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## THE FIRST DESCRIPTIONS OF NORTH AMERICAN BIRDS

BY O. A. STEVENS

Many a biologist has longed for the opportunity to examine the fauna and flora of some land never before visited by a naturalist. Few have had that opportunity, and usually the information on a new country has accumulated over a period of time, through uncertain channels, much of it poorly collected and poorly preserved. Here in America we particularly wonder what birds the first Europeans noted and what they thought of them. The Baltimore Oriole and the Yellow Warbler were the first ones mentioned by Maximilian when he landed at Boston, but that was in 1833, more than 300 years after the arrival of the first explorers. One can hardly doubt that these two species were among the first to be observed by others. Christy (*Auk*, 50:275-283) found the Sandhill Crane, Flicker, Blue Jay, Bluebird, Red-winged Blackbird and Towhee in what he believed to be the earliest written account of American birds (in 1613 or 1614). This writer presumably had not visited America but may have talked with someone who had been there and must have seen specimens which had been brought back. Still more recently, Mrs. Allen has described some paintings (*Auk*, 53:17-21) made about 1585, which included a Tropic Bird, Brown Pelican, Booby, Flamingo, Noddy Tern, and Flicker.

It is a simple matter to tabulate from the A. O. U. Check-List the various authors and the dates at which their names were given to the birds, but this yields a number of instances of common birds described later than 1900. In fact, if we list all subspecies, we have a very considerable number of recently discovered birds. This naturally suggests the advisability of limiting the discussion to the larger unit and

disregarding the subspecies. The early writers had no conception of our present subspecies, though they often described American birds as varieties of Old World species, and not infrequently they described two or more "species" from what we now know as different plumages of the same bird. In justice to recent authors it should be mentioned that some forms which had long been regarded as distinct species have been reduced to subspecies, and that a great many of the current subspecies have at some time been given specific rank.

In many cases the Check-List names are not the oldest. The Lark Bunting is known by a name given by Stejneger in 1885, but it was first described by Townsend in 1839 and known under his name until it was changed because of the still earlier use of Townsend's specific name for a different bird. Our common Crow passed for many years under the name given it by Audubon in 1834. Then an earlier name used in 1822 by a German writer, Brehm, was found applicable. Wilson had fully described the Crow in 1811 but considered it the same as the Carrion Crow of Europe. Shall we say that he was the first to describe the American bird? Certainly such a species could not fail to attract attention, but no earlier name appears in the usual literature excepting one by Bartram in 1790. Bartram's names were not consistently binominal, and all of them are rejected by most ornithologists. Few of the later descriptions were based upon his.

The use of the earliest name for the species as a whole results in a few complications. In a number of cases, such as those of the Raven, Magpie, Brown Creeper, and Crossbill, the American birds are considered races of a species which also has European races. In such cases the "species" was first discovered and described in the Old World. It might seem that we should credit the first author who described the American form as different from that of the Old World, but that would again involve the matter of the subspecies and in any case we can hardly disregard an author who gave a good description of the American bird without recognizing such difference.

The first races of many of our birds were described from Mexico, Central America, the West Indies, or South America. Quite a number of the tropical birds, or at least certain of their representatives, reach the southern borders of the United States. I find no less than 105 species of which the first form to be described does not occur within our limits. Some of the birds of eastern Asia occur more or less regularly on the Alaskan coast. In the present study I have omitted those which have been introduced from other regions or which are of only accidental occurrence in North America north of Mexico. There is of

course no sharp natural definition of the limits thus set up. Another difficulty, and one which has been very puzzling in the matter of nomenclature, is the fact that many of the early descriptions were based upon more than one still earlier description and frequently included more than one species.

The following list of the number of species described by each author, I have compiled by using the earliest identifiable name as given by Ridgway ("Birds of North and Middle America") for the oldest form of each species of the A. O. U. Check-List (4th ed.), excluding introduced and accidental species. Since Ridgway had not treated a number of families, including the bitterns, ducks, and hawks, I could not deal with these in a quite similar manner. Peters' "Check-List of Birds of the World" (Vols. 1 and 2) has been especially useful on those groups, and the historical chapter of Coues ("Key to North American Birds") has been helpful in many ways. So many difficulties and problems of treatment are involved that the list must be considered as only approximately correct.

## SPECIES OF NORTH AMERICAN BIRDS DESCRIBED BY DIFFERENT AUTHORS

Linnaeus, 10th ed. (1758)	
Occurring also in Europe.....	65
Based upon Catesby.....	59
Based upon Edwards.....	18
From other sources.....	5
Total in 10th ed.....	147
In 12th ed. (1766).....	41
Fauna Svecica (1761).....	2
Total Linnaeus.....	190
Gmelin (Syst. Nat., 1788-89).....	71
Other authors before Wilson—	
Vieillot .....	27
Boddaert .....	12
Pallas .....	17
Forster .....	10
Latham .....	9
Twenty-six others .....	48
Total before Wilson.....	384
Wilson .....	29
Audubon .....	24
Authors since Wilson—	
Swainson .....	28
Ridgway .....	15
Townsend .....	15
Baird .....	14
Bonaparte .....	13
Cassin .....	11

Wagler .....	10
Gambel .....	9
Lawrence .....	9
Coues .....	8
Say .....	8
Lesson .....	7
Sclater .....	7
Vigors .....	7
Lichtenstein .....	5
Woodhouse .....	5
Forty-nine others .....	86
Total since Wilson and Audubon.....	267
Grand Total .....	704

The Linnaean species which occur also in Europe are chiefly water birds which have a wide distribution, such as Horned Grebe, Mallard, Gadwall, Pintail, Shoveller, Common Tern, etc. Of the land birds we have the Snowy Owl, Redpoll, Lapland Longspur, and Snow Bunting of general circumpolar distribution. The Red-spotted Blue-throat and Wheatear occur in Alaska and the Greenland subspecies of Wheatear throughout northern Canada. The Bank Swallow stands practically alone as one of the smaller land birds which is widely distributed in both eastern and western hemispheres. The remaining land birds of this group, represented by American subspecies, are: Hawk Owl, Bohemian Waxwing, Raven, Magpie, Brown Creeper, Yellow Wagtail, and Pine Grosbeak. Other species which were described later are also represented in both regions.

Linnaeus had no first hand information on American birds but collated in his great "Systema" material from all sources. Foremost among these were Catesby's two fine volumes, "The Natural History of Carolina", published about 1730. From these Linnaeus secured descriptions of the following species:

Pied-billed Grebe	Flicker
Little Blue Heron	Pileated Woodpecker
Green Heron	Red-bellied Woodpecker
Yellow-crowned Night Heron	Red-headed Woodpecker
White Ibis	Ivory-billed Woodpecker
Flamingo	Eastern Kingbird
Canada Goose	Crested Flycatcher
Wood Duck	Horned Lark
Hooded Merganser	Blue Jay
Swallow-tailed Kite	Mockingbird
Bald Eagle	Brown Thrasher
Pigeon Hawk	Bluebird
Sparrow Hawk	Golden-crowned Kinglet
Heath Hen	Cedar Waxwing

Bob-white	Red-eyed Vireo
Whooping Crane	Parula Warbler
Killdeer	Yellow-breasted Chat
Laughing Gull	Redstart
Noddy Tern	Bobolink
Black Skimmer	Eastern Meadowlark
White-crowned Pigeon	Baltimore Oriole
Mourning Dove	Purple Grackle
Passenger Pigeon	Summer Tanager
Ground Dove	Cardinal
Carolina Paroquet	Blue Grosbeak
Yellow-billed Cuckoo	Painted Bunting
Screech Owl	Goldfinch
Chimney Swift	Red-eyed Towhee
Ruby-throated Hummingbird	Slate-colored Junco
Belted Kingfisher	

The next most important source of material for Linnaeus was Edwards' "History of Uncommon Birds", 1741-51. From this Linnaeus secured some northern species and various others as follows:

Great Blue Heron	Buffle-head
Blue Goose	Harlequin Duck
Black-bellied Tree-duck	Surf Scoter
Hudsonian Spruce Grouse	Hudsonian Godwit
Sharp-tailed Grouse	Red Phalarope
Little Brown Crane	Northern Phalarope
Sora	White-winged Dove
Golden Plover	Purple Martin
Marbled Godwit	Black-whiskered Vireo

Five names from other sources were: Red-billed Tropic-bird from Osbeck; Wood Ibis and Roseate Spoonbill from Marcgrave; Turkey Vulture and Wild Turkey from sources not indicated. I do not know why Linnaeus omitted a considerable number of Catesby's birds, but eight years later in the twelfth edition of the *Systema*, the following were added:

Blue-winged Teal	Catbird
Yellow-bellied Sapsucker	Robin
Hairy Woodpecker	Red-wing
Downy Woodpecker	Orchard Oriole
Tufted Titmouse	Indigo Bunting

Similarly from Edwards he added:

Brown Pelican	Golden-winged Warbler
Marsh Hawk	Blue-winged Warbler
Ruffed Grouse	Myrtle Warbler
Mexican Jacana	Chestnut-sided Warbler
Spotted Sandpiper	Oven-bird
Ruby-crowned Kinglet	Maryland Yellow-throat
Blue-gray Gnatcatcher	

An extensive French publication by Brisson had appeared in the meantime and from this Linnaeus secured:

Masked Duck	Red-breasted Nuthatch
Semi-palmated Sandpiper	Loggerhead Shrike
Sooty Tern	Black and White Warbler
Derby Flycatcher	Yellow-throated Warbler
Eastern Wood Pewee	Canada Warbler
Canada Jay	Scarlet Tanager
Black-capped Chickadee	Rose-breasted Grosbeak

The Water-Turkey and White-faced Glossy Ibis were added from Marcgrave, the West Indian Grebe and Purple Gallinule from sources not indicated. These were the last of the species described by Linnaeus, but he had included about one-fourth of the North American birds now known to us.

In 1788-89 a thirteenth edition of the "Systema" by Gmelin increased the number by nearly 50 per cent. The Osprey, Chuck-will's Widow, and Purple Finch were still from Catesby; the Willow Ptarmigan, Worm-eating Warbler, and White-throated Sparrow from Edwards; the Nighthawk, Phoebe, White-breasted Nuthatch, and five others from Brisson. The Carolina Wren, Palm Warbler, and three others were from Buffon, a few from Steller and Hernandez, but the largest addition was from Latham who had published his "General Synopsis of Birds", 1781-1802, without using binominal names. Species from this work were:

Sooty Shearwater	Barrow's Golden-eye
White Pelican	Red-tailed Hawk
Least Bittern	Coot
Surf-bird	Wood Thrush
Bristle-thighed Curlew	Veery
Wandering Tattler	Dickcissel
Great Horned Owl	White-winged Crossbill
Merrill's Pauraque	Savannah Sparrow
Scissor-tailed Flycatcher	Sharp-tailed Sparrow
Steller's Jay	Vesper Sparrow
Varied Thrush	Song Sparrow

Two of Latham's birds, LeConte's Sparrow and Swamp Sparrow, which were described in his "Index Zoologicus", 1790, still stand in the Check-List under his name. Some half-dozen others which were incompletely described or confused with other species received their present names from later authors.

Another source of new birds for Gmelin was Pennant's "Arctic Zoology", 1784-87. From this came:

Fork-tailed Petrel	Willet
Baldpate	Lesser Yellow-legs
Green-winged Teal	Dowitcher
Labrador Duck	Avocet
Red-shouldered Hawk	Marbled Murrelet
Rock Ptarmigan	Ancient Murrelet
Yellow Rail	Whiskered Auklet
Black Oyster-catcher	Rufous Hummingbird
Woodcock	

A publication in 1783 by Boddaert, Dutch doctor and naturalist, included a number of new North American birds. For the most part these were based upon earlier descriptions by Daubenton, who was at one time associated with Buffon. Many of these were apparently drawn from specimens brought by early French explorers in the West Indies, Louisiana, and adjacent regions. The species of Boddaert were:

Holboell's Grebe	Alaska Chickadee
Northern Clapper Rail	White-eyed Vireo
Royal Tern	Prothonatary Warbler
Texas Nighthawk	Water-thrush
Vermillion Flycatcher	Hooded Warbler
Barn Swallow	Cowbird

The Alaska Chickadee is regarded as a race of the Old World, Siberian Tit.

Previous to Gmelin's edition of the "Systema", J. R. Forster had published in 1771 "A Catalogue of the Animals of Hudson's Bay", a notable list of 302 species of birds but without descriptions. The next year he published some descriptions from the same region which included:

Eskimo Curlew	Black-poll Warbler
Greater Yellow-legs	Tree Sparrow
Great Gray Owl	White-crowned Sparrow
Hudsonian Chickadee	

Three others, the Whip-poor-will, Nighthawk, and Northern Shrike, were indicated in his "Catalogue", the first two based upon Catesby's descriptions, the third mistaken for the European Great Grey Shrike.

Pallas, a German zoologist, described from 1769 to 1811 a number of birds which inhabit parts of Alaska as well as Siberia. These were:

Short-tailed Albatross	Paroquet Auklet
Pelagic Cormorant	Crested Auklet
Lesser Snow Goose	Least Auklet
Steller's Eider	Rhinoceros Auklet

Rufous-necked Sandpiper	Tufted Puffin
Curlew Sandpiper	Hermit Thrush
Sanderling	Aleutian Rosy Finch
Caspian Tern	Golden-crowned Sparrow
Cassin's Auklet	

Vieillot, a French author, published descriptions of a large number of American birds from 1807 to 1819. To some extent these preceded the work of Alexander Wilson, and to a large extent they were unknown or unrecognized at that time. Many of his species were birds from Mexico and South America, northern forms of which were described later. From Vieillot we have:

Leach's Petrel	Red-cockaded Woodpecker
Fulvous Tree-duck	Couch's Kingbird
Cinnamon Teal	Tree Swallow
White-tailed Kite	Rough-winged Swallow
Everglade Kite	Cuban Cliff Swallow
Broad-winged Hawk	House Wren
White-tailed Hawk	Yellow-throated Vireo
Short-tailed Hawk	Warbling Vireo
Aplomado Falcon	Sennett's Warbler
Virginia Rail	Mangrove Warbler
Pectoral Sandpiper	Prairie Warbler
White-rumped Sandpiper	Louisiana Water-thrush
Buff-breasted Sandpiper	Kentucky Warbler
White-eared Hummingbird	

Few of the twenty-six writers who described only one or two species each in this period are well known. The Barred Owl was described by William P. C. Barton in a fragmentary work which Coues regarded as the first to be devoted entirely to North American birds. The Ring-necked Duck was described by Donovan from a specimen found in the London markets. The Common Loon and some other water birds, all from Europe, were described by Brünnich. The Snowy Egret was first recognized from Chili by the Italian, Molina. To him is credited also the first race of the Burrowing Owl. A Danish treatise by Pontoppidan gave us the Short Eared Owl, three years before the twelfth edition of Linnaeus' "Systema". The Bittern was described by Montagu in 1813 from England where it was only an accidental visitor.

In Alexander Wilson we meet for the first time a man who lived and worked among the birds which he described. He was not born in America, nor was he born an ornithologist, but his assumption of the study later in his life has helped to give us a clear record of his work and made it purely American. His travels were largely limited to Pennsylvania, Kentucky, and neighboring states, so that for the most



part he discovered new birds in an area where much collecting had been done before. His list of warblers is especially imposing. Of course his greatest work was the description of the habits of the birds, not the discovery of new species. The ones first described by Wilson were:

Canvas-back	Long-billed Marsh Wren
Mississippi Kite	Blue-headed Vireo
Goshawk	Tennessee Warbler
Sharp-shinned Hawk	Nashville Warbler
American Oyster-catcher	Cerulean Warbler
Wilson's Snipe	Bay-breasted Warbler
Wilson's Phalarope	Pine Warbler
Black-billed Cuckoo	Connecticut Warbler
Long-eared Owl	Mourning Warbler
Lewis's Woodpecker	Wilson's Warbler
Acadian Flycatcher	Western Tanager
Crow	Pine Siskin
Fish Crow	Seaside Sparrow
Clark's Nutcracker	Field Sparrow
Winter Wren	

Wilson and Audubon were two stars of the first magnitude. Audubon was American born, and certainly he was born an ornithologist with unsurpassed enthusiasm. In the old territory he was able to discover yet a few new birds: Great White Heron, Alder Flycatcher, Carolina Chickadee, Bewick's Wren, Swainson's Warbler, Bachman's Warbler, and Henslow's Sparrow. For most of these he was obliged to penetrate the swamps and remote portions of the eastern states. His journey to Labrador added Lincoln's Sparrow. He longed to visit the country west of the Mississippi River and finally in his late years succeeded in reaching the mouth of the Yellowstone River, now northwestern North Dakota. This trip yielded Nuttall's Poor-will, Sprague's Pipit, Bell's Vireo, and Baird's Sparrow. It was a great disappointment to him that he was not able to describe the birds brought from the West Coast by Townsend and Nuttall, so from the far west only the Black-footed Albatross, Western Gull, Yellow-billed Magpie, Townsend's Solitaire, Tri-colored Redwing, and Green-tailed Towhee bear his names. The following species, then, were described by Audubon:

Black-footed Albatross	Sprague's Pipit
Great White Heron	Bell's Vireo
King Rail	Swainson's Warbler
Swainson's Hawk	Bachman's Warbler
Western Gull	Western Meadowlark
Nuttall's Poor-will	Tricolored Redwing

Alder Flycatcher	Green-tailed Towhee
Oregon Jay	Baird's Sparrow
Yellow-billed Magpie	Henslow's Sparrow
Carolina Chickadee	Brewer's Sparrow
Bewick's Wren	Lincoln's Sparrow
Townsend's Solitaire	

A contemporary ornithologist, correspondent and friend of Audubon's, was William Swainson, who had the opportunity of working with the numerous specimens arriving at the British Museum. He had made a trip to Mexico and from specimens collected there described many of our species. Later with John Richardson, he published a work on the animals of northern North America in which several of the northern birds were described. His list of species is:

American Scoter	White-throated Wren
Thick-billed Parrot	Curve-billed Thrasher
Groove-billed Ani	Western Bluebird
Lucifer Hummingbird	Phainopepla
Broad-tailed Hummingbird	Painted Redstart
Rivoli's Hummingbird	Hooded Oriole
Broad-billed Hummingbird	Bullock's Oriole
Ant-eating Woodpecker	Black-headed Grosbeak
Arctic Three-toed Woodpecker	Gray-crowned Rosy Finch
Cassin's Kingbird	Arctic Towhee
Black Phoebe	California Towhee
Western Wood Pewee	Red-backed Junco
Violet-green Swallow	Clay-colored Sparrow
Dipper	Smith's Longspur

Following Wilson one can hardly overlook mention of George Ord who was Wilson's literary executor and apparently the chief opponent to Audubon in the matter of the Pacific Coast specimens. Ord described the Whistling Swan from the Pacific Coast, Wilson's Plover, Ring-billed Plover, and Bonaparte's Gull from the Atlantic Coast. Audubon received more friendly coöperation from Charles Lucien Bonaparte, who continued Wilson's work and published many other papers. The species described by him were:

Black Petrel	Wollweber's Titmouse
White-winged Scoter	Yellow-headed Blackbird
Cooper's Hawk	Scott's Oriole
Sage Hen	Pyrrhuloxia
Stilt Sandpiper	Varied Bunting
Zenaida Dove	Sharpe's Seedeater
Say's Phoebe	

The first noteworthy discovery of birds of the Great Plains region fell to Thomas Say in 1819. He was not especially interested in birds

but was an authority on shells, while in insects he was quite without a rival in early American work. The expedition of Major S. H. Long to the Rocky Mountains had many misfortunes. It failed to accomplish much of its plan, yet under repeated difficulties Say was able to make a large contribution to the natural history of that region. The Lark Sparrow was found in Missouri at the start, the Orange-crowned Warbler at the expedition's winter quarters at Engineer Cantonment near the present Omaha, Nebraska. The Dusky Grouse, Band-tailed Pigeon, Arkansas Kingbird, Rock Wren, Lazuli Bunting, and Arkansas Goldfinch were added to the list in Colorado.

A second notable expedition through the same region but continuing to the Pacific Coast, was that of N. J. Wyeth in 1834. Thomas Nuttall was accompanying the group to collect plants and had induced John K. Townsend, a zoologist, to go also. The first day out from their starting point at Independence, Missouri, they secured Harris's Sparrow. This was described by Nuttall six years later, and shortly afterward was discovered and described independently by both Audubon and Maximilian. The common name given it by Audubon has fortunately been retained. On the plains of Nebraska Townsend found the Lark Bunting and Chestnut-collared Longspur; in Wyoming the Mountain Plover and Sage Thrasher. The northern Pacific Coast region yielded a rich harvest, especially of warblers, and the full list of Townsend's species is as follows:

Mountain Plover	Black-throated Gray Warbler
Western Sandpiper	Townsend's Warbler
Vaux's Swift	Hermit Warbler
Chestnut-backed Chickadee	Macgillivray's Warbler
Coast Bush-tit	Lark Bunting
Sage Thrasher	Oregon Junco
Russet-backed Thrush	Chestnut-collared Longspur
Audubon's Warbler	

Townsend and Nuttall had the privilege of making the last great exploratory collection of the early days. No doubt others since have worked equally hard and even more industriously in restricted districts, but new areas of so great an extent no longer remained in the United States. Later additions came from various collections and from more intensive study of collections accumulating in the larger museums. The Southwest was little explored and in the furtherance of that as well as collections from all possible sources, S. F. Baird was responsible above all other men. He had the vision of a national museum and was tireless in his efforts to develop it.

Baird narrowly missed being a youthful associate of Audubon. With his brother, W. M. Baird, he began collecting at an early age and when he was but seventeen years old the brothers described the Least Flycatcher and Yellow-bellied Flycatcher, discovered in the well explored State of Pennsylvania. Baird's list of species is:

Aleutian Tern	Virginia Warbler
Spotted Owl	Grace's Warbler
Yellow-bellied Flycatcher	Kirtland's Warbler
Least Flycatcher	Rio Grand Yellow-throat
Wright's Flycatcher	Abert's Towhee
Gray Flycatcher	Sage Sparrow
San Lucas Robin	Pink-sided Junco

The name of William Gambel is closely associated with California natural history about the middle of the nineteenth century. The following birds were described by him, either from California or other western states:

Gambel's Quail	Mountain Chickadee
Elegant Tern	Plain Titmouse
Nuttall's Woodpecker	Gambel's Wren-tit
Ash-throated Flycatcher	California Thrasher
Western Flycatcher	

Two other ornithologists of that period were J. N. Lawrence and John Cassin. Lawrence described the following, of which the last was another species of the Great Plains region which had previously escaped notice:

Western Grebe	LeConte's Thrasher
Black Brant	Plumbeous Gnatcatcher
California Gull	Texas Sparrow
White-fronted Dove	McCown's Longspur
Xanthus's Hummingbird	

Cassin described the following, also from the west, excepting the Philadelphia Vireo which was yet another discovery from Pennsylvania:

Ross's Goose	Philadelphia Vireo
Heerman's Gull	Lawrence's Goldfinch
Williamson's Sapsucker	Rufous-crowned Sparrow
White-headed Woodpecker	Black-throated Sparrow
Black-crested Titmouse	Bell's Sparrow
Hutton's Vireo	

One of the foremost ornithologists following Lawrence and Cassin was Elliott Coues. His "Key to North American Birds" is encyclopedic, combining scientific and popular accounts to an extent not attempted by anyone else since Audubon. As an army surgeon he accompanied several important expeditions in the western states and

thus, like many others, carried on ornithological studies as a pastime. His new species were not numerous:

Black-vented Shearwater	Bendire's Thrasher
Pink-footed Shearwater	Gray Vireo
Ashy Petrel	Large-billed Sparrow
Least Petrel	Rufous-winged Sparrow

One other name remains for special comment. Robert Ridgway contributed more than anyone else to a careful study and revision of all previous descriptions. The species and subspecies which he described were numerous and many of them were from tropical America which was then receiving more attention from the North American ornithologists than it had before. In the following list credited to Ridgway, the isolated island forms are conspicuous:

New Mexican Duck	Guadalupe House Finch
Florida Duck	Guadalupe Towhee
Guadalupe Caracara	Dusky Seaside Sparrow
Sooty Grouse	Guadalupe Junco
Lesser Prairie Chicken	Baird's Junco
California Clapper Rail	Worthen's Sparrow
Guadalupe Wren	McKay's Snow Bunting
Belding's Yellow-throat	

There remain about 120 species distributed among nearly sixty authors of which many were European. They were Douglas, Eyton, Godman, Gould, Gosse, Gray, Richardson, Rothschild, Salvin, and Sclater from England; Blasius, Cabanis, Kaup, Naumann, Schlegel, and Wied (Maximilian) from Germany; Boucier, De Lattre, Lafraysne, Malherbe, Milne-Edwards, Pucheran, and Temminck from France; Brandt and Middendorf from Russia; Salvadori from Italy; Sundevall from Finland. In America were: Aiken, Allen, Anthony, Bannister, Brewster, Bryant, Cabot, Cooper, Crouch, Dall, Giraud, Goss, Henry, Henshaw, Howell, Maynard, Mowbry, Nichols, Stevenson, C. H. Townsend, Woodhouse, and Xantus.

I have attempted to give a brief account including the chief known sources and some features of interest in no more space than would be required for details of many of the individual species. A complete account would be impossible on account of lack of information.

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