

six have eight pairs. Of these six four have the extra pair of costal articulations at the posterior end of the series while only two have the additional pair at the anterior extremity of the sternum. So it would seem that the chances of finding an extra pair of ribs connected with the sternum at the posterior end of the series are twice as great as of finding an extra pair so attached to the anterior portion of the sternum.

A portion of the definition of the super-family *Micropodoidea* was accidentally omitted from my paper in the January Auk. This is, that of the six pairs of ribs all, save the first, articulate with the margin of the sternum proper and not with the costal process. This seems to be a rather important character, as among the highly specialized Passeres the ribs articulate exclusively with the costal process, while in more generalized forms, such as the water birds, the ribs articulate with the costal margin of the sternum.—F. A. LUCAS, *Washington, D. C.*

SCIENTIFIC SOCIETIES.

Linnæan Society of New York.

THE Society has issued no regular publications since August, 1884, when Vol. II of the 'Transactions' was published. Many papers read before the Society have been printed in 'The Auk,' 'Forest and Stream,' and elsewhere. The following is a résumé of the Proceedings for the official year 1888-89.

April 13, 1888.—Mr. Frank M. Chapman, Vice-President, in the chair.

Mr. L. S. Foster presented a paper giving a chronological sketch of the life of John James Audubon.

Mr. William Dutcher reported the capture of a Wilson's Plover (*Agialitis wilsonia*) several years ago on Long Island. He read a letter from Mr. George Lane, an intelligent and observant gunner from the same locality, stating that about two weeks ago he had seen a bunch of these birds bound east.

Mr. Chapman spoke of the immense size of the flocks of Shore-birds seen on the west coast of Florida, particularly one of Knots (*Tringa canutus*), which were very tame.

A number of specimens of Shore-birds were exhibited by Mr. Jonathan Dwight, Jr.

May, 11, 1888.—Mr. Newbold T. Lawrence, Treasurer, in the chair.

An invitation was received from the Linnæan Society of London to attend its centenary the present month.

Mr. L. S. Foster read 'Notes upon the migrating birds of the spring of 1888 as observed near Van Cortlandt, N. Y., and at Woodside, Long Island.'

A discussion of the effects of the 'blizzard' of March 12 of the present year upon avian life developed evidence as to the extensive destruction of English Sparrows (*Passer domesticus*) in this vicinity. Many of these sought the protection of out-buildings and henneries, two being actually found the next morning under a hen. Many perished from lack of food and the severe cold. In New Jersey great numbers of other species sought refuge in sheltered ravines. On Staten Island a Blue Jay (*Cyanocitta cristata*) was seen to drop dead from a tree, and near Lawrenceburg, Long Island, a Seaside Finch (*Ammodramus maritimus*) was found dead on March 12, this date being also an early record for this species.

Dr. C. Slover Allen instanced the death of many Bank Swallows (*Clivicola riparia*) after a three days' storm at Grand Menan. He also exhibited two nestlings of the Black Duck (*Anas obscura*) and fragments of one of the eggs, showing the perforated line around the larger end made by the young bird for escaping. This line is always made to the right.

October 12, 1888.—Mr. Frank M. Chapman, Vice-President, in the chair.

Mr. L. S. Foster read a list of birds noted this summer at Kiskatom, Greene Co., N. Y.

Mr. Ernest E. Thompson stated that he had heard the following birds singing throughout the night, viz.: the Golden-crowned Thrush (*Seiurus aurocapillus*), the Chipping Sparrow (*Spizella socialis*), and the Song Sparrow (*Melospiza fasciata*), as well as most of the common songsters. Mr. Thompson also remarked upon the effect of wind in repressing the songs of birds.

Mr. William Dutcher remarked that contrary to the usual published statements, he believes that Wilson's Petrel (*Oceanites oceanicus*) is the common one off our coast, as the majority of Long Island records are of this species. They were common at Little Gull Island in August, 1888.

November 30, 1888.—Mr. George B. Sennett, President, in the chair.

Mr. Frank M. Chapman read a paper entitled 'Notes on the Birds of Aiken, S. C.,' based on observations made there in November, 1887. Fifty-seven species were noted, among them a flock of fifty Crossbills, probably the third record for the State, and a single *Vireo solitarius alticola*, the second record for the State (see Auk, July, 1888, p. 324). About nine tenths of the birds seen were Sparrows and nine tenths of these *Spizella socialis*. He learned that a Mockingbird (*Mimus polyglottos*) had been observed to herald the approach of each shock of the memorable South Carolina earthquake by peculiar twitterings several moments before the rumble became audible. The English Sparrows left Aiken in a body after the earthquake.

A letter from Mr. William M. Wood of San Francisco spoke of the great number of Sea-birds that are washed ashore dead on the Pacific coast after a storm.

Mr. George B. Sennett said that Mr. Paul Babcock of New Jersey had found in his chicken coop during 'the blizzard' of last March an immense number of birds, estimated at fully twenty-five hundred, that had taken refuge there. Of these nearly one half were Bluebirds (*Sialia sialis*),

the remainder being English Sparrows. Mr. Sennett spoke also of having obtained at Erie, Pa., a few birds interesting as found in that locality. Among them a Caspian Tern (*Sterna tschegrava*); Horned Larks (*Otocoris alpestris praticola*), breeding; Shrikes (*Lanius ludovicianus*), breeding, and Grasshopper Sparrows (*Ammodramus savannarum passerinus*), breeding.

Mr. John N. Drake mentioned finding parasites resembling grains of rice among the feathers of eight specimens of Red-headed Woodpecker (*Melanerpes erythrocephalus*) taken by him in Sullivan Co., N. Y., last summer.

December 7, 1888.—Mr. George B. Sennett, President, in the chair.

Mr. Frank M. Chapman presented a paper entitled 'Notes on the Mniotiltidæ of Englewood, New Jersey.' *Dendroica discolor* is the only species lacking of the thirty-two which naturally should be found there. *Dendroica tigrina* and *Geothlypis philadelphia* have been taken each once; *Dendroica vigorsii* and *Dendroica castanea* each twice. The three *Helminthophila leucobronchialis* captured have been recorded in 'The Auk.' Twelve species are summer residents. Careful observations made upon *Geothlypis formosa*, a rather uncommon species at Englewood, show it to be a bird of peculiar song habits. A male was watched for several hours and during this period he was never silent more than three quarters of a minute at a time, uttering his marked five, six, or seven rapid notes every twelve seconds with wonderful regularity. This was early in June, 1886. A week later the same bird was in his usual haunts; but at a later visit he was doubtless oppressed by family cares, and sang very little. The nest with young of another pair of these birds was found in a bush near the ground by Mr. Chapman and Mr. C. B. Riker and was exhibited. Of special note is the capture of a breeding female *Helminthophila ruficapilla* on June 16. It was not known to nest so far south. Commenting upon this paper Mr. Dutcher said that *Dendroica discolor* was a common bird on the north shore of Long Island; *Dendroica vigorsii* fairly common there and restricted to the pines.

There was some discussion about ants annoying birds, but whether they caused the birds to desert their nests and then attacked their eggs and young or only attacked them after they had been deserted, was not demonstrated.

Mr. Foster spoke of a "barrel-ful" of birds killed by striking the Statue of Liberty on Bedloe's Island, New York Harbor, the night of October 8, 1888. He saw but a small portion of them.

Dr. C. Slover Allen showed photographs of the nest of a Purple Gallinule (*Gallinula martinica*) and its surroundings taken by him at Lake Harris, Florida.

December 21, 1888.—Mr. George B. Sennett, President, in the chair.

Mr. J. A. Allen spoke upon the Tyrannidæ and exhibited numerous specimens, largely from South America and the West Indies. This group is a very difficult one to study and its literature is scattered and unsatisfactory, although Sclater's 'Catalogue' of the family, recently issued, is in

most respects excellent. There are upwards of four hundred species, which Mr. Sclater divides into four sub-families, as follows; 1, Tæniopterinæ; 2, Platyrhynchinæ; 3, Elaineinæ; 4, Tyranninæ. Specimens illustrating the great variation in the appearance of the Fly-catchers were shown and their peculiarities and relation to one another explained by Mr. Allen. Some of Tæniopterinæ resemble Thrushes, Wagtails, and some of the Wood Warblers, while some of the Elaineinæ show wonderful variation in the length of wing of the same species, and also in the form and size of the bill. Why Mr. Sclater has removed *Sayornis phæbe* from among its relations, *S. nigricans* and *S. sayi*, among the Tæniopterinæ, and placed it in a genus by itself among the Tyranninæ, is not clear to American students.

January 4, 1889.—Mr. George B. Sennett, President, in the chair.

Mr. Frank M. Chapman read a paper entitled 'Remarks on the Northern Limit of the Carolinian Fauna on the Atlantic Coast.' Selecting nine species representative of Carolinian birds regularly occurring in or near the valley of the Hudson, the various northern records of these species were taken as a basis for some generalizations fully supported by the facts. The species selected were: 1, *Empidonax acadicus*; 2, *Corvus ossifragus*; 3, *Stelgidopteryx serripennis*; 4, *Helmitherus vermivorus*; 5, *Helmithophila pinus*; 6, *Geothlypis formosa*; 7, *Icteria virens*; 8, *Seturus motacilla*; 9, *Sylvania mitrata*. One of them, *Seturus motacilla*, occurs as far up the Hudson as Albany, while most of the others have not been noted beyond Sing Sing. Most of them are found to be more or less common in Connecticut; while on Long Island they are with a few exceptions rare; thus indicating that while the Hudson Valley and southern Connecticut are distinctly tinged with the Carolinian fauna, Long Island has but little claim to such relationship. Mr. William Dutcher's evidence on this point supported Mr. Chapman's remarks, which were freely discussed by members of the society. Dr. L. B. Bishop supplied information bearing upon Carolinian species in Connecticut. He also spoke of a specimen of *Ammodramus princeps* taken in Connecticut ten miles from the sea.

Mr. Dutcher spoke of the great scarcity of birds this winter as noticed by his correspondents on Long Island.

Mr. Chapman knew of several *Tachycineta bicolor* seen and killed by a gunner near Englewood on December 31, about 1881. The day was warm. He referred to the habit this species has of feeding upon bayberries. *Dendroica coronata* also feeds upon them, and last winter, when the berries were abundant, this species was seen by him throughout the whole season independent of the weather, while this year none were to be found, and on examining the locality frequented last year by the birds he noticed that the crop of berries was small and the berries themselves bad. From this he was led to infer that the past unusually wet season may have rotted the seeds of the weeds upon which winter birds largely feed, and that this would account for their scarcity now.

Mr. L. S. Foster spoke of an unusual flight of Killdeer Plover (*Ægial-*

itis vocifera) along the New England coast after the storm of November 27. Mr. Dutcher said that his men at the east end of Long Island reported large numbers of these birds early in December.

January 18, 1889.—Mr. William Dutcher in the chair.

Mr. John Tatlock, Jr., upon being introduced, made some remarks about Prof. W. W. Cooke's recently published report upon 'Bird Migration in the Mississippi Valley.' In regard to the chapter on 'The Relation of Migration to Barometric Pressure and Temperature,' the speaker criticised Prof. Cooke's conclusions as being based upon insufficient data. Mr. Tatlock finds ground for believing that temperature alone influences bird migration, and differs further from Prof. Cooke, who thinks migration occurs simultaneously over a wide area, in deeming it largely local. In the discussion which followed, Mr. Jonathan Dwight, Jr., mentioned the necessity of the use of very full data in reaching conclusions. Mr. William Dutcher said that not very much regarding migration could be deduced from birds striking light-houses, for the reason that birds do not strike on clear nights. A single exception is that of a Greater Yellowlegs (*Totanus melanoleucus*) which struck a Long Island light-house one moonlight night. An unexplained fact is that where one bird strikes in the spring, twenty strike in the fall.

Mr. Dutcher read extracts from a letter written by Mr. Austin F. Park, Troy, N. Y., regarding *Octocoris alpestris praticola* breeding there on Green Island. Six, including three young, were taken July 21, 1888, and six others, one young just from the nest, on July 28. This is of special interest in comparison with the early breeding of the species in the western part of the State, as has been repeatedly recorded, as it doubtless indicates that the birds rear more than one brood each season. Mr. Dutcher also read extracts from the journal of the keeper of Little Gull Island light-house, Long Island, which related to the birds seen there from August 16, 1888, to the end of the year. The first Cormorants were noted September 1. One third of those seen on November 8 were "the large kind," supposed to be *Phalacrocorax carbo*.

Mr. A. H. Hawley read a paper on the birds observed by him in Santa Clara and Santa Cruz Counties, California, during the year 1888, and exhibited a large number of specimens.

February 1, 1889.—Mr. George B. Sennett, President, in the chair.

Mr. Dutcher read a paper by Mr. Newbold T. Lawrence, entitled 'Long Island Bird Notes,' which will be published later in 'The Auk'; he also exhibited a singular looking mollusk (*Æolus papillosa*), in alcohol, from Long Island.

Dr. George Bird Grinnell presented a paper upon the Rocky Mountain Goat (*Mazama montana*), which will be published in 'Forest and Stream.' The limits of the range of this animal have never been fully defined by any one writer. It is a mammal belonging to the Arctic fauna and only found among the high and rugged mountains of the Rockies and Coast Range, where the snow lies all the year. The center of its abundance seems to be in Western Montana, Idaho and Washington Territories, and

British Columbia, and it has been found from about latitude 44° to about latitude 65°; its southernmost records being on the highest peaks of the Sierra Nevada, near Mt. Whitney ('Forest and Stream,' Feb. 26, 1885). This Goat is in no immediate danger of extermination, as it inhabits the most inaccessible localities and has few natural enemies.

Papers were read from the following persons: Mr. E. S. Gilbert, on 'Crow Roosts and Crows'; Dr. F. W. Langdon, 'On the Occurrence in large numbers of Sixteen Species of Birds in Ohio,' as follows: *Fulica americana*, *Ectopistes migratorius*, *Asio accipitrinus*, *Conurus carolinensis*, *Chordeiles virginianus*, *Corvus americanus*, *Molothrus ater*, *Quiscalus quiscula æneus*, *Loxia curvirostra minor*, *Loxia leucoptera*, *Habia ludoviciana*, *Progne subis*, *Clivicola riparia*, *Stelgidopteryx serripennis*, *Ampelis cedrorum*, and *Helminthophila peregrina*; Mr. George N. Lawrence, 'An Account of the Former Abundance of some species of Birds on New York Island at the time of their Migration to the South'; Mr. C. J. Pennock, 'Thousands of Turkey Buzzards, and a Flight of Hawks'; Mr. John H. Sage, 'A Flight of Hawks'; and Mr. E. E. Thompson, on 'Bird Hosts in Manitoba.' Mr. John N. Drake also gave a verbal account of Grackles roosting in great numbers in a Maine swamp. Mr. Lawrence's paper having a peculiar personal and local interest is here given in full.

An Account of the Former Abundance of some species of Birds on New York Island, at the time of their Migration to the South. BY GEORGE N. LAWRENCE.

At our country place (Forest Hill), eight miles from the City Hall, situated on the high ground immediately north of the valley of Manhattanville and fronting on the Hudson River, the opportunity to observe the movements of migratory birds was an excellent one, as they generally followed the course of the river in their line of flight. Here our family lived, during the summer, until about 1850, when the place was sold.

From my earliest recollection I had a fondness for birds, and before I could use a gun, watched the great numbers passing with much interest. I was allowed to have a gun about the year 1820, and from that time until leaving our old homestead, I paid more strict attention to their movements and the times of their appearance.

The first birds flying south were the Red-winged Blackbirds (*Agelaius phœniceus*); from the middle of July, for some weeks, there would be a flight of this species every afternoon, coming in flocks of from twenty-five to fifty or more individuals.

During most of August and September, in the afternoon of each day there would be a continuous flight of the White-bellied Swallow (*Tachycineta bicolor*), accompanied by a few Barn Swallows (*Chelidon erythrogaster*); the number that passed was very great.

About the first of September, when there was a strong northwest wind, Passenger Pigeons (*Ectopistes migratorius*) were sure to appear in great

numbers, flying more abundantly in the morning, though there were occasional flocks all day. From our place north to Fort Washington Point, three miles distant, the view was unobstructed, and for the entire distance it was almost an unbroken forest. We could see the flocks make their appearance over the Point, consisting of from twenty-five to over a hundred Pigeons, and come sweeping down over the tree tops seemingly at a speed of about 75 miles an hour, and consequently they soon reached the position where we were awaiting them. The flocks followed each other in quick succession, and as they dashed by before a strong northwester—sometimes quite close to the ground—they did not offer an easy mark for even an expert gunner. I never succeeded in killing more than four with one shot, from a passing flock.

On the south side of Manhattanville Valley the ground is elevated, much the same as it is on the north side. Here is one of the old country seats on the Hudson River, known as 'Claremont,' and this place was fixed upon as the most eligible sight for General Grant's Tomb. The original fine dwelling house is still in good condition. During one of these great flights of Pigeons, the house was occupied by some gentleman, whose name I cannot recall, but I remember that from the top of the house, in one morning, a hundred or more were shot by him. These flights continued as long as I lived at Manhattanville, and Pigeons were quite abundant, I was informed, for some years after, but at the present time a single one would be a rarity. Even into October there would be a flight when the wind was favorable, but in the earlier flights they were the most abundant.

In September Kingbirds (*Tyrannus tyrannus*) flew south in considerable numbers. They were much prized as game, by our foreign citizens with shooting proclivities.

About the first of October, on the occurrence of a few cold days, there would be a flight of Golden-winged Woodpeckers (*Colaptes auratus*) and some Red-headed Woodpeckers (*Melanerpes erythrocephalus*). They did not come in flocks, but singly in large numbers.

At the same time Blue Jays (*Cyanocitta cristata*) passed south in large flocks.

On favorable days in October there would be large flights of Crows (*Corvus americanus*) winging their way south to a more congenial climate.

In October flocks of Cedar birds (*Ampelis cedrorum*) migrated south very regularly. During the same month the plaintive melody of the note of the Bluebird (*Sialia sialis*) would be heard overhead from passing flocks. This favorite species was much sought after by young gunners: I have seen boys with long strings of them, carried in that way for the want of a game bag.

By the middle of October, Robins (*Merula migratoria*) were abundant, sometimes flying in flocks, but at other times they came in such numbers that they could be seen almost everywhere. They continued to be numerous for about two weeks, when the majority went south, though

some would remain even into the winter. The flight was usually from the north, but on one occasion, the first great flight of that year, was from the south at the point where I was, and I never saw them in greater numbers. This was a movement that much surprised me.

When I was a schoolboy a favorite skating place was Stuyvesant's Creek, a considerable body of water, which had its head quite close to the Third Avenue, about 20th Street, and it emptied into East River—I think about 12th Street. On the north side of it, there were high woods, where I have seen Robins pursued by gunners, when the ground was covered with snow and the creek frozen.

Speaking of skating, reminds me of an experience I had when a boy; it was one that probably but few persons have had who are now living. I skated from the 'Collect,* (quite a large pond so called, which existed near where the 'Toombs' now stands in Centre Street) down the Canal that ran through the middle of Canal Street and was the outlet of the Collect. I passed under the wooden bridge, that crossed the canal at Broadway, and on to Lispenard's Meadows, some distance west of Broadway. These meadows occupied a large area, and extended to the Hudson River.

At the time the Robins were migrating, there would be frequently flocks of Meadow Larks (*Sturnella magna*) going south. I recollect in my younger days, that about three miles from the City Hall, on the east side of the Bloomingdale Road, were extensive pasture fields—about where 40th Street now is; in these the Larks accumulated in large numbers in October, and of course were much hunted by city gunners.

March 1, 1889.—Annual Meeting. Mr. George B. Sennett, President, in the chair.

The following officers were elected for the ensuing year. President, Mr. J. A. Allen; Vice-President, Mr. Frank M. Chapman; Secre-

[* Concerning this pond, DeWitt Clinton says, in his paper read before the N. Y. Lyceum of Natural History, August 9, 1824, 'On the *Hirundo fulva* of Vieillot': "Reputable men, laboring under optical delusion, have declared that they have witnessed the descent of the swallow into the Hudson, and the pond on Manhattan Island called the Collect."

"North of this lay the Fresh Water Pond, with its neighboring district of the Collect or Katch-Hook. This name, which finally came to be applied to the pond itself, was originally given by the Dutch settlers to a point of land on the shores of the pond of about forty-eight acres in extent, the site of an old Indian village. The Fresh Water Pond was one of those traditional ponds which are found in every village, reputed to have no bottom—a reputation which it failed to sustain against the researches of modern times. The pond was indeed, very deep; deep enough, in fact, to have floated the largest ships in the navy. Its waters were filled with roach and sunfish, and to preserve these, the city authorities passed an ordinance in 1734, forbidding any person to fish in it with nets, or in any other way than angling. But the beautiful pond has passed away, and the spot where its sparkling waters once played is now filled by the 'Halls of Justice' with its gloomy prison cells."—MARY L. BOOTH, Hist. City of New York 1st. ed., 1859, pp. 322, 323.—L. S. F.]

tary, Mr. Jonathan Dwight, Jr.; Treasurer, Dr. C. Slover Allen. Resolutions were adopted relative to the death of Mr. S. Lowell Elliott, a Resident Member. Mr. Ernest E. Thompson made some remarks upon the 'Zoögraphical Areas of the Province of Ontario, Canada,' in substance as follows: A line drawn from the southern end of Georgian Bay to the eastern end of Lake Ontario seems to divide the Canadian from the Alleghanian fauna, and this same line is the dividing line between the Laurentian and Silurian geological formations. North of it is a region of rocks and fresh water lakes, where are found such species of birds as the Spruce Partridge (*Dendragapus cnaadensis*), Hudsonian Chickadee (*Parus hudsonicus*), and Three-toed Woodpeckers (*Picoides arcticus* and *P. americanus*); while south of it is found an alluvial soil and a fine farming country, where such species as the Black Squirrel (*Sciurus carolinensis leucotis*), Fox Squirrel (*S. niger ludovicianus*), Blue-gray Gnatcatcher (*Polioptila cærulea*), Wood Thrush (*Turdus mustelinus*), and Red-bellied Woodpecker (*Melanerpes carolinus*) are found. Along the shores of Lake Erie grow liriiodendron, walnut, chestnut and peach. North of this is a region of tamarack swamp, although in elevation 250 feet higher. At Ottawa there is an area of depression, characterized by many forms of life usually confined to more southern latitudes. Such species as *Polioptila cærulea*, *Turdus mustelinus*, *Harporhynchus rufus*, *Ammodramus passerinus*, and *Ammodramus caudacutus* are among those recorded from this region. Near Lake Nipissing is another area of depression where some oak and beach are found. A curious fact is that during the spring migration the Plovers and Shore-birds approach Toronto from the east and then turn abruptly northward, while the Warblers come from the southwest. Fifty years ago the Skunk (*Mephitis mephitica*) was not found at Toronto, where it is now established. A strange record is that of a Franklin's Spermophile (*Spermophilus franklini*) killed near Gravenhurst, about 120 miles north of Toronto.

Mr. George B. Sennett exhibited, from his collection from Tamaulipas, Mexico, many species of birds given in Mr. Ridgway's 'Manual' as found in the region contiguous to the United States, and liable to occur within our limits.—JONATHAN DWIGHT, JR., *Recording Secretary*.

NOTES AND NEWS.

IN THE January number of 'The Auk' (Vol. VI, p. 81) the death of Mr. Thure Kumlien of Milwaukee, Wisc., an Associate Member of the A. O. U., was briefly mentioned, with the statement that a fuller notice was necessarily delayed from lack of sufficient information. Since then we have been favored with two published memorial notices of Mr. Kumlien,—one by Mr. William M. Wheeler, Custodian and Secretary of the Public