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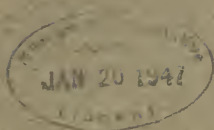
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Table of Contents

SOME CRITICAL PHYLOGENETIC STAGES LEADING TO THE FLIGHT OF BIRDS <i>William K. Gregory</i>	1
THE CHICKADEE FLIGHT OF 1941-1942 <i>Hustace H. Poor</i>	16
THE ORNITHOLOGICAL YEAR 1944 IN THE NEW YORK CITY REGION <i>John L. Bull, Jr.</i>	28
SUGGESTIONS TO THE FIELD WORKER AND BIRD BANDER Avian Pathology	36
Collecting Mallophaga	38
GENERAL NOTES	
Rare Gulls at The Narrows, Brooklyn, in the Winter of 1943-1944	40
Comments on Identifying Rare Gulls	42
Breeding of the Herring Gull in Connecticut	43
Data on Some of the Seabird Colonies of Eastern Long Island	44
New York City Seabird Colonies	46
Royal Terns on Long Island	47
A Feeding Incident of the Black-Billed Cuckoo	49
Eastern Long Island Records of the Nighthawk	50
Proximity of Occupied Kingfisher Nests	51
Further Spread of the Prairie Horned Lark on Long Island	52
A Late Black-Throated Warbler	53
Interchange of Song between Blue-Winged and Golden-Winged Warblers	53
Predation by Grackles	54
Observations on Birds Relative to the Predatory New York Weasel	56
CLINTON HART MERRIAM (1855-1942) First President of the Linnaean Society of New York <i>A. K. Fisher</i>	55
REPORT OF THE SECRETARY FOR THE YEAR 1941-1942	61
1942-1943	64
1943-1944	66
1944-1945	67
CONDENSED TREASURER'S REPORT FOR THE THREE YEARS ENDING MARCH 1, 1944	69
TREASURER'S REPORT FOR THE YEAR ENDING MARCH 1, 1945	70
MEMBERSHIP LIST, JANUARY 1946	71
OFFICERS, COUNCIL AND COMMITTEES OF THE LINNAEAN SOCIETY OF NEW YORK	78
NECROLOGY	80
LIST OF PUBLICATIONS	81

Some Critical Phylogenetic Stages Leading to the Flight of Birds*

WILLIAM K. GREGORY

The problem of the origin of birds is one of those hardy perennials that go on spreading and flourishing from generation to generation. Forty-two years ago, in June, 1900, Professor Henry Fairfield Osborn read before the American Association for the Advancement of Science a most illuminating paper entitled: "Reconsideration of the Evidence for a Common Dinosaur-Avian Stem in the Permian" (Osborn, 1900). On that occasion he said:

" . . . the recognition of avian characters among dinosaurs has been generally attributed to Cope and Huxley but it appears that Gegenbaur enjoys the priority, for in 1864 he pointed out that *Compsognathus* in the structure of its tarsus presents a transition stage between birds and reptiles, or a species of double relationship which in fact pervades the entire skeleton."

He then went on to review the similar observations and conclusions of Cope in 1866, '67, '68, and of Huxley in 1867, '68, '70, '82; he developed and modified their views, his major conclusion being that in the transition from quadrupedalism to bipedalism, with the consequent tendency to form the tibio-tarsus which is common to dinosaurs and birds, "the avian phylum may have been given off from the dinosaurian." Osborn's paper was followed by many others, of which I may mention those of Pycraft (1906, 1910), Nopcsa (1907, 1929), Abel (1912), Broom (1913), Beebe (1915), Heilmann (1927), Romer (1927) and Lowe (1928). Lowe's paper was discussed before this Society by Dr. Robert Cushman Murphy and myself in 1934. Dr. Mayr of the American Museum of Natural History has been particularly interested in the origin of birds in connection with his new exhibit in the Whitney Wing and it was he and President Nichols who invited me to address you on this occasion.

Historically the debates of the past forty-odd years relating to the origin of birds have centered around what now seem to be relatively minor or subsidiary problems, such as whether birds first acquired the power of flight after they had become able to climb trees or before that stage; whether they had a patagium before they had wings; whether the feathers on the thigh of the pro-avis had any supporting value in flight, and the like.

* Read at a meeting of the Linnaean Society of New York, November 24, 1942.

These problems have often been viewed by ornithologists peering backward from the present bird stage along the corridors of time, but I have found it more stimulating to consider the origin of birds from the opposite direction, namely, in the perspective of geologic time, in so far as it is recorded in palaeontology; that is, to consider the birds as the culmination of a series of known grades of organization, beginning with the oldest known fishes or pre-fishes of the Ordovician period and working upward through successive stages of the Palaeozoic fishes, amphibians and reptiles to *Archaeopteryx* and *Archaeornis* of the lower Jurassic.

Birds, so far as known, are the latest in origin of all the great classes of vertebrates, the Jurassic birds *Archaeopteryx* and *Archaeornis* being but little advanced beyond the grade of their Triassic reptilian ancestors or near-ancestors, the thecodonts or pseudosuchians. The mammals of the Jurassic, on the other hand, were already well advanced beyond the mammal-like reptiles, which in turn were very distinct from all other reptiles by the middle Permian.

Pre-Fishes. The oldest stage of the vertebrates known from fossil records is that of the ostracoderms or pre-fishes (figs. 1, 2) of the Ordovician, Silurian and Devonian periods. Thanks largely to the epoch-making discoveries of the Danish expeditions to East Greenland and Spitsbergen,

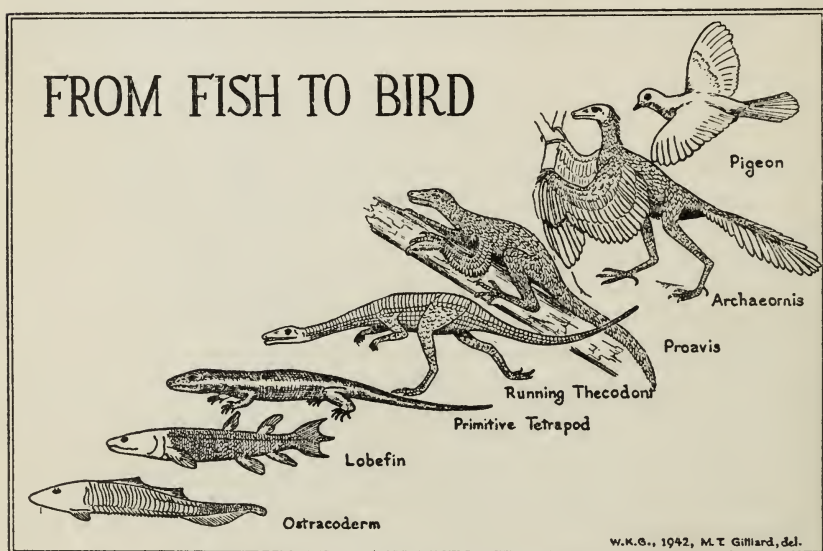


Fig. 1

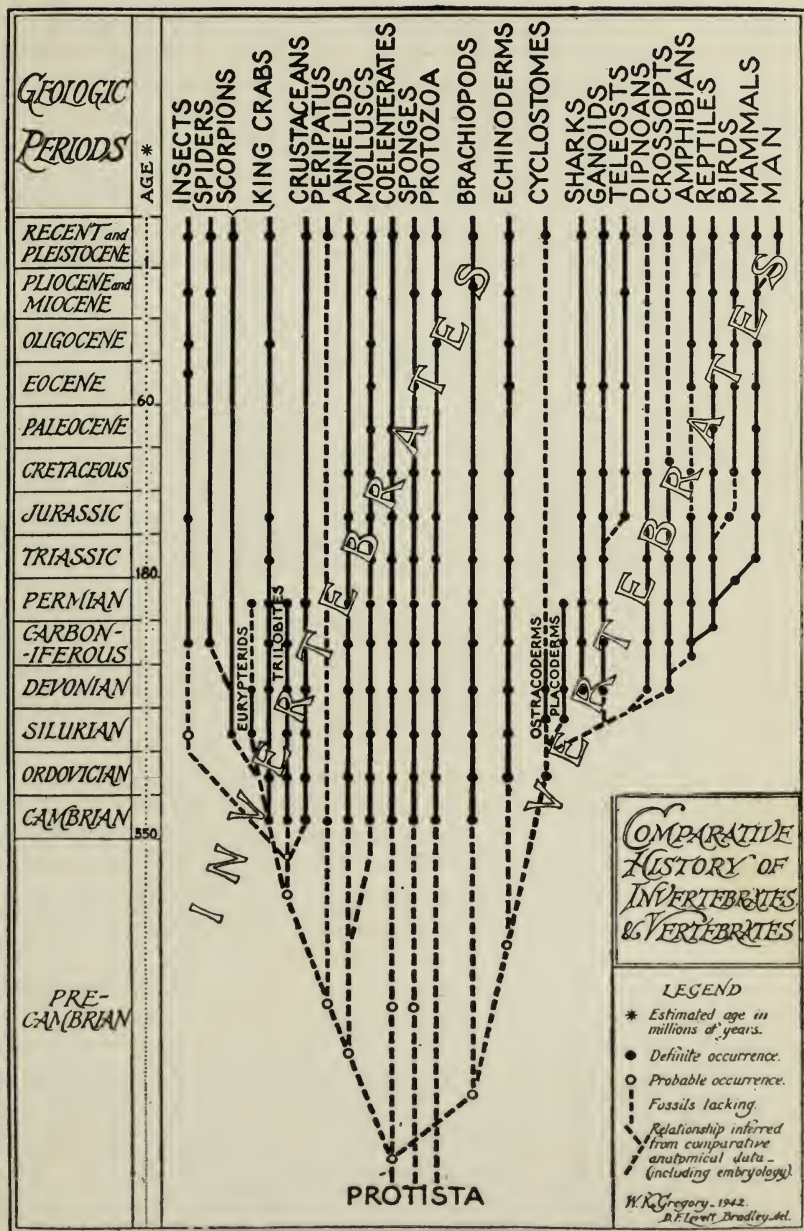


Fig. 2

and to the labors of Stensio and others, it is gradually being realized that these ostracoderms are as a whole really basic vertebrates, instead of being excessively specialized side branches. At that far-off period the ostracoderms possessed a full series of basic vertebrate characters, including bilateral symmetry, dorso-ventral asymmetry, rostro-caudal differentiation, metameric musculature, a dorsal brain and nerve cord, cranial nerves, a notochord, a full set of branchial pouches, a ventral heart, an exoskeleton, an endoskeleton. Obviously birds could never have become birds unless they had inherited all these and other basic vertebrate characters from pre-avian stages.

The bilateral symmetry of ostracoderms is the basis for their streamlined or tear-drop contour, which facilitates progression in a forward or headward direction. To be effective such progression must be controlled, with more or less functional ends. The natural endocast of the interior of the head of a very primitive ostracoderm contains clear traces of the spinal cord, anterior and posterior semicircular canals, pineal eye, paired eyes and impressions of the roof of the cavity of the mouth, branchial pouches and exits. Part of the head-shield shows the thick crust or exoskeleton, which is a primitive vertebrate character.

The ostracoderms are referred to a superclass, Agnatha, contrasting with all the true fishes and higher vertebrates, which form the superclass Gnathostomata. In the ostracoderms, jaws, if present, consisted solely of surface plates; but in the primitive gnathostomes the bony jaw plates rest on bars which are in series with the gill-arches.

Acanthodian Sharks. Among the earliest of the Gnathostomata, or complex jaw types, were the acanthodians, often called acanthodian sharks, ranging from upper Silurian to Permian. Although running up into highly specialized side lines, the oldest acanthodians were very generalized fishes and may be taken to represent the second major stage in the long road from ostracoderm to bird. Their jaws, more primitive than those of any true sharks, were in an early stage of the differentiation of the first or oralamandibular arch from the hyoid and branchial series. Their streamlined body was driven forward by the contraction of red muscle fibres arranged in myomeres, or W-shaped segments along the flanks of the body. Their fins served chiefly as stabilizers and the median and paired fins were built upon a common finfold plan supported at first by encrusted spikes.

The true sharks are not here listed as a major stage in the evolution from ostracoderm to bird, because they belong to an early side branch of the vertebrates; but they are instructive in the present connection as illustrating the evolution of the paired fins, from nearly inert keels to flexible, leaf-shaped paddles with narrow wrist-like bases.

The body in sharks is primitively of the teardrop form but as the pectoral wings grow wider, the body is greatly shortened, ending in the skates and rays. These creatures really fly with their wing-like pectorals, but they can fly only in the dense medium of water and are, of course, merely convergent toward birds.

Lobe-finned Fishes. The third major advance occurred when some early Devonian member of the lobe-finned or crossopterygian group began to force air into a paired vascular pocket in its throat to supplement the oxygen that was extracted from the water by the gills. In these fishes the arrangement of the nares was practically identical with that which is found in the lungfishes and amphibians. It is therefore inferred that the lobe-fins gulped in air as do their cousins the lungfishes, and that they also possessed lungs as well as gills. It is supposed that these pioneers, finding themselves stranded in drying streams, wriggled and pushed themselves into the mud and by means of their lungs were able to survive the drought, as do the dipnoans. It is easy to see that these conditions would set high survival values on enlargement and improvement in the lungs and circulatory system, which were later to become of critical importance to the birds.

In the lobe-finned fishes (fig. 3) the paired fins had become strong muscular paddles with a well developed flexible skeleton; the median fins were also large and strong. In the dipnoans the median fins tended to fuse into one long fin, which in the African and South American lungfishes tends to disappear. As it seems highly probable that the lobe-finned fishes gave rise to the tetrapods, we may infer that in the pro-tetrapod line (fig. 4) the median fins became weak, tended to fuse and eventually disappeared, leaving only the paired fins. The elimination of median fins and the emphasis of the paired fins were prerequisites for the emergence of the tetrapods and to the subsequent changes leading to the birds. The paired fins originally had long dermal rays, which also had to be eliminated when the creature crawled upon land.

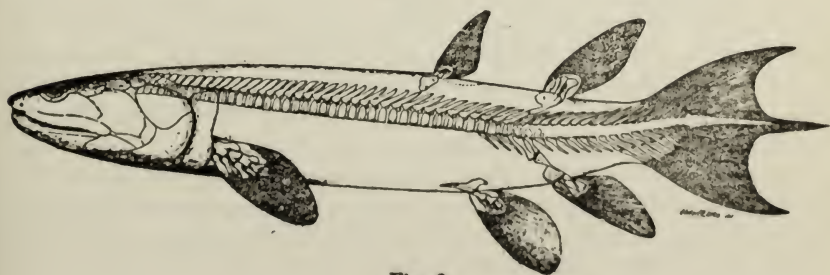


Fig. 3

Paleozoic Amphibians. The fourth grade, or major advance, was effected by the primitive tetrapods (fig. 2), whose emergence on land was perhaps a by-product of a long and bitter revolution in life habits, consequent upon great upward movements of the land mass such as raised the early continent of Appalachia above sea level at the close of the Paleozoic era.

Meanwhile the bony skeleton of the paddles became stronger and by various twists, emphases and outgrowths which are discussed elsewhere (Gregory and Raven, 1941), a bony paddle was transformed into a primitive tetrapod arm and hand, or into a leg and foot (fig. 4).

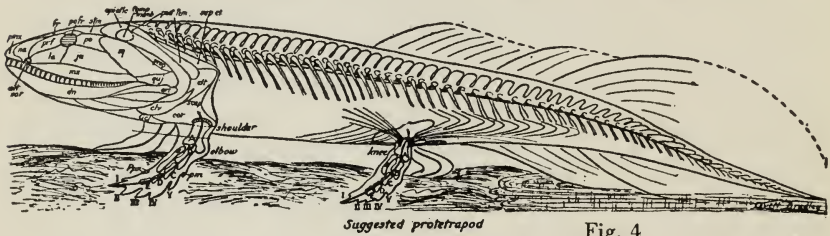


Fig. 4

When the tetrapods came up on the ground, their progression was effected by a combination of axial and appendicular movements. The axial movements were effected by the less modified portions of the myomeres, the appendicular movements by specialized parts of the myomeres which spread out along the limb skeleton. These transformations from the metameric musculature of primitive fishes to the diversified musculature of the limbs in the tetrapods have long been studied here in the American Museum of Natural History and the results are set forth especially in the papers by Gregory and Camp, Noble, Romer, Raven, Elftman, Schaeffer and others. These studies are being actively continued by Romer, who has recently published an important paper (1942) on the embryonic development of the limb muscles in the lizard (*Lacerta*).

Carboniferous and Permian Reptiles. The fifth grade of advance is illustrated in the earliest known reptiles, especially the cotylosaurs or stem reptiles of the Carboniferous and Permian periods. Presumably these creatures, like their varied reptilian descendants, were able to breed on land and their eggs were covered with a shell, in contrast with the water-laid eggs of typical amphibians, which have a gelatinous covering. The chief skeletal advance was in the vertebral column, the intercentra, prominent in earlier tetrapods, being reduced, and the pleurocentra forming the main part of the centrum. This type was transmitted with diverse modifications in detail throughout the earlier reptiles.

Bird-like Dinosaurs. The earliest tetrapods had very short limbs, sharply bent at the elbows and knees; they also had a short neck and rather slender ilia. At the other extreme of the reptiles are the small coelurosaurians or bird-like dinosaurs, whose vertebrae, becoming hollow and air-filled, foreshadowed those of birds. These graceful little dinosaurs, ranging from Triassic to upper Cretaceous, may well be taken to represent the sixth stage of advance toward the bird, because they could evidently raise themselves up and run very swiftly on their long slender hind legs.

Somewhat more primitive than the Triassic coelurosaurians were their contemporaries, the Pseudosuchia or Thecodontia (in part), which, according to von Huene, the great authority on Triassic reptiles, were also able to run bipedally.

Pelvis and Hind Limb. To run bipedally requires an adequate support for the added weight upon the pelvis and this brings us to the origin and early history of the pelvis. In the lobe-fins the pelvic bones were embedded in the ventral musculature and not yet fastened to the vertebral column. According to the evidence cited by Gregory and Raven (1941), we may suppose that in subsequent stages, as locomotion on land improved, the iliac branch on either side grew dorsad, overlapping the future sacral ribs and finally becoming connected through the sacral ribs and ligaments with the sides of the vertebral column.

While all this was happening, the gluteal, adductors, and other thigh muscles were forming a powerful muscular cone, based on the pelvis and enclosing the femur.

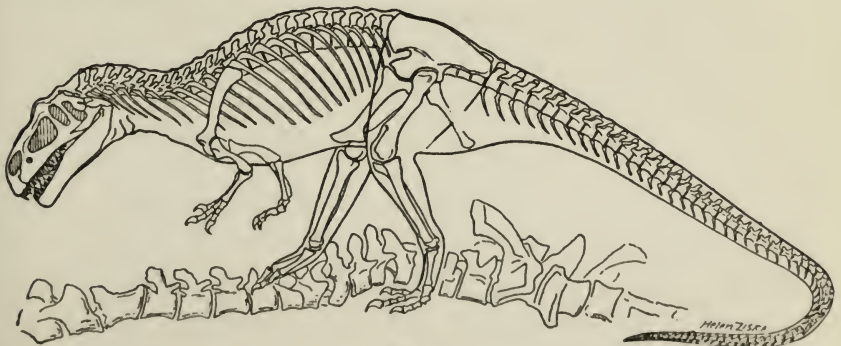


Fig. 5

This development of the femoro-pelvic muscular cone became dominant in the bipedal carnivorous dinosaurs, as seen in *Allosaurus* and culminating in *Tyrannosaurus*.

The thecodonts, like the dinosaurs of the order Saurischia (including coelurosaur, theropods and sauropods), have a triradiate or triramous pelvis, in which the pubis is directed downward and forward. The herbivorous dinosaurs (order Ornithischia) have a quadriramous pelvis (fig. 6) in which the true pubis is directed backward, while a new or pre-pubic process has grown forward and, as Romer has shown, serves for the attachment of the oblique abdominal muscles. Heilmann (1927, pp. 16-17) has argued that this process in the dinosaurs is not homologous with the corresponding one in birds, yet there seems to be no reasonable doubt that on the whole the bird pelvis is at least closely related to that of the

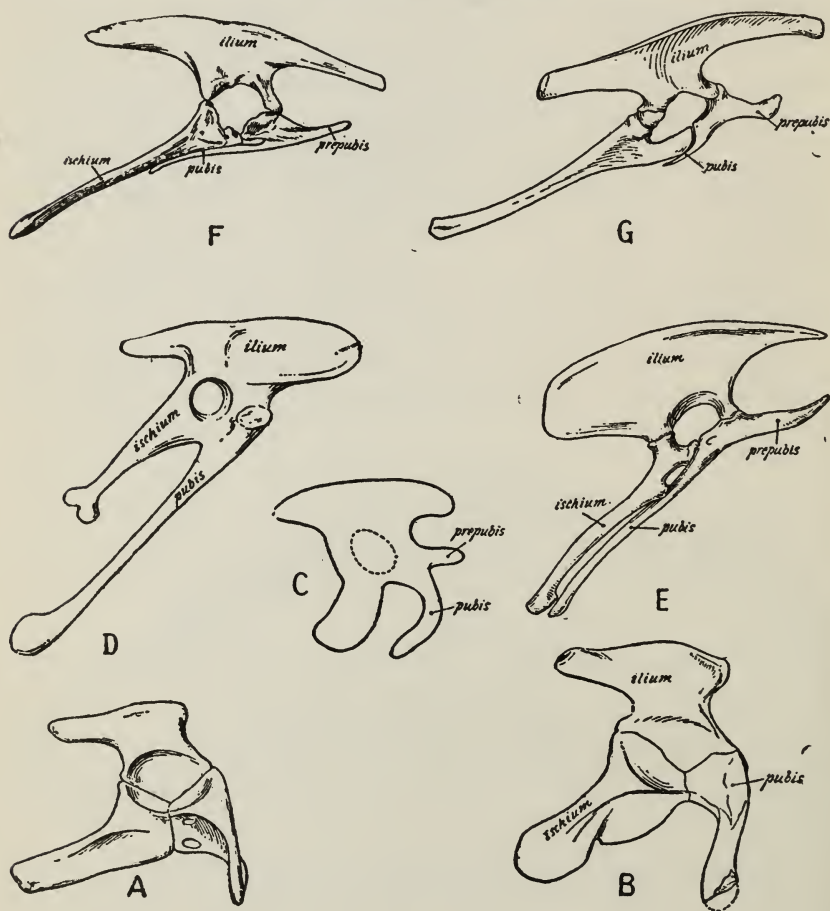


Fig. 6

ornithischian dinosaurs, as is the bird femur and indeed almost the entire skeleton.

The various parts of the ornithischian dinosaur pelvis and femur may be interpreted as having been operated by a musculature that was essentially bird-like, as in the notable study by Romer (1927). Certain writers, including Heilmann, have attempted to depreciate the strong resemblance between the pelvis and hind limbs of the ornithischian dinosaurs to the basal avian type; but I agree with Professor Romer that to brush all this aside as "mere convergence" is an arbitrary dictum which fails to advance the solution of the problem of the origin of birds. In both the saurischian and ornithischian types the opposite ilia extend upward and nearly or quite meet above the sacral vertebrae, as in the birds, and the ilia are widely extended longitudinally, greatly strengthening the back for bipedal support.

As already noted, when the lobe-finned fishes were transformed into amphibians the paired appendages underwent a profound and revolutionary change both in form and function. During the course of this transformation the very flexible, many-pieced tarsus of the primitive crawling tetrapods became adapted for rapid running in the avian fore-runners; for in the latter a hinge-like mesotarsal joint was developed, which in the dinosaurs had attained the avian stage.

Moreover the metatarsals II, III, IV, of dinosaurs were closely appressed and could readily give rise to the avian type, in which they are coalesced. The compressed elongate metatarsals added another long segment to the limb and enabled it to act like a catapult or throwing stick, an arrangement that is equally advantageous in taking off either for a leap on the ground or for a flight. Thus it may be said that in respect to the general construction of the vertebral column, pelvis and hind limbs, the essentials of the avian type were reached in creatures that had not yet learned to fly. And we shall presently see that the same is true of the pectoral girdle and limb.

Shoulder Girdle and Fore Limb. In primitive fishes the shoulder-girdle was tied to the back of the skull and there was no neck, but in tetrapods the shoulder-girdle was very early disconnected from the skull and a distinct neck and throat became differentiated, which made it possible to manoeuvre the head and jaws without turning the whole body.

As this stage of our story was reached, the shoulder-girdle developed into a muscular and bony sling, serving as a base for both the neck and the pectoral limbs.

The sternum was originally developed as a bony plate beneath a median area of surface scales in much the same way as the ventral ribs.

Then the sternal plate sank beneath the pectoral muscles and began to develop a median keel on the interclavicle. The coracoid plates were originally subcircular and did not become vertically elongate until the huge development of the pectoral muscles took place in birds later than *Archaeopteryx*.

Origin of Wings. At last we come to the crux of the whole story, which is the origin of birds' wings, and of the class of birds.

It is only with difficulty that a few lizards rear up and run for short distances on their hind legs, throwing their knees outward in a very uneconomical way which had to be eliminated in the running ancestors of birds. All the lizards are definitely ruled out of the ancestry of the birds by the detailed construction of their skulls, teeth, limbs, pectoral girdle and pelvis. This is not true of the extinct aetosaurs, of which the skull has long been known to be ideally ancestral to that of birds.

In the so-called ostrich dinosaur *Struthiomimus*, discovered by Dr. Barnum Brown and described by Professor Osborn, we see that the general form of the skeleton is very bird-like, that the pectoral limbs are elongated, the hands long with three metacarpals and strongly clawed digits. This fossil skeleton was mounted in the death posture, with the back overextended through the drying of the ligaments. Some of this overextension of the back is carried over into the restoration by Heilmann (1927, fig. 117) of the skeleton of the little dinosaur *Compsognathus*. The fact that certain lizards run in this way is hardly relevant, because the construction of their entire backbone, pelvis and limbs, is widely different from that of the near relatives of birds. I have therefore worked out a new restoration of *Struthiomimus* (fig. 7), drawn by Mrs. Ziska, in which the running animal is balanced at the pelvis. The forearms are directed backward and somewhat outward. If there were a patagium, the sudden elevation and lateral extension of the fore arms during fast running might well exert enough lifting force to enable the animal to take an unusually high and long leap, useful in both pursuit and escape.

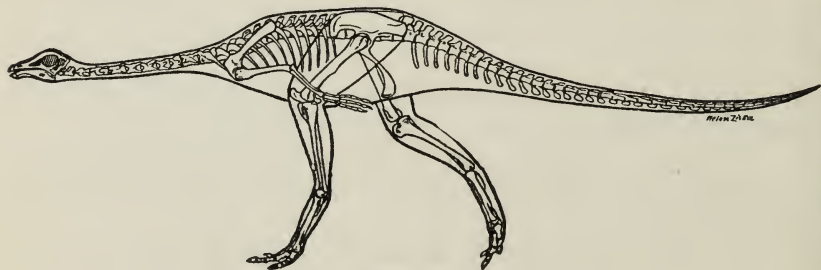


Fig. 7

From a study of the pectoral limbs in *Struthiomimus* and in its structural ancestor *Ornitholestes*, I suspect that in these bones the leading stresses were tensions, not pressures, and that the long arm bones were used as climbing hooks and perhaps also to stretch a patagium. The limb bones of *Ornitholestes* in their length and slenderness rather suggest those of the "flying lemur." The hand bones of *Ornitholestes*, as observed by Heilmann, afford an especially favorable starting-point for the wing skeleton of birds. Indeed, as Heilmann has well noted, the entire skeleton of *Archaeornis* is full of special resemblances to the coelurosaurian dinosaurs, which appear in the upper Trias and last through the Jurassic into the Cretaceous.

Thus these coelurosaurian or bird-like dinosaurs appear to afford the sixth major stage in the evolution of birds, even though they may be only the great-great uncles rather than the grandfathers of birds. No doubt *Ornitholestes*, *Struthiomimus* and *Compsognathus* represent a persistent dinosaur line which may never have attained true flight.

Future palaeontologic discoveries may indicate whether *Archaeopteryx* and *Archaeornis* were derived either from the Triassic coelurosaurian stem or from the small running ancestors of the Ornithischia, or from the still more primitive thecodonts, aetosaurs, or Pseudosuchia. In this connection it has been said that birds could not be derived from dinosaurs because dinosaurs have lost the clavicle, but the Central Asiatic Expedition under the leadership of Roy C. Andrews discovered a small ornithischian dinosaur named *Psittacosaurus*, which has a well developed clavicle on both sides, as noted by Osborn.

Feathers. In the case of *Aetosaurus ferratus* we have clear evidence that this pseudosuchian did not have imbricating scales. The imbricating stage may well have been developed later. The late Dr. W. D. Matthew (1927) suggested that feathers originated from scales at a time when the uplifting of the lands and the lowering of temperatures in the Permian brought in arid and semi-desert conditions and the need for a heat-retaining cover. It seems highly probable by analogy with other epidermal structures, such as hairs, that as each improvement was effected, including a rachis, barbs and barbules, the new type rapidly spread over the body but was subject to local enlargements and modifications.

Conclusion

In their older heritage the first birds owed to their remote piscine ancestors a long list of prerequisite and stable characters, such as bilateral symmetry, dorsoventral and anteroposterior differentiation, a locomotor system based on striped muscle fibres operating against a jointed bony

7:40—*H* continues song-dance display at rate of eight complete performances to the minute^a. A fifth adult heron, *F4*, approaches and *H* picks up a loose twig from the nest and with the twig between mandibles bobs head up and down.

7:45—*F4* occupies position close to and below *H*. *H* rattles bill near head of *F4*, but one minute later threatens and drives off *F4*. Legs of *F4* very pale yellow with no evidence of pink.

Four herons that have been repulsed by *H* now perched close together. They are restless and appear to be watching *H* as well as each other. Occasionally one of them will attempt to fly toward *H*, and the nearest other one will fly at this bird, throwing it off balance. Both birds will then resume approximately their original perches. *H* meanwhile has resumed his song-dance display.

8:03—One of the four herons succeeds in reaching *H* again (we will term it *F5*). *F5* has yellow legs. *H* leaves nest and assumes perch immediately above. *F5* walks from perch beneath nest to nest rim and then stands in nest itself. *H* descends and climbs onto back of *F5*, who walks from under. Both perch on limbs near nest. *H* has stopped song-dance display.

8:15—*H* resumes song-dance. *F5* inactive. *H* moves in and out of nest, singing irregularly, preening beneath wings frequently, and grasping loose twigs and nearby branches and shaking them nervously.

8:20—*H* moves toward *F5*, clapping bill. *F5* turns head toward *H* and claps bill. *H* threatens *F5*, driving *F5* out on limb of nest tree. *H* returns to nest and shakes twigs and branches nervously. *F5* preens vicinity of brood patch.

8:21—*H* walks out on limb again, threatening and driving *F5* out of tree. *H* resumes song-dance from nest, *F5* perches in nearby tree near three other *F* birds.

8:25—*F5* approaches *H* but is repulsed.

8:35—*H* resumes song-dance.

8:36—*F5* flies to nest tree, perches on limb above nest. *H* suddenly stops song, moves toward *F5* with threatening posture and drives *F5* out on limb, returns to nest, but does not resume song. *H* resumes song-dance at irregular intervals. *F5* remains quiet, turned slightly away from *H*.

9:20—No change, except that singing is retarded throughout heronry.

10:02—No change. Left blind.

The behavior of *H* indicated that this heron was a male. Noble, *et al.*, assume that this behavior, the "snap-hiss ceremony," is "characteristic of the male before he secures a mate." We also observed male herons engaging in this ceremony after a mate had been secured and the clutch started. On one occasion a male heron went through the entire ceremony while standing on the back of a female, the female being crouched and therefore prepared for copulation. There was one egg on the nest. After a series of song-dance displays a successful copulation appeared to follow.

Hérons *F1* to *F5* were assumed to be females on the basis of behavior.

^aAverage number was seen. Noble, *et al.*, recorded 8 to 10 minute. Maximum number we recorded was twelve per minute.

Pairing behavior wherein the responsive bird (female) had pink or red legs is described in the following extract from field notes.

May 1, 1937—8:38 A.M. (E.D.S.T.)—Bird observed singing on nest about 60 feet north of blind. Legs very red. Another bird sitting about 8 feet away assumed to be a female. This bird also has red legs. Bird on nest faces this bird. Pulls twigs between songs and preens feathers of breast with a single stroke of the beak. Sitting bird shows little interest in song but seems to be watching.

8:45—Bird which had been sitting away from nest goes to bird on nest. Bird on nest erects feathers and plumes and, rattling, touches beak of other. They stand caressing beaks. Bird on nest reaches out with opened bill and erected plumes and shakes head at other.

Their subsequent behavior was typical of mated birds and there were eggs in the nest the following week-end.

We note that the male ceased singing as soon as a female with red legs approached and entered the next stage of the cycle: mutual caressing and copulation. We never observed this if the approaching female had yellow legs.

The male's singing display may result chiefly from a combination of (1) the male's physiological condition at this season, and (2) stimulation by the songs of others. Thus, according to this theory, an unmated male would continue to sing until other males ceased singing, or until an acceptable female responded. Mated males may sing and dance with diminishing interest and vigor, until the first one or two eggs of the clutch are deposited. However, such examples may prove to be the exception and ordinarily it would seem that this particular ceremony is no longer necessary after pairing has been accomplished, and therefore ceases altogether or is greatly retarded at this time.

Verwey (1930) quite definitely establishes a song in *Ardea cinerea* that is of vital significance in the reproductive cycle of that species. In *cinerea*, the male selects a nest site and sings from this location. Apparently the unattached females move from one singing male to another. When a male bird is "satisfied" with the visiting female, the song ceases. This, however, does not mean that the male will be satisfactory to the female, and if he is not, she will leave, and his singing begins again immediately. This procedure continues until two birds meet that are mutually satisfactory, and when this occurs, pairing follows.

It should be stated that Lorenz (1934) has mentioned a "nest-luring call" in *Nycticorax n. nycticorax*, which may be similar in most

- HUXLEY, T. H. 1867. On the Classification of Birds; and on the Taxonomic Value of the Modifications of Certain of the Cranial Bones Observable in That Class. *Proc. Zool. Soc. London*, 1867: 415-472.
- 1868a. On the Animals Which Are Most Nearly Intermediate between Birds and Reptiles. *Geol. Mag.*, 5: 357-365.
- 1868b. Remarks upon *Archaeopteryx lithographica*. *Proc. Roy. Soc. London*, 16: 243-248.
- 1868c. On the Classification and Distribution of the Alectoromorphae and Heteromorphae. *Proc. Zool. Soc. London*, 1868: 294-319.
- 1870. Further Evidence of the Affinity between the Dinosaurian Reptiles and Birds. *Quart. Jour. Geol. Soc. London*, 26: 12-31.
- 1882. On the Respiratory Organs of *Apteryx*. *Proc. Zool. Soc. London*, 1882: 560-569.
- LOWE, PERCY R. 1928. Studies and Observations Bearing on the Phylogeny of the Ostrich and Its Allies. *Proc. Zool. Soc. London*, 1928: Part 1, 185-247.
- 1933. On the Primitive Characters of the Penguins and Their Bearing on the Phylogeny of Birds. *Proc. Zool. Soc. London*, 1933: Part 2, 483-538.
- 1935. On the Relationship of the Struthionies to the Dinosaurs and to the Rest of the Avian Class, with Special Reference to the Position of *Archaeopteryx*. *The Ibis*, 1935: 398-432.
- MARSH, O. C. 1884. Principal Characters of American Jurassic Dinosaurs. Part 8. The Order Theropoda. *Am. Jour. Sci.*, 27: 329-340.
- MATTHEW, W. D. and WALTER GRANGER 1917. The Skeleton of DIATRYMA, a Gigantic Bird from the Lower Eocene of Wyoming. *Bull. Am. Mus. Nat. Hist.*, 37, Art. 11: 307-326.
- MATTHEW, W. D. 1928. Outline and General Principles of the History of Life. Synopsis of Lectures in Paleontology I. Univ. Calif. Press, Berkeley.
- MINER, R. W. 1925. The Pectoral Limb of *Eryops* and Other Primitive Tetrapods. *Bull. Am. Mus. Nat. Hist.*, 51: 145-312.
- NOBLE, G. K. 1931. The Biology of the Amphibia. McGraw-Hill Book Co., New York. [Dependence of early amphibians upon water in egg-laying, p. 13.]
- NOPCSA, FRANZ BARON 1907. Ideas on the Origin of Flight. *Proc. Zool. Soc. London*, 1907: 233-236.
- 1929. Noch einmal Proavis. *Anat. Anz.*, 67, Nos. 12-14: 265-300.
- OSBORN, HENRY FAIRFIELD 1900. Reconsideration of the Evidence for a Common Dinosaur-Avian Stem in the Permian. *Am. Naturalist*, 34, No. 406: 777-799.
- 1903. *Ornitholestes Hermannii*, a New Comognathoid Dinosaur from the Upper Jurassic. *Bull. Am. Mus. Nat. Hist.*, 19, Art. 12: 459-464.
- 1917. Skeletal Adaptations of *Ornitholestes*, *Struthiomimus*, *Tyrannosaurus*. *Bull. Am. Mus. Nat. Hist.*, 35, Art. 43: 733-771.
- 1924. *Psittacosaurus* and *Protiguanodon*: Two Lower Cretaceous Iguanodonts from Mongolia. *Am. Mus. Novitates*, 127, Sept. 4, 1924: 1-16.
- PETRONIEVICS, B. and A. S. WOODWARD 1917. On the Pelvic Arches of the British Museum Specimen of *Archaeopteryx*. *Proc. Zool. Soc. London*, 1917: 1-6.
- PYCRAFT, W. P. 1900. On the Morphology and Phylogeny of the Palaeognathae (Ratitae and Cypturni) and Neognathae (Carinatae). *Trans. Zool. Soc. London*, 15, Part 2: 149-290.

- . 1906. The Origin of Birds. Knowledge and Scientific News, 1906: 531-532.
- . 1910. A History of Birds. London.
- ROMER, ALFRED S. 1927. The Pelvic Musculature of Ornithischian Dinosaurs. *Acta Zoologica*, 8: 225-275.
- . 1942. The Development of Tetrapod Limb Musculature—the Thigh of *Lacerta*. *Jour. Morphol.*, 71, No. 2: 251-298.
- SCHAEFFER, B. 1941. The Morphological and Functional Evolution of the Tarsus in Amphibians and Reptiles. *Bull. Am. Mus. Nat. Hist.*, 78: 395-472.
- STENSIO, ERIK A.: SON. 1927. The Downtonian and Devonian Vertebrates of Spitsbergen. Part 1. Family Cephalasipidae. A. Text. B. Plates. *Skrifter om Svalbard og Nordishavet*, No. 12. Oslo.
- STRESEMANN, ERWIN 1934. Sauropsida: Aves. In Kuekenenthal, W., *Handbuch der Zoologie*, 7. [Origin of birds, pp. 728-734.]
- WATSON, D. M. S. 1914. The Cheirotherium. *Geol. Mag. Decade VI*, 1, No. 603: 395-398.
- WILLISTON, S. W. 1915. *Trimerorhachis*, a Permian Temnospondyl Amphibian. *Jour. Geol.*, 23, No. 3: 246-255. [Consolidation of instep bones in oldest birds, p. 250.]

LEGENDS FOR FIGURES

Fig. 1. From fish to bird in seven stages. The fifth (Proavis) is hypothetical. This series of sketches is designed to illustrate the general sequence of stages in the evolution of locomotor methods from fish to bird: (1) swimming, (2) paddling, (3) crawling, (4) running, (5) climbing, (6) volplaning with slow wing stroke, (7) true flight.

Fig. 2. Comparative history of invertebrates and vertebrates, illustrating the far greater age of invertebrates and the relatively late appearance of the birds.

Fig. 3. Skeleton of Devonian lobe-fin, *Eusthenopteron foordi*, reconstructed by Gregory and Raven.

Fig. 4. A hypothetical link between the lobe-fin and amphibian, after Gregory and Raven.

Fig. 5. Skeleton of a carnivorous dinosaur, *Allosaurus*, based upon the mounted skeleton in the American Museum of Natural History.

Fig. 6. Evolution of the pelvis in bird-like dinosaurs and birds. Right side, front end of the pelvis toward right. A. Primitive pelvis of small lizard-like reptile (*Euparkeria capensis* Broom) from the Triassic of South Africa. B. Fossil reptile (*Erythrosuchus*, after Broom) from the Triassic of South Africa. The pubis is beginning to grow downward and slightly backward. C. Embryo bird (*Apteryx*, after Parker). The pubis is growing downward and backward in front of the obturator nerve. A prepubis is present. D. *Archaeopteryx*, Jurassic bird (after Abel). The pubis is directed backward. The prepubis is represented by a low hump in front of the socket for the femur. E. Small bird-like dinosaur (*Laosaurus consors* Marsh), showing pubis parallel to ischium. From the Jurassic of Wyoming. F. *Protiguanodon mongoliense* Osborn. The pubis is reduced to a slender rod. From the Lower Cretaceous of Mongolia. G. *Protoceratops andrewsi*. The pubis is reduced to a vestige. From the Cretaceous of Mongolia.

Fig. 7. Skeleton of *Struthiomimus* in running pose. New reconstruction based on skeleton in the American Museum of Natural History.

The Chickadee Flight of 1941-42

HUSTACE H. POOR

In the fall and winter of 1941-42 there was evidence of a noteworthy population increase and eruptive movement of Black-capped Chickadees (*Parus atricapillus*) extending "from Canada to New England and Great Lakes States, south to Ohio and Delaware." (Griscom, 1942a). This paper records some of the features of that event, with particular reference to the New York City region, where the effects were particularly pronounced.

Field Observations

According to Griscom (1941a), the 1941 breeding season was a "great success for every group of birds over the whole of New England," and the same was reported for the New York City region by Eynon (1941a), and for Rensselaerville (New York) by Odum (1942). The autumn land-bird migration was remarkably early in New England, New York, and Ohio (Griscom, 1941b; Eynon, 1941b; Walker, 1941).

At a meeting of the Linnaean Society of New York on October 10, 1941, M. C. Rich commented on the unusually great numbers of Chickadees seen during the early autumn. The widespread abundance of the species was confirmed by other observers from all localities in the New York area. At a meeting on November 25, 1941, the consensus of Linnaean Society members was that Chickadees were still unusually numerous, but that fewer were present in the region than at the peak of the flight earlier in the fall. (This is consistent with the banding data discussed below.) Observers present at the meeting of December 9, 1941, agreed that the species was still above normal numbers. Christmas bird-count reports, which showed high numbers, are discussed beyond. On January 27, 1942, C. H. Rogers reported that this species was present in the Princeton region in normal numbers. Mr. Rogers has indicated to the writer that the Black-capped Chickadee population in the Princeton region did not appear to have been abnormal in the winter of 1941-42. At the meeting of February 24, 1942, observers agreed that Black-caps were present in approximately normal numbers in Westchester County, northern New Jersey, and on Long Island.

Chickadees were noted as abundant in the Grassy Sprain area April 4, 1942, by Bull, Poor, and Young, and a big Chickadee movement along the Palisades on April 5 was reported by R. T. Peterson.*

* Butts (1931) states: "Chickadees appear to leave their winter quarters early in April."

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Irving Kassoy has told the writer of seeing considerable numbers of Chickadees in the autumn of 1941 at points in New York City where the species is normally completely absent.

In a letter to Dr. E. P. Odum, Dr. H. F. Lewis remarks: "Black-capped Chickadees were unusually numerous and generally distributed about Ottawa in the latter part of 1941. They were also unusually restless, so that they appeared frequently in the city itself, in places where they are not seen in most years." Dr. Lewis noted several in the business section of Ottawa in September 1941.

Unusually great numbers of Chickadees were mentioned in *Audubon Magazine* "Season" reports for the autumn and winter months in the Boston, New York, and Ohio regions (Griscom, 1942b; Eynon, 1942; Walker, 1942).

Banding Data

Geoffrey Gill, Editor of the Eastern Bird-Banding Association, has offered the writer the use of his banding records at Huntington, Long Island. In the periods September to April inclusive of various years he has trapped the following Black-capped Chickadees (repeats excluded):

Year	New Birds	Returns	Total
1935-36	14	4	18
1936-37	17	2	19
1937-38	10	3	13
1938-39	6	3	9
1939-40	16	1	17
1940-41	12	3	15
1941-42	30	7	37
1942-43*	13	1	14
1943-44*	8	0	8

* Trap operating schedule reduced due to war work. In previous years traps were operated daily.

The number of new birds banded in the winter of 1941-42 is 176% of the highest number in any other year. The fact that there are also more returns in 1941-42 suggests that survival of birds a year or more old was greater than usual.

Gill's data differ considerably from Fischer's and Hines' (*see below*) in the timing of the banding, Gill's records for 1941-42 being distributed as follows:

	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Total
New birds	0	2	5	3	4	8	6	2	30
Returns	3	2	1	0	0	1	0	0	7
Total	3	4	6	3	4	9	6	2	37

Since there is a normal winter population banded by Gill each year upon which the effects of the eruption were superimposed, these effects do not show as conspicuously as in Fischer's and Hines' cases where winter-banded populations are normally lacking.

At Garden City, Long Island, under the supervision of Mr. J. T. Nichols, Mrs. J. K. Henney has banded Chickadees as follows:

Period	Chickadees Banded
March and April 1940	2 (+1 repeat)
March 1941	1
Nov. 1941 to Apr. 1942	8 (+5 repeats)
1942-43	0
1943-44	0

High numbers in 1941-42 are again indicated.

Richard B. Fischer has provided the writer with data on the invasion of Black-caps based on his banding records at Flushing, Long Island. Fisher had operated his traps regularly since 1939, but with the exception of four individuals captured in the winter of 1939-40 had not trapped any Chickadees until the autumn of 1941, and has banded none from November 22, 1941 to June 1944. However, he banded 44 different individuals from September 23 to November 22, 1941. Of the 44, 25 (or 57%) came to his station October 18 to 30. Chickadees continued to arrive in reduced number from November 1 to 17, but only two new individuals were banded after November 17, the last November 22. It appears from Fischer's data that the Chickadees seen in late November and early December represented a static wintering population, and that movement of the species through or into the region had ceased before the end of November.

Joseph A. and Robert Hines have submitted data on Chickadees banded by them at Long Island City, N. Y., with approximately the same banding activity each year. Their data may be summarized as follows:

Period	Chickadees Banded
1940—Jan.	1
1941—Sept.	5
—Oct.	27
—Nov.	9
—Dec.	0
1942—May	1
1943—Oct.	1

The 1941 flight is indicated with remarkable emphasis, the peak appearing in October as in Fischer's data.

These Long Island stations have been discussed in geographical sequence, starting with the farthest from New York City, and it will be noted that the eruption is more pronounced the nearer the city is approached.

Mr. Beecher S. Bowdish, of Demarest, New Jersey, has banded the following Chickadees since 1937:

	1938	1939	1940	1941	1942	1943	1944
January	0	0	0	0	7	1	0
February	1	0	0	0	0	5	1
March	18	0	19	1	4	0	2
April	3	5	0	0	14	0	0
May	0	0	0	0	0	0	0
June	0	0	0	6	0	0	1
July	0	0	0	1	0	0	3
August	1	0	0	3	2	3	—
September	1	3	0	9	0	2	—
October	8	2	3	22	2	4	—
November	2	5	1	15	2	8	—
December	3	2	0	7	0	3	—

It will be noted that in each month from September 1941 to January 1942 the number of Chickadees banded exceeded the corresponding month in any other year, and that the numbers in October and November 1941 particularly exceeded other years, the bulk of the flight apparently being concentrated in those two months.

Christmas Counts

The 1941 Christmas bird counts provided quantitative data which can be compared with those of other years, although unfortunately the counts were made some time after the peak of the flight had passed. Christmas counts in the north-eastern states and eastern Canada published in *Bird Lore*, *Audubon Magazine*, and *Canadian Field Naturalist* were reviewed for the years 1936 to 1943 inclusive. Counts which were continued for sufficient years to provide a good comparison with 1941 are listed in Table I. The next-to-last column of the table shows the average number of Black-capped Chickadees observed in the years tabulated, exclusive of 1941. The last column lists the ratio of the 1941 count to this average, which is assumed to approximate normality.

Table I

	1936	1937	1938	1939	1940	1941	1942	1943	Avg. excl. 1941	1941 ÷ Avg.
OHIO										
Ashtabula	22	49	61	53	47	82	48	51	47	1.7
Cadiz	26	29	24	26	10	8	20	5	20	0.4
Canton	64	32	71	89	53	137	38	24	53	2.6
Cleveland	72	118	17	90	188	229	39	75	86	2.7
Salem	39	3	51	27	30	137	10	41	29	4.8
Toledo	14	9	12	16	27	188	3	33	16	11.5
Youngstown	98	153	93	105	82	86	34	85	93	0.9
PENNSYLVANIA										
Deer Creek (Alleghany Co.)	27	12	28	69	11	36	3	40	27	1.3
Glenolden	0	48	8	55	0	133	0	2	16	8.2
Harrisburg	38	42	47	40	4	74	0	26	28	2.6
Lancaster	—	—	51	83	6	178	3	1	29	6.2
Philadelphia	0	117	251	—	8	29	2	5	64	0.5
Reading	64	166	244	203	13	230	3	23	102	2.2
Scranton	—	86	23	70	10	18	169	75	72	0.3
West Chester	7	189	53	98	29	273	52	0	61	4.5
Wyncote	5	88	50	105	5	263	3	6	37	7.0
NEW JERSEY										
*Boonton	60	301	165	77	99	343	216	180	157	2.2
Essex County	290	299	250	91	115	546	—	—	209	2.6
Raritan Estuary	—	—	35	93	44	101	0	16	38	2.7
*Ridgewood	149	121	183	102	63	347	158	73	121	2.9
NEW YORK (Long Island stations tabulated east to west.)										
Montauk, L. I.	0	5	1	5	38	5	—	—	10	0.5
Easthampton, L. I. ...	—	26	27	8	41+	60	—	—	26	2.4
Westhampton, L. I. ...	11	26	53	13	28	23	9	6	21	1.1
Smithtown, L. I. ...	—	—	—	28	15	50	52	67	40	1.2
Bayville, etc., L. I. ...	—	12	—	34	40	86	32	—	30	2.9
So. Nassau Co., L. I. ...	94	0	26	18	29	128	—	—	33	3.8
*Bronx-Westchester ..	126	315	305	277	108	640	115	180	204	3.1
Buffalo	178	91	188	203	102	263	22	102	127	2.1
Cortland	—	—	64	119	76	116	85	123	94	1.2
Fort Plain	36	46	27	50	35	29	24	29	35	0.8
Geneva	32	32	77	42	22	78	6	61	39	2.0
*Port Chester	90	230	90	92	40	85	30	70	92	0.9
Rochester	5	93	109	84	113	101	52	201	94	1.1
Schenectady	242	212	249	108	266	240	180	376	234	1.0

TABLE I — CONTINUED

	1936	1937	1938	1939	1940	1941	1942	1943	Avg. excl. 1941	1941 ÷ Avg.
NEW YORK <i>Continued</i>										
*Staten Island	6	16	5	17	0	53	11	4	8	6.3
Watertown	—	—	30	4	1	16	8	29	14	1.1
CONNECTICUT										
East Fairfield Co.	17	35	14	26	30	81	39	23	25	3.2
Oxford, Seymour....	73	122	40	56	29	118	60	41	60	2.0
RHODE ISLAND										
Charlestown	29	45	24	10	18	55	—	—	25	2.2
Providence	30	115	23	—	93	42	145	82	81	0.5
Tiverton, etc.	35	50+	20+	19	16	85+	—	—	28	3.0
MASSACHUSETTS										
Belmont-Fresh Pond	93	139	81	133	84	141	88	85	100	1.4
Cape Cod	283	210	265	215	—	152	114	48	189	0.8
Cohasset-No. Scituate	33	40	28	57	54	29	32	14	37	0.8
Holyoke	108	150	165	56	72	173	69	36	94	1.8
Newburyport	—	72	114	421	355	293	198	323	247	1.2
Northampton	300	400	253	300	290	327	256	318	302	1.1
VERMONT										
Bennington	2	29	15	14	15	9	0	11	12	0.7
Wells River	64	84	105	123	98	75	—	75	92	0.8
MAINE										
Bar Harbor	41+	75	34	—	80	90	—	100	66	1.4
Danforth	—	0	25	35	150+	100+	15+	—	45	2.2
ONTARIO										
Hamilton	—	124	351	315	123	254	204	389	251	1.0
Ottawa	—	128	172	51	49	203	53	90	90	2.2
Simcoe	—	—	38	12	20	71	—	—	23	3.0
Pakenham	—	39+	74	13	16	18	44	20	34	0.5
Toronto	—	259	156	258	129	490	23	13	140	3.5
Meaford	—	110	22	33	27	4	—	—	48	0.1
QUEBEC										
Montreal	120	43	88	33	7	51	—	—	58	0.9
Hudson	—	—	—	30	178	120	96	125	107	1.1
Thirty localities	1999	3294	2759	2643	1945	4882	1620	2195	2351	2.1

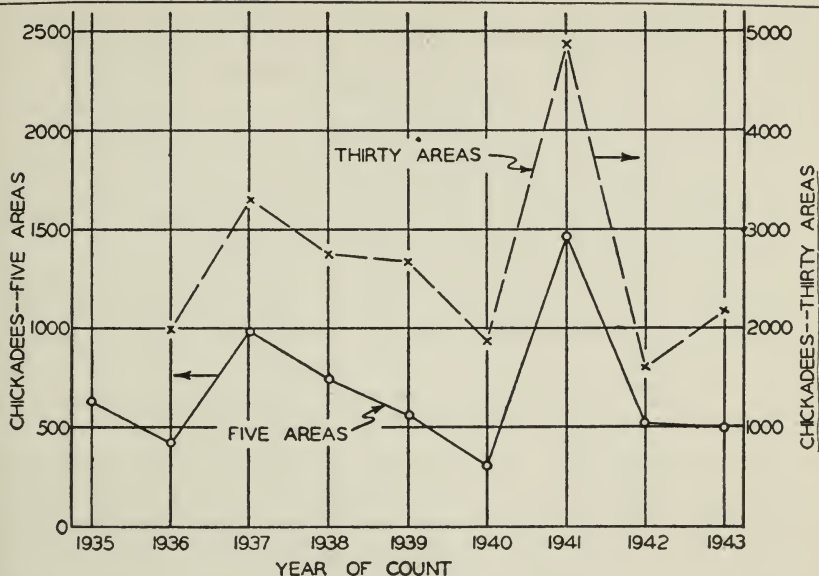
Examination of the table discloses a number of interesting facts:

- (1) There is a marked fluctuation in the numbers of Chickadees recorded in different years in the same locality.
- (2) There is a considerable variation from one locality to the next as regards the relative numbers of Chickadees in any two years. Some neighboring localities show opposite trends in 1941 (e.g., Cadiz and Salem, Ohio, 45 miles apart; Toronto and Meaford, Ontario, 100 miles distant).
- (3) Notwithstanding (1) and (2), there is evidence that the high 1941 counts were general throughout the area considered, rather than restricted to any one region, and no widespread area was deficient in Chickadees. *Apparently there was no mass emigration of Chickadees out of one extensive region into another within the area covered by the Christmas counts.*
- (4) There is a definite trend toward higher ratios as the counts proceed westward along Long Island from Montauk (0.5) to Southern Nassau County (3.8). This is in agreement with banding data.

The combined numbers of Chickadees in five Christmas counts marked * in Table I) within 30 miles of New York City are plotted in fig. 1. Also plotted for comparison is the combined Chickadee count of 30 other areas shown in Table I. It can be seen that the high numbers in 1941 came at the end of a downward trend of several years' duration, and did not carry over into subsequent years. This indicates that the eruption was a phenomenon restricted to 1941, rather than the climax of a long-term cycle. The ratio of 1941 to average was 2.5 for the New York City area counts, compared with 2.1 for the thirty counts.

Discussion

From the graph of fig. 1 it is evident that the population of Chickadees at the time of the annual Christmas bird counts declined steadily from 1937 to 1940 over all of the northeastern United States. The declining trend was noted by G. J. Wallace at Pleasant Valley Sanctuary, Lenox, Mass., where population counts were made for several years. Discussing the reduced numbers of certain summer residents in 1940, Wallace states (1943): "Coincident with the shortage assumed to be due to the severe winter [1939-40] in the United States, was an accompanying scarcity among northern insectivorous species whose decline was under way long before the onset of the winter in question. Chickadees, White-breasted Nuthatches, and Downy and Hairy Woodpeckers returned to the Sanc-



tuary feeding stations in the fall of 1939 in greatly reduced numbers, before the climatic ills of the winter had had a chance to operate . . . Detailed studies of wintering chickadees over a three-year period disclosed a decline from about 60 winter residents in 1937-38 to approximately half that number in the winter of 1939-40. Here, as in the case of wintering woodpeckers, the decline was under way long before the onset of the severe 1940 season, though it appears that the rate of reduction was accelerated during the winter, possibly at a time when the cycle should have been recovering from its downward swing."

The 1941-42 winter peak (fig. 1) immediately followed a pronounced downward population trend, and was followed in turn by low Christmas counts in the next two years. This suggests that the population of Chickadees in the northeastern United States was below normal, and that the increase and eruption in 1941 was not a result of population pressure at the peak of a cycle, but was correlated with events subsequent to the winter of 1940-41. Wallace (1941) could find no evidence of a periodic cycle in a study of Christmas bird counts.*

Odum (1942) cites the 30% higher summer Chickadee population and the greater number of successful second broods at Rensselaerville,

* Another period of abnormal Chickadee abundance in New York was noted by Dwight (1904) in the fall of 1903. Whittle (1938) noted a population peak in the winter of 1937-38 at Peterboro, New Hampshire (in this connection refer to Fig. 1). Wallace (1941) refers to population variations in other localities.

N. Y., in 1941 as compared to 1940 as evidence to support the hypothesis that most of the invaders of the following autumn "... must have been immature birds of the year, since they are normally given to wandering while adults seem to be relatively sedentary . . ." It is much to be regretted that no one seems to have collected any of the autumn invaders in order to determine if they are mostly young of the year, as were the Acadian Chickadees in the 1916-17 flight of that species (*see below*). Another comment by Wallace (1942) tends to support Odum's immature-bird population pressure hypothesis: "Wintering Chickadees, at their peak in 1937-38, declined 50 per cent during the three subsequent winters, but now [spring 1942] are definitely on the upswing again. This increase, apparently because of a highly successful nesting season in 1941, would probably be much more pronounced but for the fact that the heavy summer surplus left the Sanctuary in early fall, in all likelihood contributing to the invasion of the New York City region . . ."

Reference to Eynon, Griscom, Odum, and Wallace have indicated that the 1941 breeding season was outstandingly successful for land birds in general and Chickadees in particular. While a general correlation of breeding success with weather conditions is beyond the scope of this paper, weather data for New England and New York were examined for the years 1936-43 for indications of some abnormality in the breeding season of 1941.

It was found that 1941 was the driest year ever recorded, with sub-normal rainfall in every month except July, and that the month of April was one of the warmest on record. It seems probable that the warm April started breeding activities earlier than usual (two weeks earlier—Odum, 1942), and that reduced rainfall may have promoted nesting success and survival of adults. Kendeigh and Baldwin (1937) found in studies of the House Wren (*Troglodytes aedon*) that high temperatures and low rainfall in May, June, and July favored early nesting and high total number of broods per season in that species* By the time of October's eruptive movement, weather conditions were again normal.

The high population level in all parts of the breeding range covered by Christmas bird bounties argues against a hypothesis that food shortage or weather conditions caused an extensive population shift. Notwithstanding the obvious local movements, the phenomenon was not an "invasion" in the usual sense of the term. It therefore seems logical to conclude that 1) a highly successful breeding season produced an exceptionally great

* On the other hand, Mrs. Nice (1937) concluded that the summer drought of 1930 in Ohio induced moulting about two weeks ahead of time in her Song Sparrow (*Melospiza melodia*) population, with a consequent curtailment of the breeding season and a reduction of the number of young fledged.

number of birds of the year, and 2) these normally nomadic immatures, possibly supplemented by adults in above average numbers because of a low-mortality season, formed the bulk of the conspicuous autumn flocks.

Other Species

The winter of 1941-42 also produced "the third flight in history of the Acadian Chickadee south to New York City; the Hudsonian in Minnesota." (Griscom, 1942a). In the Boston region this flight, the first since 1916-17, began October 30. The Brown-caps "came on the heels of the Black-capped Chickadee flight and did not reach peak numbers until late December; stragglers reached the outer Cape and Block Island, but there were nowhere near as many birds as in 1916." (Griscom, 1942b). This species was reported seen in the Berkshires November 22, 1941. One remained at a feeding station at Fairfield, Conn., from November into January, and one was seen at Ardsley, N. Y., December 28, 1941, by A. Thomas and others. These latter two birds are the first recorded near New York since the winter of 1916-17. During that earlier flight eleven specimens collected in the East (including two from the New York area) were found to be Acadian Chickadees (*Parus hudsonicus littoralis*), all eleven in first-winter plumage (Townsend, 1917). (Townsend's *P. h. nigricans* is now considered to be the first-winter plumage of *P. h. littoralis*, per Bangs, 1930).

In the early fall of 1941 there were also heavy migrations of Red-breasted Nuthatches (*Sitta canadensis*), Golden-crowned Kinglets (*Regulus satrapa*), and Brown Creepers (*Certhia familiaris*) as attested by a number of references in *Audubon Magazine's* "Season" reports. It seems quite possible that the marked flights of these ecological associates of the Black-capped Chickadees may have been correlated with the population peak of the latter.

"One of the great Snowy Owl flights of history, the first since 1926" (Griscom, 1942b; refer also Snyder, 1943) in the winter of 1941-42 is probably merely coincidental.

Summary

In the autumn and winter of 1941-42 the Black-capped Chickadee population of northeastern United States, after declining for several years, was greatly above normal, and the increase was accompanied by "eruptive movements," birds appearing in unusual places. The peak of abundance in the New York City region was reached in October, as shown by field observations and banding data. Christmas bird counts, although

taken some time after the population maximum, indicated high numbers over the whole Northeast. In the late winter and spring, and in the subsequent winters of 1942 and 1943, numbers were not abnormally high. Therefore, the 1941 population peak appears to have been rather suddenly produced and dissipated.

Since the Chickadee population had been decreasing for several years (fig. 1), the 1941-42 abundance did not represent a cycle maximum, but apparently was the result of an unusually large production of young during the preceding breeding season, or increased survival of all ages during the year, or both. Field observations showed that the 1941 breeding season was unusually successful, and it was followed by an abnormally early land-bird migration. Noteworthy weather features were the early warm spring (which may have invoked early nesting) and extreme dryness throughout the year. A number of other land birds showed an early fall migration with unusual abundance. The first flight of Brown-capped Chickadees to reach New England and New York since 1916-17 also occurred in the winter of 1941-42.

REFERENCES TO LITERATURE

- BANGS, O. 1930. Types of birds now in the Museum of Comparative Zoology. *Bull. Mus. Comp. Zool.*, 70(4) : 145-426.
- BUTTS, W. K. 1931. A study of the Chickadee and White-breasted Nuthatch by means of marked individuals. (Part 2). *Bird-Banding*, 2: 1-26.
- DWIGHT, J., JR. 1904. Abstract of the proceedings of the Linnaean Society of New York, for the year ending March 8, 1904: 9.
- EYNON, A. E. 1941a. The season—New York region. *Audubon Mag.*, Sec. 2, Sept.-Oct. 1941: 467-468.
- 1941b. The season—New York region. *Audubon Mag.*, Sec. 2, Nov.-Dec. 1941: 565-566.
- 1942. The season—New York region. *Audubon Mag.*, Sec. 2, Mar.-Apr. 1942: 3-4.
- GRISCOM, L. 1941a. The season—Boston region. *Audubon Mag.*, Sec. 2, Sept.-Oct. 1941: 466-467.
- 1941b. The season—Boston region. *Audubon Mag.*, Sec. 2, Nov.-Dec. 1941: 564-565.
- 1942a. The changing season. *Audubon Mag.*, 44: 121-122.
- 1942b. The season—Boston region. *Audubon Mag.*, Sec. 2, Mar.-Apr. 1942: 2-3.
- KENDEIGH, S. C., and S. P. BALDWIN 1937. Factors affecting yearly abundance of passerine birds. *Ecol. Monographs*, 7: 91-123.
- NICE, M. M. 1937. Studies in the life history of the Song Sparrow I. *Trans. Linnaean Soc. N. Y.*, 4.
- ODUM, E. P. 1942. A comparison of two Chickadee seasons. *Bird-Banding*, 13: 154-159.

- SNYDER, L. L. 1943. The Snowy Owl migration of 1941-42. *Wilson Bull.*, 55: 8-10.
- TOWNSEND, C. W. 1917. The Labrador Chickadee (*Penthestes hudsonicus nigricans*) in a southward migration. *Auk*, 34: 160-163.
- WALLACE, G. J. 1941. Winter studies of color-banded Chickadees. *Bird-Banding*, 12: 49-67.
- 1942. Three 1941 population curves. *Bull. Mass. Aud. Soc.*, 26: 67.
- 1943. The 1940 nesting population at Pleasant Valley Sanctuary, Lenox, Massachusetts. *Auk*, 60: 403-407.
- WALKER, C. F. 1941. The season—Ohio region. *Audubon Mag.*, Sec. 2, Nov.-Dec. 1941: 569-570.
- 1942. The season—Ohio region. *Audubon Mag.*, Sec. 2, Mar.-Apr. 1942: 7-8.
- WHITTLE, C. L. 1938. Are Peterboro, New Hampshire, wintering Chickadees to any extent migratory birds? *Bird-Banding*, 9:202.

The Ornithological Year 1944 in the New York City Region

by

JOHN L. BULL, JR.

with assistance of Mr. George Komorowski in compilation of records

Three years have elapsed since the publication of Allan Cruickshank's book, "Birds around New York City," which brought up to date the status of the avifauna of this area. This book was the main guide in formulating the present report. There has been no combined report of the birds of Long Island, northern New Jersey or Westchester, Putnam and Rockland Counties in New York State, between the time of his list ending December, 1941, and this report beginning January, 1944. Therefore any future compiler, who desires to bring a work of this sort up to date, must collect the data for the two years 1942 and 1943 in addition to the years after 1944.

As time goes on, there is a definite tendency to get away from the relatively unimportant "early and late" date mania which many observers formerly strived to top. There is increasing need for observations of migration routes, accurate population counts of colonial nesting and roosting species, preferred habitats of breeding and wintering birds, breeding distribution, and particularly facts of bird behavior and so forth.

The year 1944 was an outstanding one for consistently good birding. In addition, a number of notable rarities were recorded, the following being the most outstanding. A great variety of gulls of some ten species was seen at various times during the winter of 1943-1944 and again in late 1944 at the Brooklyn sewer outlet. The hawk migration was good in the spring and very notable in the fall, not only on the New Jersey hawk ridges, where the Urner Club consistently watches every weekend, but also in Westchester and Bronx Counties and even on Long Island. The spring and fall warbler flight was particularly heavy with every species represented except the Cerulean. Idlewild, where a new airport is being constructed, was a veritable shore-bird paradise from late July to November. Hundreds of acres of sand fill with numerous pools of water, in addition to the shore of Jamaica Bay, were a great attraction and large numbers of the commoner species and not a few rarities were reported. The great hurricane of September 14, while not as destructive as the 1938 hurricane, brought a number of unusual visitors to Long Island localities. Also noteworthy was a good flight of the winter finches in January and February with, however, practically no crossbills reported. A light acid invasion was noted in the late fall.

The annotated list is not complete as only those records of particular significance are included. Any serious field student will readily understand the reason for inclusion of the various records, provided he is familiar with the literature relating to field ornithology.

This report strives to present the picture as a whole. However, if anyone is interested in month by month reports of weather conditions, they may be found in the "Season" in Audubon Magazine and the "Long Island Bird Notes."

In conclusion, special thanks are due the following: Mr. Charles K. Nichols, editor of the "Season" in the Audubon Magazine which appears bi-monthly, Mr. John J. Elliott, the author of "Long Island Bird Notes," a weekly paper, Mr. Edward B. Lang, secretary of the Urner Ornithological Club of Newark, N. J., who went through the minutes of that club for New Jersey records, various members of the Linnaean Society for field notes handed in to me during the year, and particularly to Mr. George Komorowski who very painstakingly worked out the various reports with me and helped compile and annotate these records. I also wish to express thanks to Dr. Ernst Mayr of the American Museum of Natural History and to my wife who spent many hours preparing the manuscript for the editors.

Annotated List of Birds for 1944

- Red-throated Loon. — 1 picked up dead, Lake Surprise, N. J., May 6 (Sgt. Thinnes).
Sooty Shearwater. — 1, Jones Beach, May 28 (Eisenmann, Rose).
Leach's Petrel. — 1 picked up dead, Orient, September 15 (Latham).
White Pelican. — 2 observed flying at Baldwin, May 20 (Cooper) and at Massapequa, same day, (P. Murphy) and also in same general area by Aaronoff; all apparently the same birds, observations made independently, and probably authentic, as this species was also noted at about this time in Connecticut. First record in the New York City region in 50 years.
Gannet. — 75-100, Jones Beach, October 29 (Rose).
European Cormorant. — 6 adults in breeding plumage in a flock of 30 Cormorants, Mamaroneck, Feb. 20 (Bull, et al.).
Double-crested Cormorant. — Latham at Orient records the following heavy flights: 1,200, Apr. 26; 400-500, Sept. 10; 600-800, Oct. 2-8, Regular spring and fall migrant in Hudson Valley, with occasional flocks of 50-100 birds noted at Croton Point (Bull).
American Egret. — 30, Jones Beach, June 8 (Soll); 61 Sept. 3 (Elliott); 1, Troy Meadows, N. J., Oct. 25 (Urner Club); 1, Smithtown, Dec. 23 (Fischer, Mrs. Coffey), latest record by about 6 weeks.
Snowy Egret. — 2 Jones Beach, Aug. 20 (Soll); 1, Sept. 10 (Fischer, Ralston); 1, Southold, Sept. 25 (Latham).
Little Blue Heron. — 10, East Rutherford, N. J., July 30 (Urner Club).
Yellow-crowned Night Heron. — 1, Orient, Nov. 1 (Latham).

- Glossy Ibis. — 4, Pleasant Plains, S. I., May 14 (Chapin, Cleaves, Vaurie), first record for Staten Island.
- Whistling Swan. — 1, Long Branch, N. J., Nov. 26 (Urner Club).
- Brant. — 1,200, Long Beach, Apr. 2 (Bull, Eisenmann, Poor, Rose); 1,200, Shelter Island, October 26 (Latham).
- Snow Goose. — 110, Atlantic Beach, Apr. 2 (Bull, Eisenmann, Poor, Rose); 75, Parade Ground, Prospect Park, Nov. 10 (Walsh); 4, Lawrence, Christmas Census, Jan. 1, 1945 (Bull, Eisenmann).
- Gadwall. — 23, East Patchogue, Jan. 12 (Wilcox).
- Baldpate. — 250, Jones Beach, Oct. 7 (Elliott).
- Pintail. — 1,000, Troy Meadows, Mar. 26 (Urner Club).
- European Teal. — 1, Mill Neck, Mar. 19 - Apr. 16 (Bull, Eisenmann, Rose); 1, Hempstead, Apr. 8 (Fleischer, Soll).
- Green-winged Teal. — 1, Orient, June 7 (Latham).
- Shoveller. — 11, East Patchogue, Jan. 12 (Wilcox).
- Redhead. — 7, Hempstead, Oct. 15 (Rose); 5, Boonton, N. J., Nov. 12 (Urner Club).
- Canvasback. — 100, Croton Point, Feb. 26 (Bull, et al.); 450, Flushing Bay, Dec. 28 (Fischer).
- Greater Scaup. — 15,000, Oceanport, N. J., late March (Seeley).
- Goldeneye. — 1, Idlewild, June 17 (Mayer).
- Oldsquaw. — 1,500, Orient, Feb. 20 (Latham).
- King Eider. — 1, Orient, Feb. 3 (Latham).
- White-winged Scoter. — 1, Watchung, N. J., Apr. 25 (Urner Club).
- Ruddy Duck. — 55, Jones Beach, Nov. 25 (Elliott).
- Turkey Vulture. — 1, Pine Brook, N. J., Jan. 31 and Feb. 21 (Urner Club).
- Goshawk. — Total of 10 birds away from the New Jersey hawk ridges; 3 winter records in early 1944; apparently a good flight last fall, as there are at least 7 reports up to the end of the year. 8 or 9 reported shot during the hunting seasons in Northern Westchester County.
- Red-shouldered Hawk. — 290, Rutherford, N. J., Mar. 18 (Urner Club). Tuckahoe, N. Y., Oct. 29 (Mr. and Mrs. Bull), large flight, southwestward in afternoon—122 individuals recorded in 4 hours, with a maximum of 81 the first hour (12:30 - 1:30 P. M.); 34, the next hour, and only 7, the last two hours; wind, strong N.W., birds flying low to moderate elevation, all but 2 were adults.
- Broad-winged Hawk. — 1, Pine Brook, N. J., Feb. 13 (Urner Club); 1, Speonk, Mar. 11 (Wilcox), wintering bird?; 100, Ridgewood, N. J., Apr. 26 (Urner Club).
- Rough-legged Hawk. — 3-5, Pelham Bay, Dec. 31 (Sgt. Ephraim).
- Golden Eagle. — 1, Montclair, N. J., Oct. 8 (Wolfarth et al.); 8, Kittatiny Mountains, N. J., Oct. 22 (Urner Club).
- Osprey. — 50, Orient, Apr. 1 (Latham); 42, Montclair, N. J., Sept. 17 (Urner Club); 21 nests found on Cartwright Island (Wilcox).
- Gyrfalcon. — Dark phased birds (at least 2 different looking individuals) noted at the following places: Jones Beach, Oct. 2 (Soll, Weinberg); Atlantic Beach, Oct. 26 (Komorowski, Levine); Oct. 28 (Grant, Soll, Ferguson); Dec. 24 (Komorowski, Soll) and finally Jan. 1, 1945 (Mr. and Mrs. Bull, Eisenmann) and Jan. 4, 1945 (Bull).

- Pigeon Hawk. — 1, Orient, Aug. 5 (Latham).
- King Rail. — 1, Idlewild, Apr. 29 (Rose); 1, Jones Beach, Sept. 10 (Komorowski); 1, Orient, Dec. 24 (Latham).
- Black Rail. — 3, Jones Beach, Aug. 30 (Soll); 1, Sept. 2 (Bull, Eisenmann); 1, Oct. 7 (Elliott).
- Oystercatcher. — 2, Oak Island, Sept. 23 (Wells) and Sept. 24 (Grant, Lewis, Nathan, Soll); 1, Moriches Inlet, Sept. 30 (Wells, Yrizarry).
- Piping Plover. — 150, Idlewild, Aug. 10 (Komorowski).
- Golden Plover. — 1, Orient, May 25 (Latham); 14, Orient, Sept. 13 (Latham); 1, Orient, Nov. 25 (Latham), ties previous latest record.
- Black-bellied Plover. — 450, Idlewild, Sept. 5 (Komorowski, Soll); 200, same area, Nov. 5 (Grant, Soll); 118, same area, Nov. 18 (Wells).
- Ruddy Turnstone. — 100, Idlewild, Sept. 17 (Komorowski).
- Upland Plover. — 5, Canarsie, May 30 (Grant).
- Spotted Sandpiper. — 1, Rahway, N. J., Apr. 10 (Urner Club); 1, Van Cortlandt Park, Apr. 16 (Komorowski); 25 Jones Beach, Aug. 15 (Komorowski).
- Willet. — 1, Huntington, Aug. 27 (McKeever); Idlewild, 50, Sept. 8 (Komorowski); 80, Sept. 18 (Komorowski, Soll); nearly twice the number ever previously recorded; 45, Sept. 23 (Grant, Soll); 34, Oct. 7 (Komorowski, Levine).
- Knot. — 450, Idlewild, Aug. 10 (Komorowski); 400, Oct. 23 (Soll), 34, Dec. 2 (Wells).
- Purple Sandpiper. — 30, Rye, wintering (Oboiko).
- White-rumped Sandpiper. — 1, Orient, Dec. 1 (Latham), ties previous latest record.
- Baird's Sandpiper. — 1, Idlewild, Aug. 26 (Komorowski) to Oct. 5 (Mayer).
- Red-backed Sandpiper. — Idlewild, 225, Sept. 9 (Komorowski, Levine); 500, Oct. 22 (Soll); 400, Nov. 18 (Wells); 108, Dec. 21 (Wells).
- Stilt Sandpiper. — 50, Jones Beach, Sept. 2 (Linnaean Society Field Trip).
- Buff-breasted Sandpiper. — 1, Idlewild, Aug. 26 (Grant, Soll).
- Marbled Godwit. — 10, Jones Beach-Oak Island, Sept. 6 (various observers); 10, Moriches Inlet, Sept. 14 (Wilcox). Twice the number ever previously recorded at any one locality.
- Hudsonian Godwit. — 3, Moriches Inlet, Sept. 30 (Wells Yrizarry); 2, Idlewild, Oct. 2 (Mayer, Rose) to Oct. 22 (Soll).
- Ruff. — 1, Beach Haven, N. J., July 2 (Mr. and Mrs. Q. Kramer), finally observed flying north, and perhaps the same bird seen at Jones Beach, July 4 (Wells).
- Wilson's Phalarope. — 2, Idlewild, Sept. 3 (Poor); 3, Tuckerton, N. J., Sept. 3 (Ross).
- Northern Phalarope. — 1, Idlewild, Aug. 26 (Komorowski) and 1, Oct. 5 (Mayer).
- Glaucous Gull. — 3, Canarsie, Apr. 8 (Nathan, Soll).
- Iceland Gull. — 5, Brooklyn Sewer, Dec. 30 (various observers).
- Kumlien's Gull. — 1 adult, Brooklyn Sewer, entire winter of 1943-1944, until Apr. 13 (Soll, et al.).
- Great Black-backed Gull. — 1 pair found breeding at Cartwright Island (Wilcox); 255, Point Lookout, L. I., Dec. 24 (Komorowski, Soll).
- Lesser Black-backed Gull. — 1 bird described as this species at Orient, Dec. 6 (Latham); however, may have been a race of the Western Gull, as the eye color was not noted. Therefore the specific determination is open to question and cannot be proven as such.

very well have been alone and momentarily darted in to some inlet; an observer could easily be convinced that he had seen an Ivory Gull. It is true that even a small Ivory Gull is slightly larger than a large Bonaparte's Gull . . . but then size is deceptive. This discussion naturally brings up the whole question of albino gulls. Unquestionably such birds are extremely rare but I am led to wonder whether albino Herring Gulls, Ring-billed Gulls, Bonaparte's Gulls, *et al.*, are not often seen and reported as something else.

ALLAN D. CRUICKSHANK.

The Breeding of the Herring Gull (*Larus argentatus smithsonianus*) on Long Island in 1939.—The 1937-1938 Report of the Field Work Committee by R. P. Allen (1938) lists only two Long Island colonies for this species in 1937, one on Wicopesset Island and the other on Cartwright Island, without attempting to estimate the number of pairs. However, in another note, LeRoy Wilcox (1938) records 30 or 40 pairs for Cartwright Island in 1938. No other attempts have apparently been made to find out just how many pairs breed in the area. Inasmuch as this species is a comparatively recent breeder and seems to be spreading, it appears that the only way to keep track of it properly is to record the location of the colonies and their approximate population for 1939. Then there will be a sound basis for future work in calculating the rate of increase or decrease from season to season.

The number of colonies, in two groups of islands off the eastern tip of Long Island, has increased to five. The location and known age of each colony and an estimate of the number of pairs in each for 1939 follow:

Group	Colony	Year First Known	Estimated No. of Pairs
Fishers Is.	East end	1939	20
	Wicopesset Is.	?	750
Gardiner's Is.	Bostwick Bay	1939	12
	Great Pond	1939	150
	Cartwright Is.	1936	125
	Total	1057

The first-named colony was definitely new that year. The same cannot be said for the other two, which were first known in 1939, but judging from their size it is probable that the Bostwick Bay colony was a new one, and just as probable that the one at Great Pond was as old or older than the one on Cartwright Island, which it slightly exceeded in size. John L. Helmuth of Easthampton, L. I., in 1936

found a set of eggs of this species and about a dozen pairs of very excited adults on Cartwright Island. This is apparently the first record of their breeding in this group. According to Dr. William T. Helmuth, also of Easthampton, the number of nesting pairs on Cartwright in 1937 was about the same as that estimated by Wilcox for 1938.

Dr. Helmuth also reported that he had found a set of eggs of this species and several nesting hollows on Goff Point in 1939. This is on the mainland, south and a little east of Cartwright Island. Unfortunately, on a later visit, they were found to have been deserted. Wilcox had the same experience with a set of eggs he found in 1938 on the west side of Moriches Inlet, a location which was not used in 1939. These attempts seem to indicate that the species is still extending its range and that a close watch will have to be kept on all likely locations if we are to get an accurate picture of its spread.

I am indebted to Wilfred C. O'Brien of Noank, Conn., for the data he supplied on the Fishers Island group.

ALLEN, R. P. 1938. Report of the Field Work Committee, 1937-38. *Proc. Linn. Soc. N. Y.*, 49: 84-92.

WILCOX, L. 1938. Colonial Birds on Long Island, 1938. *Proc. Linn. Soc. N. Y.*, 49:71-72.

CHRISTOPHER K. MCKEEVER.

A Christmas Census of Banded Herring Gulls.—On December 23, 1939, a systematic count of *Larus argentatus smithsonianus* was made in the general vicinity of New York City by E. Adelberg, R. Arbib, M. Brooks, A. D. Cruickshank, J. Elliott, S. C. Harriot, J. J. Hickey, J. Mayer, T. S. Pettit, O. K. Stephenson, Jr., and H. M. Van Deusen. These eleven observers, working in eight parties, thoroughly covered Jamaica Bay, the East River, most of the upper New York Bay, nearly all of the north shore of Long Island, and a concentration at Freeport. Age ratios were reported as follows:

Locality	Number of Gulls Seen	Number of			
		1st Year	2nd Year	3rd Year	Adult
Jamaica Bay	3700	33%	12%	25%	30%
Staten Island	2156	23%	—	77%	—
Brooklyn and Queens.....	4792	20%	8%	4%	68%
The Bronx	1400	28%	14%	12%	46%
Freeport	700	—	45%	—	55%
Fulton Fish Market.....	235	32%	6%	11%	51%
North Shore	970
Totals	13,953	3116	2866	1298	5518

- Lawrence's Warbler. — 1, Paramus, N. J., May 7 (Mann); 1, East Marion, L. I., Aug. 16 (Mrs. French); 1 pair breeding at Scarborough, N. Y. (Mrs. Slaker).
- Tennessee Warbler. — 12-15, Massapequa, Aug. 27 (Elliott).
- Orange-crowned Warbler. — 1, Central Park, Aug. 21 (Bull), and Aug. 23 (Komorowski). Several Sept. and Oct. records.
- Parula Warbler. — 1, Huntington, Apr. 1 (Mr. and Mrs. McKeever), earliest record by 2 weeks.
- Cape May Warbler. — 10, Central Park, Sept. 3 (Bull, Eisenmann); 12-15, Seaford, L. I., Sept. 3 (Elliott); 1, Prospect Park, Nov. 5 (Soll), very late.
- Black-throated Green Warbler. — 1, Van Cortlandt Park, Dec. 1943-Jan. 1, 1944 (Komorowski), latest record by over 3 weeks.
- Blackburnian Warbler. — 1, Fort Tryon Park, Apr. 25 (Gilbert).
- Yellow-throated Warbler. — 1, Prospect Park, May 1 (Nathan, Soll, et al.) and 1, May 13 (Brennan).
- Bay-breasted Warbler. — 14, Central Park, Sept. 3 (Bull, Eisenmann).
- Black-poll Warbler. — Recorded at various localities on May 1 which is 1 day earlier than the earliest record (numerous observers).
- Prairie Warbler. — 1, Prospect Park, late Oct.-Nov. 18 (Grant, Lewis, Soll); latest record by 25 days.
- Western Palm Warbler. — 1, Hempstead, Jan. 8 (Komorowski).
- Mourning Warbler. — 3 autumn records, earliest, 1, Massapequa, Aug. 14 (Elliott).
- Yellow-breasted Chat. — 1, Speonk, Nov. 1 (Wilcox); 1, New Dorp, S. I., Dec. 28, 1943 (Cleaves) to Jan., 1944; third winter record.
- Baltimore Oriole. — 2, Mattituck, Dec. 10 (Latham); 1, Seaford, all of Dec. (fide Elliott).
- Rusty Blackbird. — 1, Jones Beach, Sept. 9 (Komorowski).
- Cowbird. — 600-700, Orient, Sept. 10 (Latham).
- Summer Tanager. — 1, Rutherford, N. J., May 1 (Urner Club); 1, Prospect Park, May 4 (Brennan).
- Cardinal. — Notable increase on Long Island, 2 pairs breeding in Prospect Park; recorded also at Flushing, Idlewild, Garden City, Albertson, Massapequa (5) and Port Jefferson; 10, Hastings, N. Y., Dec. 31 (Thomas).
- Evening Grosbeak. — First recorded at Pine Brook, N. J., Jan. 16 (Urner Club), flock of 35; last seen at Bound Brook, N. J., May 10 (Urner Club), 2 birds, and the latest date by 4 days; maximum number recorded, 40-42, Bound Brook, N. J., Jan. 29-Feb. 22, and 17 banded by Fischer on Feb. 13; smaller flocks also recorded at Boonton, Denville, Mountain Lakes and Watchung, N. J. (Urner Club); also at Mount Kisco, N. Y. (Mrs. Tucker) and Huntington, L. I. (Lee).
- Pine Grosbeak. — 9, Mount Kisco, N. Y., Feb. - Apr. 16 (Mrs. Tucker, et al.), the latest record by 4 days.
- European Goldfinch. — Maximum, 17, Massapequa, Mar. (Elliott); also at Seaford, Bellmore (Elliott), Hempstead (Fischer) and Garden City (J. T. Nichols).
- Redpoll. — 400, Hillside Park, L. I., Feb. 7 (Astle), one of the largest flocks on record; 100, Alley Pond, L. I., Feb. 5 (Mathews); 85, Bloomsbury, N. J., Mar. 19 (Urner Club). Lesser flocks reported at many other places.
- Pine Siskin. — 100, Alley Pond, L. I., Apr. 23 (Mathews).

Acadian Sharp-tailed Sparrow. — 8, Jones Beach, Oct. 7 and 1, Nov. 4 (Elliott).

Tree Sparrow. — 1,500, eastern Morris County, N. J., Dec. 31 (Urner Club).

Chipping Sparrow. — 1, Bronx Park, Feb. 19 (Komorowski).

Lapland Longspur. — 1, Orient, Mar. 20 (Latham).

Chestnut-collared Longspur. — 1 male in breeding plumage, Dyker Heights, Brooklyn, Apr. 29 (Ferguson, Grant, Soll, Weinberg), who discovered it and studied it very carefully, later confirmed by Dr. Wiegmann. This is only the third record for the New York City region, previous record 55 years ago.

The following half-hardy species now winter or spend part of it every year, and there is no point in listing each record: Pied-billed Grebe, American Bittern, Wood Duck, Clapper Rail, Virginia Rail, Killdeer, Wilson's Snipe, Red-backed Sandpiper, Flicker, Long-billed Marsh Wren, Catbird, Brown Thrasher, Hermit Thrush, Rusty Blackbird?, Towhee, Sharp-tailed Sparrow, Seaside Sparrow, Vesper Sparrow? and Swamp Sparrow. Other half-hardies which occur annually in winter in small local flocks, such as Myrtle Warbler, Cowbird and Field Sparrow, are not included in the above list, unless the flock is of unusual size.

Suggestions to the Field Worker and Bird Bander

Avian Pathology

Probably no other aspect of ornithology has received as little attention in this country as avian pathology. An indication of this neglect is given by an examination of the 1931-1940 index of the *Auk*, official journal of the American Ornithologists' Union. In 350 pages of subject references only one-fourth of a page is devoted to anything akin to avian disease, and out of the 22 references given, fewer than half are to original articles. This comment is not meant as criticism but is made merely to emphasize the lack of interest to date among American ornithologists in this important phase of their field of study. It is true that considerable valuable and worth-while work has been done on the disease conditions present in game, domestic and caged birds. But knowledge of what constitutes the natural disease hazards of our rich wild avifauna, is very meager.

The answer to this question is of more than academic interest. In it undoubtedly lie the solutions of many ecological problems. The preservation of some diminishing species could very possibly be enhanced. Recent studies suggest that in the perpetuation and propagation of some human diseases, birds are more of a factor than hitherto realized. For example, certain wild species have been found afflicted with equine encephalomyelitis, a disease prevalent among horses and frequently found in humans in certain areas. The birds may well be a reservoir and source of propagation of the disease. Psittacosis, and a closely related, recently recognized disease known as ornithosis, afflict psittacine (parrots) and other wild birds. Cases of both these illnesses in human beings have been reported from contact with birds.

In 1937, Drs. C. Brooke Worth and Carlton M. Herman began organizing a cooperative project for the study of bird diseases. Several people in various sections of the country with both pathological and ornithological training agreed to participate. Through *Bird-Banding* magazine the desire for specimens of ailing or dead birds was made known and lists of the participating pathologists were published (October 1941 issue). Three progress reports of findings have been made in the same publication.

It may be of interest to mention in summary fashion some of the findings of this project. As might be expected, traumatic (physical violence) injuries from contact with buildings, automobiles, etc., are among the most frequent findings. Birds thus killed are most apt to be noticed and submitted for examination. Other conditions include pneumonia, aspergillosis (a fungus infection), equine encephalomyelitis, botulism, malaria, septicemia, "canker" disease, "pox" disease, enteritis, peritonitis,

kidney abscess, intestinal worms, gall-bladder parasites, ectoparasites, starvation, ruptured heart, tumors, fractures (fresh and healed) and subcutaneous emphysema.

Several hundreds of specimens have been examined in all but as yet not a sufficient number to draw conclusions as to prevalence or relative frequency of the various conditions. Full knowledge of any one condition can be obtained only by large numbers of autopsies. Even in cases where the cause of death appears obvious, such as collision with a vehicle, autopsy often reveals other unsuspected pathological conditions. Bird banders, field students, hunters, and others can contribute materially to the success of this project by submitting freshly dead birds to one of the cooperating pathologists. Bird students in New York or New Jersey will find the writer or one of the two investigators listed at the end of the article the most accessible of the cooperators. Students in other areas may locate the nearest investigator by referring to the October 1941 issue of *Bird-Banding*.

How should specimens be sent? Naturally they should be sent as promptly and speedily as possible to reduce decomposition. If there is to be any delay, specimens should be refrigerated if possible until the time of mailing. Wrap specimens lightly in paper napkins or absorbent cotton (this prevents ectoparasites from escaping into outside wrappings). Then enclose in roll of corrugated cardboard or box, wrap finally in heavy wrapping paper. Do not pack tightly in waxed paper or airtight container as this aids decomposition. Packing in powdered borax seems to help in preservation. Send preferably by air mail and special delivery.

All specimens should be accompanied by as much data as possible. Date found, date of death, locality, name of finder or shipper, symptoms of illness if not dead when found, and any data relating to circumstances of death which may be at all pertinent. Reports of findings will be sent to those submitting specimens.

As one of the people cooperating in this project, I am, of course, anxious to receive as many specimens as possible. It is my special interest to examine birds afflicted with a condition variously known as **bird pox**, epithelioma contagiosum, and "foot disease." It is manifested by wart-like, tumorous growths on the toes and tarsi which deform, cause bleeding and scab formation, and at times auto-amputation occurs. It may spread to areas about the base of the bill. This condition is due to a virus infection which is in some manner passed from bird to bird. It is particularly frequent in chipping sparrows but has also been reported in other sparrows, finches, thrashers, flickers, and other passerines. Much remains to be learned concerning it. The virus remains viable in the tissue for considerable periods. Either the whole bird, the diseased member, or bits of

the abnormal tissue (which can be broken off without danger to the handler) are desired for study.

Persons in the New York and New Jersey regions may find it more practical to send any specimens for autopsy to either Dr. L. J. Goss, Laboratories and Hospital, New York Zoological Park, 185th Street and Southern Boulevard, New York City, or Dr. T. R. Beaudette, New Jersey Agricultural Experiment Station, New Brunswick, New Jersey.

GORDON M. MEADE, M.D.

University of Rochester School of Medicine
Rochester, New York

Collecting Mallophaga

Like other living creatures, birds are parasitized by various animals and plants. Bacterial and fungus diseases attack them, malarial protozoa are carried into their bloodstreams by the bites of mosquitoes, and a variety of worms use them as hosts during some parts of their life cycles. External parasites include bloodsucking creatures such as mosquitoes, ticks, mites and hippoboscid flies. There is also an order of insects, called Mallophaga, or "bird lice," which is specialized for parasitizing birds. Mallophaga live among, feed upon, and lay their eggs on the feathers of birds, and apparently do little or no harm to their hosts. Their sizes vary from one quarter of an inch to small specks. Some species of Mallophaga are confined to single species of birds, while others are more generally distributed among various bird species.

Much remains to be learned about these insects, and ornithologists can be of great help to the entomologists by collecting specimens of these parasites. I have found that a large proportion of the birds that I have examined which were freshly dead or captured alive were hosts to one or more species of readily visible Mallophaga. Bird banders and hunters have exceptional opportunities to collect Mallophaga and other external parasites. Specimens can also be obtained from nestling birds and from birds found dead.

The U. S. Department of Agriculture will gladly identify specimens sent to them, and they have written me as follows: "We are definitely interested in obtaining material of ectoparasites from almost any source, particularly if the host is definitely known. Accordingly I hope you will continue to send in such material."

Specimens should be addressed to the U. S. Department of Agriculture, Agricultural Research Administration, Bureau of Entomology and Plant Quarantine, Washington 25, D. C. The parasites may be removed from the feathers and placed in small vials. While specimens will keep fairly well without preservative, identification is helped by having a small amount of

75% alcohol in the bottle. The vial should be labeled with the name of the bird species from which the parasites were removed, the date and locality of the collection, and the name and address of the collector.

Though I have only recently begun the collection of these Mallophaga, I have already found the following:

Host	PARASITE
Bald Eagle	<i>Philoaterus haliati</i> (Osb.) <i>Neocolpocephalum haliati</i> (Den.)
Ruddy Turnstone	<i>Actornithophilus</i> sp.
Semipalmated Sandpiper	<i>Degeeriella</i> (?) <i>actophila</i> (K. & C.)
Sanderling	<i>Degeeriella complexiva</i> (K. & C.) <i>Degeeriella</i> sp.
Herring Gull	<i>Actornithophilus funebre</i> (Kell.) <i>Philoaterus gonothorax</i> (Giebel) <i>Philoaterus</i> sp.
Ring-billed Gull	<i>Philoaterus gonothorax</i> (Giebel)

Except for two species identified by Dr. Frank H. Wilson of Tulane University, all identifications are by the Department of Agriculture.

HUSTACE H. POOR

General Notes

Rare Gulls at The Narrows, Brooklyn, In the Winter of 1943-44

In the winter of 1943-44, there were probably more rare gulls concentrated in New York Bay than in any other area along the coast. Observed many times were two European Little Gulls (*Larus minutus*), one mature European Black-headed Gull (*Larus ridibundus*), and what we believe was an immature of this species; also, one second and two first year Iceland Gulls, and a fully adult Kumlien's Gull. Of course, the Herring, Ring-billed, Great Black-backed, and Bonaparte's Gulls were very commonly seen at this time, as was the Laughing Gull at the right season.

Observations were made at a sewer outlet along the Shore Road, Brooklyn, where a vast horde of birds would closely approach and feed on the sewage. There are convenient benches along the Shore Path, and one can sit down while viewing these seemingly tame birds at distances of ten to thirty feet for as long as an hour, occasionally for longer periods of time. The making of positive sight identifications is not difficult. For example, it is often possible to make out the partial eye ring of the Laughing Gull. Marks like this could hardly be noticed on the outer beaches without the aid of powerful binoculars. (Prohibited here because of wartime restrictions.) The varied calls of the different species and the extreme variations in size and plumage were noted and studied. The fact that there were no reports for the Glaucous Gull (*Larus hyperboreus*) here, agrees with the fact that this magnificent bird was a rarity throughout the region and the only ones seen in Brooklyn were three individuals on the Canarsie Garbage Dump, April 7, 1944 (Nathan, Aranoff, Soll, Weinberg).

Following is a brief account of each rarity:

European Little Gull (*Larus minutus*). On the morning of December 25th, I met Corporal Bernard Nathan who related the facts about a European Little Gull that he had seen at the "sewer" earlier in the morning. The area was visited and the Little Gull again located. It had the black under surface of the wing, the light gray mantle, and the white wing tips and trailing edge of the wing that is characteristic of this species. On January 2, there were two Little Gulls at the "sewer." Both were in winter plumage. On the fourteenth and also the sixteenth of April an individual in spring plumage was recorded. It had a complete black hood. The latest date for observation of this foreign species was April 30 (Bull, Eisenmann, Wells). The Little Gull was collected in this region in 1887 and 1902. It was discovered in Upper New York Bay in 1929 by Dr.

James Chapin, and has been seen almost annually since (Cruickshank, 1942, "Birds around New York City," p. 234).

European Black-headed Gull (*Larus ridibundus*). Mr. Philip Wells discovered this rarity, and I first saw it on January 27, 1944. It appeared very much like a Bonaparte's Gull, but was as large as a Laughing, had a reddish bill, and the under surface of the primary feathers was black. This was the best field mark. The bird was present January 28, 29, and 31. On February 1, it was accompanied by what is believed to be an immature of this species. The young bird was of comparable size, had two dark stripes, one near the fore and one near the hind edge of the wing, and had the characteristic black on the under surface of the primaries which the Bonaparte's lacks. It was not observed thereafter. The mature individual was seen on February 2 and then not until February 20, being last observed on the 28, when it had a more intensely colored bill than previously, and a semblance of a hood. In January, it possessed only a dark auricular spot. The first record of the occurrence of this species in continental North America is a specimen collected at Newburyport, Mass., in 1930 (Emilio and Griscom, *Auk*, 47:243). Cruickshank (*op. cit.*) reports local sight records in 1938 and 1940.

Iceland Gull (*Larus leucopterus*). This beautiful "white-winged" gull was first observed on January 26. The individual was in first year plumage, being evenly buff colored. The next day there were two Icelanders, both evenly buff in coloration. One was evidently the bird recorded on the previous day, and the other a newcomer. This second bird had extraordinarily white upper tail coverts, and on first examination seemed to have a light terminal band on the tail. Except for this abnormality, it duplicated the other "white wing." On February 6, still another Iceland appeared at the "sewer." It was an exquisite, pure white bird of the second year. Below is a list of dates and observations of these three gulls, which appeared with such considerable regularity:

Jan. 26—One first year bird	Feb. 6—One second year bird.
Jan. 27—Two first year birds.	Feb. 7—One second year bird.
Jan. 28—One first year bird.	Feb. 20—One first year bird.
Jan. 30—Two first year birds.	Feb. 25—One first year bird.
Jan. 31—One first year bird.	Mar. 16—One first year bird.
Feb. 1—One first year bird.	Apr. 11—One first year bird.
Feb. 4—One first year bird.	Apr. 14—One second year bird.
Feb. 5—One first year bird.	Apr. 22—One first and one second year bird.

Kumlien's Gull (*Larus kumlieni*). Mr. Robert Nagler and I were watching the Larinae on December 30 when a mature "gray-winged"

gull flapped past. It circled back and fed for nearly an hour. We plainly made out a dark gray bar running along the leading edge of the first primary, about one quarter as wide as this feather, and extending for a good deal of the distance down it. This was the most conspicuous field mark for identification purposes. Also, there were some subterminal gray markings which were very light, running transversely across the second, third, and fourth primary feathers. These were reduced to mere spots on two of the three primaries in question. The wing tips were white and the mantle gray, almost as dark as a Herring Gull's. The legs were an intense pinkish-red. The bill by March 9 had acquired a reddish spot on the angle. Previously, it was bright yellow and lacked this spot. Below is a group of dates the Kumlien's Gull was recorded on:

December 30; January 27, 28, 29, 30, 31; February 3, 24, 25, 26; March 4, 9. The last observation was in the third week in April (Nathan).

All of these rarities were repeatedly seen by numerous members of the Linnaean Society, including some of the most expert field observers. It is amazing how regularly these rarer gulls appeared. They were evidently wintering in New York Bay, and did much traveling between the Upper and Lower Bays, stopping each time in the Narrows to feed at the "sewer." Herein lies the only plausible reason explaining this regularity.

The dates given are the writer's, unless otherwise specified. Perhaps some time lapses between groups have been noticed. These intervals have more or less been filled in by other Brooklyn observers. They are by name: Corp. B. Nathan, Messrs. R. H. Grant, J. Irizarry, P. Stern, P. Wells, A. Weinberg, and W. Ferguson.

JEROME SOLL

Comments on Identifying Rare Gulls

In view of the skepticism of many of us regarding the validity of the seven local sight records of Lesser Black-backed Gulls (*Larus fuscus*), and the renewed interest in gull identification occasioned by the presence of the Little Gull (*L. minutus*) and the Black-headed Gull (*L. ridibundus*) at the Narrows during the last two winters, members of the Society will be interested in Ludlow Griscom's recent article "Difficulties with Massachusetts Gulls" (*Bull. Mass. Aud. Soc.*, 28:181-191, 1944). The paper presents an excellent discussion of some field identification problems of the larger gulls which might reasonably be expected to occur at some time in eastern North America. Serious field students should study the original article, from which the following paragraph is abstracted.

There are three major difficulties in field identification of gulls. (1) The Herring and Black-backed group of gulls, and the allied "white-winged" species, are an exceedingly difficult group taxonomically. It is, in fact, impossible to identify many *museum specimens* of immatures, and of a few adults. Ornithologists fail to agree on whether some of the currently recognized forms are full species, geographic races of one species or another, or hybrids between two species. Additional research in arctic breeding colonies will probably cause revision of current concepts. (2) The plumages of immature gulls are complicated, and subject to wide individual variation. In some forms the immature plumages are not definitely known. (3) ". . . the main diagnostic character in adult gulls is the 'pattern' of the primaries" which ". . . cannot be completely seen unless the wing quills are forced apart in the museum specimen. The student of living birds is, therefore, forever estopped from seeing the only final and absolute specific character of nearly every gull on earth, and his field identifications must rest on a combination of secondary characters for the various species. These are adequate only for the usual or normal species in any section of the United States." On account of the above-mentioned difficulties it is often impossible for the most expert observer to identify positively an extra-limital gull even if it be observed under optimum conditions. Griscom's article presents sketches of the primaries of ten forms.*

It is a practical necessity for identification handbooks and regional faunal works to treat subjects such as the foregoing in greatly condensed form. Consequently, field identification of some difficult groups is misleadingly oversimplified, and this is true of the gulls. An excellent supplement to the usual references on gull identification is Griscom's article "Field Identification of Massachusetts Gulls." *Bull. Essex County (Mass.) Ornith. Club*, No. 11, 1929.

HUSTACE H. POOR

Breeding of the Herring Gull in Connecticut

In 1943 Griscom (*Audubon Magazine*, Sept. - Oct. 1943, Sec. 2, p. 2) reported the first Connecticut breeding record of the Herring Gull (*Larus argentatus*) "on an island off Stonington, Conn. (Miss Cheeseborough)." Since Wicopesset Island, New York, where Herring Gulls have bred since 1933 (R. P. Allen, *Auk* 50:433-434), lies just off Stonington, I asked Griscom for details of the record. His information had come from Dean Amadon, then in military service, who told me that a Herring Gull egg

* Similar sketches of the primaries of all species may be found in Dwight's "The Gulls (Laridae) of the World . . .," *Bull. Am. Mus. Nat. Hist.* 52, Art. 3: 63-401, 1925.

had been sent by Miss Cheeseborough to the American Museum for identification, but that he was not sure that it was actually from Connecticut. My own attempt to communicate with Miss Cheeseborough was unsuccessful, and it therefore seems that this record is poorly substantiated.

However, Wilfred C. O'Brien of Noank, Connecticut, former Audubon warden in that area, discovered Herring Gulls nesting on Ram Island at Noank in the summer of 1943, and he writes that in 1944 the Ram Island colony had doubled in size.

The Stonington record, if authentic, would represent an inappreciable advance of the species. The Noank colony, however, indicates another definite, if small (four miles) step in the steady extension of the Herring Gull along the New England coast.

HUSTACE H. POOR

Data on Some of the Seabird Colonies of Eastern Long Island

Because the Herring Gull, which began to breed in this area in 1936, has been increasing rapidly, the effect on the terns nesting in the same region is being watched. The main seabird colonies presently known are on Gardiner's and Cartwright Islands (the latter sometimes called Ram Island Shoals), which I visited in the breeding seasons of 1939 and 1944. Nest counts were made on both occasions. It cannot be determined definitely how accurate the counts are, but the margin of error is judged to be not in excess of 15 per cent; the count is probably lower than higher than the true figure, since there is more likelihood of overlooking nests in the grass than of duplication in the count.

Acknowledgment is due Doctor W. T. Helmuth, who cooperated on the 1939 census, to Mrs. Poor, Eisenmann, and Lester who assisted with the 1944 census, and to Winston Guest, lessee of Gardiner's Island through whose courtesy access was had to the colonies; also to Roy Latham and Le Roy Wilcox for data received from them.

For many years there have been three tern colonies on these islands. A portion of Cartwright Island held one, the Great Pond area on Gardiner's Island the second, and the Bostwick Bay area the third. The gulls, as their numbers steadily grew from season to season, formed the same number of colonies, not in exactly the same spots, but apparently close enough to affect the terns profoundly.

The visit in 1939 was made on the sixth and seventh of June and the one in 1944 on June 25. The more stable rhythm of the gulls was evident in the fact that in 1939 most of the nests held eggs, whereas in 1944 most of the eggs had hatched, and it was necessary to count empty

nests for the most part. In contrast to this, the terns seemed to be at approximately the same stage on both visits, there being full clutches of eggs in most nests and only a few very young birds in the rest.

Table I gives comparative counts; estimates, however, are used in some cases. The estimates designated in Table I by the word "about" were based on the number of birds seen hanging over the nesting areas when disturbed. Since I have observed repeatedly that there nearly always seems to be many more terns hanging over a colony than should be there on the basis of a pair for each nest, these figures are not properly comparable to a nest count.

TABLE I

Areas	1939			1944		
	Herring Gull	Common Tern	Roseate Tern	Herring Gull	Common Tern	Roseate Tern
Great Pond	150	—	—	270	about 30	—
Bostwick Bay	12	40	—	about 250	about 10	—
Cartwright Island	125	67	about 25	305	22	*
TOTAL	287	107	25	825	62	—

* Wilcox, after a visit about ten days later, reported seeing a few Roseate Terns.

In addition to the species listed in Table I, a single pair of Great Black Back Gulls were first noted as probably breeding on Cartwright Island in 1940 and proof of breeding in the form of a young bird noted in 1942 by Wilcox. In 1944 only a single young of this species was identified definitely, but three pairs of adults were milling around overhead among the disturbed Herring Gulls.

It can be seen from the figures given that the gulls have almost trebled their numbers in the five-year interval whereas the 1944 tern count was down to about one third of the 1939 figure.

Judging from Cartwright Island, the area most carefully studied, there is a possibility that the progressive thickening of vegetation may have had a detrimental effect on the terns. The 1938 hurricane had submerged the shoal under several feet of water and swept off a good portion of the beach grass and other low plants constituting the flora of the island, so that it was quite thin in 1939. In 1944, after five years of normal weather, the vegetation had thickened considerably, covering a good portion of the available nesting area with a nearly continuous mat of plant growth. However, there seemed to be ample open area for many times the number of terns actually nesting there. The recent hurricane of September, 1944, nearly equalled that of 1938 in violence and should enable some check to be made on this factor.

The foregoing speculation is somewhat weakened by the fact that in 1938 when the vegetation was undisturbed and undamaged by any such hurricane for nearly a century, there was a colony of nearly 600 pairs of Common Terns, 100 pairs of Roseate Terns, and 30-40 pairs of Herring Gulls estimated by Wilcox. The effect of violent winter storms on the ground cover is not known, but it is probable that they sweep water over the whole island.

About ten miles to the west of Gardiner's Island is situated an equally old tern colony on Long Beach Point in Orient, an exceedingly long and isolated mainland peninsula. This colony has lately been subject to severe fluctuation to the extent of complete desertion in 1943. A pair of Herring Gulls bred there for the first time in 1940, but for some reason the increase of this colony has been very slow, only three pairs being observed there in 1943 and 1944 by Latham. Nevertheless Common Terns to the number of 175-200 pairs bred there in 1944, a considerable increase over previous years and quite encouraging after the failure of the previous year.

In the Moriches and Shinnecock Bay areas further west along the south shore, there are no Herring Gulls now nesting. Although the terns have been somewhat disturbed by defense installations and activities, the Common Tern has been holding its own, and the Least Tern colonies have been increasing steadily in size and number.

From the data on hand it appears that in this region the spread of the Herring Gull as a breeder is having a definitely detrimental effect on the colonies of Common and Roseate Terns, when gull and tern colonies are in the immediate vicinity of each other.

CHRISTOPHER K. MCKEEVER

MCKEEVER, C. K. 1940. The breeding of the Herring Gull on Long Island in 1939. Proc. Linnaean Soc. New York, 50, 51: 32-33.

WILCOX, LEROY 1938. Colonial birds on Long Island. Proc. Linnaean Soc. New York York, 49:71-72.

New York City Seabird Colonies

For some years I have noticed while "birding" along the Jamaica Bay shore of Brooklyn that two of the islands in the bay far to the south have been raised to a considerable height by the deposition of large quantities of sand fill. These islands seemed to be likely places for tern colonies; however, questioning of the various Brooklyn "birders" indicated that no one had ever investigated these localities. Canarsie Pol, an island on the north shore of the bay, had been visited in 1944, but no terns had

been found breeding. On July 4, 1945, the writer, accompanied by H. H. Poor, made a rowboat trip from Broad Channel, the nearest point of civilization, to both sandfill islands.

The first island visited is west of the south tip of Broad Channel, and as far as could be determined from maps is an entirely new island connected at low tide with the western tip of Big Egg marsh on which Broad Channel is situated. On the west end of the sandy area, which was perhaps a third of a mile long and thirty feet high, was a thriving colony of Least Terns (*Sterna albifrons*) numbering perhaps 150 adults. Numerous eggs and young birds were seen on the open shell-strewn sand. Lower down among the storm-tossed drift and thatch were found eight or ten nests of Common Terns (*Sterna hirundo*) with eggs, while about fifty adults flew about overhead.

About half a mile northwest of this island is Ruffle Bar, an island shown on maps as marshy. However, even more fill has been deposited here, and as on the first island no vegetation has yet started except a few plants along the storm drift line. Along the western edge of the fill on this island also both Least and Common Terns were nesting. There were at least ten nests of Least Terns and approximately fifty adults. The only positive evidence of Common Terns nesting on this island was a single half-grown juvenal, although ten adults flew about overhead in a disturbed fashion, but without diving as they customarily do over active nesting areas.

According to various maps consulted Ruffle Bar is in Kings County, and the first island in Queens, thus giving each county a new breeding species (at least in historic times), the Common Tern, and a new Least Tern colony.

CHRISTOPHER K. MCKEEVER

Royal Terns on Long Island

On September 14, 1944, for the second time in six years, Long Island was assailed by the fury of a tropical hurricane. As the storm center passed over the Island, the wind velocity was 86 miles per hour, with gusts of 92 to 95, and a high mark of 100 miles per hour. The preponderant number of trees blown down in a north to south direction indicated that the strongest winds had come from the north. The following day was hazy and warm.

We on Long Island have always looked for uncommon birds after severe storms. On the day after the hurricane, I went to the ocean front at Atlantic Beach, a bathing resort located on the western tip of the Long Beach peninsula. While out on the breakwater, I caught sight of a large

tern flying in a westerly direction over the water. As it neared the jetty, the bird veered toward the beach and alighted there.

Approaching to about 200 feet, I noticed that the bird was considerably larger than any of our resident terns, or about the size of a Ring-billed Gull (*Larus delawarensis*). Its reddish-orange bill and a dark, wedge-shaped area in the crest were totally different from anything I had ever seen before. The folded wings extended to the tip of the tail; their primaries were slightly dusky under the tips. The bird's feet and legs were black. The general color effect as the bird flew away was that of a white-bodied bird with a pale gray mantle and wings, and dark primaries. I followed the bird in the binoculars till it disappeared toward the West.

I then began watching a flock of about 400 Herring Gulls (*Larus argentatus smithsonianus*) gathered on the beach. Whereas this group had previously consisted only of gulls, I now discovered a huge black-capped tern among them. Almost the size of a Herring Gull, the bird had a bright red heavy-looking bill and black legs and feet. There was a band on the right leg. When at rest, the long pale gray wings, whose primaries were conspicuously dark underneath, extended beyond the tip of the slightly forked tail. Upon recalling the different bill color and bill proportions of the first, unidentified tern, I suspected that the two birds were different species. Reference to Peterson's "Field Guide to the Birds," which I had with me, indicated that the present bird was a Caspian Tern (*Hydroprogne caspia imperator*), and that the other, smaller bird might well have been a Royal Tern (*Thalasseus m. maximus*).

After satisfying myself as to the identity of the Caspian Tern, I moved a short distance away, keeping the flock in view. When I returned about half an hour later to study the Caspian Tern again—I had never seen one before—I found it sitting next to two smaller terns which resembled in every detail the first, unnamed tern. One of them carried a band on its right leg. The birds were not more than 150 feet away, enabling me, by constantly comparing the two species and referring to the "Field Guide," to establish the identity of two smaller ones as Royal Terns. Except for these three birds, a specimen collected at Raynor South, L. I., on August 27, 1831, represents the only other record of this species for New York State. (Cruikshank, *Birds Around New York City*, 1942: 244).

About fifteen minutes after I left them, I returned to study the terns again. There before me were three more Caspian Terns, one in breeding plumage except for some light speckling in the black crown and crest, the other two quite differently marked about their heads, for the dark of the crown and crest were largely gone. A darker area around and especially under the eyes gave the birds an odd "black-eyed" appearance.

One of these birds was banded on the right leg. Two more birds in this plumage were found in the flock half an hour later. Incidentally, Cruickshank (Ibid.: 246) writes that the Caspian Tern is "an uncommon but regular transient along our coast."

Five days after this observation, I visited the American Museum of Natural History and examined a large number of skins of both species. Among the Caspian Tern specimens I found two which were especially good duplicates of my four birds in apparently complete post-breeding plumage. There were four Royal Tern skins which were perfect counterparts of those I had seen at Atlantic Beach; the specimens indicated that the three birds I had observed were post-breeding adults.

I am indebted to Lieutenant Ben B. Coffey, Jr., and to Mr. Ludlow Griscom for reviewing the manuscript and endorsing the identifications mentioned in this note.

RICHARD B. FISCHER

A Feeding Incident of the Black-billed Cuckoo

Ornithological literature relates that in one instance 250 tent caterpillars, perhaps a whole colony in the young stage, were found upon opening a cuckoo's stomach. In another, 217 heads of the fall webworm were counted. Also we learn that a cuckoo's stomach is sometimes completely furred with the pointed, sharp, stiff, bristly hairs of tent caterpillars which had penetrated the stomach walls and become fast. On September 4, 1944 at Massapequa, I watched the following feeding behavior of a Black-billed Cuckoo (*Coccyzus erythrophthalmus*).

Through an opening which gave good light in a dense grove, I saw the cuckoo on a lower branch of a tree 25 feet away. Suddenly it flew about three feet, alighted and picked up a hairy caterpillar from an oak branch. Grasping it by the head it proceeded leisurely to strip the caterpillar of its hair by shearing it off with its bill as it worked the length of the insect. Through 6 x 50 binoculars it was extremely interesting to watch the even flow of tawny hair dropping away from the cuckoo's bill falling gently in the still air and sunlight. I was surprised at the length of time (about 25 seconds) spent and the care given this single insect. The caterpillar, when denuded of its tawny coat, appeared bare and resembled somewhat a large inch-worm as the cuckoo backed it out of its bill almost to its full length. At this stage the insect remained motionless being somewhat mauled to all appearances. The cuckoo then leisurely swallowed it in its entirety.

It would appear that by the even flow of hair falling away from

the bill and the ease with which the worm was worked over that this is more or less the regular method of eating adult, hairy caterpillars. Available literature tells of cuckoos eating young caterpillars and fall webworms in great numbers and of stabbing the walls of the tents to get them. The hair on these is generally short and insignificant.

The cuckoo under observation did not make any particular effort by shaking its head or the caterpillar to throw off any adhering hairs and it therefore seems likely that a few might be swallowed. If these few hairs are multiplied by several dozen—a conservative estimate, according to our authorities, of the number of caterpillars eaten in a day—there would be enough to cling to the cuckoo's stomach walls and account for their hairy condition.

JOHN J. ELLIOTT

Eastern Long Island Records of the Nighthawk

At the present time I know of no breeding localities of the Nighthawk (*Chordeiles minor*) on eastern Long Island, except probably Gardiner's Island, where it was nesting in 1930. Formerly it was a summer resident on the north fork and other stations as noted below. Six to eight pairs nested regularly on the gravelly beaches on Long Beach, Orient, (now the Orient Beach State Park) until 1920. They were called locally "mosquito hawks."

Around 1900 we used to row across the bay just before dark to watch the birds and listen to their booming in that then mosquito-infested region. The oldest residents then living in Orient told me that these "mosquito hawks" had been on Long Beach for over fifty years prior to 1900.

In 1910 the nighthawk was nesting on the Ramhead beaches of Shelter Island. They evidently left that vicinity about the same time that they vacated Long Beach, Orient, soon after 1920.

During the first week of June, 1911, I saw 23 nighthawks in the air at the same time over the northern coast of Gardiner's Island. They nested on the gravel beaches on the north side and on low flat rocks in the pasture-lands, mostly on the north side. Before 1920 this species was a summer resident at Napeague. Two pairs were breeding on Horton's Beach, north of Southold, as late as 1928. One pair was present all summer on the sand dunes near the Sound north of Riverhead in 1938. This is the latest complete all-season record that I have.

The earliest recorded spring arrival is Orient, April 25, 1942; April 28, 1912. Latest recorded fall record is Orient, October 17, 1908; October 12, 1916. The largest flight I have observed is 75 to 100 birds moving

westward through Orient late in the afternoon of September 12, 1927. This flight continued for three days thereafter in decreasing numbers. Usually in the Orient region in the fall migration we have but scattered birds, rarely more than three to five birds in sight at a time, during the late afternoons from September 10th to 25th.

My nesting records are old, but they will suffice to establish the breeding status for this species on the eastern sections of Long Island during its normal summer residence here. The ground nests were not easy to locate, but were occasionally marked down by the birds in early evening.

The earliest nest with eggs found in Orient was May 25, 1903; Gardiner's Island, May 26, 1924; Ramhead, Shelter Island, May 30, 1910 (nest on a partially buried log on the beach); Southold, June 11, 1927. Latest nest with eggs, Orient, July 4, 1907. Nest with young, Orient, June 26, 1909. Napeague, June 14, 1926.

ROY LATHAM

Proximity of Occupied Kingfisher Nests

The west shore of Hempstead Bay, Nassau County, N. Y., has been worked by sand and gravel companies for years and banks 50-100 feet high are almost continuous. One of these has been undisturbed for approximately eight years, and is the subject of this paper. It follows a gentle curve shaped like a shallow crescent and measures 200 yards from tip to tip. For most of its height the sand-gravel mix follows its angle of repose, varying with the consistency of the mix. But a strip along the top edge falls vertically for 5-10 feet, and it is in this strip that burrows of the Belted Kingfisher (*Megaceryle alcyon*) occur.

These burrows are concentrated at three points along the bank, where shrubs on the brink overhang the edge. There are two possible reasons for this preference; the overhang gives more protection against rain and disturbance from above, and the vertical drop of the bank is greatest where the shrub roots have kept the edge from eroding, thus furnishing maximum protection from predators below. Each of these three sites has had one occupied burrow during 1943 and 1944. It would appear that occupancy goes back even further, as one group numbers 5 holes, including that used in 1944, and the others three. During 1943 and 1944 a fourth burrow was occupied by Rough-winged Swallows.

The three nesting areas are spaced about 40 yards apart, with the southernmost one about the same distance from the end of the bank. During 1943 one pair of kingfishers appeared to feed primarily at a fresh-

water pond 70 yards inland from the top of the bank, while the others fished in Hempstead Bay. But in 1944 no such distinction was made and all three pairs used the Bay. This body of water, an inlet from Long Island Sound, is three-quarters of a mile wide at this point. Its seven miles of length has many similar banks, but most of them are in active operation and only a few have been allowed to become stabilized enough for nesting purposes. Consequently there are ample feeding grounds for all the resident pairs, and this doubtless accounts for the unusual tolerance they show towards close neighbors.

R. L. Wood

Further Spread of the Prairie Horned Lark on Long Island

The range of the Prairie Horned Lark has spread since a summary of its status in the Long Island area up to 1941 was included in a report of the Society's Field Work Committee. It therefore seems worth while to bring the bird's status up to date. Because of restricted travel conditions and the wartime absence from the region of many of the Prairie Horned Lark's most active observers, the observations in this paper are probably not complete.

In the previous survey it was found that the breeding range was mainly along the ocean coastal strip of the western forty miles of the island with a few stations north and northwest of that. There seems to have been a more or less static period of a couple of years in the steady spread of the species at the west end. During that time it was merely becoming more common in its known range and in the Southampton - East Hampton region of the south shore.

In 1943 breeding birds were noted at two widely separated localities. For the first time in Roy Latham's long period of observations at Orient, he found a nest from which four young were successfully reared. In 1944 the birds were again present, with probably two pairs breeding. In 1943 at Massapequa, John Elliott found a pair of birds which probably bred.

The 1944 season showed further new records which partially closed the gap in range in the central portion of the island. In addition to Latham's record for this season, Elliott had a pair definitely breeding at Massapequa and also found several pairs breeding in northern Wantagh where he saw up to 23 birds in June. The latter records represent a jump from the south to the north shore of Great South Bay, probably by way of Jones' Beach causeway.

The 1944 season also produced the first definite record for the region covered so well by LeRoy Wilcox. He found a nest at Westhampton

Beach and saw a pair of birds at Moriches several times in June. A single bird seen in summer feeding west of Shinnecock Inlet and birds seen far inland between Westhampton and Riverhead in the same season may indicate a further spread of the breeding range, but cannot be accepted now as such. However, these reports may be considered as promising leads to be followed up next season.

Thanks must be given to Roy Latham, LeRoy Wilcox and John Elliott who have so readily and willingly made available the information upon which this paper is based.

CHRISTOPHER K. MCKEEVER

REFERENCE TO LITERATURE

MCKEEVER, C. K. 1941. Distribution and Habitat Selection of Some Local Birds. Proc. Linnaean Soc. New York, 40, 41: 94-96.

A Late Black-throated Green Warbler

A Black-throated Green Warbler (*Dendroica virens*) was found on November 8, 1943, in a small pine grove in Van Cortlandt Park. This bird was seen daily until January 1, 1944, a new late record for the Bronx region. On one very cold winter day at about 6° above zero, I watched this bird feeding on the little black eggs of the Pine Aphid. It would pull one of the needles through its bill and strip off the eggs. I also saw it feeding on fall web worms. On January 1, another very cold day, the bird tried to keep warm by huddling close to one of the branches which was in the sun. It was an adult male in perfect plumage and apparently in good health when last seen.

GEORGE KOMOROWSKI

Interchange of Song between Blue-winged and Golden-winged Warblers

Despite their basic similarity, the songs of the Bluewinged and Golden-winged Warblers are normally distinguishable with ease even by ornithological tyros. Recently, however, several experiences indicate that, at least in this region, it is not safe to identify these species simply on the basis of song.

On May 14, 1944, at Mountain Lakes, New Jersey, a party of Linnaean Society and Urner Club members was surprised to find the characteristic Golden-wing *bee-bzz-bzz-bzz* being uttered by an apparently typical Blue-wing, sitting in a tree in an open field. That same day in the nearby Boonton Hills woodland, where both species breed but where

the Golden-wing is commoner, a Golden-wing was seen repeatedly giving the usual drawled Blue-wing song, *beeee*, *bzzzz*. In neither case were these birds heard to utter the song of their own species, though they were singing steadily and were observed for a few minutes. On May 21, 1944, north of Woodlands station in Westchester County, which is somewhat south of the Golden-wing's normal Westchester breeding range, a Blue-wing was found persistently singing the Golden-wing song. John L. Bull, Jr. states that in this locality he has for several years noted a Blue-wing with this peculiarity. While it is well known that the hybrids, Brewster's and Lawrence's Warblers, sometimes sing like one ancestor and sometimes like the other, I know of no published record of apparently typical Blue-wings and Golden-wings exchanging their characteristic songs.

One suggested explanation is that the singers, despite their appearance, were really hybrids and were merely singing like one of their recent ancestors. Another possibility is that a bird reared in an environment where the other related species is common may occasionally learn the "wrong" sing. Thus, H. R. Ivor reports that in captivity some of his Rose-breasted Grosbeaks, instead of singing like their parents, adopted the notes of a Black-headed Grosbeak kept in the same aviary (*Wilson Bulletin*, 56: 93, 1944). A third hypothesis is that we have here an atavism to a common ancestor of both species, which may have sung both songs. A. A. Saunders, in his *Guide to Bird Songs*, (1935, p. 178) though not mentioning the phenomenon here discussed, points out that the quite different secondary song of the Blue-winged and Golden-winged Warblers (which has a rather irregular pattern and is most likely to be heard in June) appears to be the same in both species, and he suggests that this second song may have been the song of the common ancestor.

In our region, which is well within the zone of hybridization, it is difficult to determine the correct explanation. But if it were found that, in localities far from the area of interbreeding, resident birds of one species sometimes sing the song of the non-resident species, the theory of atavism would receive corroboration.

EUGENE EISENMANN

Predation by Grackles

During the spring of 1942, 1943, and 1944, the personnel of the Brooklyn Botanic Garden have noted dead English Sparrows (*Passer domesticus*) in the water or at the edges of one or more of the small streams and pools in the Botanic Garden grounds. In those cases in which a dead bird has been examined while still in a fairly fresh condition it has been observed that the head has been pecked, sometimes so

vigorously that the skull has been crushed, and the breast and occasionally the abdomen have been eaten. From the first, grackles (*Quiscalus quiscula*) were believed to be the predators, but definite proof was lacking until May 29, 1943, when an attack was witnessed by Miss Elizabeth Clarke of the Botanic Garden staff. The intended victim, an English Sparrow, was splashing and bathing in one of the streams. A grackle flew out of a bush at the border of the stream and landed on the sparrow's back, apparently attempting to push it under the water and at the same time pecking the sparrow viciously on the top of the head. This particular sparrow escaped, but the pattern of the attack indicates that the other killings are also attributable to grackles.

In all observed cases the sparrows have been killed at a stream or pool close to bushes or low branches which would provide cover for a grackle awaiting its victim. The attacks appear to be concentrated in May, and have been noted only in the nesting season. The gardeners have found as many as a dozen dead sparrows in a single day near the end of May, but such a total doubtless includes the results of several days' predation. At least four are known to have been killed during one day in 1942 in the Wild Flower Garden. Few sparrow remains were found in 1944, two dead sparrows seen about the first of May being the only ones noted. Miss Clarke writes: "The peculiar thing about it is that the dead birds disappeared very soon. Perhaps the sparrow killings continued but the remains were removed so quickly that I was unaware of the attacks, although I did see a grackle chase several sparrows."

Miss Grace E. Ashwell on June 15, 1943, found a dead Robin (*Turdus migratorius*) in juvenal plumage which had been killed in a similar manner at the edge of one of the pools. In this instance the nearest bushes and trees were at least ten feet away instead of four or five feet as was usual in the cases of the sparrows.

Grackles are known to eat eggs, nestlings, and fledglings. Davis (1944) tells of a Purple Grackle stalking and killing a juvenal English Sparrow in the National Zoological Park, Washington, D. C. Forbush (1929) mentions attacks by grackles on English Sparrows in the Boston Public Garden.

I am indebted to Miss Clarke and Miss Ashwell for permission to record their observations.

HUSTACE H. POOR

REFERENCES

- DAVIS, MALCOLM 1944. Purple Grackle kills English Sparrow. *Auk* 61: 139-140.
FORBUSH, E. H. 1929 *Birds of Massachusetts and other New England States*, vol. 2: 458-459.

Observations on Birds Relative to the Predatory New York Weasel

To the silent watcher who travels alone, the small predatory mammals very often appear. Searching the snow for tracks is another method for studying them, and squeaking on one's hand may occasionally bring such small animals as weasels and minks into view where they often reveal themselves in utter bewilderment as if searching for some wounded victim. At these times they run over obstacles, into ditches, through thickets and almost to the feet of the motionless observer before discovering the hoax. Upon catching the human scent, they disappear in a flash.

Such was an occurrence at Massapequa, L. I. one fall day as I attempted to attract migrating sparrows up out of the grass by squeaking. I happened to glance down through a tiny opening and there on the ground about ten feet away my eye caught the malevolent glare of a weasel looking up at me so intently that it momentarily startled me. A slight movement on my part and it disappeared.

When chickadees indicate a weasel's presence, they utter very rapid and excited *dee, dee, dees*. These draw the attention of other woodland birds which drift into the immediate vicinity. On such an occasion in early September, 1944, I found a weasel ranging over the trunk and larger branches of a big swamp maple. It settled on a likely looking dead clump of branches where the birds might alight. Upon becoming motionless, except for turning its head now and then, the chickadees became silent and hopped about the middle branches of the tree, the weasel eyeing them intently. At that time a redstart flew into that part of the tree, fanning its contrastingly marked tail as if in a tantalizing manner a few feet above the weasel which stealthily climbed onto a nearer branch. Then it stretched up and awaited, its flat chin, cruel mouth and triangular-shaped head poised for the kill. The bird was slightly out of range, but anticipating that it would come closer, the weasel got ready to spring. The apparently unsuspecting redstart, however, hopped the wrong way. The weasel relaxed. Then, all the prospective victims having moved away, it ran down the tree and departed.

While following weasel tracks in the snow one winter, I came upon a spot where a small covey of quail had, to all appearances, spent the night. The snow clearly showed where the weasel had sprung upon the nearest bird and captured it. Although, no doubt sucking its blood at the time, it made no attempt to eat the bird on the spot, but carried it off, substituting the characteristic, twin, parallel tracks for groups of four as it bounded forward. The quail (subspecies unknown) was carried high, presumably over the weasel's shoulder, as the snow indicated only at

infrequent intervals markings by trailing wings. After traveling about one-third of a mile through the woods and brush, the weasel buried the quail under the snow in a hidden retreat.

These few instances tend to show the weasel's interest in our smaller birds. It also appears that, especially in winter when food is comparatively scarce, a weasel may use a fair amount of effort to store a victim in some favorite location. On the other hand, during summer I have found victims left on or near the spot where they had been killed, tell-tale pinholes in their throats and their carcasses sucked dry.

JOHN J. ELLIOTT

Clinton Hart Merriam (1855-1942)

First President of the Linnaean Society of New York

Dr. Clinton Hart Merriam, who passed beyond at nine o'clock on the evening of March 19, 1942, at Berkeley, California, thus closed, in his 87th year, a life of high achievement, of interesting and valuable experiences, and of wide activities along his chosen lines of research that have proved an invaluable heritage to students of biology.

Doctor Merriam was born in New York City on December 5, 1855, son of Clinton L. Merriam and Caroline Hart Merriam. His interest in natural history began early in life, and with wildlife in abundance about his home west of the Adirondacks, he had made notable advances by the time he was twelve. In 1872, in his seventeenth year, through the assistance of that wonderful personality, Professor Baird, he became naturalist of the Hayden Survey that made explorations of the Yellowstone area. This trying expedition to the Yellowstone developed self-reliance, and the close association with Professor Baird molded a background and evolved a character which later bore wonderful fruit. When Thomas Henry Huxley visited this country, Professor Baird arranged that his young pupil meet this noted biologist.

In 1874 he entered Sheffield Scientific School at Yale and completed the course in 1877. During part of this period, as an Assistant in the U. S. Fish Commission, he studied marine forms at its Station at Woods Hole, Mass., which materially assisted in his school work. He used to relate how, soon after entering Sheffield, Professor Verrill generated a tenebrific atmosphere when he instructed Merriam to make a dissection and drawing of the alimentary system of a grasshopper, and Merriam quietly acknowledged he could not draw. The professor's reply was, in effect, if that were the case, Merriam had better get out. However, the new student remained, and made the dissection and drawing.

A notable and very creditable piece of work that he completed while at Yale was the *Review of the Birds of Connecticut*. Collecting the material for this publication brought him in friendly touch with many of the ornithologists of the state. It seems to me that he may owe much to this book, from certain happenings which occurred in 1877 at the College of Physicians and Surgeons where both of us were students. As one of the prosecutors of Prof. John C. Dalton, the physiologist, I sat in the amphitheater below the student body. From time to time notes would be handed down and, if found important, given to the professor to be announced. One morning one of these notes addressed to me, read as follows: "Are you the A. K. Fisher who found *Oporornis formosus* breeding at Sing Sing, New York?" (The record of this bird was published in the

American Naturalist in 1875 and was referred to in his book.) Turning to discover whence the note came, I saw a young man, with fine complexion and pompadour hair, nodding with a smile for recognition. At the close of the lecture we met, an event that was the beginning of a close and lasting friendship extending over sixty-five years. During this long period of companionship we were thrown together under varying conditions and happenings, which brought us in close communion and to a certain extent molded our activities.

Pursuant to a call signed by Franklin Benner and Ernest Ingersoll, on March 7, 1878, Merriam joined with others in founding the Linnaean Society of New York, and was elected its first president. Later his *Mammals of the Adirondacks* was one of the earliest noteworthy publications of the new society.

Doctor Merriam during 1879-1855 built up a good medical practice, mainly gynecological, at his home in Lewis County, New York. During the spring of 1883, as surgeon on the sealing vessel *Proteus*, he visited the ice fields off the coasts of Greenland and Labrador to make a study of the hooded seal.

In September of the same year he joined with twenty-two others in founding the American Ornithologists' Union. He was elected secretary and during 1900-1902 was its president. The committees that were appointed to obtain and study information relating to bird migration and the status of the European Sparrow amassed so much material that it seemed hopeless for the Union to digest and make it available to the public. A suggestion to memorialize Congress for aid was sponsored by Senator Warner Miller of New York, and as a result five thousand dollars was added to the Department of Agriculture appropriation for the new division of Ornithology. In the spring of 1885, the American Ornithologist's Union was asked to name a head for the new division, and Doctor Merriam was chosen. At this time he was in Europe, visiting museums in England, Holland, and Germany. Shortly thereafter, he sent me a letter from Germany asking me to be his assistant. Apparently to eradicate any chance that I might decline, he remarked that we could drop our profession for a year or two while organizing the new work. In retrospect, after half a century has gone by, it would seem that our profession had been sadly forgotten or had been left in quiet repose.

As time went on, under his leadership, the activities increased and broadened, the Division of Ornithology and Mammalogy was evolved, and later the Bureau of Biological Survey came into being. This bureau, through its various noteworthy lines of work, soon was recognized as an important source of information by the scientific world at large.

During the twenty-five years he was Chief of the Biological Survey,

Merriam planned and carried out a number of field expeditions to secure data on life zones, distribution of animal and plant life, laws of temperature control, and geographic distribution of life. Among these may be mentioned the Biological Survey of San Francisco Mountain and Desert of the little Colorado River, Arizona; Biological Reconnaissance of Idaho; Death Valley Expedition; and Biological Survey of Mt. Shasta, California.

While Merriam was on the Death Valley Expedition in 1891, President Harrison appointed him a member of the U. S. Bering Sea Commission, to study the fur-seal conditions on the Pribilof Islands. The vast numbers of mammals collected by members of the Biological Survey enabled him to describe more than 650 new species, and to monograph the pocket gophers, shrews, weasels, and the grizzly and big brown bears.

With Dr. Lewis R. Morris, Mr. Harriman's physician and a member of the Boone and Crockett Club, Dr. Merriam had considerable to do in planning the personnel and route of the Harriman Alaska Expedition. On the return of this Expedition, he devoted much time to editing its publications. In consideration for his untiring services, Mrs. E. H. Harriman established a special trust fund to enable him to carry on research work, which, after he retired from the Biological Survey in 1910, was largely devoted to the linguistic studies of California Indians.

During the years 1917-1925 Dr. Merriam was Chairman of the U. S. Geographic Board. Among the scientific societies and clubs in which he held membership the following may be mentioned: American Ornithologist's Union, Linnaean Society of New York, National Academy of Sciences, Boone and Crockett Club, American Society of Naturalists, Cosmos Club, Washington Academy of Sciences, Biological Society of Washington, American Philosophical Society, American Society of Mammalogists, Anthropological Society of Washington, and the Zoological Society of London. In a number of these he was among the founders and of the majority of them he was at one time president.

One of his leading virtues as an author was his endeavor always to secure exact facts, and many of his 500 or more publications were ever-changing manuscripts until anything in question had been removed.

Merriam was a man of many friends and admirers, and through his inspiring influence over students of ornithology and mammalogy it might be said there was a "Merriam School" much as there was a "Baird School" when that renowned naturalist's individuality flowed forth from the Smithsonian Institution.

To one who has been closely associated with Merriam through fair and foul weather, during three-quarters of his lifetime, it is a solace to feel at his passing that there was in him much gold and little dross.

A. K. FISHER

Report of the Secretary for the Year 1941-1942

At the annual meeting of the Society at the Hotel Alamac on March 11, 1941, the following officers were elected for the coming year:

President	Charles K. Nichols
Vice-President	Richard H. Pough
Secretary	Margaret Brooks
Recording Secretary	Hustace H. Poor
Treasurer	Samuel C. Harriot
Editor	Joseph J. Hickey

Elected to the Council for various terms were Messrs. Cruickshank, Kassoy, and Mayr (3 years), H. M. van Deusen (2 years), and Dean Amadon (1 year).

During the ensuing 12 months a number of the younger men in the Society were called into military service, among them Robert Arbib, whose place in the council was subsequently filled by R. T. Peterson. The treasurer was instructed to carry these men on the rolls without payment of dues and to send them publications of the Society as these are issued from time to time. Personal cards of identification were also furnished to civilian members of the Society upon application to the treasurer.

The regular semimonthly meetings of the Society were attended by an average of about 50 members and guests. The program of meetings was as follows:

- Mar. 11, 1941: "Modern Trends in Field Ornithology," Ludlow Griscom.
- Mar. 25: "An Expedition to Abyssinia," T. Donald Carter.
- Apr. 8: "Conservation in South America," T. Gilbert Peason.
- Apr. 22: "A Western Travelogue," A. L. Melander.
- May 13: "Remarks on the Classification of the Anatidæ," Jean Delacour.
- May 27: "Current Problems in Field Ornithology," Joseph J. Hickey.
- Oct. 14: "Post-Morten Studies of Wild Birds," C. Brooke Worth.
- Oct. 28: "Color Photographs of Nesting Birds," Elliot Porter.
- Nov. 11: "The Roseate Spoonbill and Its Environment," Robert P. Allen.
- Nov. 25: "Soil Conservation Practices in Relation to Songbirds," Frank C. Edminster.
- Dec. 9: "White-winged Gulls," Hustace H. Poor.

- Dec. 22: "Nesting Birds of Matinicus Rock," John F. Porter.
Jan. 13: "Discussion of Christmas Censuses," Christopher K. McKeever.
Jan. 27: "Joseph Dixon's Films of Hawks," Dean Amadon.
Feb. 10: "Distribution of Birds in Relation to Ecological Concepts,"
Roger T. Peterson and Charles K. Nichols.
Feb. 24: "Audubon the Artist," Bayard H. Christy.

At the four informal summer meetings, attendance averaged 16.

Under the leadership of President C. K. Nichols and a hard-working committee of the council, the Society's constitution and by-laws were carefully gone over, and 13 small but valuable changes were effected.

A double number of the Society's *Proceedings* was issued. This publication of the Society is thus finally brought up to date.

After due study by the Finance Committee, the council clarified certain banking arrangements of the treasurer, so that one of the Society's accounts would receive all funds that accrue to the organization through the sale of its publications. This account, to be known as the Publication Fund, is to be of a revolving nature and to defray the cost of further numbers of the *Transactions*. At a regular meeting the Society also instructed the treasurer to purchase a \$1,000 U. S. Government Bond, Series G.

The Gull Survey Committee reported a virtual cessation of new records from this investigation; an overall analysis of the Society's files on this project can now be undertaken.

Messrs. E. Eisenmann, R. A. Herbert, and C. K. Nichols were delegated to confer with the American Ornithologists' Union's Committee on Nomenclature regarding the inclusion of the vernacular name Peregrine Falcon for *Falco peregrinus anatum* in the fifth edition of the A.O.U. *Check-List*. Messrs. Herbert and Peterson were also asked to discuss a number of other changes that would improve the use of vernacular names in American ornithology.

At the Society's annual meeting in 1941, Richard G. Kuerzi was awarded the Linnaean Prize for Ornithological Research for his paper, "Life History Studies of the Tree Swallow."

During the course of the year, the Society lost by death its distinguished former president, Dr. Walter Granger, and two very active and loyal members, G. E. Hix and M. C. Rich. Appropriate memorial resolutions were passed and sent to their families. Three new honorary members were elected: A. C. Bent of Taunton, Mass., Dr. Olivero Pinto of

Sao Paulo, Brazil, and P. A. Taverner of the National Museum of Canada. J. J. Hickey and Ernst Mayr were elected fellows in recognition of their many services to the Society. The membership list now stands as follows:

Honorary members	4
Fellows	8
Active members	174
Associate members	20
	<hr/>
TOTAL	206

While this total is the highest in the Society's 63-year history, it is only four more than we enjoyed in 1940.

Respectfully submitted,

MARGARET BROOKS, *Secretary.*

Report of the Secretary for the Year 1942-1943

At the annual meeting of the Society on March 10, 1942, the following officers were elected for the ensuing year:

President	Charles K. Nichols
Vice-President	Richard H. Pough
Secretary	Hustace H. Poor
Recording Secretary	Richard B. Fischer
Treasurer	Samuel C. Harriot
Editor	Dean Amadon

At a regular meeting March 24, 1943, the Society elected Miss Margaret Brooks, Mrs. M. C. Rich, and Mr. Eugene Eisenmann to serve on the Council until March 1945.

The Linnaean Society during the year held sixteen regular and four informal summer meetings. The program of meetings was as follows:

- Mar. 10, 1942: Annual Meeting. Testimonial dinner to Mr. Frances Lee Jaques. Movies of Mt. McKinley National Park, by Dr. Adolph Murie and Mr. Victor H. Cahalane.
- Mar. 24: "Some Facts and Theories of Bird Migration" by Mr. John T. Nichols.
- Apr. 14: "Terns of the World" by Mr. Charles H. Rogers.
- Apr. 28: "Birds and Plants of Ecuador and Peru" by Dr. Henry K. Svenson.
- May 12: "Distribution of Some Local Birds in Westchester County" by Mr. John L. Bull, Jr.
- May 26: "Banding Piping Plovers and Ospreys on Long Island" by Mr. LeRoy Wilcox.
- June 16, July 21, Aug. 18, Sept. 15: Informal summer meetings.
- Oct. 13: "New Recordings of American Bird Songs by the Laboratory of Ornithology of Cornell University" by Mrs. Albert R. Brand and Dr. Paul Kellogg.
- Oct. 27: "Comparison of the Parasitic Behaviour of the Cowbird and Cuckoo" by Edgar P. Chance.
- Nov. 10: "The Problem of Synchronization of the Reproductive Cycles of Birds" by Ralph S. Palmer.
- Nov. 24: "Come Critical Phylogenetic Stages Leading to the Flight of Birds" by William K. Gregory.

- Dec. 8: "The Origin of Species in Birds" by Ernst Mayr.
Dec. 29: Discussion of the results of the 1942 Christmas bird counts.
"Song Bird Ecology" by Joseph J. Hickey.
Jan. 12, 1943: "The Distribution of Land Birds" by John T. Zimmer.
Jan. 26: "The Fugitive Warblers"; by Roger T. Peterson.
Feb. 9: "Bird Banding's Contribution to Some Ornithological Problems"
by John T. Nichols.
Feb. 23: "Six Years' Association with a Brewster's Warbler" by T.
Donald Carter.

A special feature of the program was the series of lectures on various phases of ornithology by members of the American Museum of Natural History staff.

Several field trips sponsored by the Society were arranged in the spring to points accessible by public transportation facilities. These were successful and well attended.

No publications were issued by the Society during the year. At the sixtieth stated meeting of the American Ornithologists' Union in October, 1942, the 1942 award of the Brewster Medal was made to Mrs. Margaret M. Nice in recognition of her publication "Studies in the Life History of the Song Sparrow, I," which was issued as Volume IV of the Linnaean Society's *Transactions*, April, 1937.

During the year eighteen persons were elected to active membership. One active member was reinstated, and one person was elected to associate membership. Joseph J. Hickey and Ernst Mayr were elected Fellows of the Society.

The Society lost by death two of its most prominent members, Clinton Hart Merriam, a founder of the Society and its first president, and George Edward Hix, a Life Member who joined the Society in 1914.

A number of the Society's most active members entered the armed forces of the United States, and others were forced to become inactive due to the pressure of civilian war work. However, the Society's meetings were well attended. Field activities of all observers were in large measure curtailed due to the gasoline shortage and restrictions on activities in some of the best birding areas occasioned by military necessities.

The Secretary wishes to record his appreciation of the help of President C. K. Nichols, who assumed the burden of arranging the program of the fall and winter meetings, and to the many other officers and members who have assisted in many ways.

Respectfully submitted,

HUSTACE H. POOR, *Secretary*

Report of the Secretary for the Year 1943-1944

The following Officers were elected at the annual meeting on March 9, 1943:

President	Mr. Richard H. Pough
Vice-President	Mr. Hustace H. Poor
Secretary	Mr. John L. Bull, Jr.
Recording Secretary	Mr. Eugene Eisenmann
Treasurer	Mrs. Eva Rich

The calendar for the year was as follows:

- Mar. 9, 1943: One Thousand Days with Ten Million Birds; by William Vogt.
- Mar. 23: The Distribution of Oceanic Birds; Dr. Robert C. Murphy.
- Apr. 13: Fangs of Venomous Snakes; Dr. Charles M. Bogert.
- Apr. 27: Native Orchids of the Northeast; Dr. Frederick H. Pough.
- May 11: Birds of Walt Whitman; Mr. Courtland White.
- May 25: Reports of the spring migration, by various members.
- June 8, July 13, Aug. 10, Sept. 14: Informal summer meetings.
- Oct. 12: Color-Banded Herring Gulls in the New York City Region; Mr. Hustace H. Poor.
- Oct. 26: The Audubon Nature Center; Mr. Richard H. Pough.
- Nov. 9: The Swifts; Mr. Charles H. Rogers.
- Noc. 23: Distribution of Birds in Southern California; by Mr. Don Eckelberry.
- Dec. 14: Birds of the St. Lawrence; by Richard L. Weaver.
- Dec. 28: Discussion of the Christmas Census, led by Mr. Christopher K. McKeever.
- Jan. 11: Notes on Middle American Birds with Special Reference to Panama; Mr. Eugene Eisenmann.
- Jan. 25: Seminar on Gulls, led by Mr. Hustace H. Poor.
- Feb. 8: Bird Colonies of the Coast of Maine; Mr. Carl Buchheister.
- Feb. 22: Classification of Birds; Mr. Charles K. Nichols.

The average attendance at formal meetings was fifty-five persons,

with a maximum of one hundred and twenty-five on February 8th. The four informal summer meetings averaged fifteen persons.

"Studies in the Life History of the Song Sparrow, II, by Mrs. Margaret Morse Nice, was issued as a *Transactions of the Linnaean Society*, Volume VI, in September, 1943.

Respectfully submitted,

JOHN L. BULL, JR., *Secretary*

Report of the Secretary for the Year 1944-1945

At the annual meeting of March 14, 1944, the following officers were elected:

President	Mr. Richard H. Pough
Vice-President	Mr. Hustace H. Poor
Secretary	Mr. Eugene Eisenmann
Recording Secretary	Mr. John L. Bull, Jr.
Treasurer	Mrs. Eva Rich
Editor	Miss Anna P. North

The following were the programs for the sixteen regular meetings held during the year:

- Mar. 14: Annual meeting. Ludlow Griscom, "The Origin and Distribution of North American Birds."
- Mar. 28: Dr. Charles W. Manzer, "Birding in the Audubon Sanctuaries of Florida and Louisiana."
- Apr. 11: James Bond, "The Wood Warblers."
- Apr. 25: Dr. Theodora Nelson, "The Biology of the Spotted Sandpiper."
- May 9: Irving Kasso, "Barn Owl Studies."
- May 23: Reports on the Spring Migration.
- Oct. 10: Symposium on Hawks and Hawk Migrations.
- Oct. 24: Edwin Way Teale, "Wild Life of the Indiana Sand Dunes."
- Nov. 14: Richard B. Fischer, "Techniques and Results of Bird Banding."
- Nov. 28: Dr. Heathcote Kimball, "Adventures in Bird Photography."

- Dec. 12: Dr. Richard Weaver, "Alpine Fauna and Flora of New Hampshire."
- Dec. 26: Dr. Ernst Mayr, "Bird of the Southwest Pacific Islands."
- Jan. 9: Discussion of Christmas Bird Counts, led by Christopher K. McKeever.
- Jan. 23: Carl W. Buchheister, "Notes on Leach's Petrel off the Coast of Maine."
- Feb. 13: Charles H. Rogers, "A Survey of the Owls."
- Feb. 27: John Dornan, "Backyard Birds."

In addition, informal meetings were held on June 13th, July 12th, August 15th and September 19th, 1944.

Attendance at meetings has been strikingly large. At the informal summer meetings, attendance was about 50. Beginning with the first regular meeting in October, 1944, attendance at each meeting has generally run over 100. As a result, the quarters occupied for many years proved too small and a larger room had to be taken in the American Museum.

The past few years have witnessed a steady growth in the membership of the Society. Since the last annual meeting, 51 new members have been elected. Membership is now 277, the largest in our history, including five Honorary Members, nine Fellows, 242 Active Members and 21 Associate Members. Forty-three members are known to be in the Armed Services.

During the last two years, the Society has been conducting field trips led by more experienced members and open to members and their friends. These trips have been held at least once a month from October to June and have had very good attendance; in some cases, more than 40 people have been along. These field trips have undoubtedly promoted interest in the Society, and have resulted in increased membership and attendance at meetings.

We regret that since the last annual meeting, the following members have passed away: Mr. William T. Davis, Dr. Robert T. Morris, Mr. Carol Stryker and Mr. Hugh Birckhead, the last while on active military service in France.

In the preparation of programs for the meetings, and in his other duties, the Secretary has had the help and cooperation of many members to all of whom he expresses his grateful thanks.

Respectfully submitted,

EUGENE EISENMANN, *Secretary*

Condensed Treasurer's Report for the Three Years Ending March 1, 1944

RECEIPTS

Dues	\$ 1,295.00
Sale of publications	585.22
Interest, income on funds, etc.	305.15
Total	\$ 2,185.37

EXPENDITURES

Publications	\$ 1,729.09
Membership in National Audubon Society, Eastern Bird Banding Assn., the New York Academy of Sciences and subscriptions to periodicals	64.14
Postage, stationery, printing, meeting room charges and other expenses	474.50
Total	\$ 2,267.73
Deficit for the three years ended March 1, 1944	\$ 82.36
Funds on Hand—March 1, 1941	
On deposit in Emigrant Industrial Savings Bank	\$ 3,417.64
On deposit with Irving Trust Co.—Checking account	535.09
Total	\$ 3,952.73
TOTAL	\$ 3,870.37
Funds on Hand—March 1, 1944	
On deposit in Emigrant Industrial Savings Bank	\$ 1,509.57
U. S. Bond—Series G	1,000.00
Publication revolving fund	\$ 2,509.57
On deposit with Union Dime Savings Bank designated as the Charles A. Urner Memorial Fund	526.65
On deposit with the National City Bank of New York—Checking Account	834.15
TOTAL	\$ 3,870.37

Respectfully submitted,

EVA RICH, *Treasurer*

Approved by Auditing Committee:
E. R. P. JANVRIN, M.D.
BENJAMIN GILBERT, C.P.A.

Treasurer's Report for the Year Ending March 1, 1945

RECEIPTS

Dues		\$ 549.25
Sale of publications		468.39
Interest: Union Dime Savings Bank	\$ 7.93	
Emigrant Industrial Savings Bank	23.63	
U. S. Bond, Series G	25.00	56.56
Annual Dinner		200.25
Total		\$ 1,274.45

EXPENDITURES

Publications		\$ 16.05
Memberships and subscriptions		23.04
Annual Dinner (American Museum of Natural History)		200.25
Cost of meetings: (American Mus. Nat. History) for room guards, projector operators, elevator operators, postage for Bulletin of New York Academy of Sciences		190.41
Expenses of guest speakers		32.19
Stationery, printing, postage		47.17
Total		\$ 509.11
Surplus for year ending March 1, 1945		\$ 765.34
Funds on hand March 1, 1944		3,870.37
Funds on hand March 1, 1945		\$ 4,635.71

DISTRIBUTION OF FUNDS ON HAND

Publications Revolving Fund:		
On deposit Emigrant Industrial Savings Bank	\$ 2,001.59	
U. S. Bond, Series G	1,000.00	\$ 3,001.59
Charles A. Urner Memorial Fund		
On deposit Union Dime Savings Bank		534.58
Checking Account		
On deposit National City Bank of New York		1,099.54
Total		\$ 4,635.71

Respectfully submitted,

EVA RICH, *Treasurer*

March 5, 1945

Approved by Auditing Committee:

E. R. P. JANVRIN, M.D.
SAMUEL C. HARRIOTT

Membership List, January, 1946

Honorary Members

- 1941 BENT, ARTHUR C., 140 High St., Taunton, Mass.
1937 NICE, MRS. MARGARET MORSE, 5725 Harper Ave., Chicago 37, Ill.
1941 PINTO, DR. OLIVEIRO, Dept. of Zoologia, Sao Paulo, Brazil.
1938 STRESEMANN, PROF. ERWIN, Zool. Museum der Universitat, Invaliden Strasse 43, Berlin, Germany.
1941 TAVERNER, PERCY A., 45 Leonard Ave., Ottawa, Ont., Canada.

Fellows

- 1908 CHAPIN, DR. JAMES P., Amer. Mus. Nat. History, New York 24, N. Y.
1878 FISHER, DR. A. K., Cosmos Club, Washington, D. C.
1907 GRISCOM, LUDLOW, Mus. of Comp. Zoology, Cambridge, Mass.
1924 HICKEY, JOSEPH J., Mus. of Zoology, Ann Arbor, Mich.
1878 INGERSOLL, ERNEST (*Founder*), 57 West 58 St., New York, N. Y.
1932 MAYR, DR. ERNST, Amer. Mus. Nat. History, New York 24, N. Y.
1905 NICHOLS, JOHN T., Amer. Mus. Nat. History, New York 24, N. Y.
1878 OSBORN, WM. C. (*Founder*), c/o Osborn, Fleming, and Whittlesey, 20 Exchange Pl., New York, N. Y.

Active Members

- 1922 ABBOTT, MRS. LAURA WOODWARD, "Madryn," R. D. I., West Chester, Pa.
1942 ADAMS, MRS. MARK H., 140 East 28 St., New York, N. Y.
1942 ADAMS, DR. MARK H., 155 East 93 St., New York, N. Y.
1945 ADELBERG, ERNEST, 200 West 109 St., New York 25, N. Y.
1931 *ALLEN, ROBERT P., 1006 Fifth Ave., New York 28, N. Y.
1935 *ALLYN, DR. RICHARD, Waverly, Ill.
1941 *ALPERIN, IRWIN, 1650 Ocean Ave., Brooklyn, N. Y.
1938 *AMADON, DEAN, Amer. Mus. Nat. Hist., New York 24, N. Y.
1945 ANSEL, JERRY V., 1 East 198 St., New York, N. Y.
1938 *ARBIB, ROBERT, 115 Lafayette Pl., Woodmere, L. I., N. Y.
1943 ARCHARD, HELEN, 2544 County St., Somers, Mass.
1944 ARONOFF, ARTHUR, 1011 Carroll Pl., Bronx, N. Y.
1935 ASTLE, WILLIAM O., 45-64 158 St., Flushing, N. Y.
1924 BAKER, JOHN H., 1006 Fifth Ave., New York 28, N. Y.
1944 BAILEY, MRS. GLADYS, Amer. Mus. Nat. History, New York 24, N. Y.
1928 BALDWIN, ROGER N., 170 Fifth Ave., New York, N. Y.
1945 BARR, ALFRED H., JR., 49 East 96 St., New York, N. Y.
1945 BARRAS, MOSES, 1571 Sheridan Ave., New York 57, N. Y.
1944 BATCHELDER, LOIS, 18 East 70 St., New York, N. Y.

* In the armed forces

° Life member

- 1931 BEALS, MRS. A. T. (MARIE V.) 58-33 85 St., Elmhurst, L. I., N. Y.
 1945 BEAVER, QUENTIN, 3816 Review Pl., New York 63, N. Y.
 1892 BISHOP, DR. LOUIS B., 450 Bradford St., Pasadena, Calif.
 1944 BLACKBURN, HAROLD 677 East 232 St., Bronx, N. Y.
 1943 BLAZER, WARREN C., 1516 First Ave., New York, N. Y.
 1934 BLIEMEYER, ROSE T., 115-04 89 Ave., Richmond Hill, L. I., N. Y.
 1920 BOWDISH, BEECHER S., Demarest, N. J.
 1935 BOWEN, LEON W., 77 Evergreen Ave., Bloomfield, N. J.
 1941 BRAND, MRS. ALBERT R., 200 West 70 St., New York, N. Y.
 1944 BRANDI, ALFRED, 326 West 89 St., New York, N. Y.
 1923 BRANDRETH, COURTENAY, Ossining, N. Y.
 1931 BRESLAU, LEO, c/o Laurel Printing Co., 480 Canal St., New York, N. Y.
 1938 BRIGHAM, H. STORRS, JR., 3817 Sedgwick Ave., New York, N. Y.
 1934 BROWN, CLARENCE D., 222 Valley Rd., Montclair, N. J.
 1939 BUCHHEISTER, CARL W., 1006 Fifth Ave., New York 28, N. Y.
 1939 BULL, JOHN L., JR., 49 Merrall Rd., Far Rockaway, L. I.
 1944 BULL, MRS. JOHN L., JR. (EDITH H.), 49 Merrall Rd., Far Rockaway, L. I.
 1942 BURDSALL, RICHARD, King St., Portchester, N. Y.
 1944 BURKER, LARRY, 240 Central Pk. So., New York, N. Y.
 1944 BUSHELL, MRS. ROBERT (AGNES SHEERS), 3420 79 St., Jackson Heights, N. Y.
 1938 CANT, GILBERT B., 43 Bedford Rd., Summit, N. J.
 1940 *CANTOR, IRVING, 155 West 99 St., New York, N. Y.
 1932* CARLETON, GEOFFREY, 438 West 116 St., New York, N. Y.
 1943 CARNES, MRS HERBERT, 45 Kenwood Rd., Tenafly, N. J.
 1921 CARTER, T. DONALD, Amer. Mus. Nat. History., New York 24, N. Y.
 1934 *CHALIF, EDWARD L., Barnsdale Rd., Short Hills, N. J.
 1893 °CHUBB, SAMUEL H., Amer Mus. Nat. History, New York 24, N. Y.
 1910 CLEAVES, HOWARD H., 8 Maretzek Court, Prince Bay, S. I., N. Y.
 1941 COIT, MRS. ANNA N., 147 Park St., Montclair, N. J.
 1945 COLE, HELEN D., 45 Prospect Pl., New York 17, N. Y.
 1928 COOLIDGE, OLIVER H., Broad Brook Rd., Bedford Hills, N. Y.
 1920 CRANDALL, LEE S., N. Y. Zoological Park, Bronx, N. Y.
 1943 CRANS, VERA, 65 Bedford St., New York, N. Y.
 1944 CROOKS, MYRTLE, 609 West 137 St., New York, N. Y.
 1926 *CRUICKSHANK, ALLEN D., 1006 Fifth Ave., New York 28, N. Y.
 1944 CRUM, HARRY E., 88 Morningside Dr., New York, N. Y.
 1939 DALE, MRS. ALLENE H., 390 Riverside Dr., New York, N. Y.
 1942 BARKOW, PROF. MARGUERITE, 16 East 82 St., New York, N. Y.
 1943 DELACOUR, JEAN, N. Y. Zoological Soc., Bronx, N. Y.
 1939 *DARROW, HARRY N., 49 East 2 St., Mount Vernon, N. Y.
 1945 DEMARS, R., 1557 Fulton Ave., Bronx, N. Y.
 1943 DENHAM, REGINALD K., 100 Central Park So., New York, N. Y.
 1929 DESMOND, THOMAS C., 94 Broadway, Newburgh, N. Y.
 1942 DETWEILER, HELEN M., 540 West 123 St., New York 27, N. Y.
 1939 DOEPFEL, MRS. HENRY W., 30 Cooper Lane, Larchmont, N. Y.
 1944 DOERING, HUBERT R., 2 Midland Gardens, Bronxville 8, N. Y.
 1943 DUFLLOT, HELEN, 320 East 61 St., New York, N. Y.

- 1944 DYKAAR, DAVID, 3133 Rochambeau Ave., Bronx, N. Y.
 1944 ECKELBERRY, DON, 1006 Fifth Ave., New York, N. Y.
 1943 EDEY, MRS. ALFRED (MARION), 115 East 82 St., New York, N. Y.
 1939 EDEY, MRS. MAITLAND, Glenhead, L. I., N. Y.
 1939 *EDEY, MAITLAND, Glenhead, L. I., N. Y.
 1930 EDGE, MRS. C. N., 1200 Fifth Ave., New York, N. Y.
 1943 EDWARDS, MRS. HELEN M., 111 East 12 St., New York, N. Y.
 1940 EISENMANN, EUGENE, 110 West 86 St., New York 24, N. Y.
 1939 ELLIOTT, JOHN J., Park Ave., Seaford, L. I., N. Y.
 1944 ELLIS, AMBER, 1230 Amsterdam Ave., New York 27, N. Y.
 1937 *EYNON, ALFRED E., 33 Montclair Ave., Verona, N. J.
 1945 FABLES, DAVID, 421 Walnut St., Roselle Park, N. J.
 1943 FARREN, MRS. INGER, 47 West 52 St., New York, N. Y.
 1943 *FARREN, JULIEN, 47 West 52 St., New York, N. Y.
 1945 FEENEY, MRS. JOSEPH P., Box 111, R.F.D. 1, Creekside, Pa.
 1945 FERGUSON, WALTER, 991 Carroll St., Brooklyn, N. Y.
 1944 FIFE, MARGARET, 82 East End Ave., New York, N. Y.
 1940 *FISCHER, JOHN J., 892 Faile St., Bronx, N. Y.
 1939 °FISCHER, RICHARD B., 140-19 Beech Ave., Flushing, L. I., N. Y.
 1920 FISCHER, DR. G. CLYDE, Amer. Mus. Nat. History, New York 24, N. Y.
 1945 FLAHERTY, ANNA M., 866 Bushwick Ave., Brooklyn, N. Y.
 1942 *FLAVIN, JOHN W., 155 Floral Boulevard, Floral Park, L. I., N. Y.
 1914 °FLEISHER, PROF. EWARD, 20 Plaza St., Brooklyn 17, N. Y.
 1944 FLUEKIGER, DORA, Hotel Dauphin, Broadway at 67 St., New York 23, N. Y.
 1937 FLYNN, MICHAEL G., 415 S. Crouse Ave., Syracuse, N. Y.
 1945 FRIEDLE, WILLIAM, 137-58 Geranium Ave., Flushing, L. I., N. Y.
 1921 FRIEDMAN, RALPH, 14 East 75 St., New York, N. Y.
 1923 FROST, ALLEN, 143 Academy St., Poughkeepsie, N. Y.
 1925 FRY, MRS. GLADYS GORDON, 66 Eagle Rock Way, Montclair, N. J.
 1944 FRY, VARIAN, 45 East 49 St., New York, N. Y.
 1942 FURNESS, MRS. GEO. A., 510 East 84 St., New York, N. Y.
 1944 GARRITY, DEVIN A., 76 Irving Place, New York, N. Y.
 1823 GARVAN, MRS. FRANCES P., 740 Park Ave., New York, N. Y.
 1940 GATELL, BENONI B., 84 William St., New York, N. Y.
 1943 GEE, JOHN P., 803 W. 8 St., Plainfield, N. J.
 1941 GILBERT, BENJAMIN, 265 Cabrini Boulevard, New York, N. Y.
 1939 GILLEN, H. W., 120 Broadway, New York, N. Y.
 1937 *GILLIARD, E. THOMAS, 522 Baird Ave., Meriden, Pa.
 1945 GOLDSTEIN, GEORGE, 2760 Grand Concourse, Bronx, N. Y.
 1944 GRIERSON, STANLEY, 44 Sunrise Ave., Katonah, N. Y.
 1928 GRINNELL, LAWRENCE I., 710 Triphammer Rd., Ithaca, N. Y.
 1934 GUERNSEY, RAYMOND G., Eden Terr., Poughkeepsie, N. Y.
 1921 GUTLOHM, MRS. WALTER (BLANCHE S.), 112 West 59 St., New York, N. Y.
 1944 HAGOPIAN, RALPH, 114 East 90 St., New York, N. Y.
 1935 HARRIOTT, SAMUEL C., 200 West 58 St., New York, N. Y.
 1924 HASBROUCK, HENRY C., 61 Broadway, New York, N. Y.
 1935 HECK, DR. EDSON B., 325 East 72 St., New York 21, N. Y.

- 1945 HELLER, DAVID, 540 Fort Washington Ave., New York 33, N. Y.
- 1902 *HELME, DR. ARTHUR H., 223 Bayview Terr., Port Jefferson, N. Y.
- 1932 HELMUTH, DR. W. T., Box 383, Easthampton, L. I., N. Y.
- 1928 HERBERT, RICHARD A., 961 Fox St., New York, N. Y.
- 1929 HERBST, MRS. THEO. W., Bernardsville, N. J.
- 1942 HINES, JOSEPH A., 30-12 49 St., Long Island City, N. Y.
- 1945 HORN, FRANK E., 535 East 21 St., Brooklyn, N. Y.
- 1921 HOWLAND, R. H., 92 Livingston St., New Haven 11, Conn.
- 1924 *HUNTER, ROLAND JACKSON, 68 Broad St., Freehold, N. J.
- 1939 *IMHOF, THOMAS, 413 Autumn Ave., Brooklyn, N. Y.
- 1933 INGERSOLL, MRS. RAYMOND V., 4 East 66 St., New York, N. Y.
- 1929 INGRAHAM, EDWARD A., 430 Clinton Ave., Brooklyn, N. Y.
- 1942 *IRVING, JAMES GORDON, Teaneck, N. J.
- 1939 JACOBSON, DR. A. MALCOLM, 245 Hawthorne St., Brooklyn, N. Y.
- 1918 JANVRIN, DR. E. R. P., 38 East 85 St., New York, N. Y.
- 1925 JAQUES, FRANCIS L., 610 West 116 St., New York, N. Y.
- 1912 *JOHNSON, JULIUS, M., 293 Pleasant Ave., Ridgewood, N. J.
- 1925 KASSOY, IRVING, 891 Faile St., New York, N. Y.
- 1944 KEIL, JULIUS J., 3554 De Kalb Ave., New York, N. Y.
- 1944 KEIL, MRS. JULIUS J. (FERN), 3554 De Kalb Ave., New York, N. Y.
- 1945 KESHER, ROBERT T., River Glen, Hastings, N. Y.
- 1914 KIERAN, JOHN, 4506 Riverdale Ave., Bronx 63, N. Y.
- 1942 KIMBALL, DR. HEATHCOTE, 86 Fourth St., Garden City, L. I., N. Y.
- 1945 KIMBALL, MRS. HEATHCOTE, 86 Fourth St., Garden City, L. I., N. Y.
- 1943 KING, ELEANOR, 47 West 55 St., New York, N. Y.
- 1943 KOMOROWSKI, GEORGE, 240 East 199 St., Bronx, N. Y.
- 1937 *KRASLOW, HOWARD, 2025 Regent Pl., Brooklyn, N. Y.
- 1944 LASERSOHN, MRS. ROWENA, Elmsford, N. Y.
- 1943 *LEVINE, NORMAN, 2116 Grand Ave., New York, N. Y.
- 1921 LITCHFIELD, GERTRUDE, Hudson View Gardens, 183 St. and Pinehurst Ave.,
New York, N. Y.
- 1944 MACLAY, MARK, 158 East 81 St., New York, N. Y.
- 1937 MANNING, ELIZABETH S., 1006 Fifth Ave., New York 28, N. Y.
- 1944 MANZER, DR. CHARLES, 10 Sheridan Sq., New York, N. Y.
- 1943 *MARIEN, DANIEL, 1916 Grand Concourse, New York, N. Y.
- 1943 *MATHEWS, DR. FRANK P., Fox Rd., Moylan, Pa.
- 1932 MATHEWS, WILLIAM H., 27 St. Andres's Pl., Yonkers, N. Y.
- 1944 MATHEWSON, HOPE, 82 East End Ave., New York, N. Y.
- 1945 MCCREADY, ANN, 1 West 68 St., New York, N. Y.
- 1937 MCKEEVER, CHRISTOPHER K., 429 Lincoln Pl., Brooklyn 16, N. Y.
- 1940 MCKEEVER, MRS. CHRIS. K. (KAY R.), 429 Lincoln Pl., Brooklyn 16, N. Y.
- 1944 *MILCH, ALFRED, 1475 Popham Ave., Bronx, N. Y.
- 1941 MOERAN, EDWARD HENRY, 541 Bronx River Rd., Sherwood Pk., Yonkers, N. Y.
- 1939 MUNDY, BARBARA B., 1009 Park Ave., New York, N. Y.
- 1944 NAGLER, ROBERT, 174 West 76 Street, New York, N. Y.
- 1944 *NATHAN, BERNARD, Hotel Stuyvesant, Buffalo, N. Y.
- 1919 NAUMBURG, MRS. ELSIE M. B., Amer Mus. Nat. History, New York 24, N. Y.

- 1934 NELSON, DR. THEODORA, 315 East 68 St., New York, N. Y.
 1944 NEW, JOHN, 340 West 86 St., New York, N. Y.
 1930 NICHOLS, CHARLES K., 212 Hamilton Rd., Ridgewood, N. J.
 1916 NICHOLS, L. NELSON, 331 East 71 St., New York, N. Y.
 1937 *NORSE, WILLIAM J., 531 West 211 St., New York, N. Y.
 1940 OBOIKO, MICHAEL, Box 166, Rye, N. Y.
 1945 PECK, ARTHUR, 1311 Needham Ave., Bronx, N. Y.
 1940 PELOUBET, MRS. SIDNEY W., 228 Sagamore Rd., Millburn, N. J.
 1943 PETERS, ELLEN, 442 5 St., Brooklyn, N. Y.
 1944 PETERSEN, ERICK, 34 Hillside Ave., New York, N. Y.
 1943 PETERSON, MRS. MILDRED W., 322 West 107 St., New York, N. Y.
 1927 *PETERSON, ROGER T., 1006 Fifth Ave., New York 28, N. Y.
 1939 *PETERSON, RUSSELL, 42 Overlook Rd., Verona, N. J.
 1938 PETTIT, THEODORE S., 29 Donahue Rd., Inwood, L. I., N. Y.
 1944 PHELPS, WILLIAM H., Apartado 2009, Caracas, Venezuela
 1937 PHILIPP, FREDERICK B., 99 John St., New York, N. Y.
 1944 PIECZUR, WALTER H., 1143 Rogers Ave., Brooklyn, N. Y.
 1939 POOR, HUSTACE H., 112 Park Ave., Yonkers 3, N. Y.
 1939 PORTER, JOHN F., 5 Crow's Nest Rd., Bronxville, N. Y.
 1938 *POSEY, HOWARD L., 170 Irving Ave., South Orange, N. J.
 1937 POUCH, RICHARD H., 1006 Fifth Ave., New York 28, N. Y.
 1939 POUCH, MRS. RICHARD H., 33 Highbrook Ave., Pelham, N. Y.
 1941 *RAYNOR, GILBERT S., Manorville, L. I.
 1922 RICH, MRS. EVA, 150 West 80 St., New York 24, N. Y.
 1886 RIKER, CLARENCE B., 432 Scotland Rd., South Orange, N. J.
 1944 RISSANEN, WILLIAM, 516 West 167 St., New York, N. Y.
 1944 ROCHE, DAVID, JR., 3836 Bailey Ave., Bronx, N. Y.
 1911 *ROGERS, CHARLES H., Princeton Mus. of Zoology, Princeton, N. J.
 1934 ROSE, GEORGE C., 202 Linden Rd., Mineola, L. I., N. Y.
 1943 ROSS, R. DUDLEY, 23 Jefferson Ave., Arlington, N. J.
 1943 ROSS, MRS. R. DUDLEY, 23 Jefferson Ave., Arlington, N. J.
 1942 RUBIN, MRS. ANIVA H., 328 Archer St., Freeport, L. I.
 1945 RYAN, RICHARD, 5009 BROADWAY, New York 34, N. Y.
 1939 *SABIN, WALTON B., 149-12 Roosevelt Ave., Flushing, L. I.
 1935 *SANDFORD, LLOYD, 603 Clinton Ave., Newark 8, N. J.
 1944 SCHUTZE, KATHERINE, 417 West 123 St., New York, N. Y.
 1939 SCOTT, F. CLEMENT, c/o Time Inc., 9 Rockefeller Plaza, New York, N. Y.
 1931 *SEDWITZ, WALTER, 101 West 60 St., New York, N. Y.
 1945 SHAPIRO, JOSEPH J., 465 Central Park West, New York, N. Y.
 1944 SIMON, ARNOLD, 2210 Cedar Ave., Bronx, N. Y.
 1939 *SKOPEC, ARTHUR, 36-37 202 St., Bayside, L. I., N. Y.
 1943 *SMALL, ARNOLD, 2871 Grand Concourse, New York 28, N. Y.
 1944 SMITH, MRS. FRANK G., Van Rensalaer Apts., Glenwood Gardens, Bronx, N. Y.
 1944 SOLL, JEROME, 921 Washington Ave., Brooklyn, N. Y.
 1933 *STALOFF, CHARLES, 1085 Anderson Ave., Bronx, N. Y.
 1943 STEGLE, JOSEPH, 220 Pondfield Rd., Bronxville, N. Y.
 1944 STERN, PHILIP, 991 President St., Brooklyn, N. Y.

- 1937 *STEPHENSON, DR. O. K., 1565 Odell St., Bronx, N. Y.
 1929 STEVENS, MRS. CHAS. W., 170 West 74 St., New York, N. Y.
 1937 STICKNEY, MRS. ALBERT, JR., 935 Smith Lane, Woodmere, L. I.
 1939 STOCKELBACH, MRS. F. E., 25 Gordon Pl., Verona, N. J.
 1945 STONER, MRS. C. BIRCH, Hobart Ave., Short Hills, N. J.
 1906 *STREETER, DANIEL D., 214 Fenmore St., Brooklyn, N. Y.
 1944 TAINTER, GRACE, 161 Emerson Pl., Brooklyn, N. Y.
 1945 TEALE, EDWIN WAY, 93 Park Ave., Baldwin, L. I., N. Y.
 1933 *THOMAS, ALLEN M., Graham School, Hastings-on-Hudson, N. Y.
 1926 THOMAS, MRS. MARGARET L., 366 West 245 St., Bronx, N. Y.
 1925 THORNTON, A. P., 27 West 44 St., New York, N. Y.
 1945 TOUSEY, KATHERINE, 206 East 16 St., New York 3, N. Y.
 1942 TREAT, DOROTHY A., 1006 Fifth Ave., New York 28, N. Y.
 1925 TUCKER, CARLL, 733 Park Ave., New York, N. Y.
 1923 TUCKER, MRS. CARLL, 733 Park Ave., New York, N. Y.
 1943 TURNER, RUTH D., Clapp Laboratories, Duxbury, Mass.
 1933 VAN DEUSEN, HOBART M., 8 Wellesley Rd., Upper Montclair, N. J.
 1944 VAURIE, DR. A. J. C., 231 East 76 St., New York, N. Y.
 1928 VOCT, WILLIAM, 32 Cunningham Ave., Floral Park, N. Y.
 1906 WALTERS, FRANK, 3708 64 St., Woodside, N. Y.
 1924 WALSH, LESTER L., 69 Tappan Landing Rd., Tarrytown, N. Y.
 1944 WAUGH, DAN F., 277 Park Ave., New York, N. Y.
 1943 WEAVER, DR. RICHARD L., Audubon Nature Center, R.F.D. 4, Greenwich, Conn.
 1939 WEBER, ORLANDO R., JR., 910 Fifth Ave., New York 21, N. Y.
 1944 WEINBERG, ARNOLD, 916 Carroll St., Brooklyn, N. Y.
 1944 WEINGRAFF, ABRAHAM, 316 West 97 St., New York, N. Y.
 1944 WEIRICH, MARJORIE C., 89 Crooke Ave., Brooklyn 26, N. Y.
 1944 WELLS, PHILIP, 227 Brooklyn Ave., Brooklyn, N. Y.
 1943 WERNER, IDA F., 2701 Webb Ave., Bronx, N. Y.
 1945 *WHITING, ROBERT, Army Air Base, Newark, N. J.
 1928 WILCOX, LEROY, Speonk, L. I., N. Y.
 1945 WILLIAMS, HELEN J., 400 West 119 St., New York, N. Y.
 1945 WILSON, BRUCE V., 39 West 12 St., New York, N. Y.
 1944 WOOD, CATHERINE J., 61 West 85 St., New York, N. Y.
 1942 WOOD, RAWSON, 215 East 45 St., New York, N. Y.
 1945 YEANDLE, STEPHEN, 538 East 83 St., New York 28, N. Y.
 1940 *YOUNG, ADDISON, 93 Argyle Ave., New Rochelle, N. Y.
 1944 YOUNG, ELIZABETH M., 72 Columbia Hts., Brooklyn, N. Y.
 1944 YRIZARRY, JOHN, 1141 Carroll St., Brooklyn, N. Y.

Associate Members

- 1936 *AMMANN, GEORGE A., Game Div., Dept. of Conservation, Lansing, Mich.
 1919 AYER, MRS. NATHAN EDWARD, 1300 Hillcrest Dr., Pomona, Calif.
 1945 BEARD, MRS. T. C., c/o American Hoist & Derrick Co., St. Paul, Minn.
 1941 BROWN, PROF. V. E., Taylor University, Upland, Ind.

- 1925 CARR, WILLIAM H., 1034 No. Jacobus Ave., Tucson, Ariz.
- 1925 COFFEY, MRS. BEN B., JR., 672 No. Belvedere St., Memphis, Tenn.
- 1937 EATON, MRS. TRACY A., c/o Mrs. C. K. Woodbridge, 37 Washington Sq. West, New York 11, N. Y.
- 1938 *HAMILTON, MARY, U. S. Naval Hospital, Naval Operating Base, Norfolk 11, Va.
- 1933 HICKEY, MRS. JOSEPH J., (MARGARET BROOKS), 2391 Parkwood Ave., Pittsfield Village, Ann Arbor, Mich.
- 1945 HODGE, JAMES, 1034 Harbor Rd., Davenport, Iowa
- 1884 INGERSOLL, A. M., 908 F St., San Diego, Calif.
- 1943 IRVINE, JOHN M., Bellevue, Rte. 3, Box 141, Pittsburgh, Pa.
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