes from the shoulder of the wing to the tertials. Weight full five ounces avoirdupois.

†This is a beautiful Gull, and was discovered on the Delaware below Philadelphia. It is a nondescript. Length nineteen and a half inches, extent three feet ten inches, the upper mandible has four indentations of blunt teeth, the lower three, corners of the mouth and the eyelids bright vermilion; head, neck, tail and lower parts pure white; wings, back and scapulars blue ash. Weight nineteen ounces avoirdupois.

See history of Lewis and Clark's expedition, vol. II p. 192.

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Our limits will only allow us to give a succinct account of some of the most interesting birds of the United States, for which we are chiefly indebted to Mr. Wilson's Work. It is necessary to premise that he follows, with some exceptions, the arrangement of Latham.

Turkey Vulture or Turkey-buzzard. This bird is found throughout the United States, but is most numerous in the southern section of the Union. The Turkey-buzzards are gregarious, peaceable and harmless; never offering any violence to a living animal, or, like the plunderers of the *Falco* tribe, depriving the husbandman of his stock. Their food is carrion, of which they eat so immoderately, that frequently they are incapable of flying, until they disgorge the contents of their stomach. The female lays from two to four eggs in a hollow tree, stump, or log; and brings forth her young in May. The young are extremely filthy.

Black Vulture or Carrion-crow. Mr. William Bartram was the first naturalist who indicated this bird as a distinct species from the preceding; notwithstanding which, all the Ornithologists of Europe have confounded it with the Turkey-buzzard. In the Atlantic States, the Black Vulture is seldom found to the northward of Newbern, North Carolina; but inhabits the whole continent, to the southward, as far as Cape Horn. In the towns and villages of the Southern States, particularly Charleston, Georgetown, and Savannah, they may be seen sauntering about the streets, or sunning themselves on the roofs of the houses, and fences; and may be said to be completely domesticated: being quite as familiar as the domestic poultry. They, as well as the Turkey-buzzards, are protected by a law or usage; and have a respect paid them as scavengers, whose labours are subservient to the public good. They devour animal food of all kinds, whether putrid or otherwise. They are highly useful birds. In those parts of the continent where the Alligators abound, they attend these dreadful amphibious animals, when they deposit their eggs in the sand, and devour them the first opportunity. The destruction of these birds ought to be prohibited under severe penalties.

White-headed or Bald Eagle. This distinguished bird, as he is the most beautiful of his tribe in this part of the world, and the adopted emblem of our country; is entitled to particular notice. He has been long known to naturalists, being common to both continents, and occasionally met with from a very high northern latitude, to the borders of the torrid zone, but chiefly in the vicinity of the sea, and along the shores and cliffs of our lakes and large rivers. Formed by nature for braving the severest cold; feeding equally on the produce of the sea, and of the land; possessing powers of flight capable of outstripping even the tempests themselves; unawed by anything but man; and from the ethereal heights to which he soars, looking abroad, at one glance, on an immeasurable expanse of forest, fields, lakes and ocean, deep below him, he appears indifferent to the little localities of change of seasons: as in a few minutes he can pass from summer to winter, from the lower to the higher regions of the atmosphere, the abode of eternal cold, and thence descend at will to the torrid, or the arctic regions of the earth. He is therefore found at all seasons in the countries he inhabits, but prefers such places as have been mentioned above, from the great partiality which he has for fish.

In procuring these he displays, in a very singular manner, the genius and energy of his character, which is fierce, contemplative, da-

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ring and tyrannical; attributes not exerted but on particular occasions; but when put forth, overpowering all opposition. Elevated on the high dead limb of some gigantic tree, that commands a wide view of the neighbouring shore and ocean, he seems calmly to contemplate the motions of the various feathered tribes that pursue their busy avocations below:—the snow white Gulls slowly winnowing the air; the busy *Tringa* coursing along the sands; trains of Ducks streaming over the surface; silent and watchful Cranes, intent and wading; clamorous Crows, and all the winged multitudes that subsist by the bounty of this vast liquid magazine of nature. High over all these hovers one, whose action instantly arrests all his attention. By its wide curvature of wing, and sudden suspension in air, he knows it to be the *Fish Hawk*, settling over some devoted victim of the deep. His eye kindles at the sight, and balancing himself, with half opened wings, on the branch, he watches the result. Down, rapid as an arrow from heaven, descends the distant object of his attention, the roar of its wings reaching the ear as it disappears in the deep, making the surges foam around. At this moment the eager looks of the Eagle are all avlour; and levelling his neck for flight, he sees the Fish Hawk once more emerge, struggling with its prey, and mounting in the air with screams of exultation. These are the signal for our hero, who, launching into the air, instantly gives chase, soon gains on the Fish Hawk, each exerts his utmost to mount above the other, displaying in these rencounters the most elegant and sublime aerial evolutions. The unnumbered Eagle rapidly advances, and is just on the point of reaching his opponent, when, with a sudden scream, probably of despair and honest execration, the latter drops his fish; the Eagle poising himself for a moment, as if to take a more certain aim, descends like a whirlwind, snatches it in his grasp ere it reaches the water, and bears his ill-gotten booty silently away to the woods.*

The Bald Eagle frequently destroys young lambs and pigs; and will sometimes attack old sickly sheep, aiming furiously at their eyes. Ducks, Geese, Gulls and other sea fowl, are also seized with avidity. The most putrid carrion, when nothing better can be had, is acceptable. The nest of this species is generally fixed on a very large and lofty tree, often in a swamp or morass and difficult to be ascended. It is large, being added to and repaired every season, until it becomes a black prominent mass, observable at a considerable distance. It is formed of large sticks, sods, earthy rubbish, hay, moss &c. The eggs are often two to three in number, of a whitish colour; the young are hatched early in March. It has at length been ascertained that the Sea or Gray Eagle is the present species, in a different stage of colour.

Ring-tail Eagle. This noble bird, in strength, spirit and activity, ranks among the first of his tribe. It is found, though sparingly dispersed, over the whole temperate and arctic regions, particularly the latter; breeding on high precipitous rocks; always preferring a mountainous country. The tail feathers of this bird are highly valued by the various tribes of American Indians, for ornamenting their calumets or pipes of peace. Hence this bird has been called by some writers the Calumet Eagle.

* If Mr. Wilson had never written a line except the above, he would have deserved the highest eulogy for a description which is perhaps unrivalled by the whole tribe of naturalists, from the age of Pliny to the present day. The composition is not only excellent, but the accuracy of the detail transcends all praise.

Fish Hawk or *Osprey*. This formidable, vigorous-winged, and well known bird, subsists altogether on the finny tribes that swarm in our bays, creeks and rivers; procuring his prey by his own active skill and industry; and seeming no farther dependent on the land than as a mere resting place, or, in the usual season, a spot of deposit for his nest, eggs and young. The Fish Hawk is migratory; arriving on the coasts of Newyork and Newjersey about the twenty-first of March, and retiring to the south about the twenty-second of September. Its nest is usually built on the top of a dead or decaying tree, sometimes not more than fifteen, often upwards of fifty feet, from the ground. About the first of May the female begins to lay her eggs, which are commonly three in number, sometimes only two, and rarely four. This species is considered the most numerous of its genus within the United States. There is one singular trait in the character of this bird, which is worthy of record. The Purple Grakles or Crow Blackbirds, are permitted by the Fish Hawk to build their nests among the interstices of the sticks of which his own is constructed. Several pairs of Grakles taking up their abode there, like humble vassals around the castle of their chief, laying, hatching their young, and living together in mutual harmony. We have seen no less than five of these nests so situated, and one or two on an adjoining tree. The Crows and Jays devour the eggs, and sometimes the young, of the Grakles; and all the Hawks, except the generous and noble Fish Hawk, murder, at every opportunity, the birds themselves. Hence these birds, during the important periods of incubation and nutrition, have been directed to seek that protection which they can find nowhere else; and under the guardianship of the Fish Hawk they are safe from every enemy, except the tyrant Man. How strikingly does this exemplify the superintending care of the God of Nature!

Marsh Hawk. This Hawk, and several others, particularly the White-breasted Hawk, *F. Lericianus*, are common in the winter season, among our meadows and marshes; where they render an essential service, by destroying multitudes of the Mice, which are so injurious to the meadows and their embankments. Our Graziers and Farmers would do well to protect these birds; for notwithstanding they now and then bear away a vagrant chicken, yet the good they do more than counterbalances their bad deeds.

Great-poled Hawk. This is the celebrated Peregrine Falcon, formerly so greatly esteemed for its use in Falconry. It is called along our coast the Duck Hawk, from its skill in knocking down the Ducks when on the wing. It flies with astonishing rapidity.

Snow Owl. This great northern hunter inhabits the coldest and most dreary regions of the northern hemisphere on both continents. He is often seen in the United States during the severity of winter. The usual food of this species is Hares, Grouse, Rabbits, Ducks, Mice, and even Carrion. Unlike most of his tribe he hunts by day as well as by twilight. The female measures two feet in length, and five feet two inches in extent.

Great-horned Owl. This noted and formidable bird is found in almost every quarter of the United States. His favourite residence, however, is in the dark solitudes of deep swamps covered with a growth of gigantic timber; and here, as soon as evening draws on, and mankind retires to rest, he sends forth such sounds as seem scarcely to belong to this world, startling the solitary pilgrim as he slum-

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Red Owl by its com choly, quiv the latter roost during and someti martin box sons. The pure white

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bers by his forest fire, "Making night hideous." He preys on Rabbits, Squirrels, Rats, Mice, Partridges, Small Birds and Chickens. The nest of this species is generally placed in the fork of a tall tree, sometimes in the hollow of a tree. Eggs four in number of a pure white. The Great-horned Owl is not migratory.

Red Owl. This is another of our nocturnal wanderers, well known by its common name, the *Little Screech Owl*; and noted for its melancholy, quivering kind of wailing in the evenings particularly towards the latter part of summer and autumn, near the farmhouse. They roost during the day in the thick evergreens, such as the Pine, Cedar, &c., and sometimes will take up their abode in a vacant pigeon house, or martin box, and occupy the same situation for several successive seasons. They construct their nest in the hollow of a tree, and lay four, pure white eggs.

Great American Shrike or Butcher-bird. The character of this bird is entitled to no common degree of respect. His activity is visible in all his motions; his courage and intrepidity beyond every other bird of his size, the King-bird excepted; and in affection for his young he is surpassed by no other. He attacks the largest Hawk or Eagle with a resolution truly astonishing; so that all of them respect him; and on every occasion decline the contest. As the snows of winter approach, he descends from the mountainous forests, and from the regions of the north, to the more cultivated parts of the country, hovering about the hedge-rows, orchards and meadows, and disappears again early in April. It breeds in the interior; the female lays six eggs, and produces her young in June. This species preys occasionally on small birds, which he sticks on thorns that he may tear them to pieces with greater ease; but his common feed, in the summer, appears to be the grasshoppers. The habit of the Shrike, of seizing and impaling grasshoppers and other insects on thorns, has given rise to an opinion, that he places their carcasses there by way of baits, to allure small birds to them, while he himself lies in ambush to surprise and destroy them. This is a mistake.

Carolina Parrot or Parakeet. Of one hundred and sixty-eight kinds of Parrots enumerated by European writers as inhabiting the various regions of the globe, this is the only species found native within the territory of the United States. They are not often found to the eastward of the Allegheny ridge; but are numerous on the Great and Little Miami, and at Big-bone Lick, thirty miles above the mouth of Kentucky river. In the fall, when their favourite cockle burrs are ripe, they swarm along the high grounds of the Mississippi, above New Orleans, for a great extent. They fly very much like the Wild Pigeon, in close compact bodies, and with great rapidity, making a loud and outrageous screaming, not unlike that of the Red-headed Woodpecker. Their flight is sometimes in a direct line; but most usually circuitous, making a great variety of elegant and easy serpentine meanders, as if for pleasure. They are particularly attached to the large sycamores, in the hollow of the trunks and branches of which they generally roost, thirty or forty, and sometimes more, entering at the same hole. Here they cling close to the sides of the tree, holding fast by the claws, and also by the bills. They appear to be fond of sleep, and often retire to their holes during the day, probably to take their regular *siesta*. They regularly visit the salines or salt-licks, to drink the salt water, of which they, as well as the Wild Pigeons, are remarkably fond. The food of this species is ripe fruits,

the seeds of the Cypress tree and hackberry, beech nuts and cockle burrs. What is called by Europeans the Illinois Parrot, *P. portuax*, is the young bird of this species, in its imperfect colours.

Raven. Found all over the habitable parts of America. Is more numerous in the interior, than on the coast. Along the Lakes they abound; and were seen in immense multitudes by Lewis and Clark's party on their whole route across the continent.

Common Crow. This is perhaps the most generally known, and least beloved, of all our land birds: having neither melody of song, nor beauty of plumage, nor excellence of flesh, nor civility of manners to recommend him; on the contrary, he is branded as a thief and a plunderer; a kind of black-coated vagabond, who hovers over the fields of the industrious, fattening on their labours; and by his voracity often blasting their expectations. Hated as he is by the farmer, watched and persecuted by almost every bearer of a gun, who all triumph in his destruction, had not heaven bestowed on him intelligence and sagacity far beyond common, there is reason to believe that the whole tribe, in these parts at least, would long ago have ceased to exist. The Crow is a constant attendant on agriculture, and a general inhabitant of the cultivated parts of North America.

It is in the month of May, and until the middle of June, that this species is most destructive to the corn-fields, digging up the newly planted grains of Maize, pulling up by the roots those that have begun to vegetate, and thus frequently obliging the farmer to replant, or lose the benefit of the soil; and this sometimes twice, and even three times, occasioning a considerable additional expense and inequality of harvest. No mercy is now shewn him. The myriads of worms, moles, mice, caterpillars, grubs and beetles which he has destroyed, are altogether overlooked on these occasions. Detected in robbing the hens' nests, pulling up the corn, and killing the young chickens, he is considered as an outlaw, and sentenced to destruction. But the great difficulty is how to put this sentence in execution. His watchfulness, and jealous sagacity in distinguishing a person with a gun, are notorious to every one.

Towards the close of summer, the parent Crows with their new families, forsaking their solitary lodgings, collect together, as if by previous agreement, when evening approaches. About an hour before sunset they are first observed, flying somewhat in Indian file, in one direction, at a short height above the tops of the trees, silent and steady, keeping the general curvature of the ground, continuing to pass sometimes till after sunset, so that the whole line of march would extend for many miles. The most noted Crow roost with which we are acquainted, is near Newcastle, on an island in the river Delaware, known by the name of the *Pea-patch*. This is a low flat alluvial spot of a few acres, elevated but a little above high water mark, and covered with a thick growth of reeds. This appears to be the grand rendezvous or headquarters, of the greater part of the Crows within forty or fifty miles of the spot. It is entirely destitute of trees, the Crows alighting and nesting among the reeds, which by these means are broken down and matted together. The noise created by these multitudes, both in their evening assembly, and re-ascension in the morning; and the depredations they commit in the immediate neighbourhood of this great resort, are almost incredible. Whole fields of corn are sometimes laid waste by thousands alighting on it at once, with appetites whetted by the fast of the preceding night; and the

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utmost vigilance is unavailing to prevent, at least, a partial destruction of this their favourite grain. Like the stragglers of an immense, undisciplined and rapacious army, they spread themselves over the fields, to plunder and destroy wherever they alight. It is here that the character of the Crow is universally execrated; and to say to the man who has lost his crop of corn by these birds, that *Crows are exceedingly useful for destroying vermin*, would be as consolatory as to tell him who has just lost his house and furniture by the flames, that *fires are excellent for destroying bugs*. Besides grain, insects and carrion the Crows feed on frogs, tadpoles, moles, mice, birds' eggs and their young, small fish, lizards and shell fish; with the last they frequently mount to a great height, dropping them on the rocks below, and descending after them to pick up the contents. The same habit is observable in the Raven, some species of Gulls and the Sea-side or Fish Crow.

Fish Crow. This is another roving inhabitant of our coasts, ponds and river shores; pretty numerous in some districts; though always confounded with the foregoing, until Mr. Wilson introduced it as a distinct species. Though having a general resemblance to his brother, yet he appears not to possess his bad qualities. His food is chiefly fish, and the animal matter that is found along the shores. The voice of this species is very different from that of the Common Crow, being more hoarse and guttural, and uttered as if something struck in their throat. They are smaller than the Common Crow, but of the same colour.

Magpie. This bird is much better known in Europe than in this country, where it has not been long discovered; although it is now found to inhabit a wide extent of territory, and in great numbers. The Magpie unites in its character courage and cunning, turbulence and rapacity. Not inelegantly formed, and distinguished by gray as well as splendid plumage, he has long been noted in those countries where he commonly resides; and his habits and manners are there familiarly known. He is particularly pernicious to plantations of young oaks, tearing up the acorns; and also to birds, destroying great numbers of their eggs and young, even young chickens, partridges, grouse and pheasants. It is perhaps on this last account that the whole vengeance of the game laws has lately been let loose upon him, in some parts of Britain; as appears by accounts from that quarter, where premiums, it is said, are offered for his head, as an arch poacher; and penalties inflicted on all those who permit him to breed on their premises.

Lewis and Clark's party first met with the Magpie near the great bend of the Missouri, and found that the number of these birds increased as they advanced. Pike observed them in immense numbers, and was not a little incommoded by their pilfering and rapacity. "Our horses," says he, "were obliged to scrape the snow away to obtain their miserable pittance; and, to increase their misfortunes, the poor animals were attacked by the magpies, who, attracted by the scent of their sore backs, alighted on them, and in defiance of their wincing and kicking, picked many places quite raw. The difficulty of procuring food rendered these birds so bold as to light on our men's arms, and eat meat out of their hands."* This species build their nests in trees, and they are composed of small sticks, leaves, grass

*Pike's Journal, p. 170.

&c. lined with wool, hair and feathers. The eggs are usually five, of a bluish brown, freckled with reddish brown. Captain Lewis observes that the-nests of the Bald Eagles, where the Magpies abound, are always accompanied by those of two or three of the latter, who are their inseparable attendants.*

The *Baltimore-bird*, as Catesby informs us, has been named from its colours, which are black and orange, being those of the arms or livery of Lord Baltimore, formerly proprietary of Maryland. From the singularity of its colours, and the construction of its nest, it is generally known, and, as usual, honoured with a variety of names, such as Hang-nest, Hanging-bird, Golden Robin, Fire-bird, &c. It is a beautiful bird, and adds much interest to the scenery of the American Farm.

The *Purple Grackle* or Crow Blackbird is well known to every farmer of the northern and middle states. About the twentieth of March the Grackles visit Pennsylvania from the south, fly in loose flocks, frequent swamps and meadows, and follow in the furrows after the plough; their food at this season consisting of worms, grubs and caterpillars, of which they destroy prodigious numbers, as if to recompense the husbandman before hand for the havoc which they intend to make among his crops of Indian corn. Every industrious farmer complains of the mischief committed on his corn by the Blackbirds; though, were the same means used, as with Pigeons, to take them in clap nets, multitudes of them might thus be destroyed; and the products of them in market, in some measure, indemnify him for their depredations. As some consolation, however, to the cultivator, I can assure him, that were I placed in his situation, I should hesitate whether to consider these birds most as friends or enemies, as they are particularly destructive to almost all the noxious worms, grubs and caterpillars that infest his fields, which, were they allowed to multiply unmolested, would soon consume nine-tenths of all the production of his labour, and desolate the country with the miseries of famine. Is not this a striking proof that the Deity hath created nothing in vain; and that it is the duty of man to avail himself of their usefulness, and guard against their bad effects as securely as possible, without indulging in the barbarous, and even impious wish for their utter extermination?

Ivory-billed Woodpecker. This majestic and formidable species, in strength and magnitude stands at the head of the whole class of Woodpeckers hitherto discovered. He may be called the king or chief of his tribe; and nature seems to have designed him a distinguished characteristic in the superb carmine crest, and bill of polished ivory with which she has ornamented him. His eye is brilliant and daring; and his whole frame so admirably adapted to his mode of life, and method of procuring subsistence, as to impress on the mind of the examiner the most reverential ideas of the Creator. His manners have also a dignity in them superior to the common herd of Woodpeckers. Trees, shrubbery, orchards, rails, fence posts and old prostrate logs, are alike interesting to these, in their humble and indefatigable search for prey; but the royal hunter now before us, scorns the humility of such situations, and seeks the most towering trees of the forest; seeming particularly attached to those prodigious cypress swamps, whose crowded giant sons stretch their bare and blasted or

* History of the Expedition, vol. i, p. 198.

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moss-hung arms midway to the skies. In these almost inaccessible recesses, amid ruinous piles of impending timber, his trumpet-like note and loud strokes resound through the dreary wilds, of which he seems the sole lord and inhabitant. Wherever he frequents he leaves numerous monuments of his industry behind him. We there see enormous pine trees with cart loads of bark lying around their roots, and chips of the trunk itself in such quantities as to suggest the idea that half a dozen of axe-men had been at work there for the whole morning. The body of the tree is also disfigured with such numerous and so large excavations, that one can hardly conceive it possible for the whole to be the work of a Woodpecker. With such strength, and an apparatus so powerful, what havoc might he not commit, if numerous, on the most useful of our forest trees! And yet with all these appearances, and much of vulgar prejudice against him, it may be fairly questioned whether he is at all injurious; or, at least, whether his exertions do not contribute most powerfully to the protection of our timber. Examine closely the tree where he has been at work, and you will soon perceive, that it is neither from motives of mischief nor amusement that he slices off the bark, or digs his way into the trunk. The sound and healthy tree is not the least object of his attention: the diseased, infested with insects, and hastening to putrefaction, are his favourites; there the deadly crawling enemy have formed a lodgement, between the bark and tender wood, to drink up the very vital juice of the tree. It is the ravages of these vermin which the intelligent proprietor of the forest deploras as the sole perpetrators of the destruction of his timber. Would it be believed that the larva of an insect or fly, no larger than a grain of rice, should silently, and in one season, destroy some thousand acres of pine trees, many of them from two to three feet in diameter, and a hundred and fifty feet high! Yet whoever passes along the highroad from Georgetown to Charleston, in South Carolina, about twenty miles from the former place, can have striking and melancholy proofs of this fact. In some places the whole woods, as far as you can see around you, are dead, stripped of the bark, their wintry-looking arms and bare trunks bleaching in the sun, and tumbling in ruins before every blast, presenting a frightful picture of desolation. And yet ignorance and prejudice stubbornly persist in directing their indignation against the bird now before us, the constant and mortal enemy of these very vermin, as if the hand that probed the wound to extract its cause, should be equally detested with that which inflicted it. Until some effectual preventive, or more complete mode of destruction can be devised against these insects and their larva, I would humbly suggest the propriety of protecting, and receiving with proper feelings of gratitude, the services of this and the whole tribe of Woodpeckers, letting the odium of guilt fall to its proper owners.

The Ivory-billed Woodpecker is not migratory; he is seldom found to the northward of Virginia; the Carolinas are his favourite states.

Downy Woodpecker. This is the smallest of our Woodpeckers, and is generally known by the appellation of the *Sap-Sucker*. The principal characteristics of this little bird are diligence, familiarity, perseverance, and a strength and energy in the head and muscles of the neck, which are truly astonishing. A serious charge has been brought against him by the naturalists of Europe, viz. that he is almost constantly boring and digging into apple trees; and that he is the most destructive to the orchards of his whole genus. The first

part of this charge I shall not pretend to deny; how far the other is founded in truth will appear in the sequel. Of all our Woodpeckers none rids the apple trees of so many vermin as this, digging off the moss which the negligence of the proprietor has suffered to accumulate, and probing every crevice. In fact the orchard is his favourite resort in all seasons; and his industry is unequalled, and almost incessant, which is more than can be said of any other species we have. In the autumn he is particularly fond of boring the apple trees for insects, digging a circular hole through the bark just sufficient to admit his bill, after that second, third, &c. in pretty regular horizontal circles around the the body of the tree: these parallel circles of holes are often not more than an inch or an inch and a half apart and sometimes so close together, that I have covered eight or ten of them at once with a dollar. From nearly the surface of the ground up to the first fork, and sometimes far beyond it, the whole bark of many apple trees are perforated in this manner, so as to appear as if made by successive discharges of buck-shot; and our little Woodpecker is the principal perpetrator of this supposed mischief. I say *supposed*, for so far from these perforations of the bark being ruinous, they are not only harmless, but I have good reason to believe they are really beneficial to the health and fertility of the tree. In more than fifty orchards which I have myself carefully examined, those trees which were marked by the Woodpecker (for some trees they never touch, perhaps because not penetrated by insects) were uniformly the most thriving, and seemingly the most productive: many of these were upwards of sixty years old, their trunks completely covered with holes, while the branches were broad, luxuriant, and loaded with fruit. Of decayed trees more than three fourths were untouched by the Woodpecker. Several intelligent farmers, with whom I have conversed, candidly acknowledged the truth of these observations, and with justice look upon these birds as beneficial: but the most common opinion is that they bore the trees to suck the sap, and so destroy its vegetation; though pine and other resinous trees, on the juices of which it is not pretended they feed, are often found equally perforated. Were the *sap* of the tree their object, the saccharine juice of the birch, the sugar maple, and several others, would be much more inviting, because more sweet and nourishing than that of either the pear or apple tree; but I have not observed one mark on the former for ten thousand that may be seen on the latter; besides the early part of spring is the season when the sap flows most abundantly; whereas it is only during the months of September, October and November, that Woodpeckers are seen so indefatigably engaged in orchards, probing every crack and crevice, boring through the bark, and what is worth remarking, chiefly on the south and south west sides of the tree, for the eggs and larvæ deposited there by the countless swarms of summer insects. These if suffered to remain, would prey upon the very vitals, if I may so express it, of the tree, and in the succeeding summer give birth to myriads more of their race, equally destructive.

Here then is a whole species, I may say genus, of birds, which Providence seems to have formed for the protection of our fruit and forest trees from the ravages of vermin; which every day destroy millions of these noxious insects that would otherwise blast the hopes of the husbandman; and which even promote the fertility of the tree; and in return, are prescribed by those who ought to have been their pro-

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The *Belted Kingfisher* is a general inhabitant of the banks and shores of all our fresh water rivers from Hudson's Bay to Mexico; and is the only species of its tribe found within the United States. This last circumstance, and its characteristic appearance, make it as universally known here, as its elegant little brother, the common Kingfisher of Europe, is in Britain. Like the love-torn swains of whom poets tell us, he delights in murmuring streams and falling waters; not however merely that they may soothe his ear, but for a gratification somewhat more substantial. Amidst the roar of the cataract, or over the foam of a torrent, he sits perched upon an overhanging bough; glancing his piercing eye in every direction below for his scaly prey, which with a sudden circular plunge he sweeps from their native element, and swallows in an instant. His voice, which is not unlike the sound produced by the twirling of a watchman's rattle, is naturally loud, harsh and sudden; but it is softened by the sound of the brawling streams and cascades about which he generally rambles. Mill-dams are particularly visited by this feathered fisher; and the sound of his pipe is as well known to the miller as the rattling of his own hopper.

Marsh Wren. This little bird is remarkable for its notes, and curiously constructed nest. Standing on the reedy borders of the Schuylkill, or Delaware in the month of June, you hear a low crackling sound, something similar to that produced by air bubbles forcing their way through mud or boggy ground when trod upon: this is the *song* of the Marsh Wren. But as among the human race it is not given to one man to excel in every thing; and yet each, perhaps, has something peculiarly his own; so among birds we find a like distribution of talents and peculiarities. The bird now before us, if deficient and contemptible in singing, excels in the art of *design*, and constructs a nest, which, in durability, warmth and convenience, is scarcely inferior to one, and far superior to many, of its more musical brethren. This is formed outwardly of wet rushes mixed with mud, well inter-twisted, and fashioned into the form of a cocoa nut. A small hole is left two-thirds up, for entrance, the upper edge of which projects like a pent-house over the lower, to prevent the admission of rain. The inside, is lined with fine soft grass, and sometimes feathers; and the outside, when hardened by the sun, resists every kind of weather. This nest is generally suspended among the reeds, above the reach of the highest tides, and is tied so fast in every part to the surrounding reeds, as to bid defiance to the winds and the waves. The eggs are usually six, of a dark fawn colour, and very small. The young leave the nest about the twentieth of June, and they generally have a second brood in the same season. They migrate to the southward in the month of August, and return to Pennsylvania in May.

Humming Bird. Though this interesting and beautiful genus of birds comprehends upwards of seventy species, all of which, with a very few exceptions, are natives of America and its adjacent islands, it is yet singular, that the species now before us, the *Trochilus colubris*, should be the only one of its tribe that ever visits the territory of the United States. According to the observations of Mr. John Abbot of Georgia, this species makes its first appearance at Savannah, from

the south, about the twenty-third of March: two weeks earlier than it does in the county of Burke, sixty miles higher up the country towards the interior; and at least five weeks sooner than it reaches Philadelphia. As it passes on to the northward as far as the interior of Canada, where it is seen in great numbers, the wonder is excited how so feebly constructed and delicate a little creature can make its way over such extensive regions of lakes and forests, among so many enemies, all its superiors in strength and magnitude. But its very minuteness, the rapidity of its flight, which almost eludes the eye, and that admirable instinct, reason, or whatever else it may be called, and daring courage which Heaven has implanted in its bosom, are its guides and protectors. In these we may also perceive the reason, why an all-wise Providence has made this little hero an exception to a rule which prevails almost universally through nature, viz. that the smallest species of a tribe are the most prolific. The Eagle lays two, sometimes three, eggs; the Crow five; the Titmouse seven or eight; the small European Wren fifteen; the subject of this article *two*; and yet the last is abundantly more numerous than the European Wren.

The Ruby-throated Humming-bird is so well known, that a description of its splendid plumage and interesting habits is unnecessary. Its food is the honey of flowers and insects.

The *Red-winged Starling*, or Swamp Black-bird, as it is usually called, is scattered over the whole of the United States. About the twentieth of March, or earlier if the season be open, they begin to enter Pennsylvania in numerous, though small, parties. They continue to frequent the low borders of creeks, swamps and ponds, till about the middle of April, when they separate in pairs to breed. Towards the beginning or middle of August, the young birds begin to fly in flocks; and before the commencement of September these flocks have become numerous and formidable, and the young ears of Indian corn, being then in their soft, succulent, milky state, present a temptation that cannot be resisted. Reinforced by numerous and daily flocks from all parts of the interior, they pour down on the low countries in prodigious multitudes. Here they are seen, like vast clouds, wheeling and driving over the meadows and devoted corn fields, darkening the air with their numbers. It may be well supposed that the loss of the cultivator, by these rapacious visitors, is very great: whole fields have sometimes been laid waste in the space of a few days. Various modes have been put in practice to destroy the Blackbirds; and there are not a few who conceive that the extermination of the whole race would be a public benefit. To such we would observe that the Creator has made nothing in vain; and that however a few may suffer from the depredations of these birds, yet the good offices they confer upon the farmers *in general*, in ridding their fields of myriads of worms, insects and their larvæ, the silent but deadly enemies of all vegetation, whose secret attacks are more to be dreaded than the combined forces of the whole feathered tribes together, ought to awaken different feelings from those which would incite to utter extermination.

Mocking-bird. This celebrated and extraordinary bird, in extent and variety of vocal powers, stands unrivalled by the whole feathered songsters of this or perhaps any other country. His plumage has nothing gaudy or brilliant in it; and, had he nothing else to recommend him, would scarcely entitle him to notice, but his figure is

well proportioned; his tail feathers display a variety of colors, and we may admire almost every part of his structure. The Thrush, to whom he is compared, is a more common bird, and his expression is more pleasing. The morning warblers, I have seen, imitate his note, and by such as are bold and assist in the syllables; uttered with a rapid and finished whir of his active ear.

The natural distinction and variety of the States, particularly the Eastern part of the Empire, is expressed with

Woodcock. This bird inhabits the lowlands of Florida in April, and soon as the dawn of the tall tree pipes his prelude or the beginning of a day. The whole which is intended; the firm and at each challenge vie for softening heat, and the Even in the heard!

well proportioned, and even handsome. The ease, elegance, and rapidity of his movements, the animation of his eye, and the intelligence he displays in listening to, and laying up lessons from, almost every species of the feathered creation within his hearing, are really surprising, and mark the peculiarity of his genius. To these qualities we may add that of a voice full, strong and musical, and capable of almost every modulation, from the clear mellow tones of the Wood Thrush, to the savage scream of the Bald Eagle. In measure and accent he faithfully follows his originals. In force and sweetness of expression, he greatly improves upon them. In his native groves, mounted on the top of a tall bush or half grown tree, in the dawn of the morning, while the woods are already vocal with a multitude of warblers, his admirable song rises pre-eminent over every competitor. The ear can listen to *his* music alone, to which that of all the others seems a mere accompaniment. Neither is this strain altogether imitative. His own native notes, which are easily distinguishable by such as are well acquainted with those of our various song birds, are bold and full, and varied seemingly beyond all limits. They consist of short expressions of two, three, or at the most five or six syllables; generally interspersed with imitations, and all of them uttered with great emphasis and rapidity; and continued, with undiminished ardour, for half an hour, or an hour, at a time. His expanded wings and tail, glistening with white, and the buoyant gaiety of his action, arresting the eye, as his song most irresistably does the ear.

The native notes of the Mocking-bird have considerable resemblance to those of the Brown Thrush or Thrasher, but may easily be distinguished by their greater rapidity, sweetness, energy of expression and variety. Both, however, have in many parts of the United States, particularly in those to the south, obtained the name of *Mocking-bird*. The Brown Thrush, from its inferiority of song, being called the French, and the other the English Mocking-bird. A mode of expression probably originating in the prejudices of our forefathers, with whom every thing *French* was inferior to every thing *English*.

Wood Thrush or Wood Robin. This sweet and solitary songster inhabits the whole of North America from Hudson's Bay to the peninsula of Florida. He arrives in Pennsylvania about the twentieth of April, and returns to the south about the beginning of October. As soon as he arrives he announces his presence in the woods. With the dawn of the succeeding morning, mounting to the top of some tall tree that rises from a low thick-shaded part of the woods, he pipes his few but clear and musical notes in a kind of ecstasy; the prelude or symphony to which strongly resembles the double-tonguing of a German flute, and sometimes the tinkling of a small bell. The whole song consists of five or six parts, the last note of each of which is in such a tone as to leave the conclusion evidently suspended; the finale is finely managed, and with such charming effect as to sooth and tranquilize the mind, and to seem sweeter and mellowed at each successive repetition. Rival songsters, of the same species, challenge each other from different parts of the woods, seeming to vie for softer tones and more exquisite responses. During the burning heat of the day, they are comparatively mute; but in the evening the same melody is renewed, and continued long after sunset. Even in dark wet and gloomy weather, when scarce a single chirp is heard from any other bird, the clear notes of the Wood Thrush

thrill through the dropping woods, from morning to night; and it may truly be said that the sadder the day the sweeter is his song.

The favourite haunts of this species are low, thick-shaded hollows, through which a small brook or rill meanders, overhung with alder bushes that are mantled with vines. He delights to trace the irregular windings of the brook, where by the luxuriance of foliage the sun is completely shut out, or only plays in a few interrupted beams on the glittering surface of the water. Near such a scene he generally builds his nest, in a laurel, or alder bush; the eggs are from four to five, of an uniform light blue, without any spots.

The common *Robin* is one of our earliest songsters; even in March, while the snow yet dapples the fields, and flocks of them are dispersed about, some few will mount a post or stake of the fence, and make short and frequent attempts at their song. This song has some resemblance to the notes of the Thrasher or Ferruginous Thrush; but if deficient in point of execution, he possesses more simplicity, and makes up in zeal what he wants in talent. The notes of the Robin are the prelude to the grand general concert, that is about to burst upon us from the woods, fields and thickets, whitened with blossoms, and breathing fragrance.

The *Cat-bird* is one of our earliest morning songsters, beginning generally before break of day, and hovering from bush to bush with great sprightliness, when there is scarce light sufficient to distinguish him. His notes are more remarkable for singularity than for melody. They consist of short imitations of other birds, and other sounds; but his pipe being rather deficient in clearness and strength of tone, his imitations fail where these are requisite. Upon the whole, though we cannot arrange him with the grand leaders of our vernal choristers, yet he well merits a place among the most agreeable general performers. This bird has derived its name from the circumstance of its common note resembling the mewling of a cat.

Cardinal Grosbeak. This is one of our most common cage birds; and is very generally known, not only in North America, but even in Europe. The opinion which so generally prevails in England, that the music of the groves and woods of America, is far inferior to that of Europe, we cannot admit to be correct. We cannot with fairness draw a comparison between the depth of the forest in America, and the cultivated fields of England; because, it is a well known fact, that singing birds seldom frequent the former, in any country. But let the latter place be compared with the like situations in the United States, and the superiority of song would justly belong to the western continent. The few of our song birds that have visited Europe extort admiration from the best judges. "The notes of the Cardinal Grosbeak," says Latham, are almost equal to those of the Nightingale." Yet these notes, clear and excellent as they are, are far inferior to those of the Wood Robin; and even to those of the Brown Thrush. Our inimitable Mockingbird is also acknowledged, by the Europeans, to be fully equal to the song of the Nightingale "in its whole compass." Yet these are not one tenth of the number of our singing birds. Could these people be transported to the borders of our woods and settlements, in the month of May, about half an hour before sunrise, such a ravishing concert would greet their ears as they have no conception of.

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states. Though small in size, he is not so in consequence; his coming is hailed by the sportsman with pleasure; while the careful planter looks upon him as a devouring scourge, and worse than a plague of locusts. Three good qualities, however, entitle him to our notice, particularly as these three are rarely found in the same individual—his plumage is beautiful, his song highly musical, and his flesh excellent. In the Fall, the Reed-birds resort, in prodigious numbers, to the shores of our large rivers, where grow the *Zizania aquatica*, or Wild oats, on the seeds of which they feed, and soon become excessively fat. They are said to equal the far famed *Ocellana* of Europe.

Cow Bunting. The most remarkable trait in the character of this species, is the unaccountable practice it has of dropping its eggs into the nests of other birds, instead of building and hatching for itself; and thus entirely abandoning its progeny to the care and mercy of strangers. More than two thousand years ago it was well known that the Cuckoo of Europe never built herself a nest, but dropped her eggs in the nests of other birds; but among the thousands of different species that spread over that and other parts of the globe, no other instance of the same uniform habit has been found to exist, until discovered in the bird now before us. The Cow-bird generally lays but one egg in one place, though instances have been known of one nest containing two of her eggs.

The *Scarlet Tanager* is perhaps the most showy foreigner of all those that regularly visit us from the torrid regions of the south. He is dressed in the richest scarlet with wings and tail of a deep black. On or about the first of May he makes his appearance in Pennsylvania. He rarely approaches the habitations of man, unless perhaps to the orchard, where he sometimes builds, or to the cherry trees in search of fruit. The depth of the woods is his favourite abode. This species builds its nest on the horizontal branch of a tree; the eggs are three in number, of a dull blue, spotted with brown or purple.

Among all the birds that inhabit our forests, there is none that strikes the eye of the stranger, or even a native, with so much brilliancy as this. Seen among the green leaves, with the light falling strongly on his plumage, he really appears beautiful. If he has little of melody in his notes to charm us, he has nothing in them to disgust. His manners are modest, easy and inoffensive. He commits no depredations on the property of the husbandman; but rather benefits him by the daily destruction of many noxious insects. He is a striking ornament to our rural scenery, and none of the the meanest of our rural songsters. Such being the true traits of his character, we shall always with pleasure welcome this beautiful, inoffensive stranger, to our orchards, groves and forests.

Pewee Flycatcher. This well-known bird is one of our earliest spring visitants, arriving in Pennsylvania about the first week in March, and continuing with us until October. It begins to build about the twentieth of March, on some projecting part under a bridge—in a cave—in an open well, five or six feet down—under a shed—in a spring house, and such like places; the eggs are five, pure white, with two or three dots of red near the great end. These birds sometimes rear three broods in one season.

The notes of the Pewee, like those of the Blue-bird, are pleasing, not for any melody they contain, but from the ideas of spring and returning verdure, with all the sweets of this lovely season, which are associated with his simple but lively ditty. Towards the middle

of June he becomes nearly silent; and late in the Fall he gives us a few fare-well and melancholy repetitions, that recall past imagery, and make the decayed and withered face of nature appear still more melancholy.

Warbling Flycatcher. This sweet little warbler arrives in Pennsylvania about the middle of April, and inhabits the thick foliage of orchards and high trees; its voice is soft, tender and soothing, and its notes flow in an easy, continued strain that is extremely pleasing. It is often heard among the weeping willows and lumbardly poplars of our cities; is rarely observed in the woods, but seems particularly attached to the society of man.

Blue-bird. The pleasing manners and sociable disposition of this little bird entitle him to particular notice. As one of the first messengers of spring, bringing the charming tidings to our very doors, he bears his own recommendation always along with him, and meets with a hearty welcome from every body. The usual spring and summer song of the Blue-bird is a soft, agreeable and oft-repeated warble, uttered with open, quivering wings, and is extremely pleasing. In his motions and general character he has great resemblance to the Robin Red-breast of Britain; and had he the brown olive of that bird, instead of his own blue, he could scarcely be distinguishable from him. Like him he is known to almost every child; and shews as much confidence in man, by associating with him in summer, as the other by his familiarity in winter. His society is courted by the inhabitants of the city and country, and few neglect to provide for him a snug little dwelling. For this favour he more than repays them by the cheerfulness of his song, and the multitudes of injurious insects which he daily destroys. In the month of October, his song changes to a single plaintive note, as he passes over the many-coloured woods; and its melancholy air recalls to our minds the approaching decay of the face of nature. Even after the trees are stripped of their leaves, he still lingers over his native fields, as if loth to leave them. About the middle or end of November, few or none of these birds are seen; but with every return of mild and open weather, we hear their plaintive note amidst the fields, or in the air, seeming to deplore the devastations of Winter. Indeed the Blue-bird appears scarcely ever totally to forsake us; but to follow fair weather through all its journeyings till the return of spring.

House Wren. This well known and familiar bird arrives in Pennsylvania about the middle of April; and about the eighth of May it begins to build its nest, sometimes in the wooden cornice under the eaves, or in a hollow cherry tree; but most commonly in small boxes, in or near the garden, to which it is extremely partial, for the great number of caterpillars and other larvæ which are there found. The immense number of insects which this social little bird removes from the garden and fruit trees, ought to endear him to every cultivator, even if he had nothing else to recommend him; but his notes, loud, sprightly, tremulous, and repeated every few seconds with great animation, are extremely agreeable. The eggs of this species are from six to nine in number, of a red purplish flesh colour. They generally raise two broods in a season: the first about the beginning of June, the second in July.

Winter Wren. This species, in some respects, resembles the foregoing, and is by the generality of common observers supposed to be the same but it is quite a different bird. It visits us from the

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north in the month of October, sometimes remaining with us all the winter, and is always observed early in the spring, on the route back to its breeding place. During his residence here he frequents the projecting banks of creeks, old roots, decayed logs; he approaches the farm house, rambles about the wood-pile, creeping among the interstices like a mouse. He even ventures into our cities, and is often observed in company with the Snow-birds and winter Sparrows that frequent our gardens. It is not yet known whether this species retires to breed.

The *Purple Martin* is a general inhabitant of the United States, and a particular favourite wherever he takes up his abode. His summer residence is universally among the habitations of man: who, having no interest in his destruction, and deriving considerable advantage as well as amusement from his company, is generally his friend and protector. Wherever he comes, he finds some hospitable retreat fitted up for his accommodation and that of his young.

The Purple Martin, like the King-bird, is the terror of Crows, Hawks and Eagles. These he attacks whenever they make their appearance, and with such vigor and rapidity, that they instantly have recourse to flight. Our farmers would do well to provide suitable boxes for this noble bird, who will keep at a respectful distance all those winged plunderers who are unceasingly on the watch for an opportunity to regale themselves upon the poultry. The Martins have young but once in a season; and the male does not attain to his perfect plumage until the third or fourth year.

Barn Swallow. There are but few persons in the United States unacquainted with this gay, innocent and active little bird. Indeed the whole tribe are so distinguished from the rest of small birds by their sweeping rapidity of flight, their peculiar aerial evolutions of wing, over our fields and rivers, and through our very streets, from morning to night, that the light of heaven itself, the sky, the trees, or any other common objects of nature, are not better known than the Swallows. We welcome their first appearance with delight, as the faithful harbingers and companions of flowery spring, and ruddy summer; and when, after a long, frost-bound and boisterous Winter, we hear it announced, that "*The Swallows are come!*" what a train of charming ideas are associated with the simple tidings!

It has been long asserted, and the doctrine of torpidity has had many supporters, that the Swallows winter in the mud, at the bottom of lakes and mill-ponds. That the ignorant should believe in such absurdities, is not surprising, but that men of intelligence and science should for a moment indulge the preposterous idea, excites our astonishment in no ordinary degree. The Geese, the Ducks, the Cat-bird, and even the Wren which creeps about our outhouses in summer like a mouse, are all acknowledged to be migratory, and to pass to southern regions at the approach of Winter:—the Swallows alone, on whom Heaven has conferred superior powers of wing, must sink in torpidity at the bottom of our rivers, or doze all winter in the caverns of the earth! Is not this true, ye *wise* men of Europe and America, who have published so many *credible* narratives on this subject? Is the organization of a Swallow less delicate than that of a man? Can a bird, whose vital functions are destroyed by a short privation of pure air, and its usual food, sustain, for six months, a situation where the most robust man would perish in a few hours or moments? Away with such absurdities!—They are unworthy of a

serious refutation.—It has at length been ascertained that our Swallows pass the period of Winter at Honduras, myriads of them assembling together at their roosting places, which are usually amid the rushes of the watery savannas.*

Chimney Swallow. This species is peculiarly our own; and strongly distinguished from all the rest of our swallows by its figure, flight and manners. Like all the rest of its tribe in the United States, it is migratory, arriving in Pennsylvania late in April, or early in May, and dispersing themselves over the whole country wherever there are vacant chimneys sufficiently high and convenient for their accommodation. The nest of this bird is of singular construction, being formed of very small twigs, fastened together, not with the gum of trees as is generally supposed, but with a strong adhesive glue, which is secreted by two glands, one on each side of the hind head, and mixes with the saliva. With this glue, which becomes hard as the twigs themselves, the whole nest is thickly besmeared. The nest itself is small and shallow, and attached by one side or edge to the wall, and is totally destitute of the soft lining with which the nests of the other Swallows are so plentifully supplied. The eggs are generally four, and white. They commonly have two broods in the season.

Night-hawk. This bird in Virginia, and some of the southern districts, is called a Bat; the name Night-hawk is usually given it in the middle and northern states. On the last week in April, the Night-hawk commonly makes its appearance at Philadelphia. They soon after disperse generally over the country, from the sea shore to the mountains; and are seen towards evening, in pairs, playing about, high in air, pursuing their prey—wasps, flies, beetles, and various other winged insects of the larger sort. About the middle of May the female begins to lay; the eggs are placed on the bare ground, are commonly two, of a dirty bluish white, and marked with innumerable touches of dark olive brown.

The Night-hawk is a bird of strong and vigorous flight, and of large volume of wing. It often visits the city, darting and squeaking over the streets at a great height, and diving perpendicularly with a loud booming sound, very much resembling that produced by blowing strongly into the bung-hole of an empty hog's-head. This noise is caused by the sudden expansion of his capacious mouth, while he passes through the air. The female never precipitates herself in the manner of the male.

Whip-poor-will. This is a singular and very celebrated species, universally noted over the greater part of the United States for the loud reiterations of his favourite call in Spring; and yet personally he is but little known, most people being unable to distinguish this from the preceding species; and some insisting that they are the same. We must refer the reader to Mr. Wilson's history of this bird, wherein it appears that there has been strange confusion among naturalists with respect to our three species of the *Caprimulgus* genus, and in which it is satisfactorily shewn that this is a distinct species.

The *Chuck-will's-widow* is rarely found to the north of James River, in Virginia, on the sea-board, or of Nashville, in the state of Tennessee, in the interior. It arrives on the coast of Georgia about the middle of March, and in Virginia early in April. It commences its singular

*Henderson's Honduras, p. 119.

call generally short of these repeated, attracts that of to experiment, principally be heard stronger his with

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call generally in the evening, soon after sunset, and continues it, with short occasional interruptions, for several hours. Towards morning these repetitions are renewed, and continue until dawn has fairly appeared. During the day it is altogether silent. This call instantly attracts the attention of a stranger, and is strikingly different from that of the Whip-poor-will. In sound and articulation it seems plainly to express the words which have been applied to it, *Chuck-will's-widow*, pronouncing each syllable leisurely and distinctly, putting the principal emphasis on the last word. In a still evening this bird may be heard at the distance of nearly a mile, the tones of its voice being stronger and more full than those of the Whip-poor-will, who utters his with much greater rapidity.

This singular genus of birds, formed to subsist on the superabundance of nocturnal insects, are exactly and surprisingly fitted to their peculiar mode of life. Their flight is low, to accommodate itself to their prey; silent, that they may be the better concealed, and sweep upon it unawares; their sight most acute in the dusk, when such insects are abroad; their evolutions something like those of the Bat; quick and sudden; their mouths capable of prodigious expansion, to seize with more certainty, and furnished with long branching hairs or bristles, *serving as palisades to secure what comes between them. Reposing so much during the heats of day, they are much infested with vermin, particularly about the head, and are provided with a comb on the inner edge of the middle claw, with which they are often employed in ridding themselves of these pests.

The *Passenger* or *Wild Pigeon* inhabits a wide and extensive region of North America, on this side of the Rocky Mountains, beyond which to the westward, we have not heard of their having been seen. They abound in the country round Hudson's Bay; spread over the whole of Canada; were seen by Lewis and Clark's party, near the Great Falls of the Missouri; were also met with in the interior of Louisiana by Pike; and extend their range as far south as the gulf of Mexico; occasionally visiting or breeding in almost every quarter of the United States.

But the most remarkable characteristic of these birds is their associating together, both in their migrations, and also during the period of incubation, in such prodigious numbers as almost to surpass belief; and which has no parallel among any other of the feathered tribes with which naturalists are acquainted. † I have witnessed these migrations in the ~~Conese~~ country—often in Pennsylvania, and also in various parts of Virginia, with amazement; but all that I had then seen of them were mere straggling parties, when compared with the congregated millions which I have since beheld in our western forests, in the States of Ohio, Kentucky and the Indiana territory. These fertile and extensive regions abound with the nutritious beech nut which constitutes the chief food of the Wild Pigeon. In seasons when these nuts are abundant, corresponding multitudes of Pigeons may be confidently expected. It sometimes happens that having consumed the whole produce of the Beech trees in an extensive district, they discover another at the distance; perhaps, of sixty or eighty miles, to which they regularly repair every morning, and return as

*The Night-Hawk is an exception to some of these remarks, its flight being high, and its mouth destitute of the bristles.

†The reader will observe that Mr. Wilson is the narrator.

regularly in the course of the day, or in the evening, to their place of general rendezvous, or as it is usually called, the *roosting place*. These roosting places are always in the woods, and sometimes occupy a large extent of forest. When they have frequented one of these places for some time, the appearance it exhibits is surprising. The ground is covered to the depth of several inches with their dung; all the tender grass and underwood destroyed; the surface strewn with large limbs of trees broken down by the weight of the birds clustering one above another; and the trees themselves, for thousands of acres, killed as completely as if girdled with an axe. The marks of this desolation remain for many years on the spot; and numerous places could be pointed out where for several years after scarce a single vegetable made its appearance.

The *breeding place* differs from the roosting place in its greater extent. In the western countries above mentioned, these are generally in beech woods, and often extend in nearly a straight line across the country for a great way. Not far from Shelbyville, in the state of Kentucky, a few years ago, there was one of these breeding places, which stretched through the woods in nearly a north and south direction; was several miles in breadth, and said to be upwards of forty miles long. In this tract almost every tree was furnished with nests, wherever the branches could accommodate them. As soon as the young were fully grown, and before they left the nests, numerous parties of the inhabitants came with wagons, axes, beds, cooking utensils, and encamped for several days at this immense nursery. Several of them informed me, that the noise in the woods was so great as to terrify their horses, and that it was difficult for one person to hear another speak, without bawling in his ear. The ground was strewn with broken limbs of trees, eggs and squabs, which had been precipitated from above, and on which herds of hogs were fattening. Hawks, Vultures and Eagles were sailing about in great numbers, and seizing the squabs from their nests at pleasure; while from twenty feet upwards to the tops of the trees the view through the woods presented a perpetual tumult of crowding and fluttering multitudes of Pigeons, their wings roaring like thunder, mingled with the frequent crash of falling timber: for now the axemen were at work cutting down those trees that seemed to be most crowded with nests, and contrived to fell them in such a manner, that in their descent they might bring down several others: by which means the falling of one large tree sometimes produced two hundred squabs, little inferior in size to the old Pigeons, and almost one mass of fat. On some single trees upwards of one hundred nests were found, each containing *one* young, only, a circumstance in the history of this bird not generally known to naturalists. It was dangerous to walk under these flying and fluttering millions, from the frequent fall of large branches, broken down by the weight of the multitudes above, and which in their descent often destroyed numbers of the birds themselves; while the clothes of those engaged in traversing the woods were completely covered with the excrements of the Pigeons.

I passed for several miles through this same breeding place, where every tree was spotted with nests, the remains of those above described. In many instances I counted upwards of ninety nests on a single tree; but the Pigeons had abandoned this place for another, sixty or eighty miles off toward Green river, where they were said at that

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time to be equally numerous.* From the great numbers that were constantly passing overhead to or from that quarter, I had no doubt of the truth of this statement. The mast had been chiefly consumed in Kentucky, and the Pigeons, every morning a little before sunrise, set out for Indiana territory, the nearest part of which was about sixty miles distant. Many of these returned before ten o'clock, and the great body generally appeared a little after noon. I had left the public road to visit the remains of the breeding place near Shelbyville, and was traversing the woods with my gun, on my way to Frankfort, when about one o'clock the Pigeons, which I had observed flying the greater part of the morning northerly, began to return in such immense numbers as I never before had witnessed. Coming to an opening by the side of a creek called the Benson, where I had a more uninterrupted view, I was astonished at their appearance. They were flying with great steadiness and rapidity, at a height beyond gunshot, in several strata deep, and very compact. From right to left, as far as the eye could reach, the breadth of this vast procession extended, seeming every where equally crowded. Curious to determine how long this appearance would continue, I took out my watch to note the time, and sat down to observe them. I continued there for more than an hour, but instead of a diminution of this prodigious procession, it seemed rather to increase both in numbers and rapidity; and anxious to reach Frankfort before night, I rose and went on. About four o'clock in the afternoon I crossed the Kentucky river, at the town of Frankfort, at which time the living torrent above my head seemed as numerous and as extensive as ever. Long after this I observed them in large bodies that continued to pass for six or eight minutes, and these again were followed by other detached bodies, all moving in the same south-east direction, till after six in the evening. The great breadth of front which this mighty multitude preserved would seem to intimate a corresponding breadth of their breeding place, which by several gentlemen who had lately passed through part of it, was stated to me at several miles.

The vast quantity of mast which these multitudes consume, is a serious loss to the bears, pigs, squirrels and other dependants on the fruits of the forests. I have taken from the crop of a single Wild Pigeon, a good handful of the kernels of beech nuts, intermixed with acorns and chestnuts. To form a rough estimate of the daily consumption of one of these immense flocks, let us first attempt to calculate the numbers of that above mentioned as seen in passing between Frankfort and the Indiana territory. If we suppose this column to have been one mile in breadth, (and I believe it to have been much more) and that it moved at the rate of one mile in a minute, four hours, the time it continued passing, would make its whole length two hundred and forty miles. Again, supposing that each square yard of this moving body comprehended three Pigeons; the square yards in the whole space multiplied by three, would give *two thousand two hundred and thirty millions, two hundred and seventy-two thousand Pigeons*. An almost inconceivable multitude, and yet probably far below the actual amount. Computing each of these to consume half a pint of mast daily, the whole quantity at this rate would equal *seventeen millions, four hundred and twenty-four thousand*

*This was in the year 1810. Mr Wilson was then on his journey to New Orleans.

bushels per day. Heaven has wisely and graciously given to these birds rapidity of flight, and a disposition to range over vast uncultivated tracts of the earth; otherwise they must have perished in the districts where they resided, or devoured, the whole productions of agriculture, as well as those of the forests.

Every Spring, as well as Fall, more or less of these birds are seen in the neighborhood of Philadelphia, and particularly in New Jersey; but it is only once in several years that they appear in very great bodies; and this commonly when the snows are heavy to the north, the winter here more than usually mild, and forest nuts abundant.

Turtle Dove. This is a favourite bird with all those who love to wander among our woods in spring, and listen to their varied harmony. They will hear many a singular and sprightly performer, but none so mournful as this. The hopeless wo of confirmed sorrow swelling the heart of female innocence itself, could not assume tones more sad, more tender and affecting. Its notes are four: the first is somewhat the highest and preparatory, seeming to be uttered with an inspiration of the breath, as if the afflicted creature were just recovering its voice for the last convulsive sobs of distress; this is followed by three long, deep and mournful moanings, that no person of sensibility can listen to without sympathy. There is, however, nothing of real distress in all this: quite the reverse. The bird who utters it wanders by the side of his beloved partner, or invites her by his call to some favourite and shady retreat; it is the voice of love, of faithful conjugal affection, for which the whole family of Doves are so celebrated. The flesh of this bird is considered superior to that of the Wild Pigeon; but its seeming confidence in man, the tenderness of its notes, and the innocency attached to its character, are with many its security and protection; with others, however, the tenderness of its *fl. sh.*, and the sport of shooting, overcome all other considerations. The Turtle Dove lays two pure white eggs. The male and female unite in feeding the young, and they have rarely more than two broods in the same season.

The *Ground Dove* is a native of North and South Carolina, Georgia, Louisiana, Florida, Mexico, and the West Indies. In the last it is frequently kept in cages: is esteemed excellent for the table, and honoured by the French planters with the name of Ortolan. It is a bird of passage, retiring to the islands, and to the more southerly parts of the continent, on the approach of winter, and returning to its former haunts early in April. It is of a more slender and delicate form, and less able to bear the rigours of cold, than either of the two preceding species, both of which are found in the northern region of Canada as well as in the genial climate of Florida.

Wild Turkey. It was to America that the Europeans were indebted for the original stock of the domestic Turkey; a bird which has been spread over the greater part of the civilized world, and which contributes largely to the gratifications of life. Wild Turkeys were formerly numerous in Pennsylvania; but population has driven to the westward these valuable birds; and at present what few remain are found chiefly in the Allegany ridge, and the unsettled parts to the west. In the states bordering on the Ohio and the Mississippi they are yet found in considerable numbers, though much decreased of late years, and ere long they will even there be very rare. In the Floridas and Louisiana they are numerous, particularly in the latter, but it does not appear that they extend much farther than the Big-bend of

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the Missouri. The Indians who accompanied Lewis and Clark's party on their return from the Pacific, knew nothing of this bird. The Turkey in its wild state becomes much larger, and its flesh is in greater esteem, than when it is domesticated. It is not unusual to kill them weighing upwards of thirty pounds.

Ruffed Grouse. This is the *Partridge* of the eastern states, and the *Pheasant* of Pennsylvania and the southern districts. It is known in almost every quarter of the United States, and appears to inhabit a very extensive range of country. Its favourite places of resort are high mountains, covered with the Balsam pine, hemlock, and such like evergreens. Unlike the Pinnated Grouse, it always prefers the woods: is seldom or never found in open plains; but loves the pine-sheltered declivities of mountains near streams of water. The manners of the Pheasant are solitary; they are seldom found in coveys of more than four or five together, and more usually in pairs or singly. The *drumming*, as it is usually called, is a singularity of this species. This is performed by the male alone. The bird standing on an old prostrate log, lowers his wings, erects his expanded tail, contracts his throat, elevates the two tufts of feathers on his neck, and inflates his whole body something in the manner of the Turkey-cock, strutting and wheeling about with great stateliness. After a few manoeuvres of this kind, he begins to strike his body with his stiffened wings in short and quick strokes: these are at first slow and distinct, but gradually increase in rapidity till they run into each other, resembling the rumbling sound of very distant thunder, dying away gradually on the ear. After a few minutes pause this is repeated: and in a calm day it may be heard nearly half a mile off. This drumming is most common in the spring, and is the call of the cock to his favourite female.

The Ruffed Grouse hatches in May: the eggs are from nine to fifteen in number, of a brownish white, and nearly as large as those of a pullet. The young leave the nest as soon as hatched, and are directed by the cluck of the mother, very much in the manner of the common hen. These birds are very common in the Philadelphia markets and their flesh is much esteemed.

Pinnated Grouse. This species in the middle states is simply termed Grouse;* and the epithet *pinnated* has been applied to it by naturalists from the circumstance of the neck of the male being furnished with supplemental wings, each composed of eighteen feathers, which the bird can raise or depress at pleasure. He has another peculiarity which naturalists appear to have overlooked: This is two bags of yellow skin, one on each side of the neck, which, when the bird is at rest, hang in loose wrinkled folds; but when these bags are inflated, in breeding time, they are equal in size and very much resemble in color, a middle sized, fully ripe orange. By means of this curious apparatus, which is very observable several hundred yards off, he is enabled to produce the extraordinary sound, which is called *bumping*; this is uttered only in the season of love, and it is for the purpose of attracting the female.

This rare bird, though an inhabitant of different and very distant districts of North America, is extremely particular in selecting his place of residence; pitching only upon those tracts whose features and productions correspond with his modes of life; and avoiding immense

*In some places the common people call them Heath-hens.

intermediate regions that he never visits. Accordingly we find these birds on the Grouse plains of New Jersey, as well as on the Brushy plains of Long Island—among the pines and shrub-oaks of Pocano, in Northampton county, Pennsylvania—over the whole extent of the Barrens of Kentucky; on the luxuriant plains and prairies of the Indiana territory and Louisiana. In all these places preserving the same singular habits. It is much to be regretted that attempts to domesticate this exquisite bird have hitherto failed of success. There can be little doubt that domestication may be effected if proper means are employed; and we may add that the object is highly worthy of further experiments.

The *Quail* or *Partridge* is a general inhabitant of North America, from the northern parts of Canada and Nova Scotia, in which latter place it is said to be migratory, to the extremity of the peninsula of Florida. They are numerous in Louisiana; and Captain Henderson mentions them as being plenty near the Balize at the Bay of Honduras. Where they are not too much persecuted by the sportsmen, they become almost half domesticated; approach the barn, particularly in winter, and sometimes mix with the poultry to glean up a subsistence. The Partridge, like all the rest of the gallinaceous order, flies with a loud whirring sound, occasioned by the shortness, concavity and rapid motion of its wings, and the comparative weight of its body. The flesh of this bird is peculiarly white, tender and delicate; though it is dry, and not as much esteemed as that of the Pheasant.

Rosate Spoonbill. This stately and elegant bird inhabits the sea shores of America from Brazil to Georgia. It wades about in quest of shell fish, marine insects, small crabs and fish. In pursuit of these it occasionally swims and dives.

The *Whooping Crane* is the tallest and most stately species of all the feathered tribes of the United States. It is the watchful inhabitant of extensive salt marshes, desolate swamps, and open morasses, in the neighborhood of the sea. Its migrations are regular and of the most extensive kind, reaching from the shores and inundated tracts of South America to the arctic circle. In these immense periodical journeys they pass at such a prodigious height in the air as to be seldom observed. They have, however, their resting stages on the route to and from their usual breeding places, the regions of the north. A few sometimes make their appearance in the marshes of Cape May, in December, and on Egg island in the Delaware Bay, where they are known by the name of *Storks*. Some linger in these marshes the whole winter, setting out for the north about the breaking up of the ice. During their stay they wander along the marsh and muddy flats of the shore in search of marine worms, moving occasionally from place to place, with a low and heavy flight, a little above the surface; and have at such times a very formidable appearance. Now and then they utter a loud, clear and piercing cry, which may be heard at the distance of two miles. They have also various modulations of this singular note, from the peculiarity of which they derive their name.

Least Bittern. This is the smallest known species of the whole tribe of Herons. It is commonly found in fresh water meadows, and rarely visits the salt marshes. When alarmed it seldom flies far, but takes shelter among the reeds or long grass. In the autumn this

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bird becomes very fat, and is then excellent eating, little inferior to a Snipe or Rail.

The *Long-billed Curlew* appears in the salt marshes of New Jersey about the middle of May, on its way to the north; and in September, on its return from its breeding place. Their food consists chiefly of small crabs, which they are very dexterous at probing for, and pulling out of the holes, with their long bills; they also feed on those small sea snails so abundant in the marshes, and on various worms and insects. They are likewise fond of bramble berries, frequenting the fields and uplands in search of this fruit, on which they get very fat, and are then tender and good eating, altogether free from the sedgy taste with which their flesh is usually tainted while they feed in the salt marshes.

The *Esquimaux Curlew*, or as it is called by our gunners on the coast, the *Short-billed Curlew*, arrives in large flocks on the coast of New Jersey early in May from the south; frequents the salt marshes, muddy shores and inlets, feeding on small worms and minute shell fish. They fly high and with great rapidity. In the month of June, while the dewberries are ripe, these birds sometimes frequent the fields in company with the Long-billed kind, where brambles abound, soon get very fat, and are at that time excellent eating. In the early part of spring, and indeed during the whole time that they frequent the marshes, they are much less esteemed for the table. They retire to the north to breed.

Red-breasted Snipe. This bird has a considerable resemblance to the common or *English Snipe*, not only in its general form, size and colours, but likewise in the excellence of its flesh, which is in high estimation. It differs, however, greatly from the common Snipe in its manners, and in many other peculiarities. It arrives on the coast of New Jersey early in April, is seldom or never seen inland; early in May it proceeds to the north to breed, and returns by the latter part of July. During its stay here it flies in flocks, sometimes very high, and has then a loud and shrill whistle, making many evolutions over the marshes; forming, dividing and reuniting. They sometimes settle in such numbers, and so close together, that upwards of eighty have been shot at one discharge of a musquet.

Semipalmated Snipe. This is one of the most noisy and noted birds that inhabit our salt marshes in summer. Its common name is the *Willet*, by which appellation it is universally known along the shores of New York, New Jersey, Delaware and Maryland, in all of which places it breeds in great numbers. The Willet is peculiar to America. It arrives from the south, on the shores of the middle states, about the twentieth of April; and from that time to the last of July its loud and shrill reiterated notes of *Pill-will-willet*, resound, almost incessantly, along the marshes; and may be distinctly heard at the distance of more than a half a mile. About the twentieth of May the Willets begin to lay; the eggs are usually four in number, very thick at the great end, and tapering to a narrower point at the other than those of the common hen; they are excellent eating. Towards the fall, when these birds associate in large flocks, they become extremely fat, and are then accounted a great delicacy.

Common Snipe. This bird is well known to our sportsmen; and, if not the same, has a very near resemblance to the common Snipe of Britain. It is usually known by the name of the *English Snipe*, to

distinguish it from the Woodcock, and others of the same genus. It arrives in Pennsylvania about the tenth of March, and remains in the low grounds for several weeks; the greater part then move off to the north, and to the higher inland districts, to breed. A few are occasionally found, and consequently breed, in our low marshes during the summer. When they first arrive they are usually lean; but when in good order they are excellent eating. These birds are not found in the salt marshes of the coast, except on their borders, where there happen to be fresh water springs; consequently their flesh is never sedgy. In places where they are not sought after by epicures and sportsmen, they become tame, excessively fat, and are then an exquisite morsel.

Woodcock. This bird, like the preceding, is universally known to our sportsmen. It arrives in Pennsylvania early in March, sometimes sooner. During the day they keep to the woods and thickets, and at the approach of evening seek the springs, and open watery places to feed in. They soon disperse themselves over the country to breed. About the beginning of July, particularly in long continued hot weather, they descend to the marshy shores of our large rivers, their favourite springs and watery recesses inland being chiefly dried up.

To the former of these retreats they are pursued by the merciless sportsman, flushed by dogs, and shot down in considerable numbers. This species of amusement, when eagerly followed, is still more labourious and fatiguing than that of Snipe-shooting; and from the nature of the ground, or cripple as it is usually called, viz. deep mire, intersected with old logs which are covered and hid from sight by high reeds, weeds and alder bushes, the best dogs are soon tired out. The Woodcock usually begins to lay in April. The nest is placed on the ground, in a retired part of a field, or the woods, frequently at the root of an old stump, and generally near a cripple. The female lays four, sometimes five, eggs, of a dun clay colour, thickly marked with spots of brown, and interspersed with others of a very pale purple. In a moderate season the Woodcock has been known to lay in February.

This bird, in its general figure and manner, greatly resembles the Woodcock of Europe, but it is considerably less, is differently marked below, and is a distinct species. Its food consists of various larvæ and other aquatic worms, for which during the evening it is almost continually turning over the leaves with its bill, or searching in the bogs. Its flesh is highly prized. The flight of the Woodcock is slow, and he is easily shot. The notion that there are two species of Woodcock in this country probably originated from the great difference of size between the male and female, the latter being considerably the larger.

Red-breasted Sandpiper. Birds of the *Sandpiper* genus are not distinguished, by common observers, from the *Snipes*, so nearly do they resemble each other. Naturalists, however, have given us the characteristic designations of each, which convince us of the importance of system in our inquiries into the operations of Nature. Yet it must be confessed that we sometimes meet with species, the generic characters of which are so equivocal, that we are not a little confounded in our endeavours to class them. Hence the necessity of studying *living* nature in order to determine in a case involving doubt or uncertainty. The bird before us from its general appearance would be

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called a Snipe, but when we take into view its habits, and the length of its bill, we are at no loss to discover its relationship to the family of the *Tringa* or Sandpipers.

The common name of this species, on our coast, is the *Gray-back*; and among the gunners it is a particular favourite, being generally a plump, tender and excellent bird for the table; and, consequently, bringing a good price in market. The Gray-backs do not breed on the shores of the middle states. Their first appearance is early in May. They remain a few weeks, and disappear until October. They usually keep in small flocks, and alight in a close body together on the sand flats, where they search for the small bivalve shells. They do not run about in the water as much as some others, nor with the same rapidity, but appear more tranquil and deliberate. In the month of November they retire to the south.

Spotted Sandpiper. This very common species arrives in Pennsylvania about the twentieth of April, tracing the courses of our creeks and streams towards the interior. It is remarkable for perpetually wagging the tail; for whether running on the ground, or on the fences, along the rails, or in the water, this motion seems continual. About the middle of May they resort to the adjoining corn fields to breed; the eggs are four, and large in proportion to the size of the bird. The young run as soon as freed from the shell. The flight of the Spotted Sandpiper is usually low. It skims along the surface of the water, while it utters its rapid notes of *wee wee wee*, seldom steering in a direct line up or down the river, but making a long circuitous sweep, stretching a great way out, and gradually bending in again to the shore.

The *Plover* is one of the most numerous of our *Strand-birds*, or *Sand Snipes*, as they are usually called, that frequent the sandy beach, on the frontiers of the ocean. They trace the flowing and recession of the waves with great nimbleness, wading and searching among the loosened particles for their favourite food, which is a small thin oval bivalve shell-fish, of a white or pearl colour, and not larger than the seed of an apple. During the latter part of summer and autumn, these minute shell-fish constitute the food of almost all those busy flocks that run with such activity along the sands, among the flowing and retreating waves. It is amusing to observe, with what adroitness they follow and elude the tumbling surf, while at the same time they seem wholly intent on collecting their food. These birds, in conjunction with several others, sometimes collect together in such numbers, as to seem, at a distance, a cloud of thick smoke, varying in form and appearance every instant, while it performs its evolutions in air. As this cloud descends and courses along the shores of the ocean, with great rapidity, in a kind of serpentine flight, alternately throwing its dark and white colours to the eye, it forms a very grand and interesting appearance. At such times the gunners make prodigious slaughter among them; while, as the showers of their companions fall, the whole body often alight, or descend to the surface with them, till the sportsman is completely satiated with destruction. All the Strand-birds become very fat, and are good eating.

Black-bellied Plover. This bird is known in some parts of the country by the name of the large *Whistling Field Plover*. It generally makes its first appearance in Pennsylvania late in April; frequents

the countries towards the mountains; seems particularly attached to newly ploughed fields, where it forms its nests of a few slight materials; lays four eggs, and has frequently two broods in the same season. They feed on worms, grubs, winged insects, and various kinds of berries, particularly dewberries, and are considered excellent eating. About the beginning of September they abound on the plains of Long Island, and afford considerable amusement to the *cockney* sportsmen, who generally make their approaches to the birds by means of *wagons*. They have a loud whistling note; often fly at a great height; and are called by many gunners along the coast the Black-bellied Kildeer.

Golden Plover. This beautiful species visits the coast of New York and New Jersey in spring and autumn; but does not, as far as has been discovered, breed in any part of the United States. Although they are occasionally found along our coast from Georgia to Maine, yet they are no where numerous; and we have never met with them in the interior.

Kildeer Plover. This restless and noisy bird is known to almost every inhabitant of the United States, being a common and pretty constant resident. During the severity of winter, when snow covers the ground, it retreats to the seashore, where it is found at all seasons; but no sooner has the ice of the rivers broken up, than its shrill notes are again heard, either roaming about high in air, tracing the shore of the river, or running amidst the watery flats and meadows. Nothing can exceed the alarm and anxiety of these birds during the breeding season. Their cries of *kildeer, kildeer*, as they winnow the air over head, dive and course around you, or run along the ground counterfeiting lameness, are shrill and incessant. They lay usually four eggs, of a yellowish clay colour, thickly marked with blotches of black.

Pied Oyster-catcher. This singular species, although no where numerous, inhabits almost every sea shore, both on the new and the old continent, but is never found inland. It is the only one of its genus hitherto discovered. It frequents the sandy sea beach of New Jersey, and other parts of our Atlantic coast, in summer, in small parties of two or three pairs together. They are extremely shy, and except about the season of breeding, will seldom permit a person to approach within gunshot. They walk along the shore in a watchful stately manner, at times probing it with their long wedge-like bills in search of small shell-fish. The small crabs called *Fiddlers*, that burrow in the mud at the bottom of inlets, are frequently the prey of the Oyster-catcher; as are muscles, spout-fish, and a variety of other shell-fish and sea insects with which those shores abound. The principal food, however, of this bird, according to European writers, and that from which it derives its name, is the *Oyster*, which it is said to watch for, and snatch suddenly from the shells, whenever it surprises them sufficiently open. For this purpose the form of its bill seems very fitly calculated. Yet the truth of these accounts is doubted by the inhabitants of Egg-harbour, and other parts of our coast, who positively assert that it never frequents oyster-beds, but confines itself almost solely to the sands; and this opinion I am inclined to believe correct, having myself uniformly found these birds on the smooth beach bordering the ocean, and on the higher dry and level sands, just beyond the reach of the summer

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tides. On this last situation, where the dry flats are thickly interspersed with drifted shells, they lay three eggs in a slight hollow; the young are hatched about the twenty-fifth of May. This bird is the *Sea-pie* of navigators.

Clapper Rail. This is a very numerous and well known species, inhabiting our whole Atlantic coast from New England to Florida. It is designated by different names, such as the Mud-hen, Meadow-clapper, Big Rail, &c. Though occasionally found along the swampy shores and tide waters of our large rivers, yet its principal residence is in the salt marshes. It is a bird of passage, arriving on the coast of New Jersey about the twentieth of April, and retiring again late in September. The shores of New Jersey, within the beach, seem to be the favourite breeding places of these birds, as they are there acknowledged to be more than double the number of all other marsh fowl. These shores consist of an immense extent of flat marsh, covered with a coarse reedy grass, and occasionally overflowed by the sea, by which it is cut up into innumerable islands. The Mud-hen soon announces its arrival in the marshes, by its loud, harsh and incessant cackling, which very much resembles that of a Guinea-hen. This noise is more general during the night; and is said to be always greatest before a storm. About the twentieth of May they generally commence laying and building at the same time: the first egg being usually dropt in a slight cavity, lined with a little dry grass, which as the number of the eggs increases to their usual complement *ten*, is gradually added to, until the nest rises to the height of twelve inches or more. Over this the long salt grass is artfully arched and knit at the top, to conceal it from the view above. The eggs are excellent eating, surpassing those of the domestic hen. The height of laying is about the first of June, when the people of the neighbourhood go off to the marshes *an egging*, as it is called. So abundant are the nests of this species, and so dexterous are some persons at finding them, that one hundred dozen of eggs have been collected by one man in a day. The food of the Clapper Rail consists of small shell-fish, particularly those of the snail form, so abundant in the marshes; they also eat small crabs. Their flesh is dry, tastes sedgy, and will bear no comparison with that of the common Rail.

Common Rail or Sora. The natural history of the *Rail*, or as it is called in Virginia the *Sora*, and in South Carolina the *Coot*, is to the most of our sportsmen involved in profound and inexplicable mystery. It comes, they know not whence; and goes, they know not whither. No one can detect their first moment of arrival; yet all at once the reedy shores and grassy marshes of our large rivers swarm with them, thousands being sometimes found within the space of a few acres. These, when they do venture on wing, seem to fly so feebly, and in such short fluttering flights among the reeds, as to render it highly improbable to most people that they could possibly make their way over an extensive tract of country. Yet, on the first smart frost that occurs, the great body suddenly disappear.

The Rail or Sora belongs to a genus of birds of which about thirty different species are enumerated by naturalists; and these are distributed over almost every region of the habitable parts of the earth. Their general character is everywhere the same. They run swiftly, fly slowly, and usually with the legs hanging down; become extremely fat; are fond of concealment; and, wherever it is practicable,

prefer running to flying. Early in August, when the reeds along the shores of the Delaware have attained their full growth, the Rail resort to them in great numbers, to feed on the seeds of this plant, of which they, as well as the Reed-birds and several others, are immoderately fond. On their first arrival they are generally lean, and unfit for the table; but as the seeds ripen they rapidly fatten, and from the early part of September to the last of October they are excellent, and eagerly sought after. The usual method of shooting them in Pennsylvania, is as follows: The sportsman furnishes himself with a light bateau, and an experienced boatman, with a pole of twelve or fifteen feet long. About an hour or two before high water they enter the reeds, and each takes his post, the sportsman standing in the bow ready for action, the pole-man on the stern seat pushing the boat steadily through the reeds. The Rail generally spring singly, as the boat advances, at a short distance ahead, and are instantly shot down, while the boatman, keeping his eye on the spot where the bird fell, directs the bateau forward and picks up the game as the gunner is loading. The sport continues till an hour or two after high water. Several boats are sometimes within a short distance of each other, and a perpetual cracking of musquetry prevails along the whole reedy shores of the river and islands. In these excursions it is not uncommon for an active and expert marksman to kill from six to ten dozen Rail in a tide. These birds, in common with many others, always migrate in the night; and hence the reason why many are at a loss to ascertain what becomes of them, when it is discovered that they have disappeared: as these observers cannot have *ocular* evidence of the migration, they still remain incredulous as to the fact. The first north-easter which takes place in the latter part of October, or beginning of November, the great body of the Rail depart; and it is then that these birds are found to be most abundant in Virginia and elsewhere to the south. The Rail, though considered a great delicacy by many, is yet far inferior to the Snipe.

The *Purple Gallinule* is found in the southern parts of our continent. In the state of Georgia it frequents the rice fields and marshes; it is rare, and extremely shy. In respect to its manners, it is said to be a docile bird when tamed: to feed with the poultry, and scratch the ground with its feet like the cock and hen. It will feed on many things, such as fruits, roots of plant and grain: will frequently stand on one leg, and lift the food to its mouth with the other, like a Parrot. The flesh is said to be exquisite in taste.

This is a most splendid bird: the head, part of the neck, throat and breast, are of a rich violet purple; the back and scapulars brownish green; the sides of the neck ultramarine; wings the same, tinged with green; the belly of a purplish black; the vent pure white; the naked crown, legs and feet are red; the bill of the same colour, tipped with yellow.

The *Coot* makes its appearance in Pennsylvania about the first of October. Among the muddy flats and islands of the river Delaware, which are periodically overflowed and which are overgrown with the reed or wild oats and rushes, the Coots are found. They are not numerous, and are seldom seen, except their places of resort are covered with water: in that case they are generally found sitting on the fallen reeds, waiting for the ebbing of the tide. Their food consists of various aquatic plants, seeds, insects and small fish. The

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Coot swims remarkably well, and, when wounded, will dive like a Duck. It is known in Pennsylvania by the name of the Mud-ben.

American Avocet. This species arrives on the coast of Cape May late in April; rears its young, and departs to the south early in October. It almost constantly frequents the shallow pools in the salt marshes; wading about, often to the belly, in search of marine worms, snails, and various insects that abound among the soft muddy bottoms of the pools. It is a shy and noisy bird; and from its perpetual clamour it is called by the inhabitants of Cape May, the *Law-gyer*. The nest of this species is generally fixed in a tuft of grass, at a short distance from one of the above mentioned pools; the eggs are four in number, of a dull olive colour, marked with large irregular blotches of black.

The *Long-legged Avocet* arrives on the coast of New Jersey about the same time as the foregoing; and frequents the like situations, in the salt marshes. But they are considerably more numerous than the American Avocet. They breed in small communities; the nests of six or eight pair being generally found in the vicinity of one of the pools. The eggs are also four in number, of a dark yellowish clay colour, thickly marked with large blotches of black. These nests are often placed within fifteen or twenty yards of each other; but the greatest harmony seems to prevail among the proprietors. While the females are sitting, the males are either wading through the ponds, or roaming over the adjoining marshes; but should a person make his appearance, the whole collect together in the air, flying with their long legs extended behind them, keeping up a continual yelping of *click, click, click*. Their flight is steady and not in short sudden jerks like that of the Plover. The names by which this species is known on the coast, are Still or Tilt, and Long-shanks.

Red Flamingo. This is a very singular bird; and is occasionally seen on the southern frontiers of the United States; but it is more common on the peninsula of East Florida. Its flesh is esteemed pretty good meat; and the young thought by some equal to a Partridge; but the greatest dainty is the tongue, which was esteemed by the ancients an exquisite morsel.

The *Great Northern Diver* or *Loon* is migratory in Pennsylvania. It is found along the coast as well as in the interior. They are commonly seen in pairs; and procure their food, which is fish, in the deepest water of our rivers, diving after it, and continuing under for a length of time. Being a wary bird, it is seldom they are killed, eluding their pursuers by their astonishing faculty of diving. They seem averse from flying, and are but seldom seen on the wing. The Loon is said to be restless before a storm; and an experienced master of a coasting vessel informed me that he always knew when a tempest was approaching by the cry of this bird, which is very shrill, and may be heard at the distance of a mile or more.

Black Skimmer or *Sheerwater.* This truly singular fowl is the only species of its tribe hitherto discovered. Like many others, it is a bird of passage in the United States; and makes its appearance on the shores of New Jersey early in May. Its favourite haunts are low sand bars, raised above the reach of the summer tides. On such places it usually breeds; the eggs, three in number, being placed in a hollow formed in the sand, without any materials. The Sheerwaters form themselves into small societies in the breeding season, which commences early in June; and it is not unusual to find the nests of

fifteen or twenty pair within the compass of half an acre. The females sit on them only during the night, or in wet and stormy weather.

The singular conformation of the bill of this bird has excited much surprise; and some writers, measuring the divine proportions of nature by their own contracted standards of conception, in the plenitude of their vanity have pronounced it to be "a lame and defective weapon." Such ignorant presumption, or rather impiety, ought to hide its head in the dust on a calm display of the peculiar construction of this singular bird, and the wisdom by which it is so admirably adapted to the purposes or mode of existence for which it was intended. The Sheerwater is formed for skimming, while on wing, the surface of the water for its food, which consists of small fish, shrimps, young fry, &c. whose usual haunts are near the shore, and towards the surface. That the lower mandible,* when dipt into and cleaving the water, might not retard the bird's way, it is thinned and sharpened like the blade of a knife: the upper mandible being at such times elevated above water, is curtailed in its length, as being less necessary, but tapering gradually to a point, that, in shutting, it may offer less opposition. To prevent inconvenience from the rushing of the water, the mouth is confined to the mere opening of the gullet, which indeed prevents mastication taking place there; but the stomach or gizzard, to which this business is solely allotted, is of uncommon hardness, strength and muscularity, far surpassing in these respects that of any other water bird with which we are acquainted. To all these is added a vast expansion of wing, to enable the bird to sail with sufficient celerity while dipping in the water. The general proportion of the length of our swiftest Hawks and Swallows, to their breadth, is as one to two; but in the present case, as there is not only the resistance of the air to overcome, but also that of the water, a still greater volume of wing is given: the Sheerwater measuring nineteen inches in length, and upwards of forty-four in breadth. In short, whoever has attentively examined this curious apparatus, and observed the possessor with his ample wings, long bending neck, and lower mandible occasionally dipt into and ploughing the surface, and the facility with which he procures his food, cannot but consider this exercise mere playful amusement when compared with the dashing immersions of the Tern, the Gull, or the Fish Hawk, who, to the superficial observer, appear so superiorly accommodated.

Goosander. This large and handsomely marked bird belongs to a genus different from that of the *Duck*, on account of the particular form and serratures of the bill. Naturalists have denominated it *Merganser*. In this country, the birds composing this genus are generally known by the name of Fishermen, or Fisher Ducks. The Goosander is called by many the Sheldrake. This bird is a winter inhabitant of our coast and rivers. They usually associate in small parties of six or eight, and are almost continually diving in search of food. From their common habit of feeding almost entirely on fin and shell-fish, their flesh is held in little estimation, both smelling and tasting strongly of fish. Four species of the genus *Mergus* are known to inhabit the United States, of which the Goosander is the

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largest and most beautiful. All these birds live chiefly on fish, and consequently are unfit for the table.

The *Widgeon* is a prettily marked and sprightly species, very common in winter along our whole coast, from Florida to Rhode Island; but most abundant in Carolina, where it frequents the rice plantations. It is the constant attendant of the *Canvass-back Duck*, by the aid of whose labour it has ingenuity enough to contrive to make a good subsistence. The *Widgeon* is extremely fond of the tender roots of that particular species of aquatic plant on which the *Canvass-back* feeds, and for which that Duck is in the constant habit of diving. The *Widgeon*, who never dives for food, watches the moment of the *Canvass-back's* rising, and before the latter has the water well off his eyes, the former snatches the delicious morsel from his mouth and makes off. On this account the *Canvass-backs* and *Widgeons*, or as they are generally called, *Bald-pates*, live in a state of perpetual contention. The flesh of this species is excellent.

Red-headed Duck. This is another common associate of the *Canvass-back*, frequenting the same places, and feeding on the stems of the same grass, the latter eating only the roots. Its flesh is little inferior to that of the *Canvass-back*; and it is often sold in our market for this last mentioned bird. The *Red-headed Duck* is supposed to be the *Pochard* of Europe.

Summer Duck. This most beautiful of all our Ducks has probably no superior among its whole tribe for richness and variety of colours. It is called the *Wood Duck*, from the circumstance of its breeding in hollow trees; and the *Summer Duck*, from its remaining with us during the summer. It rarely visits the sea shore, or salt marshes; its favourite haunts being the solitary, deep and muddy creeks, and mill-ponds of the interior. In Pennsylvania the female usually begins to lay late in April or early in May. Instances have been known wherein the nest was constructed of a few sticks laid in the fork of a tree; usually, however, the inside of a hollow tree that overhangs the water is selected for this purpose. The writer of this article visited an old truncated white oak, having a wide hollow six feet deep, which was tenanted by a pair of these Ducks. The eggs, thirteen in number, were the colour of old polished ivory, and lay on the rotten wood, in a slight cavity, and covered with down. When the young are hatched, the mother carries them in her bill, one by one, to the margin of the water she intends to rear them in; and when the whole are collected she launches into the element, followed by her lively and delighted little brood. This beautiful species is easily domesticated; but its flesh is not in great esteem.

Eider Duck. This species has been long celebrated in Europe for the abundance and excellence of its *down*, which for softness, warmth, lightness and elasticity, surpasses that of all other Ducks. The quantity found in one nest more than filled the crown of a hat, yet weighed no more than three quarters of an ounce; and it is asserted that three pounds of this down may be compressed into a space scarcely bigger than a man's fist, yet it is afterwards so dilatible as to fill a quilt five feet square. These birds associate in flocks, generally in deep water, diving for shell-fish, which constitute their principal food. They are numerous on the coast of Labrador, and are occasionally seen in winter as far south as the capes of the Delaware.

Dusky Duck. This species is generally known by the name of the

Black Duck, being the most common, and most numerous of all those of its tribe that frequent the salt marshes. Their principal food, on the coast, consists of those minute snail shells, so abundant in the marshes. In our fresh water marshes, where they likewise abound, they feed upon the roots and seeds of the aquatic plants and insects. The Black Ducks of the coast are generally fatter than those which frequent our fresh water rivers; but the flesh of the latter is in greater esteem, in consequence of its being free from that sedgy *fat* which is so remarkable in the former. Their voice resembles that of the Mallard; but their meat is greatly inferior.

Mallard. This is the original stock of the common domesticated Duck, reclaimed immemorially from a state of nature, and now become so serviceable to man. It is found in every fresh water lake and river of the United States in winter; but seldom frequents the sea shores or salt marshes. The Mallard is an excellent bird.

Muscovy Duck. It was to America that the Europeans were indebted for this noble Duck, which is in such great esteem for the table. Its domesticated descendants are scattered over those parts of the world where good eating is appreciated; and the original stock is found in the southern part of the continent of North America, and in Brazil.

Scaup Duck. This is a common Duck in our markets, and is generally known by the name of the *Blue-bill*. It is sometimes called the *Broad-bill*, and along the waters of the Chesapeake the *Black-head*. It is a great diver, and commonly feeds on the snails which abound in our fresh and salt marshes. When fat, its flesh is of tolerable flavour. The Blue-bills of the Chesapeake and its waters are infinitely preferable to those of the Delaware or the coast. This species is the last that leaves us in the spring for the purpose of breeding, numbers being annually seen as late as the middle of May.

Shorelitter. If we except the singularly formed and disproportionate size of the bill, there are few Ducks more beautiful, or more elegantly marked than this. The excellence of its flesh, which is juicy, tender, and well tasted, is another recommendation to which it is equally entitled. It occasionally visits the coast; but is more commonly found on our lakes and rivers. It is one of our winter birds; and is not known to breed in any part of the United States.

Buffal-headed Duck. This pretty little species, usually known by the name of the *Butter-box* or *Butter-bill*, from the circumstance of its becoming exceedingly fat, is common to the sea shores, rivers and lakes of the United States, in every quarter of the country, during autumn and winter. They feed much on shell-fish, shrimps, &c. The male exceeds the female in size, and greatly in beauty of plumage. They are dexterous divers, and fly with great velocity. Their flesh is good.

The *Blue-winged Teal* is the first of its tribe that returns to us in the autumn from its breeding place in the north. They are usually seen in September, along the shores of the Delaware, where they sit on the mud, close to the edge of the water, so crowded together that the gunners often kill great numbers at a single discharge. They fly rapidly; and when they alight they drop down suddenly, like the Snipe or Woodcock, among the reeds or on the mud. They feed eagerly on the seeds of the reed or wild oats, and become very fat. They are considered a great delicacy, and command a high price in our markets.

Green-winged Teal. This, like the preceding, is a fresh water Duck, common in our markets in autumn and winter. It frequents ponds, marshes, and the rocky shores of creeks and rivers. Is very abundant among the rice plantations of the southern states; flies in small parties, and feeds at night. It associates often with the Mallard, feeding on the seeds of various kinds of grapes and water plants, and also on the tender leaves of vegetables. Like the foregoing its flesh is excellent.

Canvass-back Duck. This celebrated American species, as far as can be judged from the best figures and descriptions of foreign birds, is altogether unknown in Europe. It approaches nearest to the *Pochard* of Britain; but differs from that bird in being superior in size and weight, in the greater magnitude of its bill, and the general whiteness of its plumage. The Canvass-back arrives in the United States from the north about the middle of October; numbers descend to the Hudson and Delaware, but the great body of these birds resort to the numerous rivers belonging to, and in the neighbourhood of, the Chesapeake Bay, particularly the Susquehannah, the Patapsco, Potowmac, and James' rivers, which appear to be their general winter rendezvous. At the Susquehannah they are called *Canvass-backs*, on the Potowmac, *White-backs*, and on James' river *Sheldrakes*. They are seldom found at a great distance up any of these rivers, or even in the salt water bay; but in that particular part of tide water where a certain grass-like plant grows, on the roots of which they feed. This plant, which is said to be a species of *Valisneria*, grows on fresh water shoals of from seven to nine feet water, but never where these are occasionally dry, in long narrow grass-like blades of four or five feet in length; the root is white, and has some resemblance to small celery. This grass is in many places so thick that a boat can with difficulty be rowed through it, it so impedes the oars. Wherever this plant grows in abundance, the Canvass-backs may be expected in corresponding numbers. It occurs in some parts of the Hudson; in the Delaware near Gloucester, and in the vicinity of Petty's island, both places within sight of Philadelphia; and in most of the rivers that fall into the Chesapeake, to each of which particular places these Ducks resort; while in waters unprovided with this nutritive plant they are altogether unknown, or are only occasionally seen when on their migrations.

On the first arrival of these birds they are generally lean, but towards the beginning of November they are in pretty good order, and about the last of the month they are in perfection. They are excellent divers, and swim with great speed and agility. They sometimes assemble in such multitudes as to cover several acres of the river, and when they rise suddenly, produce a noise resembling distant thunder. They float about the shoals, diving and tearing up the grass by the roots, which is the only part they eat. They are extremely shy, and can rarely be approached unless by stratagem. When slightly wounded in the wing, they dive to such prodigious distances, and with such rapidity, continuing it so perseveringly, and with such cunning and active vigor, as almost always to render the pursuit hopeless. The Canvass-back, in the rich juicy tenderness of its flesh, and its delicacy of flavour, stands unrivalled by the whole feathered creation. It becomes so exceedingly fat, that when shot from a tolerable height it will often burst with the fall. Those killed in the waters of the Chesapeake are generally esteemed superior to all others; but the com-

piler of this article has shot them of equal fatness and flavour in the Delaware, although many will not admit that our Canvass-backs at all resemble those of the boasted Chesapeake. The inhabitants of New York have but lately discovered that they too have the legitimate Canvass-backs on their Hudson; though ignorance and prejudice from the south will doubtless stigmatize them as a spurious race, unworthy of the name. Yet it is true that in all these places this exquisite bird is found, and will continue to be found there, so long as its favourite food abounds. Would it not be worth the experiment to transplant this celebrated grass in other similar waters, in the hope of drawing thither the delicious Canvass-back? It has been ascertained that wheat will attract them. Some years since, a vessel, loaded with this grain, was wrecked at the entrance of Great Egg-harbour, in the autumn, and went to pieces. The Canvass-backs, before unknown to the people of Egg-harbour, at that time on their way from the north, collected in immense numbers, and fed upon the wheat, remaining as long as it lasted. At our public dinners, hotels, and particular entertainments, the Canvass-backs are universal favourites. They not only grace but dignify the table; and their very name conveys to the imagination of the eager epicure the most comfortable and exhilarating ideas. Hence on such occasions it has not been uncommon to pay from two to three dollars a pair for these Ducks; and, indeed, at such times, if they can they must be had, whatever may be the price.

The *Pintail Duck*, or as it is generally called, the *Sprigtail*, is a common Duck in our markets, but not in much esteem; it being seldom fat, although its flesh is generally tender. It is a shy and cautious bird; feeds on the mud flats, and in shallow fresh water marshes; but rarely visits the coast. Like the Mallard and Black Duck it does not dive for its food; though it is tolerably expert in diving when wounded. The Sprigtail has a kind of whistling or chattering note, and is very noisy. It is vigilant in giving the alarm on the approach of the gunner, who often curses the watchfulness of this bird.

The *Brant*, or as it is usually written, *Brent*, is a bird well known on both continents; and was celebrated in former times throughout Europe for the singularity of its origin; and the strange transformations it was supposed to undergo previous to its complete organization. Its first appearance was said to be in the form of a *Barnacle shell*, adhering to old water-soaked logs, trees, or other pieces of wood taken from the sea. Of this *Goose-bearing tree*, Gerard, in his Herbal, published in 1597, has given a formal account. Ridiculous and chimerical as this notion was, it had many advocates, and was at that time as generally believed, and with about as much reason too, as the present opinion of the annual immersion of *Swallows*, so tenaciously insisted on by some of our philosophers, and which, like the former absurdity, will in its turn disappear before the penetrating radiance and calm investigation of truth.

The Brant is expected at Egg-harbour, on the coast of New Jersey, about the first of October, and has been sometimes seen as early as the twentieth of September. In their migrations they uniformly travel over the sea, parallel with the coast; their line of march very much resembles that of the Canada Geese, with this exception, that frequently three or four are crowded together in the front, as if striving for precedency. During their stay on the coast, they feed

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on the bars of the sound, or bays, at low water, never in the marshes; their principal food being a remarkably long and broad-leaved marine plant, of a bright green colour, which adheres to stones, and is called by the country people Sea-Cabbage; they also eat small shell-fish. During the time of high water they float in the bay, in long lines, particularly in calm weather. Their voice is hoarse and honking, and when some hundreds are screaming together, it reminds one of a pack of hounds in full cry. When they change their feeding grounds, or are aroused on wing, they will always endeavor to avoid crossing the land. Hence, according as the wind blows the gunners conceal themselves on certain points or tongues of land which project into the bays, and if a gale should impel the birds to leeward, they will earnestly labour to gain the windward point, flying a few feet above the surface of the water; but when they reach the extremity of the land, in endeavouring to double it they are frequently driven over the spots where the gunners lie on their backs, who instantly spring up with loud shouts: the Brant become alarmed, cluster confusedly together, and, instead of pushing straight forward, turn to avoid the danger: this is the critical moment for the gunners, who pouring into the panic-struck flock their well-directed fire, bring many of them to the ground. About the twentieth of May the Brant pass the coast of New Jersey on their route to the north, but seldom stop, unless driven in by tempestuous weather. Should a south east gale occur at that time, they soon become fatigued, and fly slowly over the surf of the sea beach, frequently affording the gunners rare sport. At this season they are very fat, and of a fine flavour. In the month of November they are likewise excellent; though after their favourite sea-cabbage becomes scarce their flesh tastes somewhat sedgy. When the winter sets in with severity the Brant principally move off to the south.

Snow Goose. This species, called on the coast the *Red Goose*, and by others the *Pied Goose* and *White Brant*, arrives in the river Delaware from the north early in November, sometimes in considerable flocks, and is extremely noisy, their notes being shriller and more squeaking than those of the Canada or common Wild Goose. On their first arrival they make but a short stay, proceeding, as winter approaches, farther to the south; but from the middle of February until the breaking up of the ice in March, they are frequently numerous along both shores of the Delaware, about and below Reedy Island, particularly near Old Duck Creek, in the state of Delaware. They feed on the roots of the reeds, tearing them up from the marshes like hogs. Their flesh, like that of most others of their tribe that feed on vegetables, is excellent.

Gray Goose. This is said to be the original stock of the common domesticated Goose, and is called by the naturalists of Britain the *Gray-lag Goose*. It is found in various parts of the old and new continents; but seldom appears within the limits of the United States. At Hudson's Bay this species arrives early in May, as soon as the ice disappears; they collect in flocks of twenty or thirty, stay about three weeks, then separate in pairs, and take off to breed. In July they moult, at which time the Indians destroy many of them. About the middle of August they return to the marshes, with their young, and continue there till September.* The Gray Goose was observed by Lewis and Clarke on the waters of the Columbia.

*Pennant, Arct. Zool. vol. 2, p. 268.

Canada Goose. This is the common Wild Goose of the United States, universally known over the country; whose regular periodical migrations are the sure signals of returning spring, or approaching winter. The tracts of their vast migratory journeys are not confined to the coast or its vicinity. In their voyages to and from the north, these winged pilgrims pass over the interior on both sides of the mountains. Their first arrival on the coast of New Jersey is early in October, and their first numerous appearance is the sure prognostic of severe weather. Those which continue all winter frequent the shallow bays and marsh islands; their principal food being the sea-cabbage, and the roots of the sedge. Every few days they make an excursion to the inlets on the beach for gravel. They cross, indiscriminately, over land or water, generally taking the nearest course to their object; differing in this respect from the Brant, who will often go a great way round by water rather than cross over the land. Wounded Geese have, in numerous instances, been completely domesticated, and readily pair with the domestic Geese. The offspring are said to be incapable of propagation; they are larger than either of the parents; but the characteristic marks of the Wild Goose still predominate. The Canada Goose is now domesticated in numerous quarters of the country, and is remarked for being extremely watchful, and more sensible of approaching changes in the atmosphere than the common Gray Goose. In England, France and Germany, they have also been long domesticated. Thus has America already added to the stock of domestic fowls three species, the Turkey, the Muscovy Duck, and the Canada Goose, inferior to none in usefulness; for it is acknowledged by an English naturalist of good observation, the ingenious Bewick, that this last species "is as familiar, breeds as freely, and is in every respect as valuable as the common Goose."

The *Wild Swan* breeds in the northern parts of North America, multitudes of them having been seen; with their young, by both Hearne and Mackenzie, in their journeys to the northern ocean. When these birds are moulting or changing their feathers, the Indians, taking advantage of their inability to fly, pursue them and kill numbers; their eggs and young are likewise sought after with avidity. In the Chesapeake bay these noble birds appear every autumn; often associating with the Canada Geese, but generally feeding by themselves in shallow water, where they can reach the bottom with their bills. They are a wary bird, and can seldom be approached within gunshot. Seen at a distance, in strings of one hundred or more, gracefully floating on the smooth expanse, they give great interest to the watery landscape; their snow-white plumage, contrasted with the russet hue of the adjacent shores, producing a fine effect, while they arouse in the mind of the classic voyager some of the most amiable and affecting fables of antiquity. The old Swans, as an article of food, are in no esteem, being tough, insipid, and far inferior to the Geese; but the cygnets or young Swans are considered good eating.

The *Snake-bird* is an inhabitant of the Carolinas, Georgia and the Floridas. It seems to have derived its name from the singular form of its head and neck, which at a distance very much resemble some species of serpents. In those countries where noxious animals abound, we may readily conceive that the appearance of this bird, extending its long neck through the foliage of a tree, would tend to startle the wary traveller, whose imagination had portrayed objects of danger

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lurking in every thicket. These birds frequent the ponds, rivers and creeks, during the summer; build in the trees of the swamps, and those of the islands in the ponds; they construct their nests of sticks; the eggs are of a sky blue colour, and from six to eight in number.

ZOOLOGY OF THE UNITED STATES.

CLASS AMPHIBIA.

ORDER REPTILIA.

GENUS TESTUDO.

- Speckled land Tortoise *Testudo Carolina.*
- Close-shelled T. - *T. chrysea.*
- Pennsylvania T. - *T. Pennsylvanica.*
- Mud T. - *T. denticulata.*
- Soft-shelled T. - *T. caroliniana.*
- Great land T. - *T. terrestris.*
- Tarrapin - *T. -*

GENUS RANA.

- Horned Toad - *Rana cornuta.*
- Virginia Frog - *R. Virginica.*
- Tree F. - *R. oborata.*
- Common Toad - *R. bufo.*
- Pond Frog - *R. ocellata.*
- Bull F. - *R. boana.*
- Clamorous F. - *R. pipiens.*
- Green Fountain F. - *R. esculenta.*
- Common F. - *R. temporaria.*
- White-spotted F. - *R. leucophylla.*

GENUS LACERTA.

- Alligator - *Lacerta alligator.*
- Pennsylvania Lizard *L. bimaculata.*
- Orbicular L. - *L. orbicularis.*
- Chameleon - *L. chameleon.*
- Six-lined Lizard - *L. serripinnata.*
- Five-lined L. - *L. quinquevittata.*
- Blue-tailed L. - *L. fuscata.*
- Four-lined L. - *L. quadrivittata.*
- Brown L. - *L. punctata.*
- Lumbriciform L. - *L. lumbricoides.*
- Copper-coloured L. - *L. dracaria?*
- Blue-bellied L. - *L. -*
- Green Carolina L. - *L. boltaria.*

GENUS SIREN.

- Carolina Siren - *Siren lacertina.*

ORDER SERPENTES.

GENUS CROTALUS.

- Ground Rattle Snake *Crotalus mitchellii.*
- Great R. S. - *C. horridus.*
- Yellow R. S. - *C. dryinus.*

- Bastard R. S. - *C. horridus.*

GENUS BOA.

- Indian Boa - *Boa constrictor.*

GENUS COLUBER.

- Canada Viper - *Coluber berberis.*
- Spotted Moccasin Snake *C. conans.*
- Small Brown Adder *C. dorsalis.*
- Mexican Viper - *C. Neve Hispanica.*
- Crowned Viper - *C. coronatus.*
- Water V. - *C. aquaticus.*
- Wampum Snake - *C. fasciatus.*
- Barred S. - *C. doliaus.*
- Tramuchon S. - *C. torquatus.*
- Florida Viper - *C. scutulatus.*
- House Snake - *C. horreorum.*
- Brown Snake - *C. sajoides.*
- Corn Snake - *C. cerastes.*
- Pearl S. - *C. polydactylus.*
- Brown Viper - *C. sibilans.*
- Dark Blue Snake - *C. affinis.*
- Black Snake - *C. constrictor.*
- Dotted S. - *C. carolinus.*
- Virginian V. - *C. virginicus.*
- Bluish Green V. - *C. aspidochelone.*
- Black V. - *C. constrictor.*
- White Snake - *C. atropis.*
- Green-striped S. - *C. diplois.*
- Green Snake - *C. naja.*
- Little Brown Boad S. *C. maculatus.*
- Coach Whip S. - *C. flagellum.*
- Copper-Bellied S. - *C. erythrogaster.*
- Ribbon S. - *C. sarrita.*
- Small Black and Red S. *C. torquatus?*
- Garter S. - *C. -*
- Moccasin S. - *C. -*

GENUS ANGUIS.

- Glass Snake - *Anguis ventralis.*
- Brownish spotted S. *A. reticulatus.*
- Yellowish White S. *A. lumbricalis.*
- Striped S. - *A. eryz?*
- Chicken S. - *A. maculatus?*

GENUS AMPHISBENA.

- Ring Snake - *Amphisbena.*
- Joint or Hoop S. - *A. fuliginosa?*

The *Soft-shelled Tortoise* is the largest of the *Testudo* genus found in North America. When full grown it weighs upwards of 40 pounds. Its flesh is very delicate. It is fierce, and when attacked defends itself by biting. They are found in Florida, and are common in many parts of South America. Of the Tortoise, commonly known by the name of *Tarrapin*, there appears to be several species. Those brought from the Susquehanna are the largest, being from a foot to 18 inches in length. The head, claws and sides, are black, with bright yellow lines; shell, gibbous, oval, and of a dusky brown colour. Those which are found near Egg Harbour, and on the eastern

*Frequently called the *horn snake*, from a blunt horny point, half an inch in length which terminates the tail. This appearance has misled some writers to class it among the *crotali* under the name of the *water rattle snake*. It is very venomous.

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shore of Maryland, are entirely black. The shell is nearly round and convex. They seldom exceed a foot in length. These animals are brought in great numbers to the Philadelphia market, where they form one of the greatest delicacies of the table.

The *Alligator* is an animal very much resembling the Crocodile of the Nile. Their common length is about 12 feet; but they have been seen as long as 23 feet. They are strong, fierce and formidable. They move through the water with great velocity. They are covered with scales which are impenetrable to the ball of the rifle. They are however, vulnerable about the head and belly, and so many of them have been destroyed by the inhabitants for their skins, that their number has considerably diminished. They inhabit the waters of the Mississippi, the streams of Florida and Mexico, and the Atlantic coasts of Carolina and Georgia. The *Chameleon* is found in Mexico. The *Green Carolina Lizard* has sometimes been called the Chameleon from the different shades of colour it assumes. The Chameleon is however much larger, and its usual colour is grayish.

The *Rattle-Snake* is the most venomous of serpents. He is, however, never known to attack man unless he has been touched or affrighted. We may pass very near him without disturbing him, or his shewing the least disposition to bite. The rattles make no noise, as commonly supposed, when the snake creeps; but when they are affrighted, they coil upon themselves, remain motionless, and are ready to dart forward. Then only, they move with an inconceivable velocity, the rattles which advise us of their vicinity. In time of danger, the young snakes take refuge in the maw of the old one. It is commonly supposed that the number of rattles is proportioned to the age of the animal, and that it acquires one rattle every year: this however is a mistake; they have been found to acquire two or three bells in one year. The venom of the rattle-snake is of a clear transparent yellow colour. It is contained in a bladder beneath each fang, and towards the middle of the lower jaw, communicating with the root of the teeth, which are pierced at their bases, and this opening communicates with the bladder containing the poison. The effects of this venom are very various, not only in different species of animals, but even in different individuals of the same species. It sometimes induces most violent pain, which, if we may judge from the cries of the bitten animal, continuing nearly to the close of its life. At other times, it induces death without creating any, or but very little pain. Warm blooded animals sometimes struggle through the danger and recover.* The *crotalus horridus* sometimes grow to the length of eight feet, and weigh between eight and nine pounds. The other species, though smaller, do not appear to be less venomous.

The *Boa* was first ascertained to be a native of the United States by Dr. Mitchell of New York. The individual he saw was on Long Island. It was seven feet four inches in length and thick in proportion. Its back was covered with black or dark brown spots. The Boa has no fangs or biting teeth, and is of course not venomous. It lives upon squirrels, rabbits, small birds, &c. This animal is known in the southern states by the name of the pine or bull snake. In India it grows to the length of forty feet, and not unfrequently attacks tygers, horses, &c.

*Mease's United States, p. 389.

The *Barred Snake* is a very beautiful little animal. Its general colour is milk-white, marked throughout with large, oval, jet-black rings. It inhabits the Carolinas. The *House Snake* is a native of New Spain, where it is said frequently to be domesticated. The *Pearl Snake* is also found in Mexico. Its body is of a beautiful pearl colour; its head and tail are sea-green, the former marked by a red spot. It is about two feet and a half long.

The *Black Snake* is one of the most common snakes of the United States. It is very large, sometimes attaining to the length of six feet. They are entirely of a shining black colour. They feed upon rats, mice, moles, &c. and are very useful in destroying these vermin. They move along the grass, or dry leaves, with great rapidity; are noted for robbing birds' nests; and many strange stories are told of their powers of fascination over squirrels, small birds, &c. which it is said they can attract from the tops of the tallest trees. The mode pursued by the *Crotalus Horridus*, and *Black Snake*, in fighting, is curious. Each one entwines his tail around a shrub, and both rising, they dart at each other, endeavouring to throw their heads round the neck of their antagonist; the one that succeeds pulls with great violence, and endeavours to drag the other down to the ground. In this struggle they frequently lose their holds, which they again resume and proceed as before. A person who was an eye-witness to such a combat, saw the Rattle Snake completely conquered and dragged into the water.

The *Black Viper* is one of the most venomous of the small *coluber* genus. It is very thick in proportion to its length, which is about eighteen inches. It is slow in its motions, and, when irritated, dilates its naturally large head to a surprising width; threatening at the same time with a horrid hiss, whence it has been peculiarly denominated the *hissing snake*. Its fangs are large, and it is said to be as dangerous as the rattle-snake. The *Green Snake* is common in many parts of North America. It is of a beautiful grass-green colour, with a bright yellow line extending on each side from head to tail. It is generally found on trees, is very active, and feeds on insects.

The *Couch-whip Snake* is very long and slender; its length being from four to seven feet. Its colour is a chocolate-brown, varied with black and white. It is very active in its motions, and perfectly innocent. The Indians believe it can cut a man in two with a jerk of its tail. The *Ribbon Snake* resembles the *Green Snake* in its manners. It is smaller. Its general colour is brown above, with three longitudinal bluish-green stripes. The *Black and Red Snake* is the smallest of the serpent kind. It is not larger than an earth worm. The head and back are of a glossy jet black, with a white coil around the neck. The head is rather large, and covered with scales; belly red, eyes flame coloured. It is a rare species, a native of Pennsylvania, where it inhabits crevices of rocks, old walls, &c. and feeds on insects. The *Moccasin Snake* inhabits the swamps and low grounds of the southern states. It grows to the length of five feet, and is said to be very venomous.

The *Glass Snake* has a very small head; the upper part of its body is of a colour blended brown and green, most regularly and elegantly spotted with yellow. Its skin is very smooth and shiny, with small scales, more closely connected than those of other serpents, and of a different structure. A small blow with a stick will separate the body, not only at the place struck, but at two or three other places,

the muscles being articulated in a singular manner, quite through to the vertebra. They are numerous in the sandy woods of the Carolina and Georgia.* They are also found in the middle states.

"The *Joint Snake* has a skin as hard as parchment, and as smooth as glass. It is beautifully streaked with black and white. It is so stiff, and has so few joints, and those so unyielding, that it can hardly bend itself into the form of a hoop." †

Thus far we have given as complete a list as could be procured of the animals of the United States according to the Linnean arrangement. A long catalogue might also be given of the fish, and a list of the insects would fill a volume. The latter is of course impossible, and a list of the fish would not be sufficiently interesting to compensate for the room it would occupy. We shall therefore confine ourselves to a few of the most interesting species of these two classes.

Fish. The *Sturgeon* is the largest fresh water fish of the United States. It is found in almost all the considerable rivers of the Union. The *Blue-cream* of the southern states is a beautiful and delicious fish. The body is dark blue, powdered with sky-blue, gold and red specks. *Herrings* appear off the coast about the latter end of March, and by the middle of April are caught in immense quantities. *Shad* of a superior quality, pay a regular annual visit to the Atlantic coasts, a short time after the herrings. *Perch, Rock, Old Wives, Catfish, Salmon, Black-fish, Mackerel*, and many others, abound in the rivers. Excellent *Trout* are found in the cold water creeks. The *Lamprey* abounds in the rivers of New-England. *Pike* are found in all the states, and sometimes are caught very large. *Cuttle-fish, Sharks, Sword-fish, Dolphins*, and other sea fish, are found off the coast of the United States. *Cod-fish* abound along the shores of New-England.

Insects. One of the most distinguished of the American insects, from the destruction which it occasionally commits, is the locust, *cicada septendecim*. This insect is found in all the quarters of the world, in almost all the parts of the torrid and temperate zones. The singularity of their periodical visits, and their immense numbers at those seasons, make them too well known to need much description. Their visits to the United States are not regular, varying from eight to fourteen years, nor do they appear in all parts of the country in the same season. The *Hessian Fly* is an insect which annually commits great ravages among the wheat. Common opinion has ascribed its introduction to the troops from Hesse Castle which served in the British army during the revolution. This opinion has however been questioned by many, and some authors assert that the insect is not known in Germany. Promising harvests of wheat are frequently totally destroyed by this insect. There is also a species of Bug which does considerable mischief to the wheat, maize, and other grain. The maize also suffers in various stages of its growth by the *Bud-worm*. Different grasses, maize, &c. are often destroyed by the *Grass-caterpillar*. There are two species of *Pea-bugs* found in the southern states, which occasionally commit dreadful havoc among the peas. Among the other insects which injure the vegetables and fruit are the *May-bug, Rose-bug, Cucumber-fly, Potatoe-fly*, different species of weavels, moths, &c.

* Morse.

† idem.

The beautiful appearance produced by the *Fire-fly* has excited the admiration of all the travellers in America. On a summer's evening they are seen in myriads along the meadows and woods. The light they produce is very brilliant, varying in magnitude according to the state of the atmosphere. It is produced and vanishes suddenly like the flash of a pistol. *Glow-worms* are also very numerous in the summer and autumn.

One of the most troublesome of the American insects is the *Mosquito*: they are very numerous in swamps, on the low banks of creeks and rivers, and on the seashore. From these places however they make excursions into all parts of the country, and are frequently very troublesome in the cities. On the Mississippi they are innumerable.

Their bite is very irritating, and is followed by inflammation and swelling. Many species of flies, spiders, beetles, grasshoppers, crickets, butterflies, wasps, hornets, bees, ants, &c. abound in the United States.

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APPENDIX.

In the preparation of this Appendix it was found necessary to examine somewhat exhaustively the literature relative to that part of Ord's Zoology included in his tabulated lists. In this labor I have been exceptionally favored by free access to the unexcelled scientific library of the Academy of Natural Sciences of Philadelphia. The results of this study, especially with respect to the Mammals, seem to show that the nomenclature of Mammalogy yet affords a wide field for critical investigation, ere we shall be able to give due credit to the work of pioneers in this branch of natural history.

The labors of American Ornithologists during the past twenty years have left comparatively little to be done in our scientific ornithology. The appended notes on Ord's catalogue of Birds were mainly compiled by my friend, Mr. Witmer Stone, of the Academy of Natural Sciences. To Dr. Elliott Coues I am much indebted for his critical inspection of the manuscript of this Appendix and for valuable suggestions regarding the bibliographic and historical questions involved. I am also indebted to Prof. E. D. Cope for a similar service in respect to the table of "Amphibia." The names of those species to which Ord gave new binomial names are printed in heavy faced type. A summary of the changes in nomenclature proposed may be found at the end of this Appendix.

TITLE PAGE.

As noticed in the Introduction, the Title Page of the only copy of the Second American Edition of Guthrie's Geography seen by Dr. Coues was defective, (Birds of the Colorado Valley, 1878, Bibliographical Appendix, P. 603.). The titles of the first and third American editions of Johnson and Warner (afterwards Benjamin Warner) are as follows:

The title page of the first (1809) edition is identical in word and spacing with the second edition to and including the words "To which are added:" under the table of contents; from this it reads—

|| A geographical index with the names of places alphabetically ar- ||
ranged. 2. A table of the coins of all nations. 3. A chro- || nological
table of remarkable events, from the || creation to the present time. ||
By William Guthrie, Esq. || The astronomical part by James Ferguson,
F. R. S. || To which have been added, || the late discoveries of Dr.

Herschel and other eminent astronomers. || Illustrated with twenty-five correct maps. || The first American edition improved. || In two volumes Vol. I. || Published by Johnson and Warner, and for sale at their book stores in || Philadelphia; Richmond Virginia; and Lexington, Kentucky || || 1809. || This quarto edition has no scientific value except in its historic connection with that of 1815.

The title of the third American Edition differs materially from those of its predecessors; it reads, || A || Universal Geography; || or || a view of the present state of || the known world, || containing || [here follows double column table of contents, same as in second edition with item number twelve omitted] to which are added, || 1. a geographical index with the names of places alphabetically || arranged. 2# A chronological table of remarkable events, from the creation to the present time. 3. A list || of men of learning and science || originally compiled by William Guthrie, Esq. || The astronomical part by James Ferguson, F. R. S. || to which have been added || the late discoveries of Dr. Herschel and other || eminent astronomers || accompanied with twenty-one correct maps. || third American edition, || with extensive alterations and additions, by several American editors. || In two volumes vol. II. [I] || = || Philadelphia: || published by Benjamin Warner, No. 171 High Street || also for sale at his store in Richmond, (Va.) and by Wm. P. Bason, || Charleston, (S. C.) || = || 1820. || Pp. 9 to 640. I. Vol. of Maps.

Page 299.

Upon whose authority Ord makes the statement that America contains one half of the Quadrupeds of the known world, I do not discover. At the present day the list of strictly North American species of mammals found North of Mexico numbers nearly *four hundred*. In Ord's list one hundred of these species are enumerated; of those remaining in the list, fifteen are undeterminable, twenty-four are Mexican and South American species, eighteen are synonyms of other names in the list and ten are old world forms having no close specific affinities with those of America.

From this it is evident that Ord's acquaintance with the mammalogy of America was chiefly that of a compiler from the works of foreign authors and that the new matter in his Zoology is almost exclusively based on the researches of those intrepid explorers, Lewis and Clark, who had just returned from the new West and the account of whose travels had been made public the previous year.* Viewed from the present standards of research in North American Mammalogy, the list of George Ord forms a striking commentary on past and present methods in zoological science.

That Ord did much toward reformation is well proven; in view of which we may charitably forget that he included in his "Zoology of North America," not only forms exclusively South American, but several species which neither the "ingenious Mr. Pennant," nor the

* February 20th, 1814, was absolute date of publication.

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versatile Dr. Turton had ever assigned to the fauna of the New World. The edition of Linnæus, by Dr. Turton, alluded to by Ord, was in all probability that of 1806, from which Prof. Baird and Dr. Coues make their references. The earlier edition of 1802, I presume has been overlooked by these writers, a fact to be regretted, as the original names and descriptions of all the mammals ascribed by them to Turton's edition of 1806 were published prior to that date.

Page 291.

GENUS *VESPERTILIO*.

"New York Bat *Vespertilio noveboracensis*." The synonymy of this species is essentially as follows:

New York Bat; Pennant, Syn. Quad., 1771, 367.

Vespertilio borealis P. L. S. Müller, (Der Neujörker), Natursys. Suppl., 1776, (No. 21), 21.

Vespertilio noveboracensis Erxleben, Syst. Regn. Anim., 1777, (No. 14), 155.

Atalapha americana Rafinesque, Precis des découvertes, 1814, 12.

Atalapha noveboracensis Peters, M. B. Akad. Berl., 1870, 908.

Atalapha borealis (Müll), (vid. infra).

Priority for the naming of the New York or Red Bat has been long accorded to Erxleben, as cited above. I am unable find any reason for discarding the name "*borealis*" given this species by Müller in the Supplement to his edition of the Systema Naturæ. This earlier name is cited by Erxleben as a synonym; but why he gave the New York Bat of Pennant another name does not appear.

Müller's name preoccupies the *Vespertilio borealis* of Nillson (Illum Fig. Scand. Faun. haft., 19; pl. 36-1838). Nillson's animal will have to stand as *Vesperugo nillsoni* Keys. & Blas., Wiegmann Archiv., 1839, 315.

"BLACK BAT *VESPERTILIO AMERICANUS*." Ord probably refers to the Silver Black Bat of Leconte, *Lasionycteris noctivagans* (Cuv. An. King., McMurtrie ed. 1831, Vol. I., App., 431). The absence of any reference to indicate this makes it questionable. In any event Ord's binomial is antedated by the *Vespertilio americanus* of Turton (Syst. Nat., 1802, 27), who gives it no English name. His characters for it are utterly worthless, viz.: "Very large, with long straggling hairs, ears large." No habitat is given. Ord certainly did not mean to refer to this as his Black Bat, nor can the latter term apply to the *Noctilio americanus* (*N. leporinus*) of the tenth and twelfth editions of Linnæus.

"Brown Bat *Vespertilio fuscus*." Palis. de Beauv., Cat. Peale's Mus., Phila., 1796, 14. = *Vesperugo serotinus fuscus* Dobs., Cat. Chir., 1878, 192. = *Adelonycteris fuscus* H. Allen, Proc. Acad. Nat. Sci., Phila., 1892.

"Hang-lip Bat *Vespertilio labialis*." Turton in his first (1802) edition of Linnæus separated this as a species from the *Vespertilio* (*Noctilio*)

leporinus Linn. evidently basing his diagnosis on Pennant's description (Syn. Quad., 365, B.) of a small specimen given him by John Ellis, Esq. Pennant's intention was to class it as a probable variety of the Peruvian Bat, No. 279, the *N. leporinus* = *N. americanus* of Linnæus. It is quite probable that this small specimen described by Pennant, and which he states, "differed from the former" (*N. leporinus*) "in size, being less, in all other respects agreed," is the same as the *N. albiventer* of Spix (Sim. et Vesp. Brasil, 1823, 58.) which Dobson (Cat. Chir. B. Mus., 1878, 398.) affirms "resembles *N. leporinus* very closely," and that "externally the only character by which this species may be at once distinguished is found in the conspicuously shorter foot."

There is reason for considering Turton's *labialis* entitled to supersede the later name of Spix. Turton's description of *labialis* states the color of belly is "ash," and the extent of wings 20 inches, which I find to agree with three spirit specimens of "*albiventer*" from Surinam in the collection of the Philadelphia Academy of Natural Sciences, but not agreeing with three alcoholic Trinidad specimens. The latter, however, agree perfectly with Dobson's diagnosis of *leporinus* (Cat. Chir. p. 394) in an extent of 26 inches (see also Pennant, sup. cit., B.) and in the fur of the lower parts being very slightly paler than that of the back.

The small size of the foot in the Surinam specimens is also noticeable. This feature is not mentioned by Pennant for the obvious reason that he considered it due to the smaller size of the animal, and not diagnostic in a comparison with young *leporinus* of same size. Turton gives "Peru and the shores of the Mosquito" as the habitat of *labialis*.

"RED BAT *VESPERTILIO RUBRA*." = *Atalapha borealis* (Müll.). *Supra cit.*

Page 291.

GENUS MYRMECOPHAGA.

"Least Ant-eater *Myrmecophaga didactyla*." = *Cycloturus didactylus* (Linn.) Gray.

"Striped Ant-eater *Myrmecophaga pentadactyla*." Taken from Turton, who describes it as a species with five toes on the fore feet, but gives no habitat. I cannot find the name in synonymy and suppose it is original with Turton.

It is possible that Ord may have known the source of Turton's description and that it was taken from an American species. It has nothing to do with *Manis*, but appears to be a genuine Ant-eater.

Page 291.

GENUS DASYPUS.

"Three-banded Armadillo *Dasypus tricinctus*." = *Tolypeutes tricinctus* (Linn.) Illiger.

"Eight-banded Armadillo *Dasypus octocinctus*," and "Nine-banded Armadillo *Dasypus novemcinctus*." = *Tatusia novemcincta* (Linn.) Lesson. *Tatu-*

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sia peba Desmarest, a name by which this species has very generally gone, is an imposition on the good sense not only of Linnæus, but of those who have perpetuated its use.

"**Arctic Walrus or Morse *Trichechus rosasmus.***" *Rosmarus trichechus* Scopoli : Lamont, Seas. with S. Horses, 1661, 141 : Gill, Johnson's Univ. Cyclop., 1877, 633. *Rosmarus rosasmus*, A. O. U. Code.

"**Manati *Trichechus australis.***" = West Indian Manatee, *Trichechus manatus*, (vid infra).

The *Trichechus manatus* of Linnæus' tenth edition of the *Systema Naturæ* is the only species enumerated for the genus in that edition.

The subsequent arrangement in the twelfth edition, by which the Walrus was given place and precedence in the genus *Trichechus*, led to its early adoption for the Walrus, the generic name *Manatus* of Tilesius (1802) being substituted for it in the case of the Manatee. This arrangement, due to the rejection of the tenth edition of Linnæus by earlier systematists, is not now sanctioned, *Trichechus* in the generic sense, being solely applicable to the Manatees.

Linnæus gives the habitat of the Manatee described in his tenth edition, as, "Habitat in mari Americano," referring in his synonymy to the "*Manatus*" of Rondelet, Gesner and Hernandez. The page reference to Gesner appears to be incorrect, nor can I find any unmistakable allusion by that fanciful author to such an animal. Both Rondelet and Hernandez give the West Indies as the habitat of the "Manati," the latter author stating this was the name applied to it by the Haitians. The West Indian Manatee should therefore stand as the type of the family and genus, *Trichechidæ* et *Trichechus*, under Linnæus' original name, *Trichechus manatus*. Its more important synonyms are:—

Trichechus manatus a australis Gmel., Syst. Nat., 1788, 60. (in part.)

Manatus australis Tiles., Jahrb. f. Naturg., "1802," l. 23.

Manatus americanus Desm., Nouv. Dict. Hist. Nat., 1817, xvii, 262.

Manatus latirostris Harlan, Jour. Acad. Nat. Sci., Phila., 1823, iii, 94.

The *Manatus inunguis* Natterer, "Cat. msc. 1830," (quoted from Hartlaub) is considered to be another good American species, and *Manatus senegalensis* Desm. (Nouv. Dict. Hist. Nat., 1817, 262.) is the name of the Old World form, both of course bearing the generic title of *Trichechus*, as now understood. For a comprehensive list of the synonymy of the family, with voluminous commentary and history, the student is referred to Dr. C. Hartlaub's paper in *Zoologische Jahrbücher* i, 1886, pp. 1-112.

Trichechus being inapplicable to it, the Walrus has been placed by some modern writers in the genus *Odobænus*, attributed to Linnæus (Syst. Nat., 1735, 39) and adopted by Brisson, (*Regne Anim.*, 1756, 48), who applied it to both the Walrus and Manatee. This name is not only objectionable in part for the same reasons as those given for *Trichechus*,

but also antedates the recognized birthday of our binomial system. The next available generic name for the Walrus is apparently that of *Rosmarus*, given that rank by Klein in 1751 (Quad. Disp. Brev. Hist. Nat., 40 & 92,) and so adopted by Scopoli in 1777 (Introd. Hist. Nat., p. 490,) and by Prof. Gill in 1866, (Proc. Essex Inst., V. 7.)

Dr. J. A. Allen, after considering the question at great length. (N. Amer. Pinnipeds, 1880, 12-26) assigns the name *Odobenus rosmarus*, Malmgren, Öfver. Vet. Akad. Forh., 1863, (1864,) to the Walrus, admitting, however, that the question of "choice evenly lies between *Odobenus* and *Rosmarus*." The fact that Klein did not use *Rosmarus* in the "binomial" sense, whereas Linnaeus did use *Odobenus* in that sense is a point in favor of the adoption of Klein's name, though the Linnæan name has 16 years priority.

"*Siren or Sea Ape Trichechus siren*." Based on the "Sea Ape," of Pennant (Hist. Quad., 1781, ii, 544); quoted from Steller, to whose work I am unable to refer. Dr. J. A. Allen, whose researches in this class of Mammals are exhaustive, informs me (in epist.) that this species "is not entitled to serious consideration," because of its unrecognizable description. It probably had reference to the Northern Fur-Seal, *Callorhinus ursinus* (Linn.).

Turton's binomial name is evidently original, but has not found its way into synonymy.

Page 291.

"GENUS PHOCA."

"*Maned Seal Phoca jubata*." = *Otaria jubata* ("Forster") Blainville; vid. J. A. Allen, N. Amer. Pinnip., 1880, 208. etc. Not North American in the restricted sense.

"*Sea Calf Phoca vitulina*." = *Phoca vitulina* Linn., Syst. Nat., 1758, i, 38.

"*Harp Seal Phoca Grœnlandica*." = *Phoca* (*Pagophilus*) *grœnlandica* Fabricius, Müller's Zool. Dan. Prod., 1776, viii.

"*Rough Seal Phoca hispida*." = *Phoca hispida* Schreber, Saugt., iii, 1778, 312. = *Phoca fetida* Fabricius, Müll. Zool. Dan. Prod., 1776, viii.

"*Crested Seal Phoca cristata*." = *Phoca cristata* Erxl., Syst. Reg. Anim., 1777, 590. = *Cystophora cristata* Nillson, "K. Vet. Akad. Hand. Stockh., 1837."

"*Hooded Seal Phoca monachus*." = *Phoca monachus* Hermann, Besc. de Berl. Ges. Nat. Freunde, iv, 1779, 456. = *Monachus albiventer* (Boddaert) Gray. Vid. J. A. Allen, N. A. Pinn. p. 465. etc., also *Monachus tropicalis* Gray, (ibid., p. 708), not then (1815) recognized. Turton gives the Hooded Seal as a resident of Dalmatia. Ord has included it on some other authority, perhaps.

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GENUS *CANIS*.

"Indian Dog *Canis Americanus*." *Canis americanus*, Gmel., Syst. Nat., 1788, 69. See Hernandez, Hist. Mex., 1651, 466, "*Canis mexicana*,"—also (infra) note to page 294.

"Common Wolf *Canis lupus*." *Canis occidentalis* Auct. recent. This name of course applies to the northern American Wolf as not distinct from the European species, a question yet unsettled in the opinion of many.

"Black Wolf *Canis niger*." The name *niger*, here used by Ord, does not appear to have been previously used, binomially. Turton refers to it in the vernacular, as a Canadian variety under *C. lupus*.

"Mexican Wolf *Canis Mexicanus*." "*Xoloitzcuintli Lupus mexicanus*," Hernandez., Hist. Mex., 1651, 479. *Canis mexicanus* Linn., Syst. Nat., 1766, 60. 71. *Canis occidentalis* var *mexicanus*, Baird, Mam. N. A., 1857, 113; Mex. B. Surv., 1859, 14. If the Mexican or Lobo Wolf of Hernandez, above quoted, on which this binomial is based, is, as supposed, not separable in a specific sense from the Gray or Timber Wolf of northern N. America, the name "*mexicanus*" should stand first, on the ground of priority, above that of *occidentalis*. Some modern zoologists are of the opinion that the American and European Gray Wolves are not only specifically distinct but that the Canadian and Mexican representatives of the former species are at least sub-specifically separable. Granting this, the correct arrangement would be:—1. Mexican Gray Wolf, *Canis mexicanus*, Linn., Syst. Nat., 1759, 60. 2. Northern Gray Wolf, *Canis mexicanus occidentalis* (Richardson), Fau. Bor. Amer., 1829, 66.

Continuing the use of these names, if the European and American Gray Wolves are not distinct species, they would stand—1. *Canis lupus* Linn. 2. *Canis lupus mexicanus* (Linn.). 3. *Canis lupus occidentalis* Rich. Dr. J. A. Allen* designates the northern Gray Wolf by the name *Canis lupus griseo-albus* taken by Baird from Sabine's Appendix to Franklin's Narrative (1823, pp. 654, 655,) and compounded as a variety of *occidentalis*! Such a manipulation of names seems to me unjustifiable. Sabine's name *Canis lupus griseus* (sup. cit.) has priority over *C. l. occidentalis* Rich., but it is preoccupied by *Canis griseus* Bodd., Elench., Anim., 1784, 97, given the Gray Fox.

A review of whole matter favors the opinion that these American and European Wolves are specifically inseparable, as follows:—

1. *Canis lupus* Linn. (Europe).
2. " " *mexicanus* (Linn.), (Mexico).
3. " " *occidentalis* Rich. (Northern N. America).

* Bull. Amer. Mus. N. H., 1894, 94.

"Large Prairie Wolf *Canis*———"=*Canis mexicanus occidentalis* (Rich.), supra cit.=? *Lupus gigas* Townsend, Jour. A. N. S., Phila., 1850, 75.—"Large wolf of the plains," Lewis & Clark, Hist. Exp., 1814, 167.

"Small Prairie Wolf *Canis*———"=*Canis latrans* Say, Long's Exp. R. Mts., I, 1823, 168.—"Small wolf of the plains," Lewis & Clark, Hist. Exp., 1814, 167.

"Large Red Fox *Canis*———"=*Vulpes macrourus* Baird, Mam. N. Amer., 1857, 130.—"Large red fox of the plains," Lewis & Clark, Hist. Exp., 1814, 168.

"Small Red Fox *Canis*———"=*Canis velox* Say, Long's Exp. R. Mts., 1823, 487.—"Kit fox, or small fox of the plains," Lewis & Clark, Hist. Exp., 1814, 168.

"Varied Fox *Canis alopec?*" This is Linnaeus' name for the European Red Fox, *Vulpes vulpes* (Linn.), with black-tipped tail.

The presence of a similar variety in America has induced Ord to include it in the list as a questionable species.

"Silvery Fox *Canis cinereo-argenteus?*" Müller, (Natursys. Suppl., 1776, 29), has priority over Erxleben for the use of this name in the binomial sense. Erxleben, (Syst. Reg. Anim., 1777, 567), quotes Müller as above in his synonymy. He gives to his "*cinereo-argenteus*" the habitat, "in America boreali," and, as generally construed, describes the "Silvery" form or variety of the Red Fox, *Vulpes fulvus* of authors.

Müller's "*Canis cinereo argenteus*" (sup. cit.) is founded on the "*Canis ex cinereo argenteus* Bris., Lawson's Carolina," as cited by Pennant (Syn. Quad., 1771, 157) which is the Gray Fox, *Urocyon virginianus* (Erxleben), (Syst. Reg. Anim., 1777, 567), of modern authors. Müller's name, therefore, not only has priority but, it is the first one correctly applied to the Gray Fox of Lawson. As such it will stand as *Urocyon cinereo-argenteus* (Müll.). See Coues & Yarrow, Wheeler Rep., 1875, v., 56.

"Black Fox *Canis lycaon.*"=*Canis lycaon* of Müller (1776), Erxleben (1777), and Schreber (1778). This is the "Black Fox" of Pennant. Mivart (Mon. Canidæ, 1890, 4) makes *C. lycaon* one of the synonyms of the *C. lupus*, and Schreber's figure of it (Saugt. iii, pl. 7, lxxxix.) represents a wolf-like animal. His page reference to a *Vulpes nigra* of Gesner is wrong, nor can I find any index reference to this name in Gesner's work. Schreber's next reference is to the "Loup noir. Buff. 9, p. 362. tab. 41 a.," from whose plate Schreber's wolf-like animal is reproduced. Erxleben and others have added to the confusion by confounding this with the black wolf, giving in some cases the habitat of the fox, a-la-Pennant, with a description both fox-like and wolfish in character. It appears most likely that it originally was the first distinctive name applied to the black variety of the Red American Fox (vid. infra) but owing to its subsequent treatment it is now worse than useless.

APPENDIX.

"Gray Fox *Canis Virginianus*." = *Canis virginianus* Erxleben. = *Urocyon cinereo-argenteus* (Müll.), (supra, q. v.).

"Common Red Fox *Canis vulpes*." Ord considered our Red Fox distinct from his black "*lycaon*" and the "*crucigera*" mentioned later, and questionably distinct from "*alopex*" and "*cinereo-argenteus*." The Red Fox of America, if specifically distinct from the European Red Fox, should go by the name "*C. V. var. Pennsylvanicus*," of Boddaert, (Elench. Anim., 1784, 97), founded on the Brant Fox of Pennant (Hist. Quad. 1781, 235.). This name is revived by J. E. Gray, (Cat. B. M., Carniv., (etc.) 1869, 205).* As above stated, the "Black Fox," (*V. lycaon*), though named earlier, has no valid claim to recognition in this connexion. Boddaert's name, modernized to *Vulpes pennsylvanicus*. (Bodd), is tenable enough, and has long priority over *Vulpes fulvus* (Desmarest), (Mamm., 1820, 203.), in common use.

"Cross Fox *Canis crucigera*." This name was first technically applied as a varietal name of the Cross Fox of Asia, Europe and America by Erxleben (Syst. Reg. Anim. 1777, 520.).

It cannot apply, for similar reasons to those given under "Black Fox" (sup. cit.), to the American Red Fox more than to any other going under that surname.

"Corsak Fox *Canis corsac*." That Mr. Ord could have intentionally confounded this Asiatic species with any American form seems doubtful. None of his predecessors seem to have done so.

Page 291.

GENUS FELIS.

"American Panther *Felis cougar*."

"Brown Tiger *Felis concolor*."

As Ord surmises (see foot note), these are the same.

Turton is apparently responsible for the synonym "*cougar*." Should the North and South American Panthers ever prove separable, Turton's name may yet apply to the northern form.

The name "Brown Tiger," here used by Ord, is taken from Pennant (Syn. Quad., 179). It originated probably with Barrere, who calls it "Tigris fulvus, Tigre rouge," (France Aequin., 166). "Conguar" or Congouar was Buffon's spelling of the "Cugacuarana" of Marcgrave (Brasil, 1658, 235.). Puma is the Mexican "Puma seu Leo," of Hernandez (Mexico, 1651, 518.).

"Black Tiger *Felis discolor*." Pennant mentions a "Black Tiger," based in part on the "Jaguarete, Marcgrave, Brasil, 235." Elliot in his Monograph of the Felidæ makes the Black Tiger of Schreber (Saugt. 1778, 394.) a synonym of *Felis concolor* Linn., and from the appearance

* See Coues & Yarrow, Wheeler Rep., 1875, v. 52.

of Schreber's plate (q. v.) this seems a fair inference. Schreber, however, quotes Pennant, as above. Marcgrave's description reads:—"It has short glossy hair, black, mixed with brown and its coat is variegated with black spots, with various figures as in the other," i. e., the Jaguar, first described. Marcgrave's figure (not lettered or numbered) opposite the above quotation is evidently intended for his "Cuguacuarana," (*F. concolor* Linn.) next described on the same page. How Pennant confounded his "Black Tiger," with the Jaguarete of Marcgrave is a problem.

Schreber correctly puts the Jaguarete as a questionable synonym of the Black Tiger (*F. discolor* Schreb.) of Pennant. These names, as originally used by Marcgrave and Pennant, refer to different species, the first to a spotted cat resembling the Jaguar, the latter to a *Felis* resembling the Puma.

The present confusion was probably due to Pennant supposing Marcgrave's figure of the "Cuguacuarana" to apply to his description of the "Jaguarete," which the printer has incorrectly placed opposite the former species.

The same confusion has resulted in the use of the name *Felis nigra* (Erxl., Syst. Reg. Anim., 1777, 512.) which may apply to both the Puma and the black variety of the Jaguar. There is some probability that the spotted young of the Puma has had something to do with the confusion in this case.

"**Brasilian Tiger.** *Felis onca.*"=Jaguar, *Felis onca* Linn. The term Brazilian Tiger is original with Pennant.

"**Mountain Lynx** *Felis montana.*" is based on the "Mountain Cat" of Pennant, (Syn. Quad. 1771, 185) and is apparently the same as his "Bay Cat," (ibid. p. 188, pl. xix, 1), which is the *Felis ruffa* Guldenstaedt, (Nov. Com. Petr., 1776, 499.). "*Montana*" was first legitimately applied to it by Turton, (Syst. Nat. 1802, 50.) not by "Desmarest, 1820" as given by Elliot. LeConte (Proc. Acad. N. Sci., Phila., 1854, 9.) thinks Pennant's "Bay Cat" is not *Lynx rufus* (Guld.) but a "lost" species, and that the name of Ray, (Syn. Meth. Anim., "1713" p. 169), *Catus montanus*, should stand; an arrangement, of course, not to be thought of.

"**Common Lynx** *Felis lynx.*"=European Red Lynx, *Felis lynx* Linn. Turton includes America in the habitat of this species. Ord's reference, of course, is to the Canada Lynx, *Lynx canadensis* (Desm.) Raf.

"**Mexican Cat** *Felis pardalis.*"=Ocelot, of same name.=*Felis pardalis* Linn., Syst. Nat., 1758, 42.

"**Mexican Tiger Cat** *Felis Mexicana.*" Copied from Turton. Whence the latter takes it, or to what species it applies is difficult to determine, but the brief description seems only applicable to one of the color variations of *pardalis*. The name appears original with Turton and precedes the *F. mexicana* of Desmarest, Saussure, etc.

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GENUS *VIVERRA*.

"*Vulpécula Weasel* or Squash *Viverra vulpecula*." Founded on the "Yzquepatl" of Hernandez (N. Hist. Mex. 1651, 332.) and, as Ord uses it, was so named first by Erxleben (Reg. Anim., 1777, 490.) who quotes Schreber. The plates of Hernandez and Schreber (after Buffon) indicate a brown, Mink-like animal. The same animal (after Hernandez) was made by Linnæus the original of his *Viverra memphitis*, (Syst. Nat., 1758, 44), though his description tallies imperfectly with that of Hernandez. There is little doubt that both described from hearsay of different species, combining interchangeably the habits of a Skunk with the colors of no known member of the *Mephitis*. The *V. vulpecula* of Erxleben and Schreber is, in part, a synonym of the *V. memphitis* of Linnæus. Squash is derived from *Quasie*, an Indian name applied to the Coati, *Nausa rufa*, on which in part, the *V. vulpecula* of Schreber is founded. The Quasje was said to have a fetid odor, hence, *memphitis* Linn. (?). See however, (infra) that the Mexican weasel was also called Squash.

"Mexican Weasel *Viverra prehensilis*." I find this nowhere mentioned save by Turton, whose description is lengthy. It is almost certainly the Kinkajou, *Cercoleptes caudivolvulus* (Pallas) Tomes, (1777).

"Striped Weasel or Skunk *Viverra putorius*." = *V. putorius* Linn. (Syst. Nat., 1758, 44). Ord must have thought this name applicable to the common Skunk of northern N. America, but, as well is well established, the Linnæan name was chiefly based on the little Striped Skunk of the Carolinas, *Spilogale putorius* (Linn.) Gray.

"WHITE WEASEL *VIVERRA ALBUS*." From Ord's reference to Lewis and Clark under this heading I am able to find mention of such an animal in only one place (page 191, Coues' 1893 edition) where a Weasel was procured from an Indian, November, 1804, near Bismarck, N. Dakota, "perfectly white except the extremity of the tail, which was black." If this is the specimen examined by Ord at Peale's Museum, *Viverra albus* Ord, antedates *Putorius longicauda* Bonap.

But Ord says this specimen had "dusky" feet. On this account, a very peculiar feature in the genus, it is as probable the specimen was *P. nigripes* (Aud. & Bach., Quad. N. A., II, 1851, 297.) as *P. longicauda*, the habitat of both species being in the region where the Indian procured the weasel mentioned by Lewis & Clark. The fact that Ord puts *V. albus* in *Viverra* and not in *Mustela*, in which he puts the Ermine and American Sable, seems to confirm this supposition. As we are not sure, however, that the specimens mentioned respectively by Lewis and Clark and Ord were identical, (Ord making no book reference to L. & C. as in other instances), the *Viverra albus* Ord must stand as a *nomen nudum*. See Ord, Jour. de Phys., 1818, 152.

GENUS MUSTELA.

"Sea Otter *Mustela lutris*."=*Enhydris lutris* (Linn.) Fleming.

"Common Otter *Mustela lutra*."=*Lutra vulgaris* (Erxl.).

"Canada Otter *Mustela Canadensis*."=*Lutra canadensis* (Schreb.) Turton. Turton included America in the habitat of the European Otter, *L. vulgaris*, but alludes to another species (Syst. Nat., 1802, 57.) as "Black; fur smooth; tail long, taper," applying to it the name "Canadensis," with "North America" for its habitat. Dr. Coues, (Fur B. Anim., 1877, 295.) gives this of Turton priority over any other name applicable to the American Otter, expressly stating in parentheses to reference that the "*Mustela canadensis*" of Turton is not the *M. canadensis* of Schreber. While this is literally true, there is a "*Mustela lutra canadensis*" described, indexed and figured by Schreber (Saugt. iii, 1778, 458 and 588; Pl. cxxvi, B.) which undoubtedly refers to the animal in question. Though put in trinomial form, and as a variety only, of the European animal, there are good reasons why this name of Schreber should be first accredited to him and not to Turton. The "*Mustela canadensis*" of Schreber (1778) is the same animal as "*M. pennantii* of Erxleben (1777). Erxleben's *M. canadensis* is the Mink, *Lutreola vison*. Owing to its page sequence in the Saugthiere the name "*canadensis*" is applicable to only one member of the genus *Mustela* as Schreber defines it, and that (if recognized as a tenable form) is the trinomial "*M. Lutra canadensis*." The other, in such an event, is a synonym.

For discussion of synonymy of *Enhydris lutris*, see Coues (sup. cit.), for that of "*Mustela canadensis*," (sic), see Baird, Mam. N. Amer., 1857, 141.

"Minx *Mustela minx*."

"Tawny Weasel *Mustela vison*." } = *Lutreola vison*." American Mink, Schreb., Saug., iii, 1778, 463; Pl. 127 B. }

"Fisher Weasel *Mustela nigra*." This name is original with Turton. In the 1802 edition of his System it follows his "*M. Canadensis*, Pekan," of which it is a synonym. Turton evidently based *nigra* on the Fisher Weasel of Pennant, (Syn. Quad., 1771, 223).

"Common Weasel *Mustela vulgaris*."=*Putorius vulgaris* (Erxl.). Ord agrees with Turton that this species is cosmopolitan, as also the Ermine *P. erminea* (Linn.). See Coues, (Fur B. An., 1877, 136), on this subject.

"PEKAN *MUSTELA HUDSONIUS*." Ord is certainly responsible for this name of the *Mustela pennantii* of Erxleben. He has justly discarded Turton's name *canadensis* as a synonym, because of its use under this genus on a previous page; for the Otter, (vid. sup. cit.).

"American Sable *Mustela Americanus*." Turton's claim to precedence in thus naming the American, as distinct from the European, Marten, is well established.

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Page 261.

GENUS *URSUS*.

"GRIZZLY BEAR *URSUS HORRIBILIS*." This of Ord's, is the first tenable name for the West American form, which many eminent naturalists consider too intimately related to *Ursus arctos* to form a distinct species. For further discussion of it see notes on page 299. See also, Ord., Jour. de Phys., 1818, 152.

"American Bear *Ursus Americanus*." The term, American Bear, first used by Turton and copied by Ord, is a better name for our animal than "Black Bear," by which it is so generally called. Black bears are to be found among several so-called species, and not infrequently our "Black Bear," is brown. Custom, however, will probably retain the name in spite of any effort to establish the more distinctive title.

"Badger *Ursus meles*."

"American Badger *Ursus Labradorius*." The critical reader is referred to Dr. Coues' history of the American Badger (Fur. B. Anim. 1877, 261-292.) for discussion of the points of synonymy, etc., involved in its separation from the European Badger. Dr. Coues makes his first reference in the synonymic list to the "*Ursus taxus*," of Schreber (Saugt. iii, 1778, 520, Pl. 142 B.). This reference was not verified by Dr. Coues, as he states on page 276, adding that Schreber "is cited for a name, "*Ursus taxus*" as applicable to the American Badger though quoted as considering our species as distinct from the European." It is unfortunate Dr. Coues did not make this reference, as he evidently thinks the name "*Taxus*," first used for a Badger by Aldrovandus (?) and in a specific sense by Schreber, as above quoted, was originally intended (as now universally and erroneously applied) for the European species.

That this view is erroneous the description of Schreber, (sup. cit.) and his plate plainly show. In these he has almost as explicitly shown the external differences between his American Badger, *U. taxus*, and his European Badger, *U. meles*, as has Dr. Coues, and often in equivalent terms.

Taxidea taxus (Schreber, 1778) should therefore stand as the proper name of the American Badger. The later use of the name "*taxus*" by Boddaert, (Elench. Anim., 1784), after the specific name "*Meles*," of Linnæus was made generic, for the European form, is inadmissible. This, as well as his "var. *americanus*," are synonymy of *taxus*.

Blumenbach, (Hand. Natur., 1799, 96), misquoted by Gray (B. M. Cat. Carniv., (etc.) 1869, 124), gives to the European Badger the name "*taxus*," quoting Schreber (sup. cit.), having mistaken the *taxus* of that author for the European animal and ignoring his "*Ursus meles*" entirely. Blumenbach's description refers solely to the European form.

The proper name for the European Badger is *Meles meles* Linn.

"Wolverene *Ursus luscus*." } = *Gulo luscus* (Linn.) J. Sabine. As hinted by
 "Glutton *Urus gulo*." }
 Ord in the foot note, these refer to one species, of Arctogean distribution.

Page 291.

GENUS DIDELPHIS.

"Virginian Opossum *Didelphis opossum*." Turton, followed by Ord, first gives (?) the name *opossum* to the Virginian species, the *Didelphys virginiana* of Kerr, (1798) and Shaw (1800).

Dobson, (perhaps on rather scanty material, viz, rather less than fifty skins, stands, skulls and skeletons from northern N. America, (vid. B. Mus. Cat., Marsup. & Monot., 1888, 327-329.)), includes *D. virginiana*, *cancrivora*, *aurita*, *californica* and *breviceps*, (with *azaræ* as a subspecies), under the Linnæan *D. marsupialis*. The *D. opossum* of Linnæus, (*D. quica* of Temminck), Dobson considers plainly applicable to a small Neotropical species belonging to another subgenus. It is likely that the *D. virginiana* of Kerr, wrongly accredited to Shaw, is as entitled to subspecific rank as *azaræ*. That it is a distinct species from typical *marsupialis*, as defined by Dobson, (sup. cit.), seems doubtful.

"Mexican Opossum *Didelphis cayopolin*" = *Didelphys murina* Linn., Syst. Nat., 1758, 55. See Dobson, (sup. cit.), p. 343.

Page 291.

GENUS TALPA.

"Long-tailed Mole *Talpa longicaudata*." A synonym of Erxleben's (Syst. Reg. An., 1777, 118.) for the Star nosed Mole *Condylura cristata* (Linn.), based on Pennant's "Long-tailed Mole"; the same as the "Radiated Mole" of Pennant.

"Red Mole *Talpa rubra*." Originating in the "*Talpa americana*" of Seba (Thes. I, 51; T. 32, fig. 2.) and based on a specimen said to have three toes on the fore feet; in other respects similar to *Talpa europæa* and of a brownish red. A remote suggestion can be conceived in the description to a *Geomys*; and Schreber in his synonymy of it tentatively included "Le Tucan" of Buffon. It is unidentifiable, though Pennant, Müller and Erxleben give it a place in their Systems.

Page 291.

GENUS SOREX.

"Crested Shrew *Sorex cristatus*." = *Condylura cristata* (Linn.). See note (supra) on *Talpa longicaudata*.

"Aquatic Shrew or Common Mole *Sorex aquaticus*." = *Scalops aquaticus* (Linn.).

"Fetid Shrew *Sorex araneus*." Ord includes this European species

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on authority of Turton, who refers to a form; "2. Head, upper parts dusky; sides brownish rusty. Inhabits Hudson's Bay and Labradore."

"**Black Shrew, *Sorex niger*.**" Not mentioned in Turton nor in Pennant, nor elsewhere that I can find, unless it refers to the "*Talpa Virginianus niger supinus*" of Seba (Thes., II, p. 51.) quoted in the synonymy of *Scalops* ("*Sorex*") *aquaticus* of earlier authors, and which originated, perhaps, in a specimen of *Condylura cristata*.

"**Mexican Shrew *Sorex Mexicanus*.**" Ord bases this on the *S. mexicanus* of Turton, Turton on Pennant's name and description, and Pennant on the "De Tucan, seu Talparum Indicarum quodam genere, Cap. XXIV," of Fernandez, (Hist. Quad. Nov. Hisp., 1651, 7.). Erxleben confounds it (De Tucan) with the "*Talpa rubra Americana*" of Seba (vid. sup. cit.) questioning, however, if the latter be the same as the Mexican Shrew of Pennant. Fernandez's description is that of a "tawny" *Geomys* with "short tail and legs, sharp nose, small rounded ears, long incurved claws and living in burrows with numerous passages, which are a nuisance to travelers."

Pennant translates, "two long fore-teeth above and below . . . length from nose to tail nine inches," and adds "M. de Buffon thinks it a mole, but by the ears it should be classed here," (viz. as a shrew). Turton makes the same diagnosis, prefacing it, however, with, "fore-feet, 3-toed, hind-feet 4." evidently taken (after Erxleben) from Seba's erroneous description of the aforesaid "*Talpa rubra americana*." Fernandez's meaning in that passage, translated by Pennant, "two long fore-teeth above and below," is very difficult to make out and may have reference to the grooved incisors. In this case the animal was a true *Geomys*, (not *Thomomys*); *Thomomys*, however, has not been reported from southern Mexico. Fernandez's "Tucan" was evidently either *Geomys hispidus*, Leconte, or the *G. mexicanus* (Licht.), (Abhand. K. Acad. Wiss. Berl., 1827, 113), of late authors. The probability is strongly in favor of this assumption, and, judging by the abundance of the animal described by Fernandez as compared with what we know of the comparative abundance and scarcity, respectively, of *G. mexicanus* and *G. hispidus* there is small doubt that Fernandez's "Tucan" was the same as Liechtenstein's animal.

Fortunately for synonymy, Lichtenstein selected the same specific name for the Tucan that had been applied to it 25 years previously by Turton. Briefly summarized, the synonymy of the Tucan should be—

Tucan, Fernandez, Hist. Quad. N. Hisp., 1651, 7.

Mexican Shrew, Pennant, Syn. Quad., 1771 (No. 240), 309.

Sorex mexicanus, Turton, Syst. Nat., 1802, 72.

" " Ord, Guth. Geog., 1815, 291.

Ascomys mexicanus Licht., Abhan. K. Akad. Wiss. Berl., 1827, 113.

Geomys mexicanus Rich., Rep. Brit. Assn. Ad. Sci., 1836 & '37, 150.

" " Baird, Mam. N. Am., 1857, 387.

Page 291.

GENUS *HYSTRIX*.

"Brazilian Porcupine *Hystrix prehensilis*." } = *Syntheres prehensilis*
 "Mexican Porcupine *Hystrix Mexicana*." }
 (Linn.) Cuv.

"Canada Porcupine *Hystrix dorsata*." = *Erethizon dorsatus* (Linn.) Cuv.

Page 292.

GENUS *MUS*.

"American Rat *Mus Americanus*." This is undoubtedly the "American Rat" of Turton, whose description is a virtual quotation of the diagnosis of the "American Rat" of Pennant, (No. 229., Hist. Quad. 1781, 441.), who quotes Bartram, referring to Kalm's Travels (ii, 48).

Bartram's references, as quoted, apply to the Cave Rat of the Alleghany Mountains, the extinct (?) *Neotoma magister* of Baird, (Mam. N. Am., 1857, 498, (in text)), which, as *N. pennsylvanica*, Stone, (Proc. Acad. Nat. Sci., Phila., (1893, 16.) has been described as a recent species. This animal, which is distinct from *N. floridana* Ord, would be entitled to the name *americanus* imposed by Turton (q. v.) were not that name preoccupied by the "*Mus americanus*" of Kerr (Syst. Nat., 1792, 231.) which is now accepted as the first tenable name of the eastern White-footed Mouse, *Sitomys americanus*. Some earlier authors have confounded the two in their synonymy.

"Water Rat *Mus amphibius*." The *Arvicola pennsylvanica* Ord (vid infra) was identified by Turton and his predecessors with the large Water Vole of Europe. See Lawson's History of Carolina, page 122.

"SAND OR EARTH RAT *MUS TUZA*." Prof. Baird's quotation of this name is incorrectly spelled *tuza* in his work on N. American Mammals. Dr. Coles has rightly insisted on the adoption of Ord's specific name for the Georgian Hamster or Salamander of the Gulf States, which has generally gone under the name *Geomys pinetis* of Rafinesque, (Amer. Month. Mag., 1817, 45.). Both names are probably based on the same descriptions, notably those of Mitchell, (N. York Med. Repos., 1802,) 89—*Ib.*, Bewick's Quad., 1st. Amer. ed., 1804, 525).

"Louisiana Earth Rat or Gopher *Mus Ludovicianus*." Ord's foot-note reference to this animal leaves us in doubt whether he referred to the common Pocket Gopher, *Geomys bursarius* (Shaw), (Linn. Trans., v., 1800, 237) or not. It is probable that he did. Shaw's name in any case, has priority.

"ASH-COLOURED RAT *MUS CINEREUS*." = *Neotoma (cinerea)*. Say & Ord, Jour. A. N. Sci., Phila., 1825, 346. Another of Ord's species, for the honor of naming which he acknowledges his indebtedness to the painstaking narrative of Lewis and Clark. The *N. drummondii* (Rich.)

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(Zool. Jour., 1828, 517.), and the *N. occidentalis* "Cooper, Mss." (Baird, Proc. A. N. Sci., Phila., 1855, 335.) were applied to the same species. These have been revived as subspecies of *N. cinerea*, the first by Dr. Merriam (Proc. Biol. Soc. Washn., 1892, 25.) as inhabiting the Rocky Mountains of British Columbia, the second by Dr. J. A. Allen, (Bull. Amer. Mus. N. Hist., 1891, 287.), with habitat in "Idaho and Shoalwater Bay, Washington." The habitat of *N. cinerea* (typical) is the east slope of the Rockies near Great Falls, Montana. See Coues' Lewis & Clark, 1893, pp. 400, 863. It probably extends much farther north, into Alberta, B. America.

"Rustic Mouse *Mus agrarius*." Turton, under this name, includes a "No. 2," equivalent to the "No. 230 a" or American Rat of Pennant (Syn., Quad., 1771, 303.) which (sup. cit.) is the White-footed Mouse, *Mus agrarius* var *americanus* = *Sitomys americanus* (Kerr). It is probable that Ord intentionally applied this name, (*Mus agrarius*), to the Pennsylvania W. F. Mouse, not considering it separable from the European animal. His "*Mus Americanus*", the American Rat, No. 299 of Pennant's History of Quadrupeds, is, as we have seen, (sup. cit.), widely different.

"Mexican Mouse *Mus Mexicanus*." Turton's brief description, "A large reddish brown spot each side the belly. Inhabits Mexico, whitish mixed with red," is from Pennant, (Hist. Quad., 1781, 446), who quotes Seba (Thes. Mus., 1734/74, Tab. xlv, fig. 5.). Seba's figure looks like that of a House Mouse or a species of *Reithrodontomys*. The peculiar color-pattern, if diagnostic of an indigenous species, should make its recognition an easy task. It is probably a partial albino.

"Virginian Mouse *Mus Virginianus*," is another production of the indefatigable Seba, which Pennant recognizes in his History of Quadrupeds. The type of this creation was probably the result of albinism and outrageous stuffing, being described as a white "Rat" (mouse?) with base of tail very thick. It may have been a mole.

"Hudson's Mouse *Mus Hudsonius*." This is an Arvicoline animal described under the same name by Pallas (Nov. Sp. Glires, 1778, 208.) who quotes Foster. It is not a *Zapus*, as its specific name would suggest, but (see Coues, Mon. N. Am. Rod., 1877, 249) a synonym of *Mus torquatus* Pallas (sup. cit., pp. 77 & 206). Should it be proven that the American and Asiatic animals are separable, (Dr. Coues considered them identical), the *Mus hudsonius* of Pallas will still apply to the former as *Cuniculus hudsonius* (Pallas), (Coues, Mss.).

"AMERICAN WANDERING MOUSE *MUS CANADENSIS*." By the reference of Dr. Coues, (Mon. Am. N. Rod., 1877, 50) it appears the vernacular part of this name was applied originally by Barton ("Med. & Surg. Jour., 1805, 31") to the White-footed Mouse *Sitomys americanus* (Kerr). I am unable to find the Journal referred to. If certainly identifiable as such, the subspecific name "*canadensis*," applied by Mr. G. S. Miller Jr.

(Proc. Biol. Soc. Washn., viii, 1893, 55) to the form of White-footed Mouse inhabiting northern New York and New England, would appear to be preoccupied by the "*canadensis*" of Ord.

"**Meadow Mouse *Mus arvalis*.**" Turton erroneously includes Newfoundland in the habitat of this Old World species, and Ord follows suit.

"**PENNSYLVANIA MEADOW MOUSE *MUS PENNSYLVANICA*.**" While admitting that this name in strictness is justly applicable to Wilson's "Meadow Mouse", Dr. Coues prefers to use Ord's later name of "*riparius*"; stating (Mon. Rodentia, p. 156, foot note) that "the name (*pennsylvanica*) is simply based, without sufficient description, upon a scarcely recognizable figure incidentally introduced in an ornithological work." As will be seen, Ord's reference is not made to the figure at all, but to Wilson's description, (Amer. Orn., vi, 59.), which fact Dr. Coues appears to have overlooked. This description is a full one and unmistakably applies to the same animal subsequently described by Ord (Jour. Acad. Nat. Sci., Phila., 1825, 305.) with the name *riparius*. Wilson's figure, good or bad, (and it is poor enough), is of secondary importance.

Rafinesque's *Mynomes pratensis* (Amer. Mon. Mag., ii, 1817, 45) also makes it imperative that Ord's earlier name should stand, if Ord is to get the credit due him. Baird incorrectly quotes Ord's *pennsylvanica*, in his synonymic list, under *Arvicola* instead of *Mus*, and he seems to have been imitated by subsequent writers.

Page 292.

GENUS ARCTOMYS.

"**Maryland Marmot or Ground Hog *Arctomys monax*.**" } These names apply
 "**Canadian Marmot *Arctomys empetra*.**" }
 to the same species. The *Arctomys empetra* of Pallas was originally imposed by him on Parry's Spermophile of Richardson. In Pallas's references, however, he cites the Quebec Marmot of Pennant and Foster as synonyms of the Spermophile. This originated much confusion among later authors, in which Ord has followed Turton. Dr. Allen (Mon. N. Am. Rod., pp. 915-917.) fully discusses these perplexing questions.

"**Hoary Marmot *Arctomys pruinosus*.**" = *A. priuosus* Gmelin.

"**Tailless Marmot *Arctomys Hudsonius*.**" Founded on "No. 265, Tailless M." of Pennant (Hist. Quad., 1781, 405) whom Turton copies and imposes the binomial. I find no subsequent reference to it in literature. It seems unidentifiable, being described as having two upper and four lower cutting teeth and no tail: "inhabits Hudson's Bay. In the Leverian Museum." It is not impossible that it was a *Lagomys* from the Hudson's Bay Territory.

"**Earless Marmot *Arctomys citillus*.**" Ord has made a pencil foot note, "not in America," under this species.

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"LOUISIANA MARMOT OR PRAIRIE DOG *ARCTOMYS LUDOVICIANA*." = *Cynomys ludovicianus* (Ord) Rafinesque. See below, note for page 302.

"COLUMBIA MARMOT *ARCTOMYS COLUMBIANUS*." = *Spermophilus columbianus* (Ord) Merr. See Merriam, N. Am. Fauna No. 5, 1891, 39; also Coues, Lewis & Clark, 1893, iii, 856 (foot note); also my notes, below, for page 303. Type locality, Camp Chopunnish on the Koooskooskee (Clear-water) River, near town of Kamai, Idaho.

Page 292.

GENUS *SCIURUS*.

"Large Black Squirrel *Sciurus niger*." = *Sciurus niger* of the tenth edition of Linnæus, now understood in the restricted sense to apply to the Fox Squirrel of the southeastern United States.

"SMALL BLACK SQUIRREL *SCIURUS PENNSYLVANICA*." Dr. J. A. Allen, after discussing (Mon. N. Am. Rod., 1877, 709) the synonymy of the eastern Gray Squirrel, *Sciurus carolinensis* of Gmelin, (Syst. Nat., i, 1788, 148), prefers to retain the varietal name *leucotis* of Gapper (Zool. Jour., v, 1830, 206) for the northern form in preference to the above name of Ord, applied to it fifteen years earlier. Dr. Allen, not having access to Ord's work, objected to the validity of *pennsylvanica* on the plea that it was based on specimens from the Middle States, an intermediate locality between those of the southern and northern forms and so not typical of either. This objection is fully met by Ord's foot note, which gives the habitat of the Small Black Squirrel as "those parts of Pennsylvania which lie to the westward of the Alleghany ridge." The region thus designated is assigned by Dr. Allen (Bul. Am. Mus. N. Hist., iv, pl. viii.) almost wholly to the Alleghanian and Canadian faunæ, and it is well known that the "Black Squirrel" is very rarely met with in Pennsylvania east of the Susquehanna River, and rarely west of it, except in the northwestern parts of the state, in a region typically Canadian in its faunal characters. There seem therefore, no valid objections to allowing *Sciurus carolinensis pennsylvanicus* (Ord) to stand as the name of the northern Gray Squirrel.

"Cat or Fox Squirrel *Sciurus vulpinus*." This is Gmelin's name for the *Sciurus niger* of Catesby and Linnæus.

"Gray Squirrel *Sciurus cinereus*." Ord probably applied this name to the normal gray phase (sup. cit.) of his "Small Black Squirrel," *S. carolinensis pennsylvanicus*. The name *S. cinereus* Linn. (Syst. Nat., 1758, 64) is considered to properly belong to the northern race of *Sciurus niger*, the "Cat Squirrel" of Bachman, and should read *Sciurus niger cinereus* (Linn.) J. A. Allen.

"Louisiana Gray Squirrel *Sciurus Ludovicianus*." This species is not given in either edition of Turton. It was so named by Custis in Barton's Medical and Physical Journal (vol. ii., 1806, p. 43) from which Ord must

have taken it. Dr. Allen makes it stand (Mon. N. Am. Rod.) for the western race of *S. niger* Linn. as *S. n. ludovicianus* (Custis).

"**Virginian Squirrel** *Sciurus Virginianus*." Turton is responsible for this name, which appears, from the description, to be a synonym of one of the *S. niger* group.

"**NEW JERSEY SQUIRREL** *SCIURUS HIEMALIS*." Undoubtedly named in good faith, but, as the description implies, based on such fanciful characters as any individual of the *S. carolinensis* group may assume at some period of its existence. *S. hiemalis* is a synonym of *S. c. pennsylvanicus*, (Ord), (sup. cit.).

"**Varied Squirrel** *Sciurus variegatus*."=*S. variegatus* Erxleben, which is based on two or more Mexican species.=*S. boothiæ* Gray (1st Mam. B. Mus., 1843, 149). For discussion of its synonymy, see Allen, Mon. N. Am. Rod., 1877, 741.

"**Mexican Squirrel** *Sciurus Mexicanus*." This is possibly *Spermophilus mexicanus*, (Licht.) Wagner. Turton's description indicates this genus, or *Tamias*, certainly not *Sciurus*.

"**Hudson's Bay Squirrel** *Sciurus Hudsonius*." This is Pallas' name for the typical northern Red Squirrel or Chickaree. See Pallas, Nov. sp. Glir., 1778, 376. It is strictly a synonym of Erxleben's *S. hudsonicus*, (Syst. Anim., 1777, 414), a synonym, however, which later authors have allowed to stand because Erxleben classified it as a variety of *Sciurus vulgaris* Linn.

Usage may permit, but good rules will not sanction such an interpretation. *S. hudsonicus* is Erxleben's name, but hitherto Pallas got the credit of it.

"**CAROLINA OR CHICKAREE SQUIRREL** *SCIURUS CAROLINENSIS*." A synonym of *Sciurus hudsonicus* Erxleben. The name is also preoccupied by the *S. carolinensis* Linn. (sup. cit.), and by one of Gmelin's synonyms.

"**Fair Squirrel** *Sciurus flavus*." This is one of Linnæus' original species. Its habitat is given as "Carthagera America." Pennant (Syn. Quad., 285.) says "it inhabits the woods near Amadabad the capital of Guzarat," and then quotes Linnæus as above. It is an unidentifiable species.

"**Flying Squirrel** *Sciurus volucella*."=*Sciuropterus volucella* (Pallas) Geoff.

"**HUDSON'S BAY FLYING SQUIRREL** *SCIURUS LABRADORIUS*." The Flying Squirrel of northeastern N. America, the species here designated, has, either as a species or variety, gone under the names *hudsonius* of Gmelin (Syst. Nat., i, 1788, 153) and *sabrinus* of Shaw (Gen. Zool., ii, 1801, 157). Contrary to the arguments of Dr. Allen (Mon. N. Am. Rod., 1877, 660), Shaw's name must hold for the Hudson's Bay race, because Gmelin's *Sciurus hudsonius* (p. 153, sup. cit.) is only applicable to the Chickaree, *S. hudsonicus* Erxl. (sup. cit.), to which Gmelin applies it on a previous page (p. 147) of the same book.

Ord's name *Labradorius* for this animal is apparently his own, Turton does not use it, nor, so far as I can search, does anyone else.

"**COLUMBIA GRAY SQUIRREL** *SCIURUS*———" A brief of the synonymy of this Squirrel is as follows:—

"The large gray squirrel," Lewis & Clark, Hist. Exp., ii, 1814, 172.

"*S. griseus*," Ord, Guth. Geog., 1815, 292, (Mss. annot. in author's copy: no date of entry).

"Columbian Gray Squirrel *sciurus griseus*;" Ord, Jour. de Phys., lxxxvii, 1818, 150.*

Sciurus fossor Peale, Mam. & B'ds., U. S. Expl. Exp., 1848, 55.

A consultation of the above references shows unmistakably Ord's priority in giving the Gray Squirrel of the Pacific slope a permanent name. It is to be hoped the title "Columbian Gray Squirrel," will be hereafter adhered to by all patriotic Americans. It is geographically correct, this Squirrel having been taken not only on the Oregon side of the Columbia River, but as far north in Washington as Puget Sound. I have examined specimens taken in the vicinity of Olympia, now in the collection of Edwards Bros., Tacoma, Washington.

"**RED-BREADED SQUIRREL** *SCIURUS*———" The synonymy of this species, is in part, as follows:—

"The small brown squirrel," Lewis & Clark, Hist. Exp., ii, 1814, 174.

"*S. rubricatus*," Ord, Guth. Geog., 1815, 292, (Mss. annot. in author's copy: no date of entry).

"Red-breasted Squirrel *S. rubricatus*;" Ord, Jour. de Phys., lxxxvii, 1818, 150.

Sciurus douglassi Bachman, Proc. Zool. Soc., Lon., 1838, 99.

As in the case above cited, *Sciurus rubricatus* Ord, legitimately antedates Bachman's name for the Red Squirrel of the West Cascade region of Oregon and Washington. The citations from Lewis and Clark made by Ord in Guthrie's Geography, and the consensus of opinion as to the identity of their "small brown squirrel" with *Sciurus douglassi* Bach., make it almost as plain a case as that of the Columbia Gray Squirrel.

Sciurus rubricatus should not, in my opinion, be made subspecific of *S. hudsonius*.

"**ROCKY MOUNTAIN GROUND SQUIRREL** *SCIURUS*———" Its earlier synonymy now stands:—

"The ground squirrel," Lewis & Clark, Hist. Exp., 1814, 175.

"*S. troglodytus*," Ord, Guth. Geog., 1815, 292, (Mss. annot. in authors' copy: no date of entry).

"Rocky Mountain Ground Squirrel *S. troglodytus*;" Ord, Jour. de Phys., lxxxvii, 1818, 150.

*This and the two succeeding citations occur in the following passage:

"My friend Lesueur has figured for me the greater part of the quadrupeds brought back by Lewis (and Clark), or at least those whose skins were in a perfect state of preservation, the common *Bagger*, *Ursus labradoricus* of Linnæus; the Marmot of Louisiana, *Arctomys Ludoviciana*; the *Viverra alba*; the Columbia grey Squirrel; *sciurus griseus*; the Red breasted Squirrel, *S. rubricatus*; the Rocky mountain ground Squirrel, *S. troglodytus*, the Great Grizzly Bear, *Ursus horribilis*; I have of this last, two figures from two fine individuals in the Museum."

Sciurus quadrivittatus Say, Long's Exp. R. Mts., ii, 1823, 45. + *Tamias townsendi* Bachman, Jour. Acad. N. Sci., Phila., viii, 1839, 68, and varieties.

The Ground Squirrel of Lewis and Clark above cited, and to which Ord's *Sciurus troglodytus* was applied, included at least two or three species or subspecies and is of too composite a character to make the name of any fixed value.

"Brown Squirrel *Sciurus*———" Ord in the foot note reference surmises the other Brown Squirrel of Lewis and Clark to be *Sciurus hudsonius* and there is no doubt that by this term, which is rather vaguely and loosely applied by Lewis and Clark, they meant to designate the forms of *hudsonius* found east of the Cascade Mountains, now going under the names, *S. hudsonius richardsoni* (Bach.) and *S. hudsonius fremonti* (Aud. & Bach.).

Page 292.

GENUS *DIPUS*.

"Labrador Jerboa *Dipus Labradorius*," Turton, Syst. Nat., 1802, 99.

"Canada Jerboa *Dipus Canadensis*," Davies, Trans. Lin. Soc., 1798, 157.

"American Jerboa *Dipus Americanus*," Barton, Amer. Philos. Trans., 1798, 115.

This trio of names apply, so far as can be ascertained, to one species, the *Zapus hudsonius* (Zimmerman) Coues (Mon. N. Am. Rod., 1877, 461-479.). They may apply in part to the *Zapus insignis* Miller, (Amer. Nat., 1891, 472, and Proc. Biol. Soc. Washn., 1893, 1.), a very distinct species, confined to the more boreal parts of the eastern habitat of *hudsonius*.

Page 292.

GENUS *LEPUS*.

"Common Hare *Lepus timidus*."=*Lepus timidus arcticus* (Leach), Ross' Voy., ii, 1819, app. iv, 170.

"Varying Hare *Lepus varibialis*."=*Lepus americanus* Erxleben, Syst. Reg. Anim., 1777, 330.

"American Hare or Rabbit *Lepus Americanus*."=*Lepus sylvaticus* Bachman, Jour. Acad. N. Sci., 1837, 403.

For discussion of the perplexing synonymy of the N. American Hares, see Allen, Mon. N. Am. Rod., 1877, 288-343.

Page 292.

GENUS *CERVUS*.

"Greater Stag or Elk *Cervus major*."=*Cervus canadensis* Erxleben, Syst. Reg. Anim., 1777, 305. Ord's name *major* is the second pure syn-

onym of Erxleben's, the first being the *C. wapiti* of Barton, (Amer. Phil. Trans., vi, 1809. 79.)* Turton makes the Elk an American representative of *Cervus elaphus* Linn.

"Mexican Deer *Cervus Mexicanus*." Gmelin (Syst. Nat., 1788, 179) is apparently the first to use this name in the binomial sense. His description has been considered by Baird and others to apply to the Mexican form of *Cariacus virginianus* and by some authorities it has been considered a distinct species. Gmelin's first citation of authority for his *C. mexicanus* is the Mexican Deer, No. 52, of Pennant (Hist. Quad., 1781, 110), his third citation is "Teutl macame. Hernandez an. mexic. 324." Pennant's first citation is the same as Gmelin's, viz: "Teutlamacame, Hernandez An. Mexic. 324." The Teutlamacame is therefore the basis of the Mexican Deer of Pennant, Gmelin and later authors. But it has been asserted on the authority of the Berlandier Manuscripts (Baird, Mam. N. Am., 1857, 666., Alston, Biol. Cent. Am., 1879-'82, 113) that the Teutlamacame or Berrendo of the Spanish Mexicans is the Pronghorn Antelope, *Antilocapra americana* Ord, (infra). If this can be proven, Ord's name would have to go, and the Mexican *Cariacus* receive a new name. Reference to Hernandez' description of the Teutlamacame shows quite conclusively that, whatever the Mexicans considered a "Berrendo" in Berlandier's day, this name was understood by Hernandez to apply to a gray deer about the size of a goat with ample branching horns. This is confirmed by Pennant's description and figure which unmistakably relates to a *Cariacus*. Hernandez' description, which is not on page 324, but near the middle of 325, is as follows:—"moreover concerning the Teutlalmacame which is a little larger than a medium sized goat. Covered with gray hair, easily pulled out, and yellowish ("fulvoq."); but with sides and belly hoary white, hence the Spanish natives are accustomed to call them Berrendos.† They wear ample (wide) evenly branching horns, (but in some they are small), long tapering sharp pointed, divided into branches and reaching beyond (or below) the eyes, of which (viz: the animal) we show a figure." This figure, from the context, is the one on page 324. The figure on page 325 is of the Temamacame next described, which Hernandez likens to the "Fallow Deer, with the shortest and sharpest of horns color fulvous, brown, and beneath, white." The figure shows a spike-horned animal, which Mr. Alston (Biol. Cent. Am., p. 119) considers to be *Cariacus rufinus* (Bourcier & Pucheran). The figure of the Teutlalmacame is the real cause of the confusion of authors, owing to the resemblance of its horns to those of the Antelope, *Antilocapra americana* Ord. It is not impossible that this figure was based on the Antelope, but as it differs in many other respects from that animal, and the most liberal translation of

*I find in the Journal de Physique, 1818, p. that Ord gets his name *C. major* from Artorby, who, he affirms, gave the Wapiti this name long before that of Gmelin, viz. *C. canadensis* Erxl. Artorby seems to be so obscure an individual as not to merit citation in any of the scientific literature at my command. It is probable that Artorby gave it this name before the binomial system was recognized as authoritative.

†Spanish, *Berrendo*—tinged with two colors.

Hernandez' description cannot be made to fit it, we must base conclusions on the text. As has been stated, Pennant's interpretation, on which Gmelin's description of *C. mexicanus* is based, makes the case decisive in favor of regarding the "Teuhtlalmacame" as the oldest literary reference to *Cariacus virginianus mexicanus* (Gmel.).

"Spring-back Deer *Cervus*——." I fail to find any reference to such a name in literature.

"Mule Deer *Cervus*———"="The mule deer" Lewis & Clark, Exped., 1814, 167, No. 3.—=*Cervus macrotis* Say, Long's Exped., ii, 1823, 88.—=*Cariacus macrotis* (Say) Gray, Knows. Menag., 1850, 67.

"Long-tailed Fallow Deer *Cervus*———"="The common red deer" (tail 17 in. long), Lewis & Clark, *ibid.*, p. 166, No. 1.—=*Cervus virginianus* Boddaert, Elench. Anim., I, 1784, 136.—=*Cariacus virginianus macurus* (Rafinesque), Amer. Mon. Mag., 1817, 436.

"Black-tailed Fallow Deer *Cervus*———"="The black-tailed fallow deer" Lewis & Clark, *ibid.*, p. 166, No. 2.—=*Cervus macrotis, var columbianus* Richardson, F. B. Amer., I, 1829, 255. See foot notes, Dr. Coues' 1893 edition Lewis & Clark, pp. 843—845.

We are here again confronted with the question why Ord refrained from giving specific names to animals so fully described in the History of the Lewis and Clark Expedition. It is evident however that unless a species had been noticed by other writers, or was minutely described, as in the case of the "Columbia Marmot," or unmistakably distinct from any other then known form, as the "Ash-coloured Rat," Ord did not impose a technical name. See also in this connexion note on page 307 and foot note page 292, Columbia Gray Squirrel, etc.

Page 292.

GENUS ANTILOPE.

"AMERICAN OR PRONG-HORNED ANTELOPE *ANTILOPE AMERICANUS*." =*Antilocapra americana* Ord, Jour. de Phys., 1818, 149. The above name, with Ord's quotations and remarks on page 308, constitute the original description of this remarkable species. In the later reference Ord established for it a new genus which has since been made the type of the family *Antilocapridæ*. See my notes (*infra*) to page 308; also Dr. Coues' Lewis & Clark, 1893 ed., p. 849.

"Barbarian Antelope *Antelope dorcas*." Henderson's book, on which this so called antelope is based is unobtainable in Philadelphia. It may have been the Wood Brocket. See note (*infra*) on Big-horned Sheep.

Page 292.

GENUS OVIS.

"Big-horned Sheep or Argali *Ovis ammon*." Considered inseparable by many earlier authors, from the Siberian Argali, *Ovis argali*. Cuvier,

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(Reg. An., i, 1817, 267) was the first to recognize the Rocky Mountain Sheep as distinct from the Asiatic Argali, but he gave it the same binomial as that previously given by Ord (vid. infra) to the Rocky Mountain Goat ("Sheep") *Mazama montana* (Ord) Rafinesque.

Shaw, (Nat. Misc., xv., t. 610) figured and described this species under the name *Ovis canadensis*, but this work, being without any date whatever, the name is unavailable, though it probably has priority over any other. *Ovis cervina* Desmarest (Nouv. Dict. Hist. Nat., 1818, 551) is the next available name.*

Desmarest (sup. cit.) quotes Geoffroy for "*Ovis montana*" but his reference, "Ann. Mus., 2, pl. 40," shows he did not consult it, as the plate is numbered "58" and named "Berlier de Montagne." In Geoffroy's description (pp. 360-363) the plate is numbered "Pl. LX"! Nowhere is a binomial Greek or Latin name applied to the animal. Gray (Cat. B. Mus., i, 1850, 177) wrongly makes the same reference to Geoffroy in the synonymy of this species and even attributes the same name to Richardson, who never used it!

"**ROCKY MOUNTAIN SHEEP *OVIS MONTANUS*."** = Rocky Mountain Goat, *Mazama montana* (Ord) Rafinesque. The context, (pp. 309, 310) shows that Ord intended this name for what is now known as the Goat. For discussion of the confusion of the Rocky Mountain Goat and Sheep by earlier authors, see my notes for pages 308, 309 & 310, also Dr. Coles, Lewis & Clark, ed. 1893, pp. 850, 851. Prof. Baird (Mam. N. Am., 1857, 665) rejects the generic name *Mazama* Rafinesque (Amer. Month. Mag., i, 1817, 44) because of its heterogeneous character. In this view he is supported by Mr. Alston (sup. cit. p. 113). Rafinesque certainly intended to represent by this genus a class of animals "with solid, simple, straight, round and permanent horns." The *Temamazame* (sup. cit.) is the first of the three given under this genus with the name *Mazama tema* but it has been since identified as a *Cervus*, *C. rufinus* (B. & P. sup. cit.) and hence cannot stand as the type of *Mazama*. The next two, *M. dorsata* and *M. sericea* refer unmistakably to the Rocky Mountain Goat, Rafinesque quoting Ord's *Ovis montana* for the first and Blainville's *Antelope (Rupicapra) Americana* (Bull. des Sc. Philom., 1816, 80) for the second.

Contrary to the assertions of some earlier writers, *Mazama*, as defined by Rafinesque, has not the remotest reference to *Antilocapra americana* Ord. If Mr. Alston's assertion, that the *Temamazame* of Hernandez is the Black-faced Brocket, *Cariacus rufinus* (B. & P.), (sup. cit.), be true, it should stand as *Cariacus tema* (Raf.).

The general acceptance of certain other genera of Rafinesque's, of doubtful status, makes it quite consistent that *Mazama* should be retained, but the law of priority in sequence of enumeration of species under a newly proposed genus, if strictly adhered to, makes *C. tema* the type and the genus *Mazama* by such an interpretation is worthless.

*Since this was written I find that Mr. Alston (Biol. Gen. Amer., p. 111 (foot note) comes to the same conclusion.

Page 292.

GENUS *BOS*.

"Bison or American Ox *Bos Americanus*."—*Bos bison* Linn., Syst. Nat. 1758, 72.—*Bos americanus* Gmelin, Syst. Nat., 1788, 204.—*Bison americanus* H. Smith, Griff. Cuv., v, 1827, 374.—*Bison bison* (Linn.) H. Smith, A. O. U. Code.

Page 292.

GENUS *TAPIR*.

"Long-nosed Tapir *Tapir Americanus*."—*Tapirus terrestris* (Linn.) Cuv. of South America. The N. American, (Mexican and Central American) forms, *Tapirus bairdi* and *T. dowi* were both described under his genus *Elasmognathus* by Prof. Gill, the former in the Proc. Acad. N. Sci., Phila., 1865, 183, the latter in the Amer. Jour. Sci., 1870, 142. *Elasmognathus* is considered by the best American authorities as a strongly characterized genus.

Page 292.

GENUS *SUS*.

"Mexican Hog or Peccary *Sus tajassu*."—*Sus tajacu* Linn., Syst. Nat., 1766, 103. The *Dicotyles lorquatus* Cuv. is a synonym. Ord's spelling, "*tajassu*," is original, perhaps unintentional. See Alston (Biol. Cent. Amer., 1879—'82, 107) for discussion of this subject. *Dicotyles angulatus* Cope (Amer., Nat., 1889, 147) is the Texan representative of this genus.

"Darren Hog or Warree *Sus*———" This is another instance where Ord's apparent hesitation to impose a possible synonym deprives him of the honor of naming an anonymous species. Cuvier, in 1817, gave this animal the name *Dicotyles labiatus*. See my note (infra) for page 312.

Page 292.

GENERA *MONODON*, *PHYSETER*, *DELPHINUS*.

Owing to the involved condition of the classification and synonymy of the *Celacea*, any attempt on the part of the author to unravel the mysteries of this section of Ord's list would involve useless expenditure of time and space.

Page 293.

"Arctic Walrus."

The first paragraph relating to this animal is nearly a literal translation of Molineux Shuldham's account, published in 1775 in the Philosophical Transactions (vol. xlv, p. 249). Before Ord's day the Walrus had been exterminated in the St. Lawrence region. A live specimen was taken in the Straits of Belle Isle in 1869. See J. A. Allen, N. Am. Pinn., 1880, 67—69.

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Page 294.

"Wolf."

Nearly eighty years have elapsed since Ord prophesied the early extinction of the Wolf in Pennsylvania. One of these animals was killed in Potter Co., Pennsylvania in 1891. They have been reported since that time from Monroe County, and it is the concurrent testimony of reliable hunters in the western parts of the state that several Wolves continue to exist in the Alleghany wilderness. Since my note on the Mexican Wolf, page 7 of this Appendix was printed I find that the name *Canis occidentalis* Richardson, is antedated by *Canis nubilus* Say (Long's Exp. R. Mts., i, 1823, 168, (foot note)). The Gray Wolf of northern N. America should stand *Canis lupus nubilus* (Say).

Pages 294, 295.

"Indian Dog."

The problem of the relationships between wild and domestic Dogs and Wolves is not much nearer solution than in 1813. The reader may get a fair summary of what we know on this question in Mivart's Monograph of the Canidae. The final conclusion of Darwin, that domestic Dogs had a multiple origin, arising from several races of Wolves and Jackals and at least one South American species, is indorsed by Mr. E. Harting and not denied by Prof. Mivart.

It is not improbable that the Indian Dog traces its decent from Old-World forms introduced to America in prehistoric times. Its consanguinity with the Coyote, *Canis latrans*, is well proven. As we go north beyond the habitat of the Coyote this admixture decreases and, in the Esquimaux Dog, the salient characters closely approach those of the Gray Wolf. Mr. Bartlett asserts that the Esquimaux Dog is nothing more than a domesticated Wolf.

Page 296.

"Couguar or Panther."

Ord evidently had no personal knowledge of the Panther, and from what follows it seems likely he was not sure of its presence in Pennsylvania, where they still exist and are occasionally taken by the hunters.

Page 296.

"Lynx."

The confusion of names and identities, existing in Ord's day on account of the use of the name "Catamount," has been perpetuated. It is still applied by hunters to the Lynx, *Lynx canadensis*, the Wild Cat, *L. rufus* and the Panther, *Felis concolor*.

The promiscuous use of these names resulted also in the multiplication

of binomial names to match, in which Rafinesque, as usual, caps the climax in the American Monthly Magazine (1817, p. 46).

The Catamount of Morse's Geography, referred to, was, no doubt, a Panther. The Brown Tiger of Pike was a large, dark-colored specimen of the same, such as are often encountered in the well-watered regions of the far west.

Page 297.

"Striated Weasel."

As already implied in a previous note, it is here evident that Ord mistook Pennant's description of the Striated Weasel to apply to the common Skunk. It is not likely that the Little Striped Skunk of the Gulf States had ever come under Ord's notice.

Page 299.

"Grizzly Bear."

Because of the endless controversy among zoologists respecting the status of the black, brown and grizzly Bears of America and their affinities with *Ursus arctos*, this original description and naming of *Ursus horribilis* has done more than anything else to keep the name of Ord prominently in scientific notice. This interest has been increased by the absolute lack of other references to Ord's description than the synonymic ones made to it by Say, Godman and Baird.

Owing to the disappearance of the only known copy of Guthrie from which Baird took his references, it has been impossible to improve upon them until now. It may be disappointing to many, who now for the first time scan the description, to find that Ord in this, as in similar cases, makes no personal deductions or diagnosis of the case, as presented by Brackenridge, which might absolutely fix the type and type locality of this form as contrasted with others in the United States nearly related to it. Ord's quotations being wholly taken from Brackenridge's account, (in which are included the Lewis and Clark quotations made by Ord, their sequence only being changed), we may justly define the typical habitat of *horribilis* to be western North Dakota, eastern Montana and north-eastern Wyoming. Brackenridge's description, apart from its Lewis and Clark quotations, is unquestionably taken from hearsay rather than personal experience and we must therefore base conclusions mainly on Lewis and Clark's narrative of the Bears in this region. The type specimen of *horribilis* is the "brown bear" (Coues' 1893 ed. L. & C., pp. 297, 298.) whose measurements Brackenridge and Ord copied from Lewis & Clark. This specimen is described as the largest they had seen up to that time; it was killed May 5, 1805, near old Fort Charles at the mouth of Little Dry or Lackwater Creek, flowing into the Missouri, in Dawson County, north-eastern Montana.

In a recent paper "On the Character and Relationships of *Ursus cinna-*

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momeus Aud. & Bach."* Mr. Arthur Erwin Brown gives a resume of the relationships of the North American Bears to each other and to those of Europe, deciding finally that *Ursus arctos* should stand as the type, *isabellinus*, *syriacus*, *horribilis*, *cinnamomeus* and *americanus* being only subspecifically distinct therefrom. A strong consensus of opinion to-day is largely in agreement with this view. Nevertheless it is a patent fact that a trustworthy, representative series of skins, with accompanying skulls and full data, of these bears does not exist in all the museums of the world, nor is it likely that they will be secured for many years to come. Until such a collection shall have been made, the verdict cannot be final, though it is likely that it will closely approximate the conclusions of Mr. Brown.

The case of the American and European Wolves is a parallel one, and we must confess that the affinities between many New and Old World forms of the North Temperate Carnivora indicate a specialization so perfectly fitted for resisting the normal influence of environment, and at the same time permit a range of local and individual variation so great, that the common rules of classification fail to assign them a permanent place in nomenclature.

It should be stated that the type specimen and given habitat of the *cinnamomum* of Audubon and Bachman indicate, with considerable certainty, that it is identical with Ord's *horribilis* as now defined, and that Mr. Brown's brown and yellow Bears are nothing more nor less than the "brown" and "white"† Bears which continually harassed the westward march of Lewis and Clark from the Mandan villages to the eastern slopes of the Rocky Mountains. This is corroborated by the description of a skull of a "brown bear" killed on the Missouri (sup. cit. p. 307) which mentions the "sharp projection of the centre of the frontal bone" and the great thickness of the skull, as defined by Mr. Brown for his *cinnamomeus*. The evidence, so far as I can sum it, makes *cinnamomum* a pure synonym of *horribilis*.

The Californian Grizzly is thought by some to represent a type subspecifically distinct from that of the Missouri Valley. Should this be agreed to, the only applicable *existing* name is *horriacus*, applied by Baird (Mex. Bdry. Surv., 1859, 24) to a small Sonoran form which he thought differed from the Grizzly of northern California. If possible, this name should be retained in preference to giving a new one.

The *Ursus luteolus*, Griffith, revived by Dr. Merriam (Proc. Biol. Soc. Wash., 1893, 147) seems not identical with the yellow Bears of Mr. Brown's paper; its affinities seem to be closer to *americanus* than to *horribilis*, forming, indeed, another link in the mysterious chain which makes our most honest attempts to classify these Bears appear more hopeless than ever.‡

* Proc. Acad. Nat. Sci., Phila., 1894, 119.

‡ I consider *Ursus americanus* a good species in any case.

† "brown gray" Gase' Jour.

Pages 302, 303.

"Columbia Marmot."

For an amusing and trustworthy interpretation of the affiliation of Snakes Lizards, Owls and Prairie Dogs, consult Dr. Coues' Birds of the Northwest, 1874, p. 324. Rafinesque named this animal *Cynomys socialis* in 1817.

Pages 303, 304.

"Louisiana Marmot"

It seems evident, from the context, that Ord never saw a specimen of this Spermophile but was induced, by the minute description, to risk naming it.

Dr. Merriam's identification of it has, we trust, settled forever one of the strangest cases of mistaken identity that has arisen in American Zoology.

Page 304.

Squirrels Discovered by Lewis and Clark.

This paragraph is important, and to be better understood may be amended as follows:—"Our Catalogue, it will be perceived, is enriched with the [vernacular and generic] names of those animals of this genus which were discovered [and described] by Lewis and Clark, the stuffed skins of which have been deposited in Peale's Museum. The history of their [Lewis and Clark's] journey gives an account of some others [squirrels, chipmunks and spermophiles] but as this notice [Lewis & Clark's account] is a mere record of their existence [the existence of these animals] we are not enabled [in the absence of specimens] to determine whether or no they are nondescripts." It is evident therefore, and the paragraph quoted (supra) from the Journal de Physique confirms it, that Ord did not refrain from imposing specific names on these Squirrels because they were not represented by specimens, but that he was content to defer the final naming of them until he could bring out his illustrated work on the zoology of Lewis and Clark's Journey, spoken of in his letter to Blainville.

Page 307.

Lewis and Clark Deer.

We have no account that any specimens of these deer were brought to Philadelphia. If there had been, Ord would undoubtedly have given them specific names in his catalogue.

Page 308.

Prong-horned Antelope.

Though the Antelope had been vaguely and imperfectly characterized

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by former travelers, Ord rightly credits Lewis and Clark with the first detailed account of this interesting animal.

Pages 309, 310.

"Another Animal of the Ovis Genus."

Though given under the name of Sheep, Lewis and Clark's description of the Mountain Goat is unmistakable. Many years, however, elapsed ere the true affinities of this animal, in contradistinction with those of the Mountain Sheep, were made known. The name "White Buffalo" is peculiarly applicable to this species, from the striking resemblance of the configuration of the neck and shoulders to that of the Bison. As Prof. Dyche (*Camp Fires of a Naturalist*, Edwards) has shown, this character is due to the great length and fixity of the spinous processes of the interscapular vertebræ and the low poise of the neck, which combine to prevent the animal from raising its nose much above a horizontal position even when on the alert.

Pages 313, 314.

"Ornithology."

Ord may be said to stand among his cotemporaries as preeminently the Patriot Naturalist, and his frequent allusions to the injustice done American Zoology by the dogmatic ignorance of such "foreigners" as Buffon show the amount of prejudice and misrepresentation which he felt it his peculiar mission to withstand and refute. Natural Science in America to-day, notably in the realm of Ornithology, has splendidly vindicated the cause in which Wilson was the inspired pioneer. From him Ord probably drew the original inspiration, adding thereto a strong loyalty to his native America which it was impossible for Wilson to feel. It was this impulse more than any other which induced the modest patron and biographer of Alexander Wilson to risk an irksome notoriety by editing and completing the *American Ornithology*.

The beautiful tribute paid by Ord in this and succeeding pages of the *Zoology* to the genius of a Scottish emigrant shows his patriotism to have been thoroughly republican, free of self-interest or jealousy, and that the attainment of truth was its highest ambition.

Page 315.

CLASS AVES.

As in his list of the Mammalia, Ord's table of North American Birds is evidently copied in the main from Turton's *Linnaeus*, edition of 1806. All the species there accredited to North America (inclusive of Mexico) are entered in the list and to these the author has added the new species described by Wilson, eliminating some however, which he was convinced were synonyms of names already on his list. In addition to this are a few new species proposed by Mr. Ord himself, and with two exceptions,

based upon the descriptions in Lewis and Clark's narrative. As may be supposed, many of the birds which were entered on the authority of Turton (or Gmelin) were wrongly attributed to North America, some being European and some South American. Quite a number of other names, originally proposed by Gmelin, are entirely unrecognizable.

Gmelin's edition of the *Systema Naturæ* of Linnæus is the one most frequently referred to in the following notes. Ord's references to Lewis and Clark are to be found in the edition of Nicholas Biddle published in Philadelphia in 1814.

Page 315.

GENUS VULTUR.

Besides the three species of Vultures which inhabit the United States, three others appear in the list, of these the Condor, and King Vulture are South American, the latter reaching southern Mexico.

Vultur columbianus is a new name of Ord's based upon the "Buzzard" of Lewis and Clark. It is a synonym of the *Vultur californianus* immediately preceding, = *Pseudogryphus californianus*.

Page 315.

GENUS FALCO.

F. fulvus L. = *Aquila chrysaetos* L.

F. leucogaster Gm. = *Haliaetus leucogaster* Gm.) an Australian and Indian species wrongly attributed to North America.

F. leucurus Gm. = *Buteo borealis* (Gm.).

F. sparverius Gm. = *Circus hudsonius* (L.).

F. sacer Gm. = *Hierofalco sacer* of Europe and Africa. Gmelin's "var B," which was attributed to N. America, may possibly have been intended for *Archibuteo sanctijohannis*.

F. obscurus Gm. = *Falco columbianus* L.

F. hiemalis Gm. = *Buteo lineatus* (Gm.), young.

F. uliginosus Gm. = *Circus hudsonius* (L.).

F. furcatus L. = *Elanoides forficatus* (L.), (1758). The name was changed to "furcatus" in the 12th. edition.

F. niger Wils. = *Archibuteo lagopus sanctijohannis* (Gm.). The *Falco niger* of Gmelin is a very different bird and is generally referred to *Aquila chrysaetos* (L.).

F. pennsylvanicus Wils. = *Accipiter velox* (Wils.). The name *pennsylvanicus* was used for the "Slate colored" Hawk in vol. vi, p. 13 of the American Ornithology, and *velox* for the Sharp shinned Hawk in vol.

v, p. 116. In the latter part of vol. vi, p. 92, Wilson used *pennsylvanicus* for the Broad winged Hawk, but finding that he had already used the name, he changed it to *latissimus* in the last edition of the volume.

"BLUE H. F. CÆSIUS." This name was here proposed by Ord for a presumably undescribed species. No reference or description accompanies it, but from the fact that he called it the Blue Hawk and as the adult male of the Marsh Hawk is often known by that name, we presume this was the bird intended. This view is strengthened by the fact that Wilson did not figure or describe the adult male Marsh Hawk.

In a manuscript foot note Mr. Ord says, "name preoccupied," and this statement is correct, as Meyer proposed the name in 1810 (Tascheub. Deutschl. Vogelk., i, p. 60) for a European Hawk, i. e. the *Falco regulus* of Pallas, which latter name has priority.

F. obsoletus Gm. = *Buteo swainsoni* Bonap. } These Gmelinian names,
F. fuscus Gm. = *Accipiter velox* Wils. } long in use, have been discarded by the A. O. U.

The other names included under this genus are of doubtful application, i. e. — *F. variegatus*, *cinereus*, *gentilis* and *novæ-terra*.

Page 315.

GENUS STRIX.

S. bubo L. = *Bubo virginianus*. (Gm.).

S. mexicana = *Asio mexicanus* Gm., a South American species.

S. albifrons Shaw. = Young of *Nyctala acadica* (Gm.).

S. otus L. = *Asio wilsonianus*, an American species.

S. nœvia Gm. = *Megascops asio* (L.).

S. flammea L. = *Strix pratincola* Bp. At the time Mr. Ord's work appeared, the American Barn Owl was not distinguished from the European species.

S. passerina L. = *Nyctala acadica*.

S. hudsonia Wils. = *Surnia ulula caparoch* (Müll.).

S. brachyotus Gm. = *Asio accipitrinus*. Pall.

S. wapacuthu Gm. is based upon Pennant's "Wapacuthu Owl." The description of this bird agrees very well with *Bubo virginianus arcticus* (Sn.) except that it is included among the species *without* horns, so that the name can hardly be used for this species, and must be disregarded.

S. tolchiquatli and *chichictli* of Gmelin are unrecognizable.

S. funerea L. is *Surnia ulula caparoch* (Müll.).

APPENDIX.

Page 315.

GENUS LANIUS.

L. septentrionalis Gm. } the same: both=*L. borealis* Vieill. For many
L. excubitor L. } years the American *L. borealis* was confused with *excubitor*.

L. carolinensis Wils.=*Lanius ludovicianus* L. Gmelin's *L. carolinensis*
 =*Tyrannus tyrannus* (L.).

L. canadensis, *nootka* and *pileatus* are unrecognizable, though the first is partly based upon a female *Thamnophilus cirrhatus* Gm. of South America.

Page 315.

GENUS PSITTACUS.

P. leucocephalus.=*Chrysotis leucocephalus* (L.). Cuba.

P. sordidus.=*Pionus sordidus* (L.). Venezuela.

P. mexicanus Gm. is founded upon Germi's plate which seems to be a "made up" bird, probably a Cockatoo which had been painted or dyed. (Cf. Salvadori, Cat. Bds. Brit. Mus., vol. xx).

P. menstruus.=*Pionus menstruus* (L.). Costa Rica to Peru.

P. ochrocephalus.=*Chrysotis ochrocephalus* (Gm.). Venezuela to Peru.

P. macao.=*Ara macao* (L.). Southern Mexico to Amazon Valley.

P. aracango Gm.=*Ara macao* (L.).

Page 315.

GENUS RAMPHASTOS.

R. torquatus Gm.=*Pteroglossus torquatus* (Gm.). The three other species given under this genus are unrecognizable.

Page 315.

GENUS CORVUS.

C. mexicanus Gm. is probably a Mexican Crow which does not reach the United States.

C. argyrophthalmus Gm. and *zancoe* Gm. are unrecognizable.

C. corax L. The American Ravens are now separated as subspecies, *principalis* inhabiting north eastern N. America and *sinuatus* the south western sections.

C. pica L. The American Magpie is now separated as *Pica pica hudsonica* (Sab.).

Page 315.

GENUS *CORACIAS*.

C. mexicanus Gm., is unrecognizable. No true *Coracias* occurs in America.

Page 315.

GENUS *ORIOIUS*.

O. americanus Gm. = *Leistes guianensis* L., South America.

O. ludovicianus Gm. Brisson's plate, upon which this is based, has the appearance of being made from a partially albino *Quiscalus*.

O. mexicanus. = *Gymnomystax mexicanus* (L.). Mexico.

O. bonana L., *xanthornus* Gm. and *dominicensis* L. all belong to the genus *Icterus* and occur, respectively, in Martinique, South America and San Domingo.

Page 316.

O. capensis Gm. = *Sitagra capensis* (L.) a Weaver bird, wrongly attributed to America.

O. novae hispaniae, *costototi*, *griseus*, *melanchoicus*, *viridis* and *furcatus* are unidentified species of Gmelin's. The *O. viridis* of Müller is *Ostinops viridis*.

Page 316.

GENUS *GRACULA*.

G. barita Wils. = *Quiscalus major* (Vieill.). Gmelin's *G. barita* is of doubtful application.

G. ferruginea Gm. = *Scolecophagus carolinus* (Müll.).

Page 316.

GENUS *TROGON*.

Trogon curucui L. is a South American species.

Page 316.

GENUS *CUCULUS*.

C. ridibundus Gm. is probably a Mexican species of *Piaya*.

C. dominicus Lath. is probably referable to *Coccyzus americanus* (L.).

C. carolinensis Wils. = *Coccyzus americanus* (L.).

Page 316.

GENUS *PICUS*.

P. viridis Linn. is a European species.

P. tricolor Gm. is unidentifiable. The name was subsequently used by Vieillot for a South American species.

P. canadensis Gm. is a synonym of "*Dryobates villosus* [L.] var. *canadensis*" (Bodd.).

P. querulus Wils. = *Dryobates borealis* (Vieill.).

P. major L. is a European species.

ROCKY MOUNTAIN W. *P. MONTANUS*. This is a new name, here proposed by Ord for a "Woodpecker" described as follows in the Narrative of Lewis and Clark's expedition, (vol. 1, p. 398), "Among the woods Captain Clarke observed a species of woodpecker, the beak and tail of which were white, the wings black, and every other part of the body of a dark brown; its size was that of a robin and it fed on the seeds of the pine." This was the Clark's Nutcracker *Picicorvus columbianus* (Wils.). *Picus montanus* Ord will therefore become a synonym of this species, which, in turn, has recently been shown* to be generically identical with *Nucifraga* of the Old World.

Page 316.

GENUS *ALCEDO*.

A. torquata L. This species is properly a resident of South and Central America and southern Mexico, but a specimen has been recently taken on the Rio Grande at Laredo, Texas (Auk, 1894) so that it may have just claims as a bird of the United States.

Page 316.

GENUS *SITTA*.

S. varia Wils. = *S. canadensis* L.

Page 316.

GENUS *TODUS*.

T. obscurus Gm. The true Todies are restricted to the West Indies. This bird is described from Rhode Island and seems to be a small Tyrant Flycatcher, perhaps *Tayornis phæbe*. The description is too meagre however to make the name of any value.

*Auk, 1894, p. 179.

Page 316.

GENERA MEROPS & UPUPA.

Merops cinereus Gm.
Merops californiensis.
Upupa mexicanus Gm. } are unidentifiable.

Page 316.

GENUS CERTHIA.

C. mexicana Gm. has not been identified; it is not the Mexican Creeper,
C. familiaris mexicana (Glog.).

C. maculata Wils. = *Minotilta varia* (L.).

C. caroliniana Wils. = *Thryothorus ludovicianus* (Lath.).

C. palustris. = *Cistothorus palustris* (Wils.).

Page 316.

GENUS TROCHILUS.

Of the Humming birds enumerated in the list only two occur in the United States, *Trochilus colubris* and *Selasphorus rufus*.

T. paradiseus and *cyanurus* of Gmelin have not been satisfactorily identified. The remaining species are now referred to other genera or are synonyms, viz.:

T. maculatus Gm. = *Lampornis gramineus* (Gm.). Northern South America.

T. punctulatus Gm. = *Lampornis violicauda* (Bodd.). S. America.

T. venustissimus Gm. = *Eulampis jugularis* (L.). West Indies.

T. mango. = *Lampornis mango* (L.). Jamaica.

T. holosericeus. = *Eulampis holosericeus* (L.). West Indies.

T. minimus. = *Mellisuga minima* (L.). Jamaica and St. Domingo.

T. exilis. = *Bellona exilis* (Gm.). West Indies.

Page 316.

GENUS STURNUS.

S. ludoviciana Linn. 1776. = *S. magna* Linn. 1758. Now known as *Sturnella magna*.

S. obscurus = *Molothrus ater obscurus* (Gm.).

S. prædatorius Wils. = *Agelaius phœniceus* (L.).

Page 316.

GENUS TURDUS.

T. plumbeus. = *Mimocichla plumbea* (L.). Bahamas.

T. hudsonius and *T. labradorus* of Gmelin are both based on specimens of *Scolecophagus carolinus* (Müll.).

T. rufus. = *Harporhynchus rufus* (L.).

T. melodus Wils. = *T. mustelinus* Gm. Wilson used Gmelin's name for the Veery (*T. fuscescens* Steph.) and proposed this new name for the Wood Thrush. Bonaparte discovered this mistake, but not having seen Stephen's description he added to the synonymy by proposing the name *Turdus wilsoni* for the Veery.

T. aurocapillus. = *Seiurus aurocapillus* (L.).

T. lividus Wils. (nec Licht) = *Galeoscoptes carolinensis* (L.).

T. aquaticus Wils. = *Seiurus noveboracensis* (Gm.).

T. solitarius Wils. = *Turdus aonataschkæ pallasii* (Cab.) While Wilson's text relates to the Hermit Thrush, his plate is of the Olive Backed Thrush *T. ustulatus swainsonii* (Cab.).

T. mustelinus Wils. (nec Gm.) = *Turdus fuscescens* Steph. (sup. cit.).

Page 316.

GENUS AMPELIS.

A. americana. = *Ampelis cedrorum* (Vieill.).

Page 316.

GENUS LOXIA.

Three of the species included under this genus are not found in North America.

L. grisea. = *Spermophila grisea* (Gm.). South America.

L. canora. = *Phonipara canora* (Gm.). Cuba.

L. nigra. = *Melopyrrha nigra* (L.). Cuba.

L. virginica Gm. is of doubtful application, but is probably based on a moulting *Piranga rubra* (L.).

L. obscura Gm. is the young of *Habia ludoviciana* (L.).

L. flabellifera Gm. is perhaps based on the young of *Gniraca cœrulea* (L.). See Cat. Bds. B. M., vol. xii p. 139. The following names have not been satisfactorily identified with any species: *L. mexicana*, *novæ hispaniæ*, *canadensis* and *hudsonica*.

Page 316.

GENUS CURVIROSTRA.

C. americana is now known as *Loxia curvirostra minor* (Brehm), the type of the genus *Loxia* being a Crossbill.

Page 316.

GENUS EMBERIZA.

E. mexicana Müll.=*Capodacus mexicanus* (Müll.); Gmelin's *E. mexicana* is doubtful.

E. atricapilla Gm.=in part, *Zonotrichia coronata* (Pall.).

E. cœrulea Gm. is probably *Passerina cyanea* (L.) in winter plumage.

E. americana=*Spiza americana* (Gm.).

E. erythrophthalma.=*Pipilo erythrophthalmus* (L.).

E. oryzivora.=*Dolichonyx oryzivorus* (L.).

E. pecoris Gm.=*Molothrus ater* (Bodd.).

E. nivalis.=*Plectrophenax nivalis* (L.).

E. ciris.=*Passerina ciris* (L.).

E. graminea.=*Poocetes gramineus* (Gm.).

E. hiemalis L. (nec Gm.)=*Junco hyemalis* (L.).

The following have not been satisfactorily identified, *E. leucophala*, *E. ludovicæ*.

Page 316.

GENUS TANAGRA.

T. mexicana.=*Calliste mexicana* L.

T. rubra.=*Piranga erythromelas* Vieill.

T. œstiva.=*Muscicapa rubra* L.=*Piranga rubra* (L.).

T. anorca, and *grisea* of Gmelin are of doubtful application.

Page 316.

GENUS FRINGILLA.

F. cannabina L. is a European species.

F. cristata. = *Coryphospingus cristatus*. South America.

Page 317.

F. hudsonia Forst. = *Junco hyemalis* (Linn.).

F. arborea Wils. = *Spizella monticola* (Gm.).

F. melodia Wils. = *Melospiza fasciata* Gm.

F. palustris Wils. = *Melospiza georgiana* (Lath.).

F. ferruginea Gm. = *Passerella iliaca* (Merr.).

F. carthagenensis, *variegata*, *cutotol* and *carolinensis* of Gmelin are unidentified.

Page 317.

GENUS MUSCICAPA.

M. forficatus. This name is given twice, once for the Fork-tailed Flycatcher and again for the Swallow-tailed. The first is doubtless an error for *M. tyrannus*. Both species belong in *Mitvulus*.

M. ludoviciana Gm. = *Myiarchus crinitus* (L.).

M. solitaria and *olivacea* belong in the genus *Vireo*.

M. cantatrix Wils. = *Vireo noveboracensis* (Gm.).

M. nunciola Wils. = *Sayornis phæbe* (Lath.).

M. rapax Wils. = *Contopus virens* (L.).

M. querula Wils. = *Empidonax acadicus* (Gm.). The *M. querula* of Vieillot however is *Contopus virens* (L.).

M. sylvicola Wils. = *Vireo flavifrons* Vieill.

M. cærulea. = *Polioptila cærulea* (L.).

M. canadensis and *pusilla* belong in *Sylvania*.

*M. cuculiatu*s Wils. = *Sylvania mitrata* (Gm.).

M. melodia Wils. = *Vireo gilva* Vieill.

M. ruticilla. = *Setophaga ruticilla*.

M. striata Forst. = *Dendroica striata* (Forst.).

M. ferruginea Merr. is of doubtful application.

The other species all belong in the Family *Tyrannidae* no true *Muscicapas* occur in America.

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Page 317.

GENUS ALAUDA.

- A. ludoviciana* Gm. and *rufa* Wils. = *Anthus pensilvanicus* (Lath.).
A. magna. = *Sturnella magna* (L.).
A. alpestris. = *Otocoris alpestris* (L.).

Page 317.

GENUS SYLVIA.

- S. icterocephala* L. = *Dendroica pensylvanica* (L.).
S. cincta Gm. = *Dendroica coronata* Gm.
S. ludoviciana, *aurocollis*, *canadensis*, *hudsonica* & *leucoptera* have not been identified.
S. flavicollis Wils. and *S. pinus* Wils. = *Dendroica vigorsii* (Aud.).
S. solitaria Gm. = *Dendroica dominica* (L.).
S. citrinella Wils. = *Dendroica aestiva* (Gm.).
S. magnolia Wils. = *Dendroica maculosa* (Gm.).
S. autumnalis Wils. = *Dendroica castanea* (Wils.), young.
S. rara Wils. is the young of *Dendroica caerulea* (Wils.).
S. rubricapilla Wils. is a misprint for *ruficapilla*; the former spelling occurs in Wilson's Index.
S. pusilla Wils. = *Compothlypis americana* (L.).
S. petechia Wils. (nec L.) = *Dendroica palmarum hypochrysea* Rdgw.
S. minuta Wils. = *Dendroica discolor* (Vieill.).
S. montana Wils. has not been found since Wilson's time and is a doubtful species.
S. parus Wils. = *Dendroica blackburinae*, (Gm.), young.
S. maritima Wils. = *Dendroica tigrina* (Gm.).
S. marylandica Wils. = *Geothlypis trichas* (L.).
S. sialis. = *Sialia sialis* (L.).
S. calendula and *regulus* belong to genus *Regulus*. The latter is a European species; the American Golden-crowned Kinglet being now separated as *R. satrapa* Licht.
S. domestica Wils. = *Troglodytes ædon* Vieill.

S. troglodytes L. = *Troglodytes hiemalis* Vieill. *T. troglodytes* is the European species.

Page 317.

GENUS PIPRA.

P. cristata, *piciciti* and *macatototi* are not recognizable.

P. polyglotta Wils. = *Icteria virens* (L.).

Page 317.

GENUS HIRUNDO.

H. rupestris. = *Cotile rupestris* Scop., a European bird.

H. cinerea. = *Atlicora cinerea* (Gm.) of South America.

H. oonalaskensis Gm. is not identifiable.

H. americana Wils. = *Chelidon erythrogaster* (Bodd.).

H. viridis Wils. = *Tachycineta bicolor* (Vieill.).

H. purpurea L. = *Progne subis* (L.).

Page 317.

GENUS CAPRIMULGUS.

C. americanus Wils. = *Chordeiles virginianus* (Gm.).

Page 317.

GENUS COLUMBA.

C. fusca, *cærulea*, *holiott*, *nævia* and *mexicana* are of doubtful application. The first may be *Scardafella squamata* of South America and *C. nævia* may be *Zenaidura macroura* (L.).

C. canadensis L. = *Ectopistes migratoria*, young, or female.

C. passerina. The true *Columbigallina passerina* (L.) is a West Indian bird, *C. p. terrestris* Chapm. is the Eastern U. S. race and *C. p. pallescens* (Baird) the Western form.

Page 317.

GENUS PENELOPE.

P. cristata L. is perhaps *P. purpurascens* from Guatemala.

P. cumanensis Gm. belongs in genus *Pipile*; habitat Guiana.

P. pipile. Probably the same as *P. cumanensis* Gm.

Page 317.

GENUS CRAX.

C. alector L. is a South American species, while *C. globicera* L. is found in Central America and southern Mexico.

C. pauxi L. belongs in genus *Pauxi*; it is a South American bird.

C. vociferans Gm. is not identifiable.

Page 317.

GENUS PHASIANUS.

P. mexicanus Gm. = *Geococcyx affinis*?

P. cristatus = *Opisthocomus cristatus* Gm.

"**COLUMBIAN P. P. COLUMBIANUS.**" "The grouse or prairie-hen" of Lewis & Clark's Report, vol. 2, p. 180, is here named for the first time by Mr. Ord. The name now stands as *Pediocetes phasianellus columbianus* (Ord).

317.

GENUS TETRAO.

T. albus = *Lagopus albus* L., a European species.

"**BROWN G. T. FUSCA.**" A new species based on Lewis and Clark's narrative, and seems to refer to the Oregon Ruffed Grouse, generally known as *Bonasa umbellus sabini* (Dougl.). This is clearly pointed out by Dr Coues in his new edition of The History of Lewis and Clark's Expedition, vol. iii p. 872, foot note. He there proposes the adoption of Ord's name, as it has priority over that of Douglass, and writes the species *Bonasa umbellus fusca* (Ord).

Page 317.

GENUS PERDIX.

P. naevius, *mexicanus* and *coyoclos* are doubtful species.

P. hudsonica Lath. = *Porzana noveboracensis* (Gm.).

P. cristatus L. belongs in genus *Eupsychortyx*; it is a South American species.

In a mss. footnote Ord makes *virginianus*, *mexicanus* and *coyoclos* the same. *Californicus* and *cristatus*, he also indicates to be synonyms.

Page 318.

GENUS *CANCROMA*.*Cancroma cochlearia* is a South American bird.

Page 318.

GENUS *ARDEA*.*A. americana* belongs in genus *Grus*.*A. hoactli*, *spadicea*, *hohou*, *virgata*, *striata* and *cana* are of doubtful application, though the first two probably apply to *Nycticorax nycticorax nævius* (Bodd.).*A. minor* Wils. = *Botaurus lentiginosus* (Montag.).*A. gardeni* Gm. = young *Nycticorax n. nævius* (Bodd.).

Page 318.

GENUS *TANTALUS*.*T. minutus* L. is probably a young *Guara rubra* (L.).*T. mexicanus* Gm. is probably *Plegadis autumnalis* (Hasselq.).*T. albicollis*. A South American species now placed in *Geronticus*.

Page 318.

GENUS *SCOLOPAX*.*S. nigra*, *nutans* and *candida* are of doubtful application.*S. gallinula*. = *Gallinago gallinula* (L.), a European species.*S. melanoleuca*, *totanus* and *vociferus*. Ord, in a manuscript note, says that these are identical. There seem, however, to be two species, *Totanus totanus* of Europe and *T. melanoleucus* of N. America; *vociferus* of Wilson being a synonym of the latter.*S. glottis*. = *Totanus glottis*, a European species accidental in the United States.*S. calidris*. = *Totanus calidris*, another European bird.*S. noveboracensis*. = *Macrorhamphus griseus* (Gm.).*S. semipalmata* (Gm.) belongs in genus *Symphemia*.*S. gallinago* Wils. = *Gallinago delicata*. The true *G. gallinago* (L.) is a European species.T. s
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Page 318.

GENUS TRINGA.

- T. striata novæterræ*, *hiaticula* and *variëgata* are unidentified.
T. ochropus. = *Totanus ochropus* (L.), a European species, accidental in the United States.
T. icelandica and *cinerea* of Gmelin = *T. canutus*, as stated by Ord in a manuscript note. *T. rufa* Wils. is also a synonym.
T. borealis. = *Aphriza virgata* (Gm.).
T. bartramia = *Bartramia longicauda* (Bechst.).
T. semipalmata. = *Ereunetes pusillus* (L.).
T. cinclus L. = *Tringa alpina* (L.), in immature plumage.

Page 318.

GENUS CHARADRIUS.

- C. apricarius* L. is a European species. Wilson used the name for *C. dominicus*.
C. pluvialis L. = *C. apricarius* L.
C. hiaticula L. is a European species now placed in *Ægialitis*. Wilson used the name for *Ægialitis semipalmata* Bp.
C. calidris L. = *Calidris arenaria* (L.).

Page 318.

GENUS HÆMATOPUS.

- H. ostralegus* L. This is the European species. The American form is now known as *H. palliatus*. Temm.

Page 318.

GENUS RALLUS.

- R. minutus* Pall. is an Old World species.
R. cayennensis Gm. = *Aramides cayana* Müll., S. American.

Page 318.

GENUS PARRA.

- P. jacana* and *nigra* are now known as *Jacana jacana* (L.) and *J. nigra* (Gm.).

P. chavaria.—*Chauna chavaria* (L.); one of the South American Screamers.

P. ludoviciana Gm. seems to be *Chettusia miles* Bodd., an Australian bird.

Page 318.

GENUS GALLINULA.

G. porphyrio Wils.=*Ionornis martinica* (L.).

G. chloropus.—*Gallinula galeata* (Licht.).

G. flavirostris Gm.=*G. martinica* L.?

G. ruficollis Gm.=*Aramides ruficollis* (Gm.). Cayenne.

G. cartiagena and *purpurea* of Gmelin are of doubtful application.

G. noveboracensis Gm. is now *Porzana noveboracensis* (Gm.).

Page 318.

GENUS PHALAROPUS.

P. glacialis Gm.=*Crymophilus fulcarius* (L.).

P. fusca and *hyperborea*=*P. lobatus* (L.).

Page 318.

GENUS FULICA.

F. atra L. is a European species. The American bird is *F. Americana* Gm.

F. mexicana is doubtful.

Page 318.

GENUS PODICEPS.

P. cornutus.—*Colymbus auritus* L.

P. minor Gm. *Tachybaptus dominicus*?

P. ludovicianus Gm.=*Podilymbus podiceps* (L.).

P. obscurus Gm.=*Colymbus auritus* L.

Page 318.

GENUS RECURVIROSTRA.

R. alba L. is of doubtful application.

D. spaci-
D. exul-
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A. lob-
a young

C. str-
C. sept-
C. glac-

S. cay-
S. min-
S. fesi-
S. ara-
S. plu-
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scribed
Tern, a
S. sin-

L. ca-
Rich.
L. fu-
L. ri-

APPENDIX.

47

Page 319.

GENUS *DIOMEDEA*

- D. spadicea* Gm.—young of *D. exulans* L.
D. exulans L., & *Thalassogeron chlororhynchus* (Gm.) do not occur on the United States' coasts.

Page 319.

GENUS *ALCA*

- A. labradora* Gm. is probably a Puffin; perhaps, as Dr. Coues suggests, a young *Lunda cirrhata* Pall.

Page 319.

GENUS *COLYMBUS*

- C. striatus* Gm.—*Urinator lumme* (Gunn.) young.
C. septentrionalis L. & *stellatus* Brünn=*U. lumme* (Gunn.).
C. glacialis L. & *immer* L.=*U. imber* (Gunn.).

Page 319.

GENUS *STERNA*

- S. cayanensis* Gm.=*S. maxima* Bodd.
S. minuta Wils.=*S. antillarum* (Less.).
S. fessipes L.=*Hydrochelidon nigra surinamensis* (Gm.).
S. aranea Wils.=*Gelochelidon nitotica* (Hasselq.).
S. plumbea Wils.=*Hydrochelidon n. surinamensis* (Gm.), young.
"BANDED-TAIL T. *S. PHILADELPHIA*." This is a new species here described for the first time by Ord. It is however a true Gull and not a Tern, and is now known as *Larus philadelphia* (Ord).
S. simplex and *spadicea* are unidentifiable.

Page 319.

GENUS *LARUS*

- L. canus* is a European species; the American bird is *L. brachyrhynchus* Rich.
L. fuscus L. is a European species.
L. ridibundus Wils.=*L. atricilla* Linn.

L. parasiticus belongs in *Stercorarius*.

cataractes & *keeask* both refer to *Megalestris skua* (Brünn.).

eburneus.—*Gavia alba* (Gunn.)?

"TOOTHED-BILL G. L. DELAWARENSIS." Another new species which is here described for the first time.

Page 319.

GENUS PROCELLARIA.

P. obscura.—*Puffinus obscura*, habitat Indian Ocean.

P. melanopus and *brasilliana* of Gmelin are of doubtful application.

P. gelida.—*Puffinus gelidus* Gm. an Antarctic species.

Page 319.

GENUS MERGUS.

M. fuscus and *caeruleus* are doubtful.

M. albellus is a European species. Wilson confused it with the Butter-ball.

M. meganser L. is a European species. The American bird is known as *merganser americanus* (Cass.).

Page 319.

GENUS ANAS.

"WHISTLING SWAN *A. COLUMBIANUS*." This species is based upon Lewis and Clark's narrative, vol. i, p. 398, and is here named for the first time. It is now placed in the genus *Olor*.

A. ferna is a European bird. Wilson employed the name for *Aythya americana* (Eyt.).

A. anser.—*Anser anser* (L.), a European species,

A. marila. The American bird is now subspecies *nearctica*.

A. mollissima. The true American Eider is *Somateria dresseri* Sharpe. This is a European bird. The Greenland form is *S. m. borealis* (Brehm.).

A. moschata L. Not found wild in North America.

A. bahamensis L. is *Dafila bahamensis*; not found in N. America.

A. viduata L.=*Dendrocygna viduata* (L.) a South American and West African species.

A. arborea L.=*Dendrocygna arborea* (L.) a West Indian species.

A. fuligula L. is a European bird. Wilson, however, used the name for *Aythya collaris* (Donov.).

A. spinosa Gm.=*Nomonyx dominicus* (L.).

A. crecca of Wilson and some others=*Anas carolinensis*. The true *A. crecca* is a European bird.

A. fulva belongs in *Dendrocygna*.

A. fuscescens, *georgica* and *novæhispaniæ* are of doubtful application. *

Page 319.

GENUS PELICANUS.

P. onocrotalus L. is a European species. Ord meant our *P. erythrorhynchos*.

P. carolinensis Gm.=*P. fuscus* L.

P. aquilus.=*Fregata aquila* (L.).

P. thagus Moll. is probably the *Pelecanus molinæ* Gray.

P. fiber L.=*Sula sula* L.

P. parvus Gm. is doubtful, but certainly a *Sula*.

P. graculus.=*Phalacrocorax cristatus* L., a European species.

Page 319.

GENUS PLOTUS.

P. surinamensis Gm.=*Heliornis fulica* Bodd., a South American bird.

Page 320.

With slight exceptions Ord's bird notes on this and following pages are a transcript from Wilson's Ornithology, many of them, however, being quoted from his own contributions to that work as editor.

The brief notes already appended to Ord's catalogue of Birds are

* Ord has added a note in lead-pencil at foot of Genus Anas, page 319, as follows: "Lewis's Red headed D. *A. ruficapilla*." - This cannot refer to the "red-headed fishing-duck" of L. & C., vol. 2, p. 193, as the description expressly states it is the same as our eastern Merganser. On page 195 (sup. cit.) L. & C. describe a Duck which is said to have "the head, the neck (etc.) of fine deep black with a slight mixture of purple about the head and neck." This is the only other Duck mentioned by L. & C. to which Ord's lead pencil name can at all apply. Dr. Coues (1893 ed. L. & C., p. 889) identifies this duck as *Aythya collaris* (Donov.).

deemed sufficient to identify those of greatest interest. Owing to the completeness and accessibility of our ornithological literature, little comment seems necessary beyond the bare references aforesaid. By these it is hoped the critical reader may obtain some introduction to the necessary authors without our unduly encumbering this Appendix with details.

Page 324.

"Common Crow."

To these pertinent remarks on the relations of Crows to agriculture etc. the scientist of to-day can add but little, either of information or advice. Both the Crow and House Sparrow have demonstrated the divine right and ability to solve their own destiny without the advice of the United States government or of State legislatures. For discussion of Crow Roosts and Roosting Crows, see my paper in the American Naturalist, 1886, pp. 691 & 777.

Page 326.

"Purple Grackle."

Ord's (Wilson's) humane verdict on the economic status of our Black-birds stands the test of modern investigations in this important branch of ornithology.

Pages 327, 328.

"Downy Woodpecker."

While the general usefulness of our Sapsuckers is undeniable, it is a fact that some of them, especially the Yellow-bellied Woodpecker, do tap the healthy trees for the sap and that the insects thus attracted are incidentally devoured as well as the sap itself. See paper by the late Mr. Bolles, Auk, 1891, p. 270. Also Dr. Coues in Birds of the Northwest, and Proceedings of the Philadelphia Academy for 1866.

Page 329.

"Humming Bird."

Nineteen species of the *Trochilidae* have been recorded in the United States.

Page 337.

"Wild Pigeon."

- ① "The Present Status of the Wild Pigeon," (etc) is made the subject of a paper by Mr. Wm. Brewster in the Auk for October, 1889. The extinction of this bird over the greater part of its former habitat has been accomplished. Those remaining have "retreated to uninhabited regions, perhaps north of the Great Lakes in British North America." Mr. Brewster concludes "it is probable that enough Pigeons are left to re-

stock the West, provided that laws, sufficiently stringent to give them fair protection, be at once enacted."

Page 341.

"Pinnated Grouse."

The typical "Grouse plains" of New Jersey cover a very limited tract between Woolmansie and Cedar Bridge, near the boundary line of Ocean and Burlington Counties. The diameter of this area varies from three to five miles. The pines and oaks here rarely attain a maximum height of four feet. Turnbull mentions the extinction of the Heath Hen in New Jersey as having occurred about 1869.

Page 357.

Of all the Reptiles enumerated in Ord's table of "Amphibia" and which, it should be observed, he restricts to the "Zoology of the United States," about ten per cent. are Mexican or South American, three or four are exotic and two or more unidentifiable. Prof. E. D. Cope, after careful inspection of the table, informs me that all of the newly named species to which sufficient reference is made in the text to merit examination, are either synonyms or unidentifiable.

Note on Changes in Nomenclature.

Owing to unforeseen delays in the publication of this work, the summary of changes in nomenclature here proposed, which was announced on page 1 of the Appendix, to be given in this place, was published in the American Naturalist, June 1894, pp. 523-526. To this the critical reader is referred.

Errata of Reprint.

- Page 291. (Genus *Mustela*); for "vixon" read *vixon*.
 " (Genus *Didelphis*); for "opossum" read *opossum*.
 " 292. (Genus *Arctomys*); for "Prairie-dog" read *Prairie-dog*.
 " 13th line from foot, "Chikaree" is so spelt in the original.
 " 294. 14th line from foot, for "favorite" read *favourite*.
 " " 11th line from foot, for "Indain" read *Indian*.
 " 296. 23rd line from top, "Lynx" should not be italicized.
 " 299. 11th line from foot, for "after 'escape' read *.
 " 309. 7th line from foot, for "considered" read *considered*.
 " 307. 29th line from foot, for "thy" read *they*.
 " 312. 19th line from top, for "Hippopotamus" read *Hippopotamus*.
 " 317. (Genus *Hirundo*); for "Rock-swallow" read *Rock Swallow*.
 " 318. (Genus *Gallinula*); for "nor barucasia" read *novaboracensis*.
 " 319. (Genus *Feliconus*); for "Lesser G." read *Lesser B.*
 " " (foot note), 3rd line from foot, "ninteen" is so spelt in the original.
 " 334. 17th line from foot; "e" in "Wren" should be italic.
 " 344. 13th line from top; "k" in "Woodcock" should be italic.
 " 346. 29th line from foot; for "small" read *small*.
 " 351. 11th line from top, for "Wigson" read *Widgeon*.

Errata of Appendix.

- Page 2. (middle); for "Page 299." read *Page 290*.
 " 3. 16th line from foot, for "nilsson" read *nilsson*.
 " 5. 5th line from foot, for "fuscus" read *fusca*.
 " 5. above "Arctic Walrus or Morse" insert *Page 291. Genus Trichechus*.
 " 5th line from top, for "rossowus" read *rossowus*.
 " 6. 8th line from foot, for "Nilsson" read *Nilsson*.
 " 7. 2nd line from foot, for "Rich." read *(Rich.)*.
 " 8. 5th line from top, before "Cunis lotrans Say" insert —.
 " 8. (middle) for "Cunis corsak" read *Cunis Corsak*.
 " 11. 19th line from top for "certainly" read *certainly*.
 " 12. 16th line from foot, expunge quotation marks after "Lutreola vison."
 " 13. 7th line from foot, for "synonym" read *synonyms*.
 " " last line, for "Linn" read *(Linn.)*.
 " 16. 3rd line from top, for "Brazilian" read *Brasiltian*.
 " " 6th line from top, for "Canada" read *Canadian*.
 " " (middle) for "Arvicola pennsylvanica Ord" read *Arvicola pennsylvanica (Ord)*.
 " 19. 13th line from top, for "Sciurus" read *Sciurus*.
 " 20. 22nd line from top, for "classified" read *classified*.
 " 21. 8th and 13th lines from top, for "Columbian" read *Columbia*.
 " " 15th line from foot, for "Andsonius" read *hudsonicus*.
 " 22. 10th and 12th lines from top, for *hudsonius* read *hudsonicus*.
 " 24. 18th line from foot, for "page" read *page*.
 " 31. last line, for "species" read *species*.
 " 32. 8th line from top, for "Nicholas" read *Nicholas*.
 " " 15th line from top, for "Fulur columbianus" read "Columbia V. V. COLUMBIANUS."
 " 33. 18th line from top, for "nova terra" read "nova terra".
 " 37. 19th line from top, for "Miotilla" read *Miotilla*.
 " " 8th line from foot, for "holaeiticus" read *holoericanus*.
 " " 3rd line from foot, for "hudsoniana" read *hudsonianus*.
 " 38. 5th line from top, for "hudsonius" read *hudsonicus*.
 " " 18th line from top, for "ustulatus" read *ustulatus*.
 " " 19th line from top, for "fuscus" read *fuscens*.
 " 39. 11th line from top, for "Capodatus" read *Capodatus*.
 " " 11th line from foot, for "leucocephala" read *leucocephala*.
 " " 4th line from foot, for "anorca" read *canora*.
 " " 40. 6th line from top, for "palustris" read "palustris".
 " " 7th line from foot, for "cuculatus" read *cuculata*.
 " " 6th line from foot, for "Vireo gilva Vieill" read *Vireo gilvus (Vieill)*.
 " " 2nd line from foot, insert semicolon after "Tyrannida."

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INDEX TO WHOLE VOLUME.

[Note.—Page numbers under each entry follow their actual sequence in pagination, those of the Appendix (pp. 1 to 51 inclusive) following the original pagination of the *Zoology* (pp. 290 to 361 inclusive).]

- A**
- Aberdeen Sandpiper 318
 Acadian Owl 315
 acadica, Nyctala 33
 Acadica, Strix 315
 academicus, Empidonax 40
 Accipiter velox 32, 33
 Accipitres, Order 315
 accipitrinus Asio 33
 acuta, Anas 319
 Adder, Small Brown 357
 Adelonycteris fuscus 3
 Aegialitis 45
 semipalmata 47
 aestiva, Dendroica 41
 Sylvia 317
 Tanagra 317
 aestivus, Coluber 357
 aethereus, Phaeton 319
 affinis, Geococcyx 40
 African Lion 299
 Agelaius phoeniceus 38
 agilis, Sylvia 317
 agrarius, Mus 292, 17
 aguti, Cavia 291
 ajaja, Platalea 318
 Alauda alpestris 317, 41
 Genus 317, 41
 Ludoviciana 317, 41
 rufa 317
 alba, Gavia 48
 Recurvirostra 318, 46
 Viverra 21
 Albatross, Chocolate 318
 Wandering 318,
 Yellow-nosed 318
 albellus, Mergus 319, 48
 albeola, Anas 319
 albicollis, Fringilla 317
 Tantalus 318, 44
 albifrons, Strix 315, 33
 albiventer, Monachus 6
 Noctilio 4
 albus, Lagopus 43
 Tantalus 318
 Tetrao 317, 43
 Viverra 291, 11
 Alca alle 319
 Arctica 319
 cristatella 319
 Genus 319, 47
 impennis 319
 Alca Labradora 319, 47
 pygmæa 319
 torda 319
 Alcedo alcyon 316
 Genus 316, 36
 torquata 316, 36
 alces, Cervus 292
 alcyon, Alcedo 316
 alector, Crax 317, 43
 alle, Alca 319
 Alligator 320, 357, 358
 alligator, Lacerta 357
 alopecurus, Canis, 291, 8
 alpestris, Alauda 317, 41
 Otocoris 41
 alpina, Tringa 45
 American Antelope 292, 24
 Avoset 318, 349
 Badger 291, 13
 Bear 291, 13
 Bison 311
 Buzzard 315
 Crossbill 316
 Godwit 318
 Hare 292, 22
 Hawk 315
 Jabiru 318
 Jerboa 292, 22
 Magpie 34
 Ornithology 291, 292, 314, 1, 31
 Owl 315
 Ox 292, 26
 Panther 291, 296, 9, 27, 28
 Rat, 292, 16, 17
 Raven 34
 Sable 291, 11, 12
 Shrike 315
 Sparrow Hawk 215
 Wandering Mouse 292, 17
 Americana, Ampelis 316, 38
 Anas 319
 Antilocapra 23, 24
 Antelope (Rupicapra) 25
 Ardea, 318, 44
 Atalapha 3
 Aythya 48
 Compothlypis 41
 Curvirostra 316
 Emberiza, 316, 39
 Fulica 36
 Hirundo 317, 42
 Recurvirostra 318

Americana, Spiza 39
 ,Strix 315
 ,Talpa 14
 Americanus, Antelope 292
 ,Bison 26
 ,Canis 291, 7
 ,Caprimulgus 317
 ,Coccyzus 35
 ,Dipus 292, 22
 ,Lanius 315
 ,Lepus, 292, 22
 ,Manatus 5
 ,Merganser 48
 ,Mus 292, 16
 ,Mustela 201, 12
 ,Noctilio 3, 4
 ,Oriolus, 315, 35
 ,Sitomys, 16, 17
 ,Tapir 292, 26
 ,Ursus 291, 13, 29
 ,Vespertilio 291, 3
 ammon, Ovis 292, 24
 Ampelis Americana 316, 38
 cedrorum 38
 ,Genus, 316, 38
 Amphibia, Class 357, I
 amphibius, Mus, 292, 16
 Amphisbæna 357
 fuliginosa 357
 ,Genus 357
 Anas acuta 319
 albeola 319
 Americana 319
 anser 319, 48
 arborea 319, 49
 Autumnalis 319
 Bahamensis 319, 48
 bernicla 319
 boschas 319
 Canadensis 319
 carolinensis 49
 clangula 319
 clypeata 319
 Columbianus 319, 48
 crecca 319, 48
 cygnus 319
 discors 319
 ferina 319, 48
 fuligula 319, 48
 fulva 319, 48
 fusca 319
 fuscescens 319, 48
 ,Genus 319, 48
 Georgica 319, 48
 glacialis 319
 histrionica 319
 hyperborea 319
 Labradorica 319
 marila 319, 48
 mollissima 319, 48

Anas moschata 319, 48
 nigra 319
 Novæ Hispaniæ 319, 48
 obscura 319
 perspicillata 319
 rubidus 319
 ruficapilla 49
 spectabilis, 319
 spinosa 319, 48
 sponsa 319
 Stelleri 319
 strepera 319
 valisineria 319
 viduata 319, 49
 Anguis eryx 357
 ,Genus 357
 lumbricalis 357
 maculatus 357
 ventralis 357
 angulatus, Dicotyles, 6
 annulatus, Coluber 357
 anser, Anas 319, 48
 ,Anser 48
 Anser anser 48
 Ant-eater, Least 291, 4
 ,Striped 291, 4
 Antelope, American 292, 294, 301,
 306, 308, 24
 ,Barbarian 292, 24
 ,Cervine 306
 ,Prong-horned 292, 308, 23, 24,
 30
 (Rupicapra) americana 25
 Anthus pensilvanicus 41
 antillarum, Sterna 47
 Antilocapra americana 23, 24, 25
 Antilocapridæ 24
 Antelope Americanus 292, 24
 bubalis 306
 dorcas 292, 24
 ,Genus 292, 24
 apella, Simia 291
 Aphriza virgata 45
 apricarius, Charadrius 318, 45
 Aquatic Shrew 291, 14
 aquatica, Zizania 333
 aquaticus, Coluber 357
 aquaticus, Scalops 14, 15
 ,Sorex, 291, 14
 ,Turdus 316, 38
 Aquila chrysetos 32
 aquila, Fregata 49
 aracango, Psittacus, 315, 34
 Ara macao 34
 Aramides cyanea 45
 ruficollis 46
 aranea, Sterna 319, 47
 araneus, Sorex 291, 14
 arborea, Anas 319, 48
 ,Dendrocygna 49

Arbor
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 Asc
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 ,
 Asia
 Asi

- Arborea, *Fringilla* 317, 40
 Rana 357
 Archibuteo lagopus 32
 sanctijohannis 32
 Arctic Gull 319
 Walrus 291, 293, 5, 26
 arctica, *Alca* 319
 arcticus, *Bubo virginianus* 33
 Colymbus 319
 Lepus timidus 22
 Arctomys Columbianus 292, 19
 citillus, 292, 18
 empetra 292, 18
 Genus 292, 18
 Hudsonius 292, 18
 Ludoviciana 292, 19, 21
 monax 292, 18
 pruinosa 292, 18
 pruinosis 292, 18
 arctos, *Ursus* 13, 28, 29
 Ardea Americana 318, 44
 caerulea 318
 cana 318, 44
 candidissima 318
 egretta 318
 exilis 318
 Gardeni 318, 44
 Genus 318, 44
 herodias 318
 hoactli 318
 hobou 318
 Ludoviciana 318
 minor 318, 44
 ncticorax 328
 spadicea 318, 44
 striata 318, 44
 violacea 318
 virescens 318
 virgata 318, 44
 arenaria, *Calidris* 45
 Argali 292, 308, 309, 24
 Asiatic 25
 Siberian 24
 argali, *Ovis* 24
 argyrophthalmus, *Corvus* 315, 34
 Armadillo, Eight-banded 291, 4
 Nine-banded 291, 4
 Three-banded 291, 4
 arvalis, *Mus* 292, 18
 Arvicola pennsylvanica 16, 18
 riparius 18
 Ascomys mexicanus 15
 Ash-bellied Swallow 317
 Ash-coloured Buzzard 315
 Heron 318
 Rat 292, 16, 24
 Sandpiper 318
 Asiatic Argali 25
 Asio accipitrinus 33
 wilsonianus 33
 asio, *Megascops* 33
 Strix 315
 Atalapha americana 3
 noveboracensis 3
 borealis 3, 4
 ater, *Molothrus* 39
 atra, *Fulica* 318, 46
 atratus, *Vultur* 315
 atricapilla, *Emberiza* 316, 39
 atricapillus, *Falco* 315
 Parus 317,
 atricilla, *Larus* 47
 atropos, *Coluber* 357
 Atticora cinerea 42
 Auk, Crested 319
 Great 319
 Labrador 319
 Little 319
 Pigmy 319
 aura, *Vultur* 315
 auratus, *Picus* 316
 aurita, *Didelphys* 14
 auritus, *Colymbus* 46
 aurocapillus, *Turdus* 316, 38
 Seiurus 38
 aurocollis, *Sylvia* 317, 41
 australis, *Manatus* 5
 Trichechus 291, 5
 autumnalis, *Anas* 319
 Plegadis 44
 Sylvia 317, 41
 Autumnal Warbler 317
 Aves, Class 315, 31
 Avoset, American 318, 349
 Long-legged 318, 349
 White 318
 Aythya americana 48
 collaris 49
 marila nearctica 48
- B**
- Badger, 291, 13
 American 291, 13
 Bagger, common 21
 Bahamensis, *Anas* 319, 48
 Dafila 48
 Balæna boops 292
 Genus 292
 gibbosa 292
 mysticetus 292
 physalus 292
 rostrata 292
 Bald Eagle 315, 320, 321, 326, 331
 Bald-pate 319, 351
 Baltimore-bird 326
 Oriole 316, 326
 Baltimorus, *Oriolus* 316
 Banded-tail Tern 319, 347
 Bank Swallow 317
 Barbarian Antelope 292, 34

barita, Gracula 316, 35
 Barking Squirrel 302, 303
 Barn Owl 315
 Swallow 317, 335
 Barred Owl 315
 Snake 357, 359
 Bartramia longicauda 45
 , Tringa 318, 45
 Bartram's Sandpiper 318
 bassanus, Pelicanus 319
 Bastard Rattle Snake 357
 Bat, Black 291, 3
 Brown 291, 3
 Hang-lip 291, 3
 New York 291, 3
 Red 291, 4
 Silver Black 3
 Vampire 291
 Bay-breasted Warbler, 317
 Cat 10
 Lynx 291
 -winged Bunting 316
 Bear, American 291, 13
 , Black 300, 13, 28, 29
 , Brown 28, 29
 , Cinnamon 29
 , Common 299, 300
 , Great Grizzly 21
 , Grizzly 291, 299, 300, 13, 21,
 28, 29
 , Polar 291
 , white 29
 , yellow 29
 Beaver, Common 592, 298, 301, 302
 Bee-eater, California 316
 , Cinereous 316
 Bellona exilis 37
 Bellus, Order 392
 Belted Kingfisher 316, 329
 Belted Warbler 317
 Beluga 292
 bernicla, Anas 319
 Berrendo 23
 bicolor, Parus 317
 , Tachycineta 42
 Big-horn 309
 Big-horned Sheep 292, 308, 24
 Big Rail 347
 bimaculata, Lacerta 357
 Birds, Land 315
 Bison 292, 294, 306, 310, 311, 26, 31
 , American 311
 , americanus 26
 , bison 26
 bison, Bison 26
 Bittern 318
 Least or Minute 318, 342
 Black and blue Tanager 316
 Red Snake 359
 Yellow Warbler 317

Black-backed Gull 319
 Black Bat 291, 3
 , Silver 3
 Black Bear 300, 13
 -bellied Darter 319
 Gallinule 318
 Hummingbird 316
 Kildeer 346
 Plover 318, 345
 Black-billed Cuckoo 316
 Whistling Duck 319
 Black-bird, Crow 322, 326
 , Swamp 343
 Black Bunting 316
 Blackburnia, Sylvia 317
 , Dendroica 41
 Blackburnian Warbler 317
 Black-cap Hawk 315
 -capped Shrike 315
 -capt Titmouse 317
 Creepers 316
 -crowned Bunting 316
 Oriole 315
 Duck 319, 352
 -faced Brouck 25
 Finch 316
 -fish 360
 Fox 291, 8, 9
 Grosbeak 316
 Guillemot 319
 Hawk 315
 -head 352
 -headed Gull 319
 Jacana 318
 Mexican Siskin 316
 -poll Warbler 317
 Rat 292
 Shrew 291, 15
 Skimmer 319, 45
 Snake 357, 359
 Black Snipe 318
 -spotted Pigeon 317
 Squirrel 292, 19
 , Large 292, 19
 , Small 292, 19
 -tailed Fallow Deer 292, 307, 24
 Tern 319
 -throated blue Warbler 317
 Bunting 316
 Diver 319
 green Warbler 317
 -toed Petrel 319
 Wolf 291
 Blue-bellied Lizard 357
 -bill Duck 319, 352
 -bird 333, 334
 -bream 360
 Bunting 316
 -eyed Warbler 317
 -gray Flycatcher 317

Blue-g
 G
 H
 -h
 H
 Je
 M
 -n
 P
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 T
 Blue-
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 Bluis
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 Boa c
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 Bras
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 Bre
 bre
 Bro

- Blue-green Warbler 317
 Grosbeak 316
 Hawk 315, 32
 -headed Parrot 315
 Heron 318
 Jay 315
 Merganser 319
 -mountain Warbler 317
 Pigeon 317
 -tailed Humming Bird 316
 Lizard 357
 Toucan 315
 Blue-winged Teal 319
 yellow Warbler 317
 yellow-back Warbler 317
 Bluish Green Viper 357
 Blunt-headed Cachalot 292
 Boa constrictor 357
 , Genus 357
 , Indian 357
 boans, Rana 357
 Boatbill, Crested 318
 Boat-tailed Grackle 316
 Bobolink 332
 bonana, Oriolus 315, 35
 Bonasa umbellus sabini 43
 fusca 43
 Booby, Brown 319
 Lesser 319
 boops, Balæna 292
 boothia, Sciurus 20
 borealis, Atalapha, 3, 4
 , Buteo 32
 , Dryobates 36
 , Falco 315
 , Lanius 34
 , Numenius 318
 , Somateria mollissima 48
 , Tringa 318, 45
 , Vespertilio 3
 Boreal Sandpiper 318
 boschas, Anas 319
 Bos Americanus 292, 25
 bison 25
 , Genus 292, 25
 moschatus 292
 Botaurus lentiginosus 44
 brachyotus, Srix 315, 33
 brachyrhynchus, Larus 47
 Brant 319, 354, 355
 , White 355
 Brazilian Porcupine 292, 16
 Tiger 291, 10
 Braziliana, Procellaria 319, 48
 Brazilian Petrel 319
 bream, Blue 360
 Brent 354
 breviceps, Didelphys 14
 Broad-bill, 352
 -winged Hawk 315, 33
 Brocket, Black-faced 25
 , Wood 25
 Brown Bat 291, 3
 Bear 28, 29
 Booby 319
 -cheeked Grosbeak 316
 Creepers 316
 Duck 319
 Grouse 317, 43
 -headed Nuthatch 316
 Starling 316
 Brownish spotted Snake 357
 Brown Lark 317
 Lizard 357
 Merganser 319
 Mole 291
 Owl 315
 Pelican 319
 Phalarope 318
 Pigeon 317
 Sapajou 291
 Snake 357
 Squirrel 292, 22
 Tern 319
 Thrush 331
 Tiger 291, 9, 28
 Viper 357
 Bruta, Order 291
 bubo, Strix 315, 33
 Bubo virginianus 33
 arcticus 33
 Bud-worm 360
 Buffalo 294, 299, 301, 310, 311
 , White 310, 31
 Buff-headed Duck 319, 352
 bufo, Rana 357
 bug, Pea 360
 May 360
 Rose 360
 Bull Frog 357
 Bunting, Bay-winged 316
 , Black 316,
 -crowned 316
 -throated 316
 , Cow 316, 333
 , Louisiana 316
 , Mexican 316
 , Painted 316
 , Rice 332
 , Snow 316
 , Towhee 316
 , White-crowned 316
 Burrowing Squirrel 302, 303
 bursarius, Geomys 16
 Butcher-bird 323
 Buteo borealis 32
 lineatus 32
 swainsoni 33
 Butter-box 352
 -ball 352

- Carolina Parrot 315, 323
 Siren 367
 Squirrel 292, 20
 Wren, Great 316
 carolinensis, Anas 49
 Galeoscoptes 38
 Carolinensis, Caprimulgus 317
 Cuculus 316, 35
 Columba 317
 Fringilla 316, 40
 Lanius 315, 34
 Pelicanus 319, 49
 Psittacus 315
 Sciurus 292, 20
 Sitta 316
 Caroliniana, Certhia 316, 37
 Carolinus, Picus 316
 Rallus 318
 carolinus, Scolecophagus 35, 38
 Carpodacus mexicanus 39
 Carrion Crow 315, 320
 Carthagea, Gallinula 318, 46
 Gallinule 318
 Carthaginensis, Fringilla 316, 40
 Carthaginian Crow 315
 Finch 316
 cartilaginea, Testudo 357
 castanea, Dendroica 41
 Sylvia 317
 Castor fiber 292
 Genus 292
 zibethicus 292
 Cat 296
 Catamount 296, 27, 28
 Cat-a-mountain 296
 cataractes, Larus, 319, 48
 Cat, Bay 10
 Cat-bird 316, 332, 335
 Cat, Mexican 291, 10
 Mountain 10
 catodon, Physeter 292
 Cat, Tiger 291, 296, 27
 Catus montanus 10
 Cat, Wild 291, 10
 caudacuta, Fringilla 317
 caudivolvulus, Cercoleptes 11
 cayana, Aramides 45
 Cayanensis, Sterna 319, 47
 Cayennensis, Rallus 318, 45
 Cayenne Rail 318
 Tern 319
 cayopollin, Didelphis 291, 14
 Cave Rat 16
 Cavia aguti 291
 Genus 291
 paca 291
 Cavy, Long-nosed 291
 Spotted 291
 Cedar-bird 316
 cedrorum, Ampelis 38
 Cercoleptes caudivolvulus 11
 Certhia Caroliniana 316, 57
 familiaris 316, 37
 mexicana 37
 Genus 316, 37
 maculata 316, 37
 Mexicana 316, 37
 palustris 316, 37
 Cerulean Tanager 316
 cervina, Ovis 25
 Cervine Antelope 306
 Cervus alces 292
 canadensis 22, 23
 elaphus 23
 Genus 292, 22
 macrotis 24
 var. columbianus 24
 major 292, 22, 23
 Mexicanus 292, 23, 24
 tarandus 292
 Virginianus 292, 24
 Cetaceæ 26
 Cete, Order 292
 Chameleon 357, 358
 Charadrius apricarius 318, 45
 calidris 318, 45
 dominicus 45
 Genus 318, 45
 hiaticula 318, 45
 pluvialis 318, 45
 vociferus 318
 Wilsonia 318
 Chat, Yellow-breasted 317
 Chatterer 316
 Chauna chavaria 46
 chavaria, Chauna 46
 Parra 318, 46
 Chelidon erythrogaster 42
 Chestnut Jacana 318
 Chestnut-sided Warbler 317
 Chettusia miles 46
 chichictli, Strix 315, 33
 Chickaree 292, 20
 Chicken Snake 357
 Chikaree 292
 Chimney Swallow 317, 336
 Chipping Sparrow 317
 chloropus, Gallinula 318, 46
 chlororhynchos, Diomedea 319
 Chocolate Albatross 319
 Falcon 315
 Chordeiles virginianus 42
 chrysaetos, Aquila 32
 Falco 315
 chrysoptera, Sylvia 317
 Chrysotis leucocephalus 34
 ochrocephalus 34
 Chuck-will's widow 317, 336, 337
 cicada septendecim 360
 cinclus, Tringa 318, 46

- Common Lynx 291, 10
 Mole 291, 4
 Otter 291, 12
 Rail 318, 347
 Red Fox 291, 295, 296, 9
 Snipe 343
 Toad 357
 Tropic-bird 319
 Weasel 291, 12
 Whale 292
 Wolf 291, 293, 294, 295, 7
 Compothlypis americana 41
 concolor, Felis 291, 9, 10, 27
 Condor 315, 32
 Condur Vulture 315
 Condylura cristata 14, 15
 Connecticut Warbler 317
 constrictor, Boa 357
 Coluber 357
 Contopus virens 40
 Coot 347, 348, 349
 Common 318
 Mexican 318
 Copper-bellied Snake 357
 -coloured Lizard 357
 Coracias, Genus 315, 35
 Mexicanus 315, 35
 corax, Corvus 315, 34
 coronata, Sylvia 317
 Zonotrichia 39
 coronatus, Coluber 357
 corone, Corvus 315
 Corn Snake 357
 cornuta, Palamedea 318
 Rana 357
 cornutus, Podiceps 318, 46
 Corsac, Canis 291, 9
 Corsak Fox 291, 9
 Corvorant 319
 Corvus argyrophthalmus 315, 34
 Canadensis 315
 Columbianus 315
 corax 315, 34
 principalis 34
 sinuatus 34
 corone 315
 cristatus 315
 Corvus, Genus 315, 34
 Mexicanus 315, 34
 ossifragus 315
 pica 315, 34
 Stelleri 315
 Zanoe 315, 34
 Coryphospingus cristatus 40
 costototi, Oriolus 316, 35
 Cotile rupestris 42
 Cougar 9
 Cougar 296, 9, 26
 cougar, Felis 291, 9
 Courier Pheasant 317
 Cow Bunting 316, 333
 coyoclos Perdix 317, 43
 Coyote 27
 Crane, Whooping 318, 342
 Crax alector 317, 43
 , Genus 317, 43
 globicera 317, 43
 pauxi, 43
 vociferans 317, 43
 crecca, Anas 319, 49
 Creeper, Black and White 316
 , Brown 316
 , Red 316
 crepitans, Rallus 318
 Crested Auk 319
 Boatbill 318
 Curassow 317
 Merganser 319
 Pheasant 317
 Quail 317
 Seal 291, 6
 Shrew 291, 14
 Shrike 315
 Titmouse 317
 Crimson-headed blue Humming-
 bird 316
 crinita, Muscicapa 317
 crinitus, Myiarchus 40
 cristata, Condylura 14, 15
 , Fringilla 316, 40
 , Penelope 317, 42
 , Phoca 291, 6
 , Pipra 317, 42
 cristatella, Alca 319
 cristatus, Corvus 315
 , Coryphospingus 40
 , Cystophora 6
 , Perdix 317, 43
 , Phalacrocorax 49
 , Phasianus 317, 43
 , Sorex 291, 14
 Crocodile, 358
 Crossbill 39
 , American 316
 , White-winged 316
 Cross Fox 291, 9
 Crotalus dryinas 357
 durissus 357
 , Genus 357
 horridus 357, 368, 359
 miliarius 357
 Crow, Black-bird 322, 326
 , Carrion 315, 320
 , Clark's 315
 , Common 315, 324, 325
 , Carthaginian 315
 , Fish 315, 325
 , Mexican 315, 34

- Crow, Roost 324
 ,Steller's 315, 34
 ,Zanoe 315, 34
 Crowing Gallinule 318
 Crowned Viper 357
 crucigera, Canis 291, 9
 Crying Curassow 317
 Crymphilus fulvicarius 46
 Cuckoo, Black-billed 316
 ,Laughing 316
 ,St. Domingo 316
 ,Yellow-billed 316
 cuculiatu, Muscivora 317, 40
 cucullatus, Mergus 319
 Cuculus Carolinensis 316, 35
 Dominicus 316, 35
 erythrophthalma 316
 ,Genus 316, 35
 ridibundus 316, 35
 Cucumber Fly 360
 Cugacuarana 9, 10
 Cuniculus hudsonius 17
 cupido, Tetrao 317
 Curassow, Crested 317
 ,Crying 317
 ,Cushew 317
 ,Globose 317
 ,Piping 317
 Curlew, Esquimaux 318, 343
 ,Hudsonian 318, 343
 ,Long-billed 318, 343
 ,Short-billed 343
 Curucui, Red-bellied 316
 curucui, Trogon 316, 35
 Curvirostra Americana 316, 39
 ,Genus 316, 39
 leucoptera 316
 Cushew Curassow 317
 cutotol, Fringilla 316, 40
 Cuttle-fish 360
 cyanea, Fringilla 317
 ,Passerina 35
 cyanurus, Trochilus 316, 37
 Cycloturus didactylus 4
 cygnus, Anas 319
 Cynomys ludovicianus 19
 socialis 30
 Cystophora cristata 6
- D**
- Dafia bahamensis 48
 Darien Hog 292, 26
 Dark blue Snake 357
 Darter, Black-bellied 319
 ,Surinam 319
 Dasypus, Genus 291, 4
 novemcinctus 291, 4
 octocinctus 291, 4
 tricinctus 291, 4
 discolor, Felis 291, 9, 10
 discors, Anas 319
 decumanus, Mus 292
 Deer, Black-tailed Fallow 292, 307, 24
 ,Common 292, 294, 296, 301, 307,
 308
 Red 24
 ,Fallow 308, 23
 ,Long-tailed Fallow 292, 307, 24
 ,Mexican 292, 23
 ,Mule 292, 307, 308
 ,Rein 292, 306, 307
 ,Spring-back 292, 24
 Delawarensis, Larus 319, 48
 Delphinus delphis 292
 ,Genus 292, 26
 leucas 292
 orca 392
 phocaena 292
 delicata, Gallinago 44
 delphis, Delphinus 292
 Dendrocygna arborea 49
 fulva 49
 viduata 49
 Dendroica aestiva 41
 blackburniae 41
 caerulea 41
 castanea 41
 coronata 41
 discolor 41
 dominica 41
 maculosa 41
 palmarum hypochrysea 41
 pennsylvanica 41
 striata 40
 tigrina 41
 vigorsii 41
 denticulata, Testudo 357
 Dicotyles angulatus 26
 labiatus 26
 torquatus 26
 didactyla, Myrmecophaga 291, 4
 didactylus, Cycloturus 4
 Didelphis cayopollin 291, 14
 Genus 291, 14
 Didelphis opossum 291, 14
 Didelphys californica 14
 cancrivora 14
 marsupialis 14
 murina 14
 virginiana 14
 Diomedea chlororhynchus 319
 exulans 319, 47
 ,Genus 319, 46
 spadicea 319, 47
 dipsas, Coluber 357
 Dipus Americanus 292, 22
 Canadensis 292, 22
 ,Genus 292, 22
 Labradorius 292, 22
 discolor, Dendroica 41

Diver,
 ,It
 ,N
 ,R
 ,S
 ,S
 Dog 2
 ,E
 ,I
 ,F
 doliat
 Dolich
 Dolph
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 Dry
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 Duc

Du

- Diver, Black-throated 319
 ,Imber 319
 ,Northern 319, 349
 ,Red-throated 319
 ,Speckled 319
 ,Striped 319
 Dog 294, 295, 27
 Esquimaux 26
 ,Indian 291, 294, 195, 7, 27
 ,Prairie 292, 302, 303, 19, 30
 doliatus, Coluber 357
 Dolichonyx oryzivorus 39
 Dolphin 292
 domestica, Sylvia 317
 dominica, Dendroica 41
 Dominicensis, Oriolus 316, 35
 Dominicus, Cuculus 316, 35
 dominicus, Charadrius 45
 ,Tachybaptus 46
 ,Nomonyx 49
 dorcas, Antelope 292, 24
 Dormouse, Striped 304
 dorsata, Hystrix 291, 16
 Mazama 25
 dorsatus, Erethizon 16
 Dotted Snake 357
 douglassi, Sciurus 21
 Dove, Ground 317, 340
 ,Turtle 317, 340
 Downy Woodpecker 316, 327
 dracena, Lacerta 357
 dresseri, Somateria 48
 drummondii, Neotoma 16
 Dry Heron 318
 dryinas, Crotalus 357
 borealis 36
 Dryobates villosus canadensis 36
 Duck, Black 319
 -billed Whistling 319
 ,Blue bill 319
 ,Brown 319
 ,Buffel-headed 319, 352
 ,Canvass-back 319, 351, 353, 354
 ,Common Black 319
 ,Dusky 319, 351
 ,Eider 319, 351
 ,Georgia 319
 ,Gray headed 319
 ,Harlequin 319
 Hawk 322
 ,Hathera 319
 ,Lewis's Red-headed 49
 ,Long-tailed 319
 ,Mexican 319
 ,Muscovy 319, 352, 356
 ,Pied 319
 ,Pintail 354
 Duck, Red-billed 319
 -headed 319, 351
 ,Ruddy 319
 Duck, Scaup 319, 352
 ,Scoter 319
 ,Spanish 319
 ,Sprigtail 319, 354
 ,Summer 319, 351
 ,Tufted 319
 ,Velvet 319
 ,Western 319
 ,Wood 351
 durissus, Crotalus 357
 Dusky Duck 319, 351
 Falcon 315
 Grebe 318
 Grosbeak 316
 Parrot 315
 Petrel 319
 Tody 316
- E
- Eagle, Bald 315, 320, 321, 326, 331
 ,Calumet 321
 ,Golden 315
 ,Gray 321
 ,Ring-tailed 315, 321
 ,Sea 321
 Eagle, White-bellied 315
 -headed 320
 Earless Marmot 292, 18, 23
 eburneus, Larus 319, 48
 Ectopistes migratoria 42
 egretta, Ardea 318
 Eider Duck 319, 351
 Eight-banded Armadillo 291, 4
 Elanoides forficatus 32
 elaphus, Cervus 23
 Elasmognathus, genus 26
 hardi 26
 howi 26
 Emberiza Americana 316, 39
 atricapilla 316, 39
 caerulea 316, 39
 ciris 316, 39
 erythrophthalmus 316, 39
 ,Genus 316, 39
 graminea 316, 39
 hiemalis 316, 39
 leucocephala 316, 39
 Ludoviciana 316, 39
 Mexicana 316, 39
 nivalis 316, 39
 oryzivora 316, 39
 pecoris 316, 39
 English Mocking-bird 331
 Snipe 318, 343
 Enhydris lutris 12
 enucleator, Loxia 316
 Equus caballus 292
 ,Genus 292
 Ereunetes pusillus 44
 Ermine 291, 298, 11, 12

erminea, *Mustela* 29, 12
 erythrocephalus, *Picus* 316
 erythrogaster, *Chelidon* 42
 Coluber 357
 erythromelas, *Piranga* 39
 erythrophthalma, *Emberiza* 316, 39
 erythrophthalmus, *Cuculus* 316
 Pipilo 39
 erythrorhynchus, *Pelicanus* 319, 49
 eryx, *Anguis* 357
 esculanta, *Rana* 357
 Esquimaux Curlew 318, 343
 Dog 27
 Gull 319
 Eulampis holosericeus 37
 jugularis 37
 Eupychortyx, genus 43
 europæa, *Talpa* 14
 European Badger 13
 Lynx 10
 Otter 12
 Red Fox 8, 9
 Wren 330
 excubitor, *Lanius* 315, 34
 exilis, *Ardea* 318
 Bellona 37
 Sorex 291
 Trochilus 316, 37
 exulans, *Diomedea* 319, 47

F

Fair Squirrel 292, 20
 Faithful Jacana 318
 Falco atricapillus 315
 borealis 315
 cæsius 315, 32
 chrysaetos 315
 cinereus 315, 33
 Columbarius 315
 columbianus 32
 fulvus 315, 32
 furcatus 315, 32
 fuscus 315, 32
 gentilis 315, 33
 Genus 315, 32
 haliætos 315
 hiemalis 315, 32
 Hudsonius 315
 lagopus 325
 latissimus 315
 leucocephalus 315
 leucogaster 315, 32
 Leverianus 315, 322, 32
 lineatus 315
 Mississippiensis 315
 niger 315, 32
 Novæ terræ 315, 33
 obscurus 315, 32
 obsoletus 315, 33
 Pennsylvanicus 315, 32

Falco peregrinus 315
 regulus 33
 sacer 315, 32
 S. Johannis 315
 spadiceus 315, 32
 sparverius 315
 uliginosus 315, 32
 variegatus 315, 33
 velox 315
 Falcon, Chocolate 315
 Common 315
 Dusky 315
 Gentle 315
 Plain 315
 St. John's 315
 Newfoundland 315
 Peregrine 322
 Fallow-Deer 308, 23
 Long-tailed 292, 307, 24
 Black-tailed 292, 307, 24
 familiaris, *Certhia* 316
 Fan-tailed Grosbeak 316
 fasciata, *Lacerta* 357
 Melospiza 40
 fasciatus, *Coluber* 357
 fatuellus, *Simia* 291
 Favourite Galiinule 318
 fedoa, *Scolopax* 318
 Felis concolor 291, 9, 27
 gouguar 291, 9
 fiscolor 291, 9
 Genus 291, 9
 lynx 291, 10
 Mexicana 291, 10
 montana 291, 10
 onca 291, 10
 pardalis 291, 10
 rufa 291, 10
 ruffa 10
 Feræ, Order 291
 ferina, *Anas* 319, 48
 ferruginea, *Fringilla* 317, 40
 Gracula 316
 Muscicapa 317, 40
 Ferruginous Thrush 316
 Fetid Shrew 291, 14
 fiber, *Castor* 292
 Pelicanus 319, 49
 Field Sparrow 317
 Finch, Black-faced 316
 Carolina 316
 Carthaginian 316
 Lapland 316
 Pine 317
 Purple 317
 Sea-side 317
 Sharp tailed 317
 Variagated 316
 Fin-fish 292
 Fire-bird 326

- Fire-fly 360
 Fish 360
 Crow 315, 325
 Fisher Ducks 350
 Weasel 291, 12
 Fish Hawk 315, 321, 322, 350
 fissipes, *Sterna* 319, 47
 Five-lined Lizard 357
 flabellifera, *Loxia* 316, 39
 flagellum, *Coluber* 357
 flammea, *Strix* 315, 33
 Flamingo, Red 318, 349
 flavicollis, *Sylvia* 317, 41
 flavifrons, *Vireo* 40
 flavipes, *Scolopax* 318
 flavirostris, *Gallinula* 318, 46
 flavus, *Sciurus* 292, 20
 Florida Viper 357
 floridana, *Neotoma* 16
 Fly, Cucumber 360
 Hessian 360
 Potatoe 360
 Fire 360
 Flycatcher, Blue-gray 317
 Canada 317
 Forked-tail 317, 40
 Great-crested 317
 Green black-capt 317
 Hooded 317
 Louisiana 317
 Pewee 317, 333
 Red-eyed 317
 Rusty 317
 Small green 317
 -headed 317
 Solitary 317
 Striped 317
 Swallow-tailed 317, 40
 Tyrant 317, 36
 Warbling 317, 334
 White-eyed 317
 Yellow-throated 317
 Flying Squirrel 292, 20
 Hudson's Bay 292, 20
 foetida, *Phoca* 6
 Foolish Guillemot 319
 forficata, *Muscicapa* 317
 forficatus, *Muscicapa* 317, 40
 Elanoides 32
 Forked-tail Flycatcher 317, 40
 Fork-tailed Oriole 316
 Petrel 319
 formosa, *Sylvia* 317
 fossor, *Sciurus* 21
 Four-lined Lizard 357
 Fox, American Red 8
 Arctic 291, 295
 Black 291, 8, 9
 Common Red 291, 295, 296
 Corsak 291, 9
 Fox, Cross 291, 9
 Gray 291, 8, 9
 Kit 8
 Large Red 291, 8
 Small Red 291, 8
 Silvery 291, 8
 Varied 291, 8
 Fregata aquila 49
 fremonti, *Sciurus hudsonius* 22
 Frigate Pelican 319
 Fringilla albicollis 317
 arborea 317, 40
 cannabina 316, 39
 Carolinensis 316, 40
 Carthaginensis 316, 40
 caudacuta 317
 cristata 316, 40
 cutotol 316, 40
 cayanea 317
 ferruginea 317, 40
 Genus 317, 39
 Hudsonia 317, 40
 Lapponica 316
 linaria 316
 maritima 317
 melodia 317, 40
 Mexicana 316
 palustris 317, 40
 passerina 317
 pinus 317
 pusilla 317
 Savanna 317
 socialis 317
 tristis 317
 variegata 316, 40
 Frog, Bull 357
 Clamorous 357
 Common 357
 Green Fountain 357
 Horn 303
 Pond 357
 Tree 357
 Virginia 357
 White-spotted 357
 Fulica americana 46
 atra 318, 46
 Genus 318, 46
 Mexicana 318, 46
 fulica, *Heliornis* 49
 fulicarius, *Crymophilus* 46
 fuliginosa, *Amphisbæna* 357
 Sterna 319
 fuligula, *Anas* 319, 49
 Fulmar Petrel 319
 fulva, *Anas* 319, 49
 fulvius, *Coluber* 357
 fulvus, *Falco* 315, 32
 Vulpes 8, 9
 funerea, *Strix* 315, 33
 furcata, *Procellaria* 319

furcatus, Falco 315, 32
 Oriolus 316, 35
 Fur Seal, Northern, 6
fusca Anas 319
 Bonasa umbellus 43
 Columba 317, 42
 Phalaropus 318, 46
 Tetrao 317, 43
 Vespertilio 291, 3
fuscescens, Anas 319, 49
 Turdus 38
fuscus, *Adelonycteris* 3
 Falco 315
 Larus 319, 47
 Mergus 319, 48
 Pelecanus 49
 Pelicanus 319
 Vesperugo serotinus 3

G
 Gadwall 319
galeata, *Gallinula* 46
Galeoscoptes carolinensis 38
Gallinæ, Order 317
Gallinago delicata 44
 gallinago 44
gallinago, *Gallinago* 44
 Scolopax 318, 44
Gallinula Carthagena 318, 46
 chloropus 318, 46
 flavirostris 318, 46
 galeata 46
 Genus 318, 46
 martinica 46
 novæboracensis 318, 46
 porphyrio 318, 46
 purpurea 318, 46
 ruficollis 318, 46
gallinula, *Gallinago* 44
Gallinule, Black-bellied 318
 Carthagena 318
 Crowing 318
 Favourite 318
 Purple 318, 348
 Yellow-breasted 318
Gannet 319
 Lesser 319
Gardeni, *Ardea* 318, 44
Gardenian Heron 318
Garter Snake 357
Gavia alba 48
Gazelle 292
gelida, *Procellaria* 319, 48
gelidus, *Puffinus* 48
Gelochelidon nilotica 47
Gentle Falcon 315
gentilis, *Falco* 315, 33
Geococcyx affinis 43
Geomys 14, 15
 bursarius 16

Geomys hispidus 15
 mexicanus 15
 pinetis 16
 tuza 16
Georgia Duck 319
Georgian Hamster 292, 16
georgiana, *Melospiza* 40
Georgica, *Anas* 319, 49
Geothlypis trichas 41
Geronticus 44
gettulus, *Coluber* 357
Giant Petrel 319
gibbosa, *Halæna* 292
Gibeonite 291
gigantea, *Procellaria* 319
gilvus, *Vireo* 40
Glacial Petrel 319
Glass Snake 357, 359
glacialis, *Anas* 319
 Colymbus 319, 47
 Phalaropus 318, 46
 Procellaria 319
Glires, Order 291
glocicera, *Crax* 317, 43
Globose Curassow 317
glottis, *Scolopax* 318, 44
 Totanus 44
Glow worms 360
Glutton 291, 14
Goat 309, 25
 Mountain 31
 Rocky Mountain 25
Godwit, *American* 318
 Hudsonian 318
Golden-crested Wren 317
 -crowned Kinglet 41
 Thrush 316
 Eagle 315
 -eye 319
 Plover 318, 346
 Robin 326
 -winged Warbler 317
 Woodpecker 316
Goosander 319, 350
Goose, *Canada* 319, 355, 356
 Gray 319, 355
 lag 355
 Pied 355
 Snow 319, 355
 White 355
 Wild 355, 356
Gopher 292, 16
 Pocket 16
Gracula barita 316, 35
 ferruginea 316, 35
 Genus 316, 35
 quiscula 316
graculus, *Pelicanus* 319, 49
Grakle, *Boat-tailed* 316
 Purple 316, 322, 326

Grakle
 Gralla
 C
 grami
 gramin
 F
 Gram
 Grass
 Gray
 E
 F
 G
 G
 -I
 -L
 C
 P
 S
 S

Grea

Gre

Gre

Gre

Gr

- Grackle, Rusty 316
 Grallæ 295
 , Order 318
 graminea, Emberiza 316, 39
 gramineus, Lampornis 37
 , Pooecætes 39
 Grampus 292
 Grass Caterpillar 360
 Gray Back 345
 Eagle 321
 Fox 291, 295, 7, 8, 9
 Goose 319, 535
 Grosbeak 316
 -headed Duck 319
 lag Goose 355
 Oriole 315
 Phalarope 318
 Sandpiper 318
 Squirrel 292, 304, 19, 21
 , Columbia 292, 21, 24
 , large 21
 Tanager 316
 Wolf 7, 27
 , American 7
 , European 7
 , Mexican 7
 , Northern 7
 Great American Shrike 315, 323
 Auk 319
 crested Flycatcher 317
 -footed Hawk 315, 322
 Grizzly Bear 21
 Heron 318
 -horned Owl 315, 322, 323
 Land Tortoise 357
 Northern Diver 349
 Owl 315
 Rattle Snake 357
 Tern 319
 White Heron 318
 , Pelican 319
 Greater Redpoll 316
 Spotted Woodpecker 316
 Stag 292, 23
 Grebe, Dusky 318
 , Horned 318
 , Little 318
 , Louisiana 318
 , Pied-bill 318
 Green black-cap Flycatcher 317
 Carolina Lizard 357, 358
 Fountain Frog 357
 Heron 318
 Sandpiper 318
 -shank Snipe 318
 Snake 357, 359
 -striped Snake 357
 -throated Humming-bird 316
 Green white-bellied Swallow 317
 -winged Teal 319
 Woodpecker 316
 grisea, Loxia 316, 38
 , Spermophila 38
 , Tanagra 316
 griseus, Macrorhamphus 44
 , Oriolus 315, 35
 , Sciurus 21
 Grizzly 29
 Bear 291, 299, 300, 13, 21, 28, 29
 , Great 21
 , Californian 29
 Groenlandica, Phoca 291, 6
 Ground Dove 317
 Hog 292, 8
 Rattle Snake 357
 Squirrel 292, 21
 , Rocky mountain 292, 21
 Grosbeak, Black 316
 , Blue 316
 , Brown-cheeked 316
 , Canada 316
 , Cardinal 316, 332
 , Dusky 316
 , Fan-tailed 316
 , Gray 316
 , Hudson's Bay 316
 , Mexican 316
 , Pine 316
 , Rose-breasted 316
 , Yellow-bellied 316
 -headed 316
 Grouse, Brown 317, 43
 , Pinnated 317, 341, 342, 50
 , Rock 317
 , Ruffed 317, 41
 , Sharp tailed 317
 , Spotted 317
 , White 317
 Grus, Genus 44
 grylle, Uria 319
 gryphus, Vultur 315
 Guan 317
 Guara rubra 44
 guianensis, Leistes 35
 Guillemot, Black 319
 , Foolish 319
 , Marbled 319
 Guinea Hen 347
 Guiraca cærulea 39
 Gull, Arctic 319
 , Black-backed 319
 , -headed 319
 , Common 319
 , Esquimaux 319
 , Herring 319
 , Ivory 319
 , Kittiwake 319
 , Skua 319
 , Toothed-bill 319, 47
 Gulo luscus 14

gulo, Ursus 291, 14
Gymnomystax mexicanus 35

H

Habia ludoviciana 38
Hæmatopus, Genus 318, 45
 ostralegus 318, 45
 palliatu8 45

Hairy Wood-pecker 316

Haliætos, Falco 315

Hämster, Georgian 292, 16

Hanging-bird 326

Hang-nest 326

Hare, American 292, 22

 Common 292, 22

 Varying 292, 22

Harlequin Duck 319

Harporhynchus rufus 38

Harp Seal 291, 6

Hawk, American 315

 Sparrow 315

 Black 315

 -cap 315

 Blue 315, 32

 Broad-winged 315, 32

 Duck 322

 Fish 315, 321, 322, 350

 Great-footed 315, 322

 Hudson's 315

 Marsh 315, 322, 32

 Night 317, 336

 Owl 315

 Pigeon 315

 Red-shouldered 315

 tailed 315

 Rough-legged 315

 Sharp-shinned 315, 32

 Slate-coloured 315, 32

 Swallow-tailed 315

 White-breasted 322

 Winter 315

Heath hens 341

Hedgenog 312

Helionis fulica 49

Hemlock Warbler 317

Hermit Thrush 316, 38

herodias, Ardea 318

Heron, Ash-coloured 318

 Blue 318

 Dry 318

 Gardenian 318

 Great 318

 White 318

 Green 318

 Hohou 318

 Louisiana 318

 Mexican 318

 Night 318

 Rusty-crowned 318

 Snowy 318

Heron, Streaked 318

 Striated 318

 Yellow-crowned 318

hiaticula, Charadrius 318, 45

 Tringa 318, 45

hiemalis, Emberiza 316, 39

 Falco 315, 32

 Troglodytes 42

 Sciurus 292, 304, 20

Hierofalco sacer 32

High-finned Cachalot 292

himantopus, Recurvirostra 318

Hippopotamus 312

Hirundo Americana 317, 42

 cinerea 313, 42

 Genus 317, 42

 Oonalaskensis 317, 42

 pelasgia 317

 purpurea 317, 42

 riparia 317

 ruepestris 317, 42

 viridis 317, 42

hirundo, Sterna 319

hispidia, Phoca 291, 6

hispidus, Geomys 15

histrionica, Anas 319

hoactli, Ardea 318, 44

Hoary Marmot 292, 18

Hog, Darien 292, 26

 Ground 292, 18

 Mexican 292, 26

Hohou Heron 318

hohou, Ardea 318, 44

hoilotl, Columba 317, 42

holosericus, Eulampis 37

 Trochilus 316, 37

Hooded Flycatcher 317

 Seal 591, 6

Hoopoe, Mexican 316

Horned Grebe 318

 Lizard 303

 Sapajou 291

 Screamer 318

 Toad 357

horriæus, Ursus 29

horribilis, Ursus 291, 13, 21, 28, 29

horridus, Crotalus 357

Horse, Wild 292

House Snake 357, 359

 Wren 317, 334

Hudsonia, Fringilla 317, 40

 Strix 315, 33

Hudsonian Curlew 318

 Godwit 318

 Quail 317

 Thrush 316

Hudsonica, Gallinago 318

 Loxia 316

 Numenius 318

 Perdix 317, 43

Hudsc

huds

Hudsc

huds

Hudsc

, M

, L

, F

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huds

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ilia

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imi

iml

- Hudsonica, *Sylvia* 317, 41
 hudsonica, *Pica pica* 34
 Hudsonicus, *Turdus* 316, 38
 hudsonicus, *Sciurus* 20, 21
 Hudsonius, *Arctomys* 292, 18
 , *Mus* 292, 17
 , *Mustela* 291, 12
 , *Parus* 317
 , *Sciurus* 292, 20
 hudsonius, *Circus* 32
 , *Cuniculus* 17
 , *Zapus* 22
 Hudson's Bay Grosbeak 316
 Flying Squirrel 292, 29
 Squirrel 292, 20
 Titmouse 317
 Hudson's Hawk 315
 Mouse 292, 17
 Warbler 317
 humanus, *Coluber* 357
 Humming-bird, Black-bellied 316
 , Blue-tailed 316
 , Crimson-headed blue 316
 , Green-throated 316
 , Least 316
 , Little 316
 , Mango 316
 , Paradise 316
 , Ruby-throated 316, 329, 330
 , Ruff-necked 316
 , Spotted 316
 Hump Whale 292
 Hydrochelidon nigra surinamensis
 47
 hyemalis, *Junco* 39, 40
 hyperborea, *Anas* 319
 , *Phalaropus* 318, 46
 hypochrysea, *Dendroica palmarum*
 41
 Hystrix dorsata 291, 16
 , Genus 291, 16
 , Mexicana 291, 16
 , prehensilis 291, 16

I
 Ibis, Lesser 318
 , Mexican 318
 , Scarlet 318
 , White 318
 -necked 318
 , Wood 318
 Icelandica, *Tringa* 318, 45
 Icteria virens 42
 icterocephala, *Sylvia* 317, 41
 Icterus, genus 35
 Iliathera Duck 319
 iliaca, *Passerella* 40
 Illinois Parrot 324
 Imber Diver 319
 imber, *Urinator* 47
 immer, *Colymbus* 319
 impennis, *Alca* 319
 Indian Boa 357
 Dog 291, 294, 595, 7, 27
 Indigo-bird 317
 Insects 360
 insignis, *Zapus* 22
 interpres, *Tringa* 318
 inunguis, *Manatus* 5
 Ionornis martinica 46
 isabellinus, *Ursus* 29
 Ivory-billed Woodpecker 316, 326,
 327
 Gull 319

J
 Jabiru, American 318
 Jacana, Black 318
 , Chestnut 318
 , Faithful 318
 jacana 45
 , Louisiana 318
 nigra 45
 jacana, *Jacana* 45
 , Parra 318, 45
 Jackals 27
 Jack Snipe 318
 Jaguar 10
 Jaguarete 9, 10
 Jay, Blue 315
 , Canada 315
 Jerboa, American 292, 22
 , Canada 292, 22
 , Labrador 292, 22
 Joint Snake 357, 360
 jubata, *Otaria* 6
 , *Phoca* 291, 6
 jugularis, *Eulampis* 37
 Junco hyemalis 39, 40

K
 keeask, *Larus* 319, 48
 Kentucky Warbler 317
 Kildeer Plover 318, 346
 , Black-bellied 346
 King-bird 317, 323, 325
 Kingfisher, Belted 316, 329
 , Cinereous 316
 Kinglet, Golden crowned 41
 King Vulture 315, 32
 Kinkajou 11
 Kite, Mississippi 315
 Kit Fox 8
 Kittiwake Gull 319
 Knot Sandpiper 318

L
 labialis, *Verspertilio* 291, 3
 labiatus, *Dicotyles* 26

- Labrador Auk 319
 Jerboa 292, 22
 Thrush 316
 Labrador, Alca 319, 47
 ,Anas 319
 Labradoricus, Ursus 21
 Labradorius, Dipus 292, 22
 ,Sciurus 292, 29
 ,Ursus 291
 Labradorus, Turdus 316, 38
 Lacerta alligator 357
 bimaculata 357
 bullaris 357
 chameleon 357
 dracæna 357
 fasciata 357
 ,Genus 357
 lumbricoides 357
 orbicularis 303, 357
 punctata 357
 quadrolineata 357
 quinquelineata 357
 sexlineata 357
 lacertina, Siren 357
 Lagomys 18
 lagopus, Canis 291
 ,Falco 315
 ,Tetrao 317
 Lampornis gramineus 37
 mango 37
 violicauda 37
 Lamprey 360
 Land Birds 315
 Lanius Americanus 315
 borealis 34
 Canadensis 315, 34
 Carolinensis 315, 34
 excubitor 315, 34
 ,Genus 315, 34
 ludovicianus 34
 Nootka 315, 34
 pileatus 315, 34
 septentrionalis 315, 34
 Lapland Finch 316
 Lapponica, Fringilla 316
 Large Black Squirrel 292, 19
 Prairie Wolf 291, 8
 Red Fox 291, 8
 Lark, Brown 317
 ,Louisiana 317
 ,Meadow 317
 ,Shore 317
 Larus atricilla 27
 brachyrhynchus 37
 canus 319, 47
 cataractes 319, 48
 Delawarensis 319, 48
 eburneus 319, 48
 fuscus 319, 47
 ,Genus 319, 47
 keeask 319, 48
 marinus 319
 parasiticus 319, 48
 ridibundus 319, 47
 tridactylus 319
 Lasionycteris noctivagans 3
 latirostris, Manatus 5
 latissimus, Falco, 315, 33
 latrans, Canis 27
 Laughing Cuckoo 316
 Lawyer 349
 Least Ant Eater 291, 4
 Bittern 318, 342
 Humming-bird 316
 leberis, Coluber 357
 Leistes guianensis 35
 lentiginosus, Botaurus 44
 leporinus, Noctilio 3, 4
 Lepus Americanus 292, 22
 ,Genus 292, 22
 sylvaticus 22
 timidus 292, 22
 arcticus 22
 variabilis 292, 22
 Lesser Bonana Oriole 315
 Cachalot 292
 Ibis 318
 Mexican Quail 317
 Red poll 316
 le Tucan 14
 leucas, Delphinus 392
 leucocephala, Emberiza 316, 39
 ,Columba 317
 leucocephalus, Chrysotis 34
 ,Falco 315
 ,Psittacus 315, 34
 leucogaster, Falco 315, 32
 ,Haliaetus 35
 leucophylla, Rana 357
 leucoptera, Columba 317
 ,Curvirostra 316
 ,Sylvia 317, 41
 leverianus, Falco 315, 322, 32
 Lewis' Red-headed Duck 49
 Woodpecker 316
 linaria, Fringilla 316
 lineatus Buteo 32
 ,Falco 315
 Lion, African 299
 Little Auk 319
 Brown Bead Snake 357
 Grebe 318
 Humming-bird 316
 Owl 315
 Rail 318
 Sandpiper 318
 Screech Owl 323
 lividus, Turdus 316 38
 Lizard, Blue-bellied 357
 -tailed 357

- Lizard, Brown 357
 , Copper-coloured 357
 , Five-lined 357
 , Four-lined 357
 , Green Carolina 357
 , Horned 303
 , Lumbriciform 357
 , Orbicular 357
 , Pennsylvania 357
 , Six-lined 357
 lobata, Phalaropus 318
 lobatus, Phalaropus 46
 Lobo Wolf 7
 loculator, Tantalus 318
 locust 360
 Loggerhead Shrike 315
 Long-billed Curlew 318, 343
 -legged Avoset 318, 349
 -nosed Cavy 291
 Tapir 292, 313, 25
 Shanks 349
 -tailed Duck 319
 Fallow Deer 292, 307, 24
 Mole 291, 14
 longicauda, Bartramia 15
 , Putorius 11
 , Talpa 291, 14
 longirostra, Numenius 318
 Loon 319, 349
 lotor, Ursus 291
 Louisiana Bunting 316
 Earth Rat 292, 16
 Flycatcher 317
 Gray Squirrel 292, 19
 Grebe 318
 Heron 318
 Jacana 318
 Lark 317
 Marmot 292, 302, 303, 19, 30
 Oriole 315
 Quail 317
 Starling 316
 Tanager 316
 Warbler 317
 Loxia caerulea 316
 Canadensis 316, 39
 canora 316, 38
 cardinalis 316
 curvirostra minor 39
 enucleator 316
 flabellifera 316, 39
 , Genus 316, 38
 grisea 316, 38
 Hudsonica 316, 39
 Ludoviciana 316
 Mexicana 316, 39
 nigra 316, 38
 Novae Hispaniae 316, 39
 obscura 316, 38
 Virginica 316, 38
 Ludicrous Monkey 291
 Ludoviciana, Emberiza 316, 39
 Ludoviciana, Alauda 317, 41
 , Arctomys 292, 19, 21
 , Ardea 318
 , Loxia 316
 , Muscicapa 317, 40
 , Parra 318, 46
 , Sylvia 317, 41
 , Tanagra 316
 ludoviciana, Habia 38
 Ludovicianus, Lanius 34
 , Mus 292, 16
 , Oriolus 315, 35
 , Podiceps 318, 46
 , Sciurus 292, 19
 niger 20
 , Sturnus 316, 37
 ludovicianus, Cynomys 19
 Thryothorus 37
 lumbricalis, Anguis 357
 Lumbriciform Lizard 357
 lumbricoides, Lacerta 357
 lumme, Urinator 47
 Lunda cirrhata 47
 Lupus gigas 8
 Mexicanus 7
 lupus, Canis 291, 7
 luscus, Ursus 291, 14
 , Gulo 14
 luteolus, Ursus 29
 luteus, Ramphastos 315
 Lutra vulgaris 12
 lutra, Mustela 291, 12
 Lutreola vison 12
 lutris, Enhydris 12
 , Mustela 291, 12
 lycan, Canis 291, 8
 Lynx 297, 27
 , Bay 291
 , Canada 10
 canadensis 10, 27
 , Common 291, 10
 , European Red 10
 , Mountain 291, 10
 , rufus 10, 27
 lynx Felis 291, 10

 M
 macao, Ara 34
 , Psittacus 315, 34
 Macaw, Red and Blue 315
 Yellow 315
 Mackarel 360
 macrocephalus, Physeter 292
 Macrorhamphus griseus 44
 macrotis, Cariacus 24
 , Cervus 24
 macroura, Zenaidura 42
 macrourus, Vulpes 8

- macrurus, *Cariacus virginianus* 24
 maculata, *Anguis* 357
 Certhia 316, 37
 maculatus, *Trochilus* 316, 37
 maculosa, *Dendroica* 41
 magna, *Alauda* 317, 41
 Sturnella 37, 41
 Sturnus 37
 magnolia, *Sylvia* 317, 41
 magister, *Neotoma* 16
 Magpie 315, 325, 326
 American 34
 major, *Cervus* 292, 22, 33
 Picus 316, 36
 Quiscalus 35
 Mallard 319, 352
 Mammalia, Class 291
 Manakin, Mexican 317
 New Spain 317
 Purple 317
 Manatee, West India 5
 Manati 291, 293, 5
 Manatus americanus 5
 inunguis 5
 latirostris 5
 Maned Seal 291, 6
 Mango Humming-bird 316
 mango, *Lampornis* 37
 Trochilus 316, 37
 Manis 4
 Marbled Guillemot 319
 marila, *Anas* 319
 marinus, *Larus* 319
 maritima, *Fringilla* 317
 Sylvia 317
 maritimus, *Ursus* 291
 marmoratus, *Uria* 319
 Marmot, Canadian 292, 18
 Columbia 292, 303, 19, 24, 30
 Earless 292, 18
 Hoary 292, 18
 Louisiana 292, 303, 19, 30
 Maryland 292, 18
 Quebec 18
 Tailless 292, 18
 Marsh Hawk 315, 322, 33
 Tern 319
 Wren 316, 329
 marsupialis, *Didelphys* 14
 Marten 12
 martes, *Mustela* 291
 Martin, Pine 291
 Purple 317, 335
 martinica, *Gallinula* 46
 Ionornis 46
 Marylandica, *Sylvia* 317, 41
 Maryland Marmot, 292, 18
 Yellow-throat 317
 maxima, *Sterna* 47
 Mazama dorsata 25
 Mazama, Genus 25
 montana 25
 sericea 25
 temia 25
 Meadow Clapper 319
 Meadow Lark 317
 Mouse 292, 18
 Pennsylvania 292, 18
 Megalestris skua 48
 Megascops asio 33
 melancholicus, *Oriolus* 316, 35
 Melancholy Oriole 316
 melanogaster, *Plotus* 319
 melanoleuca, *Scolopax* 318, 44
 melanoleucus, *Totanus* 44
 melanopus, *Procellaria* 319, 48
 Meleagris gallopavo 317
 Genus 317
 meles, Meles 13
 Ursus 292, 13
 Meles meles 13
 Mellisuga minima 37
 melodia, *Fringilla* 317, 40
 Muscicapa 317, 40
 melodus, *Turdus* 316, 38
 Melophyrtha nigra 38
 Melospiza fasciata 40
 georgiana 40
 memphitis, *Viverra* 11
 menstruus, *Pionus* 34
 Psittacus 315, 34
 Mephitidæ 11
 Merganser americanus 48
 Blue 319
 Brown 319
 Crested 319
 Red-breasted 319
 merganser, *Mergus* 319, 48
 Mergus albellus 319, 48
 cæruleus 319, 48
 cucullatus 319
 fuscus 319, 48
 Genus 319, 48
 merganser 319, 48
 serrator 319
 Merops Californiensis 316, 37
 cinereus 316, 37
 Genus 316, 37
 Mexican Bunting 316
 Cat 291, 10
 Coot 318
 Crow 315, 34
 Deer 292, 23
 Duck 319
 Gray Wolf 7
 Grosbeak 316
 Heron 318
 Hog 292
 Hoopoe 316
 Ibis 318

- Mexican Manakin 317
 Mouse 292, 17
 Opossum 291, 14
 Oriole 315
 Owl 315
 Parrot 315, 34
 Partridge 317
 Pigeon 317
 Pochard 319
 Porcupine 291, 16
 Roller 315
 Shrew 291, 15
 Siskin 316
 Squirrel 292, 20
 Starling 316
 Tiger Cat 291, 10
 Weasel 291, 11
 Wolf 291, 7, 26
 Viper 357
 Mexicana, Calliste 39
 , Certhia 316, 37
 familiaris 37
 , Columba 317, 42
 , Emberiza 316, 39
 , Felis 291, 10
 , Fringilla 316
 , Fulica 318, 46
 , Hystrix 291, 16
 , Loxia 316
 , Strix 315, 33
 , Tanagra 316, 39
 Mexicanus, Ascomys 15
 , Asio 33
 , Canis 291, 7
 , Cariacus virginianus 24
 , Cervus 292
 , Coracias 315, 35
 , Corvus 315, 34
 , Geomys 15
 , Gymnomystax 35
 , Lupus 7
 , Mus 292, 16
 , Oriolus 315, 35
 , Perdix 317, 43
 , Psittacus 315, 34
 , Sorex 291, 14
 , Spermophilus 20
 , Sturnus 316
 , Tantalus 318, 44
 , Upupa 316, 37
 miacatototl, Pipra 317, 42
 microps, Physeter 292
 migratoria, Columba 317
 , Ectopistes 42
 , Turdus 316
 miles, Chettusia 46
 milarius, Crotalus 357
 Mimocichla plumbea 38
 minima, Mellisuga 37
 minimus, Trochilus 316, 37
 Mink 298, 11
 American, 12
 minor, Ardea 318, 44
 , Loxia curvirostra 38
 , Podiceps 318, 46
 , Scolopax 318
 minuta, Muscicapa 317
 , Sterna 319, 47
 , Sylvia 317, 41
 minutus, Rallus 318, 45
 , Tantalus 318, 44
 Minx 291, 298, 12
 mix, Mustela 291, 12
 Mississippi Kite 315
 Missippiensis, Falco 315
 mitrata, Sylvania 40
 Mniotilta varia 37
 Moccasin Snake 357, 359
 Mocking-bird 316, 330, 333
 , English 331
 , French 331
 Mole, Brown 291
 , Common 291, 14
 , Long-tailed 291, 14
 , Radiated 291, 14
 , Red 291, 14
 , Star-nosed 14
 mollissima, Anas 319, 48
 Molothrus ater 39
 obscurus 37
 Monachus albiventer 6
 monachus, Phoca 291, 6
 monax, Arctomys 292, 18
 Monkey, Capucin 291
 , Ludicrous 291
 monoceros, Monodon 292
 Monodon, Genus 292, 26
 monoceros 292
 montana, Felis 291, 10
 , Sylvia 317, 41
 montanus, Catus 10
 , Ovis 292, 25
 , Picus 316, 36
 monticola, Spizella 40
 Moor Hen 318
 Moose 292, 296, 305, 306, 309
 moschata, Anas 319, 48
 moschatus, Bos 292
 Mosquito 360
 Mottled Owl 315
 Mountain Cat 10
 Goat 31
 Lynx 291, 10
 Sheep 310
 Mourning Warbler 317
 Mouse, American Wandering 292, 17
 Common 292
 House 17
 Hudson's 292, 17
 Meadow 292, 18

Mouse, Mexican 292, 17
 , Pennsylvania Meadow 292, 18
 , Rustic 292, 17
 , Virginian 292, 17
 , White-footed 16, 17, 18
 Mud Hen 347, 349
 Tortoise 357
 Mule Deer 292, 307, 24
 murina, Didelphys 14
 Mus agrarius 292, 17
 var. americanus 17
 Americanus 292, 16
 amphibius 292, 16
 arvalis 292, 18
 Canadensis 292, 17
 cinereus 292, 16
 decumanus 292
 , Genus 292, 16
 Hudsonius 202, 17
 Ludovicianus 292, 16
 Mexicanus 292, 17
 musculus 292
 Pennsylvanica 292, 18
 rattus 292
 torquatus 17
 tuza 292, 16
 Virginianus 292, 17
 Muscicapa cærulea 317, 40
 Canadensis 317, 40
 cantatrix 317, 40
 crinita 317
 cuculiata 317, 40
 ferruginea 317, 40
 forficata 317
 forficatus 317, 40
 , Genus 317, 40
 Ludoviciana 317, 40
 melodia 317, 40
 minuta 317
 nunciola 317, 40
 olivacea 317, 40
 pusilla 317, 40
 querula 317, 40
 rapax 317, 40
 rubra 39
 rutililla 317, 40
 solitaria 317, 40
 striata 317, 40
 sylvicola 317, 40
 tyrannus 317, 40
 Muscovy Duck 319, 352
 musculus, Mus 292
 Musk Ox 292, 312
 Muskrat 292, 302
 Mustela Americanus 291
 Canadensis 291, 12
 erminea 291
 , Genus 291, 12
 Hudsonius 291, 12
 lutra 291, 12

Mustela lutra canadensis 12
 lutris 291, 12
 martes 291
 minx 291, 12
 nigra 291
 pennantii 12
 vulgaris 291, 12
 zibellina 291
 mustelinus, Turdus 316, 38
 Mycteria Americana 318
 , Genus 318
 mycterizans, Coluber 357
 Myiarchus crinitus 40
 Myrmecophaga didactyla 291, 4
 , Genus 291
 pentadactyla 291, 4
 mysticetus, Balæna 292

 N
 nævia, Columba 317, 42
 , Strix 315, 33
 nævius, Nycticorax nycticorax 44
 , Perdix 317, 43
 , Turdus 316
 Narval 292
 Nashville Warbler 317
 Nasua rufa 11
 nearctica, Aythya marila 48
 nebulosa, Strix 315
 Neotoma cinerea 16
 drummondii 16
 floridana 16
 magister 16
 occidentalis 17
 pennsylvanica 16
 Newfoundland Falcon 315
 Sandpiper 318
 New Jersey Squirrel 292, 20
 Spain Manakin 317
 Oriole 315
 Owl 315
 York Bat 291, 3
 ncticorax, Ardea 318
 niger, Canis 291, 7
 , Falco 318, 32
 , Sciurus 292, 19, 20
 , Sorex 291, 15
 Night Hawk 317, 336, 337
 Heron 318
 Nightingale 332
 nigra, Anas 319
 , Felis 10
 , Jacana 45
 , Loxia 316, 38
 , Melopyrrha 38
 , Parra, 318, 45
 , Mustela 291, 12
 , Scolopax 318, 44
 , Vulpes 8
 nigripes, Putorius 11

nilc
 nils
 Ni
 niv

 No

 noc
 No
 No
 No

 No

 No
 No

 N

 nævia, Columba 317, 42
 , Strix 315, 33
 nævius, Nycticorax nycticorax 44
 , Perdix 317, 43
 , Turdus 316
 Narval 292
 Nashville Warbler 317
 Nasua rufa 11
 nearctica, Aythya marila 48
 nebulosa, Strix 315
 Neotoma cinerea 16
 drummondii 16
 floridana 16
 magister 16
 occidentalis 17
 pennsylvanica 16
 Newfoundland Falcon 315
 Sandpiper 318
 New Jersey Squirrel 292, 20
 Spain Manakin 317
 Oriole 315
 Owl 315
 York Bat 291, 3
 ncticorax, Ardea 318
 niger, Canis 291, 7
 , Falco 318, 32
 , Sciurus 292, 19, 20
 , Sorex 291, 15
 Night Hawk 317, 336, 337
 Heron 318
 Nightingale 332
 nigra, Anas 319
 , Felis 10
 , Jacana 45
 , Loxia 316, 38
 , Melopyrrha 38
 , Parra, 318, 45
 , Mustela 291, 12
 , Scolopax 318, 44
 , Vulpes 8
 nigripes, Putorius 11

- nilotica*, *Gelochelidon* 47
nilsoni, *Vesperugo* 3
 Nine-banded Armadillo 291, 4
nivalis, *Emberiza* 316, 39
 Plectrophenax 39
Noctilio americanus 3, 4
 albiventer 3, 4
noctivagus, *Lasionycteris* 3
 Nodding Snipe 318
Nomonyx dominicus 49
 Nootka, *Lanius* 315, 34
 Shrike 315
 Northern Diver 319
 Fur Seal 6
 Shrike 315
 Norway Rat 292
Novæ Hispaniæ, *Anas* 319, 49
 Coluber 357
 Loxia 316
 Oriolus 315, 35
Novæ terræ, *Falco* 316, 33
 Tringa 318, 45
noveboracensis, *Gallinula* 318, 46
 Scolopax 318, 44
 Seiurus 38
 Vespertilio 291
novemcincta, *Tatusia* 4
novemcinctus, *Dasyptus* 291, 4
nubilus, *Canis* 27
 lupus 27
Nucifraga 36
Numenius borealis 318
 Genus 318
 Hudsonica 318
 longirostra 318
nunciola, *Muscicapa* 317, 40
 Nan, White 319
nutans, *Scolopax* 318, 44
 Nutcracker, Clark's 36
 Nuthatch, Brown-headed 316
 Red bellied 316
 White-breasted 316
Nyctala acadica 33
nyctea, *Strix* 315
Nycticorax nycticorax nævius 44
- O**
- obscura*, *Anas* 319
 Loxia 316, 38
 Puffinus 48
 Procellaria 319, 48
obscurus, *Falco* 315, 32
 Molothrus ater 37
 Podiceps 318, 46
 Sturnus 316, 37
 Todus 316, 36
obsoletus, *Falco* 315
occidentalis, *Canis* 7, 26
 mexicanus 7, 8
ocellata, *Rana* 357
- Ocelot* 10
ochrocephalus, *Chrysotis* 34
 Pittacus 315, 34
ochropus, *Totanus* 45
 Tringa 318, 45
octocinctus, *Dasyptus* 291, 4
Odobænus 5, 6
 rosmarus 6
 Old Wives 360
olivacea, *Muscicapa* 317, 40
Olive-backed Thrush 38
 Oriole 316
Olor, genus 48
onca, *Felis* 291, 10
onocrotalus, *Pelicanus* 319, 49
Oonalaska Swallow 317
Oonalaskensis, *Hirundo* 317, 42
Opisthocomus cristatus 43
Opossum, Mexican 291, 14
 Virginian 291, 300, 301, 14
opossum, *Didelphis* 291
Orange-throated Warbler 317
Orbicular Lizard 357
orbicularis, *Lacerta* 303, 357
orca, *Delphinus* 292
Orchard Oriole 316
Order Accipitres 315
 Belluæ 292
 Bruta 291
 Cete 292
 Columbæ 317
 Feræ 291
 Gallinæ 317
 Glires 292
 Grallæ 318
 Palmipedes 318
 Passeres 316
 Pecora 292
 Picæ 315
 Pinnatipedes 318
 Primates 291
 Reptiles 357
 Serpents 357
Oriole, Baltimore 316
 Black-crowned 315
 Fork-tailed 316
 Gray 315
 Lesser Bonana 315
 Louisiana 315
 Melancholy 316
 Mexican 315
 New Spain 315
 Olive 316
 Orchard 316
 Red-breasted 315
 St. Domingo 316
 Yellow-throated 316
Oriolus, Americanus 315, 35
 Baltimorus 316
 bonana 315, 35

Oriolus Capensis 316, 35
costototi 315, 35
Dominicensis 316, 35
furcatus 316, 35
 , Genus 315, 35
griseus 315, 35
Ludovicianus 315, 35
melancholicus 316, 35
Mexicanus 315, 35
mutatus 316
Novæ Hispaniæ 315, 35
viridis 35
Xanthornus 315, 35
 Ornithology 313
Ortolan 333, 340
oryzivora, *Emberiza* 316, 39
oryzivorus, *Dolichonyx* 39
Osprey 322
ossifragus, *Corvus* 315
Ostinops viridis 35
ostralegus, *Hæmatopus* 318, 45
Octocoris alpestris 41
Otter, American 12
 , Canada 291, 12
 , Common 291, 298, 12
 , European 12
 , Sea 291, 297, 12
otus, *Strix* 315, 33
Ovis ammon 292, 24
argali 24
canadensis 25
cervina 25
 , Genus 292, 309, 24
montana 25
montanus 292, 25
 Owl, *Acadian* 315
 , American 315
 , Barn 315
 , Barred 315
 , Brown 315
 , Canada 315
 , Great 315
 -horned 315, 322, 323
 , Hawk 315
 , Little 315
 , Screech 323
 , Long-eared 315
 , Mexican 315
 , Mottled 315
 , New Spain 315
 , Red 315, 323
 , Short-eared 315
 , Snow 315, 322
 , Sooty 315
 , Spotted 315
 , Tawny 315
 , *Wapacuthu* 33
 , White-fronted 315
 Ox, American 292, 25
 , Musk 292, 312

P

Pagophilus 6
Painted Bunting 316
Palamedea cornuta 318
 , Genus 318
pallasii, *Turdus aonalaschkæ* 38
pallascens, *Columbigallina passerina* 42
palliatius, *Hæmatopus* 45
palmarum hypochrysea, *Dendroica* 41
Palmipedes, Order 318
palustris, *Certhia* 316, 37
 , *Cistothorus* 37
 , *Fringilla* 317, 40
Panther, American 291, 296, 9, 27, 28
papa, *Vultur* 315
Paradise Humming-bird 316
paradiseus, *Trochilus* 316, 37
Parakeet 323
parasiticus, *Larus* 319, 47
pardalis, *Felis* 291, 10
Parra chavaria 318, 46
 , Genus 318, 45
jacana 318, 45
Ludoviciana 318, 46
nigra 318, 46
Parrot, Blue-headed 315
 , Carolina 315, 323
 , Dusky 315
 , Illinois 324
 , Mexican 315
 , White-fronted 315
Parry's Spermophile 18
Partridge 341, 342, 349
 , Mexican 317
 , Virginian 317
Parus atricapillus 317
bicolor 317
 , Genus 317
Hudsonius 317
parus, *Sylvia* 317, 41
parvus, *Pelicanus* 319, 49
Passenger Pigeon 317, 337
Passerella iliaca 40
Passeres, Order 310
Passerina ciris 39
cyanea 39
passerina, *Columba* 317
Columbigallina 42
Fringilla 317
Strix 315, 33
Pauxi, genus 43
pauxi, *Crax* 317, 42
Pavonine Toucan 315
pavoninus, *Ramphastos* 315
Pea Bugs 360
Pearl Snake 357, 359
peba, *Tatusia* 5

- Peccary 292, 312, 313, 26
 Pecora, Order 292
 pecoris, Emberiza 316, 39
 Pedicætes phasianellus columbianus 43
 Pekan 291, 12
 pelagica, Procellaria 319
 pelasgia, Hirundo 317
 Pelecanus erythrorhynchus 49
 molinae 49
 fuscus 49
 Pelican, Brown 319
 , Charleston 319
 , Frigate 319
 , Great White 319
 , Rough-billed 319
 , Saw-billed 319
 Pelicanus aquilus 319, 49
 bassanus 319
 carbo 319
 Carolinensis 319, 49
 erythrorhynchus 319
 fiber 319, 49
 fuscus 319
 Genus 319, 49
 graculus 319, 49
 onocrotalus 319, 49
 parvus 319, 49
 piscator 319
 thagus 319, 49
 Penelope cristata 317, 42
 Cumanensis 317, 42, 43
 , Genus 317, 42
 pipile 317, 43
 purpurascens 42
 Penguin 319
 pennantii, M(ustela) 12
 Pennsylvania Lizard 357
 Meadow Mouse 292
 Tortoise 357
 Pennsylvanica, Mus 292, 18
 , Sciurus 292, 19
 , Sylvia 317
 , Testudo 357
 pennsylvanica, Arvicola 16
 , Neotoma 16
 Pennsylvanicus, Falco 315, 32, 33
 , Sciurus carolinensis 19
 pensilvanicus, Anthus 41
 pensylvanica, Dendroica 41
 Pensylvanicus, C (anis) V. var. 9
 pensylvanicus, Vulpes 9
 pentadactyla, Myrmecophaga 291, 4
 Perch 360
 Perdix Californicus 317, 43
 coyoclos 317, 43
 cristatus 317, 43
 , Genus 317, 43
 Hudsonica 317, 53
 Mexicanus 317, 43
 Perdix naevius 317, 34
 Virginianus 317, 43
 peregrina, Sylvia 317
 Peregrine Falcon 322
 peregrinus, Falco 315
 perspicillata, Anas 319
 pertainax, Psittacus 324
 petechia Sylvia 317, 41
 Petrel, Black-toed 319
 , Brazilian 319
 , Dusky 319
 , Fork-tailed 319
 , Fulmar 319
 , Giant 319
 , Glacial 319
 , Shearwater 319
 , Stormy 319
 Pewee Flycatcher 317, 333
 Phænicopterus, Genus 318
 ruber 318
 Phaeton æthereus 319
 , Genus 319
 Phalacrocorax cristatus 49
 Phalarope, Brown 318
 , Gray 318
 , Plain 318
 , Red 318
 Phalaropus fusca 318, 46
 , Genus 318, 46
 glacialis 318, 46
 hyperborea 318, 46
 lobata 318, 46
 lobatus 46
 Phasianus Columbianus 317, 43
 cristatus 317, 43
 , Genus 317, 43
 Mexicanus 317, 43
 phasianellus, Tetrao 317
 Pheasant 317, 341, 342
 Columbian 317, 43
 Courier 317
 Crested 317
 Philadelphia, Sterna 319, 47
 , Sylvia 317
 Phoca cristata 291, 4
 , Genus 291, 6
 Grœnlandica 291, 6
 hispidata 291, 6
 jubata 291, 6
 monachus 291, 6
 vitulina 291, 6
 phocæna, Delphinus 292
 phœbe, Sayornis 36, 40
 phœniceus, Agelaius 38
 Phonipara canora 38
 physalus, Balæna 292
 Physeter catodon 292
 , Genus 292, 26
 macrocephalus 292
 microps 292

- Physeter tursio 292
 Piaya 35
 Pica pica 34
 hudsonica 34
 pica, Corvus 315, 34
 Pica 34
 Picæ, Order 315
 picicilli, Pipra 317, 42
 Picicorvus columbianus 36
 Picus auratus 316
 Carolinus 316
 Canadensis 316, 36
 erythrocephalus 316, 36
 , Genus 316, 36
 major 316, 36
 montanus 316, 36
 pileatus 316
 principalis 316
 pubescens 316
 querulus 316, 36
 torquatus 316
 tricolor 316, 36
 villosus 316
 viridis 316, 36
 Pie, Sea 347
 Pied-bill Grebe 318
 Duck 319
 Goose 355
 Oyster-catcher 318, 346
 Pigeon, Black-spotted 317
 , Blue 317
 , Brown 317
 Hawk 315
 , Mexican 317
 , Passenger 317, 337
 , Wild 323, 337, 338, 339, 340
 , White-crowned 317
 - winged 317
 Pigmy Auk 319
 Shrew 292
 Pike 360
 -headed Whale 292
 Pileated Woodpecker 316
 pileatus, Lanius 315, 34
 , Picus 316
 Pine-creeping Warbler 317
 Finch 317
 Grosbeak 316
 Martin 292
 Snake 358
 Squirrel 292
 Swamp Warbler 317
 pinetis, Geomys 16
 Pinnated Grouse 317, 341, 342
 Pinnatipedes, Order 318
 pinus, Fringilla 317
 , Sylvia 317, 41
 Pionus menstruus 34
 sordidus 34
 pipiens, Rana 357
 Pipile, genus 42
 pipile, Penelope 317, 43
 Pipilo erythrophthalmus 39
 Piping Curassow 317
 Pipra cristata 317, 42
 , Genus 317, 43
 miacatotl 317, 42
 picicilli 317, 42
 polyglotta 317, 42
 Piranga erythromelas 39
 rubra 38, 39
 piscator, Pelicanus 319
 Plain Falcon 315
 Phalarope 318
 Platalea ajaja 318
 , Genus 318
 Plectrophenax nivalis 39
 Plegadis autumnalis 44
 Plotus, Genus 319, 49
 melanogaster 319
 Surimamensis 319, 49
 Plover, Black-bellied 319, 345
 , Golden 318, 346
 , Kildeer 318, 346
 , Ringed 315
 , Wilson's 318
 , Whistling Field 345
 plumbea, Mimocichla 38
 , Sterna 319, 47
 plumbeus, Turdus 316, 38
 pluvialis, Charadrius 318, 45
 Pochard 351
 , Mexican 319
 Podiceps cornutus 318, 46
 , Genus 318, 46
 Ludovicianus 318, 46
 minor 318, 46
 obscurus 318, 46
 podiceps 318
 podiceps, Podiceps 318
 , Podilymbus 46
 Podilymbus podiceps 46
 Polar Bear 291, 293, 298
 Polioptila caerulea 40
 polyglotta, Pipra 317, 42
 polyglottus, Turdus 316
 Pond Frog 357
 Poocetes gramineus 39
 Porcupine, Brazilian 291, 16
 , Canadian 291, 16
 , Mexican 291, 16
 porphyrio, Gallinula 318, 46
 Porpoise 292
 Porzana noveboracensis 43, 46
 porzana, Rallus 318
 Potatoe Fly 350
 prædatorius, Sturnus 316, 38
 Prairie dog 292, 302, 303, 19, 30
 Hen 317
 Warbler 317

Prai

prate

prehe

S

Prim

princ

Procc

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I

- Prairie Wolf 291, 295
 , Large 291, 8
 , Small 291, 8
 pratensis, Mynomes 18
 prehensilis, Hystrix 291, 16
 Syntheres 16
 , Viverra 291, 11
 Primates, Order 291
 principalis, Picus 316
 Procellaria Braziliiana 319, 48
 furcata 319
 gelida 319, 48
 , Genus 319, 48
 gigantea 319
 glacialis 319
 melanopus 319, 48
 obscura 319, 48
 pelagica 319
 puffinus 319
 Progne subis 42
 Prong-horned Antelope 292, 308, 23,
 24, 30
 Prothonotary Warbler 317
 protonotarius, Sylvia, 317
 pruinosa, Arctomys 292, 18
 pruinosis, Arctomys 18
 Pseudogryphus californicus 32
 Psittacus aracango 315, 34
 Carolinensis 35
 , Genus 315, 34
 leucocephalus 315, 34
 Mexicanus 315, 34
 macao 315, 34
 menstruus 315, 34
 ochrocephalus 315, 34
 pentinax 324
 sordidus 315, 34
 Ptarmigan 317
 Pteroglossus torquatus 34
 pubescens, Picus 316
 Puffin 319
 Puffinus gelidus 48
 obscura 48
 puffinus, Procellaria 319
 Puma 296, 9, 10
 punctata, Lacerta 357
 punctulatus, Trochilus 316, 37
 Purple Finch 317
 Gallinule 318, 348
 Grakle 316, 322, 326
 Manakin 317
 Martin 317, 335
 purpurea, Gallinula 318, 46
 , Hirundo 317, 42
 Purre 318, 345
 pusilla, Fringilla 317
 , Muscicapa 317, 40
 , Sitta 316
 , Sylvia 317, 41
 , Tringa 318
 pusillus, Ereunetes 45
 Putorius nigripes 11
 longicauda 11
 putorius, Spilogale 291, 11
 , Viverra 291, 11
 pygmæa, Alca 319
- Q
- Qua-bird 318
 quadrivittatus, Sciurus 22
 quadrolineatus Lacerta 357
 Quail 317, 342
 California 317
 Crested 317
 Hudsonian 317
 Lesser Mexican 317
 Louisiana 317
 Quasie 11
 Quasje 11
 Quebec Marmot 18
 Warbler 317
 querula, Muscicapa 317, 40
 querulus, Picus 316, 36
 quinquelineatus, Lacerta 357,
 Quiscalus major 35
 quiscula 35
 quiscula, Gracula 316
 Quiscalus 35
- R
- Rabbit 292, 305, 22
 Raccoon 291
 Radiated Mole 291, 14
 Rail, Big 347
 , Cayenne 318
 , Clapper 318, 347
 , Common 318, 347
 , Little 318
 , Red-billed 318
 , Spotted 318
 Rallus Carolinus 318
 Cayennensis 318/45
 crepitans 318
 , Genus 318, 45
 minutus 318, 45
 porzana 318
 Virginianus 318
 Ram 308
 Ramphastos cæruleus 315
 , Genus 315, 34
 luteus 315
 pavonius 315
 torquatus 315, 34
 Rana arborea 357
 boans 357
 bufo 357
 cornuta 357
 esculauta 357
 , Genus 357
 leucophylla 357

- Rana ocellata* 357
 pipiens 357
 temporaria 357
 Virginica 357
rapax, *Muscicapa* 317, 40
rara, *Sylvia* 317, 41
Rat, American 292, 16
 , Ash-coloured 292, 16, 24
 , Black 291
 , Cave 16
 , Earth 291, 16
 , Louisiana Earth 291, 16
 , Norway 291
 , Sand 291, 16
 , Water 291, 16
 , Wood 300
Rattle Snake 303, 358, 359
 , Bastard 357
 , Great 357
 , Ground 357
 , Yellow 357
rattus, *Mus* 292
Raven 315, 324, 325
 , American 34
Razor-bill 319
Recurvirostra alba 318, 46
 Americana 318
 , Genus 318, 46
 himantopus 318
Red and Blue Maccaw 315
 Yellow Maccaw 315
 Bat 291, 4
 -bellied Curncui 316
 Nuthatch 316
 Woodpecker 316
 -billed Duck 319
 Rail 318
 bird, Summer 316
 -breasted Merganser 319
 Oriole 315
 Sandpiper 318, 343
 Snipe 318, 343
 Squirrel 292, 21
 -breast, *Robin* 334
 -cockaded Woodpecker 316
 Creepers 316
 -eyed Flycatcher 317
 Flamingo 318, 349
 Fox, European 8, 9
 , Large 291, 8
 , Small 291, 8
 Goose 355
 -headed Duck 319, 357
 , *Lewis's* 49
 -headed Woodpecker 316, 323
 -legged Thrush 316
 Lynx, European 10
 Mole 291, 14
 Owl 315, 323
 Phalarope 318
 Red-poll, Greater 316
 , Lesser 316
 shank Snipe 318
 -shouldered Hawk 315
 Squirrel 20
 -tailed Hawk 315
 -throated Loon 319
 -winged Starling 316
red deer, common 34
Reed-bird 316, 332
Regulus, Genus 41
 satrapa 41
regulus, *Falco* 33
 Sylvia 317, 41
Rein Deer 292, 306
Reithrodontomys 17
Reptiles, Order 357
reticulatus, *Anguis* 357
Ribbon Snake 357, 359
Rice-bird 332
 Bunting 332
richardsoni, *Sciurus hudsonius* 21
ridibundus, *Caculus* 316, 35
 , *Larus* 319, 47
Ringed Plover 318
 Sandpiper 318
 Snake 357
Ring-tailed Eagle 315, 321
riparia, *Hirundo* 317
riparius, *Arvicola* 18
Robin 316, 332
 , *Golden* 326
 , *Red-breast* 334
 , *Wood* 316, 331
Rock 360
 , *Grouse* 317
 , *Swallow* 317
Rocky Mountain Goat 25, 31
 , *Ground Squirrel* 292, 21
 , *Sheep* 292, 309, 25
 , *Woodpecker* 316, 36
Roller, Mexican 315
Roseate Spoonbill 318, 342
Rose-breasted Grosbeak 316
Rosmarus 6
 , *rosmarus* 5
 , *trichechus* 5
 , *rosmarus*, *Odobænus* 6
 , *Rosmarus* 5
 , *Trichechus* 291, 5
rostrata, *Balaena* 292
Rough-billed Pelican 319
 -legged Hawk 315
 , *Seal* 291, 6
ruber, *Phœnicopterus* 318
 , *Tantalus* 318
rubidus, *Anas* 319
rubra, *Guara* 44
 , *Muscicapa* 39
 , *Piranga* 38, 39

rubr

rubr

rubi

Rut

Rud

rufa

ruffi

Ruf

Ruf

rubi

rubi

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rufi

rup

Rui

Rui

ruti

Ry

sab

Sat

sab

sac

Sac

Sal

Sal

sar

Sar

- rubra*, *Talpa* 291, 14
 Tanagra 316, 39
 Vespertilio 291
rubricapilla, *Sylvia* 317, 41
rubricatus, *Sciurus* 21
Ruby-crowned Wren 317
 -throated Humming-bird 316,
 329, 330
Ruddy Duck 319
rufa, *Alauda* 317
 Felis 291, 10
 Nasua 291, 11
 Tringa 318, 45
ruffa, *Felis* 10
Ruffed Grouse 317, 341
Ruff-necked Humming-bird 316
ruficapilla, *Sylvia* 41
 Anas 49
ruficollis, *Aramides* 46
 Gallinula 318, 46
rufinus, *Cariacus* 23, 25
rufus, *Harporhynchus* 38
 Selasphorus 37
 Trochilus 316
 Turdus 316, 38
rupestris, *Cotile* 42
 Hirundo 317, 42
 Tetrao 317
Rustic Mouse 292, 17
Rusty-crowned Heron 318
 Flycatcher 317
 Grakle 316
ruticilla, *Muscicapa* 317, 40
 Setophaga 40
Rynchops, *Genus* 319
 nigra 319
- S**
- sabini*, *Bonasa umbellus* 43
Sable 291
 American 291, 11
sabrinus, *Sciuropterus volucella* 20
sacer, *Falco* 315, 32
 Hierofalco 32
Sacre 315
Salamander 16
Salmon 360
sanctijohannis, *Archibuteo* 32
 lagopus 32
Sandpiper, *Aberdeen* 318
 Ash-coloured 318
 Bartram's 318
 Boreal 318
 Gray 318
 Knot 318
 Little 318
 Newfoundland 318
 Red-breasted 318, 344
 Ringed 318
 Semipalmated 318
 Sandpiper, *Solitary* 318
 Spotted 318, 345
 Striated 318
 Variegated 318
Sand Rat 292, 16
Sapajou, *Brown* 291
 Horned 291
Sap-sucker 327
satrapa, *Regulus* 41
saurita, *Coluber* 357
Savanna, *Fringilla* 317
Savannah Sparrow 317
Saw-billed Pelican 319
Sayornis phoebe 36, 40
Scalops aquaticus 14
Scardafella squamata 42
Scarlet Ibis 318
 Tanager 316, 33
Scaup Duck 319, 352
Sciuropterus volucella 20
 sabrinus 20
Sciurus boothiae 20
 Carolinensis 292, 19, 20
 pennsylvanicus 19, 20
 cinereus 292, 19
 douglassi 21
 flavus 292, 20
 fossor 21
 Genus 292, 19
 griseus 21
 hiemalis 292, 304, 20
 hudsonicus 20, 21, 22
 Hudsonius 292, 20, 22
 fremonti 22
 richardsoni 22
 Labradorius 292, 20
 Ludovicianus 292, 19
 Mexicanus 292, 20
 niger 292, 19, 20
 ludovicianus 20
 Pennsylvanica 292, 19
 quadrivittatus 22
 rubricatus 21
 striatus 292
 trogodytus 21, 22
 variegatus 292
 Virginianus 292, 20
 volucella 292, 20
 vulgaris 20
 vulpinus 292, 19
Scolecophagus carolinus 38
Scolopax calideis 318, 44
 candida 318, 44
 fedoa 318
 flavipes 318
 gallinago 318, 44
 gallinula 318
 Genus 318, 44
 glottis 318, 44
 Hudsonica 318

- Scolopax melanoleuca* 318, 44
 minor 318
 nigra 318, 44
 noveboracensis 318, 44
 nutans 318, 44
 semipalmata 318, 44
 totanus 318, 44
 vociferus 318, 44
 Scoter Duck 319
 Screamer, Horned 318
 Screamers, South American 46
 Sea Ape 291, 6
 Calf 291, 6
 Cow 293
 Eagle 321
 Otter 291, 297, 11
 -pie 318, 347
 -side Finch 317
 Seal, Crested 291, 6
 Harp 291, 6
 Hooded 291, 6
 Maned 291, 6
 Northern Fur 6
 Rough 291, 6
Seiurus aurocapillus 38
 noveboracensis 38
Selasphorus rufus 37
semipalmata, *Ægialitis* 45
 Scolopax 318, 44
 Tringa 318, 45
 Semipalmated Sandpiper 318
 Snipe 318, 343
senegalensis, *Manatus* 5
septemdecim, *cicada* 360
septentrionalis, *Colymbus* 319, 47
 Lanius 315, 34
sericea, *Mazama* 25
serotinus, *Vesperugo* 3
 Serpents, Order 357
serrator, *Mergus* 319
Setophaga ruticilla 40
sexlineata, *Lacerta* 357
 Shad 360
 Shag 319
 Sharks 360
 Sharp-nosed Cachalot 292
 -shinned Hawk 315, 32
 -tailed Finch 317
 Grouse 317
 Shearwater Petrel 319
 Sheep, Big-horned 292, 308, 24
 Mountain 310
 Rocky Mountain 292, 309, 25, 31
 Sheerwater 319, 349
 Shelldrake 319, 350
 Shore Lark 317
 Short-eared Owl 315
 -billed Curlew 343
 -tailed Tern 319
 Shoveller 319, 352
 Shrew, Aquatic 291, 14
 Black 291, 15
 Crested, 291, 14
 Shrew, Mexican 291, 15
 Pigmy 291
 Shrike, American 315
 Black-capped 315
 Crested 315
 Great American 315, 323
 Loggerhead 315
 Nootka 315
 Northern 315
Sialia sialis 41
sialis, *Sialia* 41
 Sylvia 317, 41
 Siberian Argali 24
 Silver Black Bat 3
 Silvery Fox 291, 8
Simia apella 292
 Capucina 291
 fatuellus 291
 Genus 291
 Simple Tern 319
simplex, *Sterna* 319, 47
simus, *Coluber* 357
sipedon, *Coluber* 357
Siren 291, 6
 Carolina 357
 Genus 357
 lacertina 357
siren, *Trichechus* 291, 6
sirtalis, *Coluber* 357
 Siskin, Black Mexican 31
 Mexican 316
Sitagra capensis 35
Sitomys americanus 16, 17
Sitta canadensis 36
 Carolinensis 316
 Genus 316, 36
 pusilla 316
 varia 316, 36
 Six-lined Lizard 357
S. Johannis, *Falco* 315
 Skimmer, Black 319, 349
 Skua Gull 319
skua, *Megalestris* 48
 Skunk 291, 296, 297, 11, 28
 Striped 11, 28
 Slate-coloured Hawk 315, 32
 Small Black Squirrel 292, 19
 and Red Snake 357, 359
 Brown Adder 357
 Green Flycatcher 317
 -headed Flycatcher 317
 Prairie Wolf 291, 8
 Red Fox 291, 8
 small brown squirrel 21
 Smew 319
 Snake, Barred 357, 359
 Bird 356

- Snake, Black 357, 359
 , Brown 357
 , Brownish spotted 357
 , Bull 358
 , Chicken 357
 , Coach Whip 357, 359
 , Copper-Bellied 357
 , Corn 357
 , Dark Blue 357
 , Dotted 357
 , Garter 357
 , Glass 357, 359
 , Green 357, 359
 -striped 357
 , Hoop 357
 , Horn 357
 , House 357, 359
 , Joint 357, 360
 , King 357
 , Little Brown Bead 357
 , Moccasin 357, 359
 , Pearl 357, 359
 , Pine 358
 , Ribbon 357, 359
 , Small Black and Red 357
 , Spotted Moccasin 357
 , Striped 357
 , Truncheon 357
 , Wampum 357
 , Yellowish White 357
- Snipe, Black 318
 , Common 343
 , English 318, 343
 , Green-shank 318
 , Jack 318
 , Nodding 318
 , Red-breasted 318, 343
 -shank 318
 , Semipalmated 318, 343
 , Sand 345
 , Spotted 318
 , Stone 318
 , Tell-tale 318
 , White Red-shank 318
 , Yellow-shanks 318
- Snow-bird 317, 335
 , Bunting 316
 , Goose 319, 355
 , Owl 315, 322
- Snowy Heron 318
- socialis, Cynomys 30
 , Fringilla 317
- Soft-shelled Tortoise 357
- solitaria, Muscicapa 317, 40
 , Sylvia 317, 41
 , Tringa 319
- solitarius, Turdus 316, 38
- Solitary Flycatcher 317
 , Sandpiper 318
- Somateria dresseri 48
 , Somateria mollissima borealis 48
- Song Sparrow 317
- Sooty Owl 315
 , Tern 319
- Sora 318, 347
- Sorex aquaticus 291, 14
 , araneus 291, 14
 , cristatus 291, 14
 , exilis 291
 , Mexicanus 291, 15
 , niger 291, 15
- sordidus, Pionus 34
 , Psittacus 315, 34
- spadicea, Ardea 318, 44
 , Diomedea 319, 47
 , Sterna 319, 47
- spadiceus, Falco 315, 32
- Spanish Duck 319
- Sparrow, Chipping 317
 , Field 317
 , Fox-coloured 317
 , Savannah 317
 , Song 317
 , Swamp 317
 , Tree 317
 , White-throated 317
 , Yellow-winged 317
- sparverius, Falco 315
- Speckled Buzzard 315
 , Diver 319
 , land Tortoise 357
- spectabilis, Anas 319
- spectrum, Vespertilio 291
- Spermaceti Whale 292
- Spermophila grisea 38
- Spermophile, Parry's 18
- Spermophilus columbianus 19
 , mexicanus 20
- Spilogale putorius 11
- spinosa, Anas 319, 49
- Spinous-tailed Teal 319
- Spiza americana 39
- Spizella monticola 40
- sponsa, Anas 319
- Spoonbill Roseate 318, 342
- Spotted Grouse 317
 , Humming-bird 316
 , Moccasin 357
 , Owl 315
 , Rail 318
 , Sandpiper 318, 345
 , Snipe 318
 , yellow Warbler 317
- Sprigtail Duck 319
- Spring-back Deer 292, 24
- squamata, Scardafella 22
- Squash 291, 11
- squatarola, Tringa 318
- Squirrel, Barking 302, 303
 , Brown 292, 22

- Squirrel, Burrowing 302, 303, 304
 , Carolina 292
 , Cat 292
 , Chickaree 292
 , Chikaree 292
 , Columbia Gray 292, 21
 , Fair 292, 20
 , Flying 292, 304, 20
 , Fox 292, 19
 , Gray 292, 20, 21
 , Ground 292, 304
 , Hudson's Bay 292, 20
 Flying 292, 20
 , Large Black 292, 19
 , large gray 21
 , Louisiana Gray 292, 19
 , Mexican 292, 20
 , New Jersey 292, 20
 , Red 20
 -breasted 292, 21
 , Rocky-mountain Ground 292,
 21
 , Small Black 292, 19
 , small brown 21
 , Virginian 292, 20
 , Varied 292, 20
 Stag 306, 308
 , Greater 306, 23
 Starling, Brown-headed 316
 , Louisiana 316
 , Mexican 316
 , Red-winged 316, 330
 Star-nosed Mole 14
 St. Domingo Cuckoo 316
 , Oriole 316
 stellatus, Colymbus 319, 47
 Stelleri Anas 319
 , Corvus 315
 Steller's Crow 315
 Stercorarius 48
 Sterna aranea 319, 47
 , Cayanensis 319, 47
 , fissipes 319, 47
 , fuliginosa 319
 , Genus 319, 47
 , hirundo 319
 , maxima 319
 , minuta 319, 47
 , Philadelphia 319, 47
 , plumbea 319, 47
 , simplex 319, 47
 , spadicea 319, 47
 , Surinamensis 319, 47
 Stilt 349
 St. John's Falcon 315
 Stoat 291, 298
 , American 291
 Stone Snipe 318
 Stork 242
 Stormy Petrel 319
 Streaked Heron 318
 strepera Anas 319
 striata, Ardea 318, 44
 , Colymbus 319, 45, 47
 , Dendroica 40
 , Muscicapa 317
 , Sylvicola 317, 40
 , Tringa 318
 Striated Heron 318
 , Sandpiper 318
 , Weasel 291, 297, 11, 28
 striatus, Sciurus 292
 Striped Ant-eater 291, 4
 , Dormouse 304
 , Divcr 319
 , Flycatcher 317
 , Skunk 11
 Strix Acadica 315
 , Americana 315
 , albifrons 315, 33
 , asio 315
 , brachyotus 315, 33
 , bubo 315, 33
 , chichictli 315, 33
 , cinerea 315
 , flammea 315, 33
 , funerea 315, 33
 , Genus 315, 33
 , Hudsonia 315, 33
 , Mexicana 315, 33
 , naevia 315, 33
 , nebulosa 315
 , nyctea 315
 , otus 215, 33
 , passerina 315, 33
 , tolchiquatl 315, 33
 , ulula 315
 , Virginiana 315
 , wapacuthu 315, 33
 Sturnella magna 37, 41
 Sturnus, Genus 316, 37
 , Ludovicianus 316, 37
 , Mexicanus 316
 , obscurus 316, 37
 , praeatorius 316, 38
 subis, Progne 42
 Sula sula 49
 sula Sula 49
 Summer Red-bird 316
 Surinam Darter 319
 , Tern 319
 Surinamensis Plotus 319, 48
 , Sterna 319, 47
 surinamensis, Hydrochelidon nigra
 , 47
 Surnia ulula caparoch 33
 Sus, Genus 292, 26
 , tajacu 26
 , tajassu 292, 26
 Swallow, Ash-bellied 317

- Swallow, Bank 317
 , Barn 317, 335
 , Chimney 317, 336
 , Green white-bellied 317
 , Oonalaska 317
 , Róck 317
 Swallow-tailed Flycatcher 317, 40
 Hawk 315
 swainsoni, Bnteo 33
 Turdus ustulatus 38
 Swamp Blackbird 330
 Sparrow 317
 Swan, Whistling 319, 48
 Wild 319, 356
 Sword Fish 360
 Sylvania 40
 mitrata 40
 sylvaticus, Lepus 22
 Sylvia æstiva 317
 agilis 317
 aurocollis 317, 41
 Autumnalis 317, 41
 Blackburniæ 317
 cærulea 317
 calendula 317, 41
 Canadensis 317, 41
 castanea 317
 chrysoptera 317
 cincta 317, 41
 citrinella 317, 41
 coronata 317
 domestica 317
 flavicollis 317, 41
 formosa 317
 , Genus 317, 41
 Hudsonica 317, 41
 icterocephala 317, 41
 leucoptera 317, 41
 Ludoviciana 317, 41
 magnolia 317, 41
 maritima 317
 Marylandica 317, 41
 minuta 317, 41
 Montana 317, 41
 parus 317, 41
 Pennsylvanica 317
 perigrina 317
 petechia 317, 41
 Philadelphia 317
 pinus 317, 41
 protonotarius 317
 pusilla 317, 41
 rara 317, 41
 regulus 317, 41
 rubricapilla 317, 41
 sialis 317, 41
 solitaria 317, 41
 striata 317
 tigrina 317
 troglodytes 317, 42
 Sylvia vermivora 317
 virens 317
 Symphæmia, genus 44
 Syntheres prehensilis 16
 syriacus, Ursus 25
- T
- Tachybaptus dominicus 46
 Tachycineta bicolor 42
 Tailless Marmot 292, 18
 tajacu, Sus 26
 tajassu, Sus 292, 26
 Talpa europæa 14
 , Genus 291, 14
 longicaudata 291, 14
 rubra 291, 14
 Virginianus 15
 Tamias townsendi 22
 Tapir Americanus 292, 26
 , Genus 292, 26
 , Long-nosed 292, 312, 26
 Tapirus bairdi 26
 dowi 26
 terrestris 26
 Tanager, Black and blue 316
 , Cerulean 316
 , Gray 316
 , Louisiana 316
 , Scarlet 316, 33
 Tanagra æstiva 316, 39
 canora 316, 39
 , Genus 316, 39
 grisea 316, 39
 Ludoviciana 316
 Mexicana 316, 39
 rubra 316, 39
 Tantalus albicollis 318, 44
 albus 318
 , Genus 318, 44
 loculator 318
 Mexicanus 318, 44
 minutus 318, 44
 ruber 318
 tarandus, Cervus 292
 Tarrapin 357
 Tatusia novemcincta 4
 peba 5
 Tawny Owl 315
 Thrush 316
 Weasel 291, 12
 Taxidea taxus 13
 taxus, Taxidea 13
 , Ursus 13
 Teal Blue-winged 319, 352
 , Green-winged 319, 353
 , Spinous-tailed 319
 Tell-tale Snipe 318
 tema, Cariacus 25
 , Mazama 25
 Temamacame 23, 25

- Temamazame 25
 temporaria, Rana 357
 Tennessee Warbler 317
 Tern, Banded-tail 319, 47
 , Black 319
 , Brown 319
 , Cayenne 319
 , Great 319
 , Marsh 319
 , Short-tailed 319
 , Simple 319
 , Sooty 319
 , Surinam 319
 terrestris, Columbignallina passerina
 42
 , Testudo 357
 Testudo Carolina 357
 cartilaginea 357
 clausa 357
 denticulata 357
 , Genus 357
 Pennsylvanica 357
 terrestris 357
 Tetrao albus 317, 43
 Canadensis 317
 cupido 317
 fusca 317, 43
 , Genus 317, 43
 lagopus 317
 phasianellus 317
 rupestris 317
 umbellus 317
 Teuhtlalmacame 23, 24
 Teutlalmacame 23
 Teutlamacame 23
 thagus, Pelicanus 319, 41
 Thalassogeron chlororhynchus 47
 Thamnophilus cirrhatus 34
 Thomomys 15
 Thrasher 331, 332
 Three-banded Armadillo 291, 4
 Thrush, Brown 331
 , Ferruginous 316, 332
 , Golden-crowned 316
 , Hermit 316
 , Hudsonian 316
 , Labrador 316
 , Olive-backed 38
 , Red-legged 316
 , Spotted 316
 , Tawny 316
 , Water 316
 , Wood 316, 331, 38
 Thyrothorus ludovicianus 37
 Tiger 299, 6
 , Black 291, 9
 , Brazilian 291, 10
 , Brown 291, 296, 9, 28
 , Cat, Mexican 10
 , tigrina, Dendroica 41
 , tigrina Sylvia 317
 , Tilt 318, 349
 , Timber Wolf 7
 , timidus Lepus 292, 220
 , tisiphone, Coluber 357
 Titmouse, Black-capt 317
 , Crested 317
 , Hudson's Bay 317
 Toad, Common 357
 , Horned 357
 Tòdus, Genus 316, 36
 obscurus 316, 36
 Tody, Dusky 316
 tolchiquatli Strix 315, 33
 Toothed-bill Gull 319, 47
 torda, Alca 319
 torquata, Alcedo 316, 36
 torquatus, Coluber 357
 , Dicotyles 26
 , Mus 17
 , Picus 316
 , Pteroglossus 34
 , Ramphastos 315
 Tortoise 393
 , Close-shelled 357
 , Great land 357
 , Mud 357
 , Pennsylvania 357
 , Soft-shelled 357
 , Speckled-land 357
 Totanus 44
 calidris 44
 glottis 44
 melanoleucus 44
 ochropus 45
 totanus 44
 totanus, Scolopax 318, 44
 Towhee Bunting 316
 townsendi, Tamias 22
 Toucan, Blue 315
 , Collared 315
 , Pavonine 315
 , Yellow 315
 Tree Frog 357
 Sparrow 317
 trichas, Geothlypis 41
 Trichechidæ 5
 Trichechus australis 291, 5
 , Genus 291, 5
 manatus 5
 rosmarus 291, 5
 siren 291, 5
 tricinctus, Dasyppus 291, 4
 tricolor, Picus 316, 30
 tridactylus, Larus 319
 Tringa alpina 45
 Bartramia 318, 45
 borealis 318, 45

Tringa
 cir
 cir
 ,G
 hi
 Ice
 in
 ma
 No
 oc
 pu
 ru
 ser
 sol
 su
 str
 ya
 tristis,
 Trochi
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 Troglo
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 troglod
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 Tropic
 Trout
 Trunci
 Tucan
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 Tufted
 Turdu
 aq
 au
 fu
 ,G
 Hu
 La
 liv
 me
 mi
 mu
 na
 plu
 po
 rul

Tringa canutus 318, 45
 cinclus 318, 45
 cinerea 318, 45
 Genus 318, 45
 hiaticula 318, 45
 Icelandica 318, 45
 interpres 318
 macularia 318
 Novae-terrae 318, 45
 ochropus 318, 45
 pusilla 318
 rufa 318, 46
 semipalmata 318, 45
 solitaria 318
 squatarola 318
 striata 318, 45
 variegata 318, 45
 tristis, Fringilla 317
 Trochilus colubris 316, 329, 37
 cyanurus 316, 37
 exilis 316, 37
 Genus 316, 37
 holosericus 316, 37
 maculatus 316, 37
 mango 316, 37
 minimus 316, 37
 Paradiseus 316, 37
 punctulatus 316, 37
 rufus 316, 37
 vehustissimus 316, 37
 Troglodytes hiemalis 42
 troglodytes 42
 troglodytes, Sylvia 317, 41
 Troglodytes 42
 troglodytus, Sciurus 21, 22
 Trogon curucui 316, 35
 Genus 316, 35
 troile, Uria 319
 Tropic-bird, Common 319
 Trout 360
 Truncheon Snake 357
 Tucan 15
 De 15
 le 14
 Tufted Duck 319
 Turdus aonalaschkae pallasii 38
 aquaticus 316, 38
 aurocapillus 316
 fuscescens 316
 Genus 316
 Hudsonicus 316
 Labradorus 316
 lividus 316
 melodus 316
 migratorius 316
 mustelinus 316
 naevius 316
 plumbeus 316
 polyglottus 316
 rufus 316

Turdus solitarius 316
 wilsoni 316
 ustulatus swainsonii 38
 Turkey Buzzard 315, 320
 Wild 317, 340
 Vulture 320
 Turnstone 318
 tursio, Physeter 292
 Turtle, Canada 317
 Dove 317, 340
 tuza, Mus 292, 16
 tuzu (Geomys) 16
 Tyrant Flycatcher 317, 36
 Tyrannus 34
 tyrannus 34
 tyrannus, Muscicapa 317, 40
 Tyrannus 34

U

uliginosus, Falco 315, 32
 ulula Strix 315
 umbellus, Tetrao 317
 Upupa, Genus 316, 37
 Mexicanus 316, 37
 Uria, Genus 319
 grylle 319
 marmoratus 319
 troile 319
 Urinator imber 47
 lumme 47
 Urocyon virginianus 8
 cinereo-argenteus 8, 9
 ursinus, Callorhinus 6
 Ursus Americanus 291, 13, 29
 arctos 13, 28, 29
 cinnamomeus 28, 29
 cinnamomum 29
 Genus 291, 13
 gulo 291, 14
 horriaeus 29
 horribilis 291, 13, 28, 29
 isabellinus 29
 labradoricus 21
 Labradorius 291, 13
 lotor 291
 luscus 291, 14
 luteolus 29
 maritimus 291
 meles 291, 13
 syriacus 29
 taxus 13

V

valisineria, Anas 319
 Vampire Bat 291
 varia, Mniotilta 37
 Sitta 316
 variabilis, Lepus 292, 22
 Varied Fox 291, 8
 Squirrel 292, 20

- Varied Woodpecker 316
variegata, *Fringilla* 316, 40
 , *Tringa* 318, 45
 Variegated Finch 316
 Sandpiper, 318
variegatus, *Falco* 315
 , *Sciurus* 292, 20
 Varying Hare 292, 22
 Veery 38
velox, *Accipiter* 32, 33
 , *Canis* 8
 , *Falco* 315
 Velvet Duck 319
ventralis, *Anguis* 357
venustissimus, *Trochilus* 316, 37
Vespertilio Americanus 291, 3
 borealis 3
 , *Genus* 291, 3
 labialis 291, 3
 noveboracensis 291, 3
 rubra 291, 4
 spectrum 4
Vesperugo nilssoni 3
 serotinus fuscus 3
vermivora, *Sylvia* 317
viduata, *Anas* 319, 49
 , *Dendrocygna* 49
vigorsii, *Dendroica* 41
villosus, *Picus* 316
violacea, *Ardea* 318
violicauda, *Lampornis* 37
Viper, *Black* 357, 359
 , *Bluish Green* 357
 , *Brown* 357
 , *Canada* 357
 , *Crowned* 357
 , *Florida* 357
 , *Mexican* 357
 , *Water* 357
 , *Virginian* 357
virens, *Contopus* 40
 , *Icteria* 42
 , *Sylvia* 317
Vireo flavifrons 40
 , *Genus* 40
 gilvus 40
 noveboracensis 40
virescens, *Ardea* 318, 44
virgata, *Aphriza* 45
 , *Ardea* 318
Virginia Frog 357
Virginian Mouse 292, 17
 Opossum 291, 14
 Partridge 317
 Squirrel 292, 20
 Viper 357
virginiana, *Didelphys* 14
 , *Strix* 315
Virginianus, *Bubo* 33
Virginianus, *Canis* 291, 9
 , *Cariacus* 23
 , *Cervus* 292
 , *Chordeiles* 42
 , *Mus* 292, 17
 , *Perdix* 317, 43
 , *Rallus* 318
 , *Sciurus* 292, 20
 , *Talpa* 15
Virginica, *Loxia* 316, 38
 , *Rana* 357
Virginicus, *Coluber* 357
viridis, *Hirundo* 317, 42
 , *Oriolus* 35
 , *Ostinops* 35
 , *Picus* 316, 36
vison, *Lutreola* 12
 , *Mustela* 291
vitulina, *Phoca* 291, 6
Viverra alba 21
 albus 291, 11
 , *Genus* 291, 11
 memphitis, 11
 prehensilis 292, 11
 putorius 291, 11
 vulpecula 291, 11
vociferus, *Caprimulgus* 37
 , *Charadrius* 318
 , *Scolopax* 318, 44
vociferans, *Crax* 317, 43
Vole, *Water* 16
volucella, *Sciuropterus* 20
vulgaris, *Mustela* 291, 12
 , *Sciurus* 20
Vulpecula Weasel 291, 11
vulpecula, *Viverra* 291, 11
Vulpes fulvus 8, 9
 lycaon 9
 macrourus 8
 nigra 8
 pensylvanicus 9
 vulpes 8
vulpes, *Canis* 291, 9
 , *Vulpes* 8
vulpinus, *Sciurus* 292
Vultur atratus 315
 aura 315
 Californianus 315, 32
 Columbianus 315, 32
 , *Genus* 315, 32
 gryphus 315
 papa 315
Vulture, *Black* 320
 , *Californian* 315
 , *Columbian* 315
 , *Condur* 315
 , *King*, 315, 32

W

Walrus, *Arctic* 291, 293, 299, 5, 6, 26

- Wampum Snake 357
 Wandering Albatross 319
 Mouse, American 291, 17
 Wapacuthu Owl 33
 wapacuthu, Strix 315, 33
 Wapiti 23
 wapiti, Cervus 23
 Warbler, Autumnal 317
 , Bay-breasted 317
 , Belted 317
 , Black and Yellow 317
 , Blackburnian 317
 , Black-poll 317
 , -throated blue 317
 green 317
 , Blue-eyed 317
 green 317
 mountain 317
 -winged yellow 317
 yellow-back 317
 , Cærulean 317
 , Cape May 317
 , Chestnut-sided 317
 , Connecticut 317
 , Golden-winged 317
 , Hemlock 317
 , Hudson's 317
 , Kentucky 317
 , Louisiana 317
 , Mourning 317
 , Nashville 317
 , Orange-throated 317
 , Pine-creeping 317
 swamp 317
 , Prairie 317
 , Prothonotary 317
 , Quebec 317
 , Spotted-yellow 317
 , Tennessee 317
 , Worm-eating 317
 , Yellow-poll 317
 red-poll 317
 rump 317
 throat 317
 Warbling Flycatcher 317, 334
 Warree 292, 313, 26
 Water Birds 318
 Rat 292, 16
 Thrush 316
 Viper 357
 Vole 16
 Weasel, Common 291, 12
 , Fisher 291, 12
 , Mexican 291, 11
 , Striated 291, 28, 11
 , Tawny 291, 12
 , Vulpecula 291, 11
 , White 291, 11
 Weasels 298
 Weaver bird 35
 Western Duck 319
 West Indian Manatee 5
 Whale, Beaked 292
 , Common 292
 , Hump 292
 , Pike-headed 292
 Whip-poor-will 317, 336, 337
 Whistling Field Plover 345
 Swan 319, 356, 48
 White Avoset 318
 -bellied Eagle 315
 Brant 335
 breasted Hawk 322
 Nuthatch 316
 Buffaloe 310, 31
 -crowned Bunting 316
 Pigeon 317
 -eyed Flycatcher 317
 -footed Mouse 16, 17, 18
 -fronted Owl 315
 Parrot 315
 Grouse 317
 -headed Eagle 320
 Ibis 318
 -necked Ibis 319
 Nun 319
 Red Shank Snipe 318
 spotted Frog 359
 -throated Sparrow 317
 Weasel 291, 11
 -winged Crossbill 316
 Pigeon 317
 Whooping Crane 319
 Widgeon 319, 351
 Wild Cat 291, 27
 Goose 355, 356
 Horse 292
 Pigeon 223, 337-340
 Swan 319
 Turkey 317, 40
 Willet 343
 wilsoni, Turdus 38
 Wilsonia, Charadrius 318
 wilsonianus, Asio 33
 Wilson's Plover 318
 Winter Hawk 315
 Wren 317, 334
 Wisstonwish 303
 Wolf, Black 291, 7
 , Common 291, 293, 294, 295, 296,
 303, 7, 27
 , Gray 7, 27
 , Large Prairie 8
 , Lobo 7
 , Mexican 291, 7, 27
 , Prairie 295
 , Small Prairie 291, 8
 , Timber 7

Wolverine 291, 40
 Wood Brocket 247
 Woodcock 318
 Wood Duck 351
 Ibis 318
 Woodpecker, Canada Spotted 316
 Downy 316
 Gold-winged 316
 Greater Spotted 316
 Green 316
 Hairy 316
 Ivory billed 316, 326, 327
 Lewis's 316
 Pileated 316
 Red-bellied 316
 -cockaded 316
 -headed 316, 323
 Rocky-mountain 316, 36
 Varied 316
 Yellow-bellied 316
 Wood Rat 300
 Robin 316, 331
 Thrush 316, 331, 38
 Worm-eating Warbler 317
 Wren, European 330
 Golden-crested 317
 Great Carolina 316
 House 317, 334
 Marsh 316
 Ruby-crowned 317
 Winter 317, 334

X

xanthornus, Oriolus 315, 35
 Xoloitzcuintli 7

Y

Yacou 317
 Yellow-Bears 29
 -bellied Grosbeak 316
 Woodpecker 316
 -billed Cuckoo 316
 -bird 317
 -breasted Chat 317
 Gallinule 318
 -crowned Heron 318
 -headed Grosbeak 316
 -nosed Albatross 319
 -poll Warbler 317
 Rattle Snake 357
 red-poll Warbler 317
 -rump Warbler 317
 -shank Snipe 318
 -throat, Maryland 317
 Warbler 317
 -throated Flycatcher 317
 Oriole 317
 Toucan 315
 -winged Sparrow 317
 Yellowish White Snake 357
 Yzquiepatl 11

Z

Zancoe, Corvus 315
 Crow 315
 Zapus, 17, 22
 hudsonius 22
 insignis 22
 Zenaidura macroura 42
 zibellina, Mustela 291
 zibethicus, Fiber 292
 Zizania aquatica 333
 Zonotrichia coronata 39