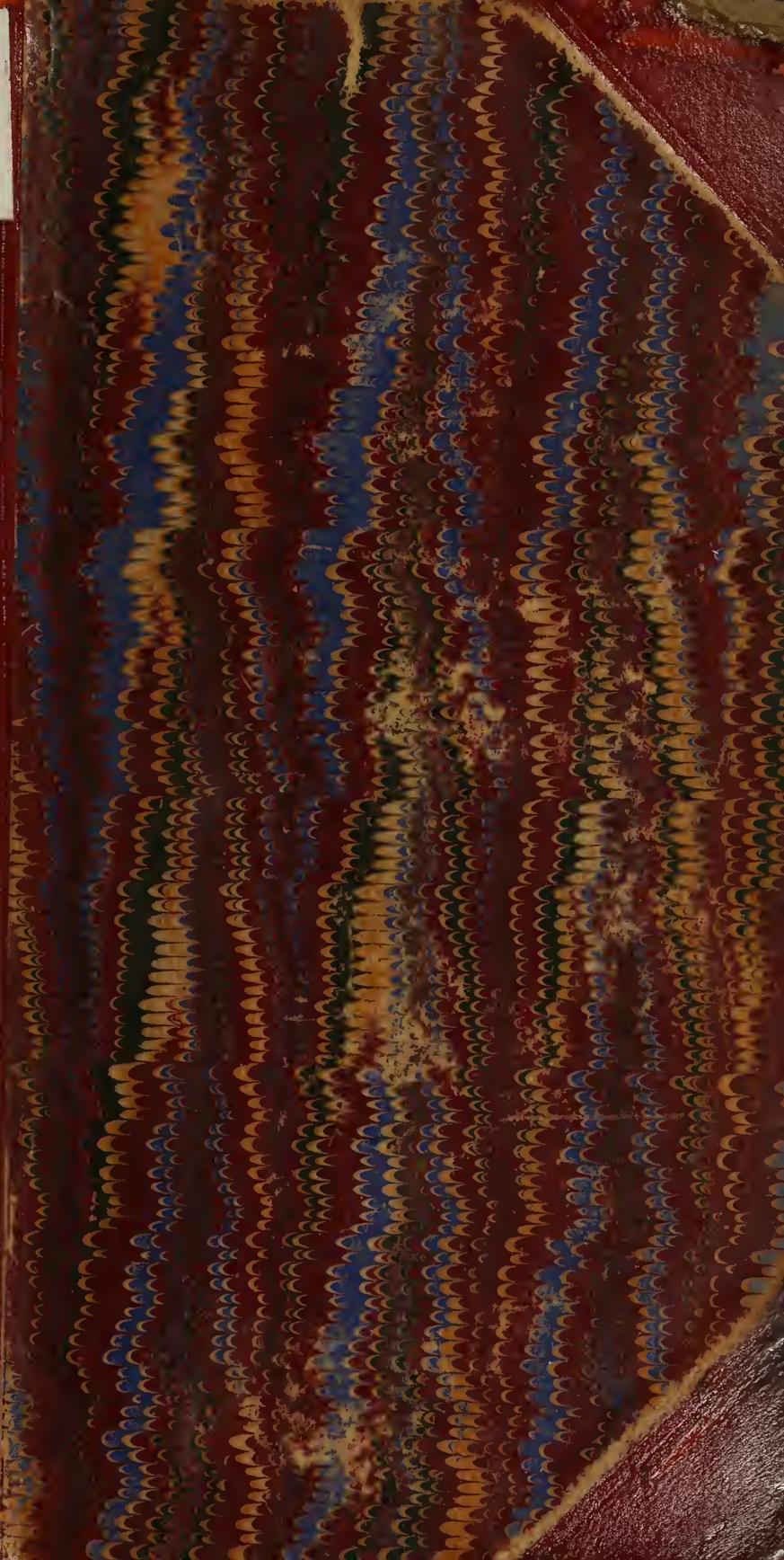


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EDITOR,
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VOL. II.

JANUARY, 1885.

NO. I.

ON THE BREEDING HABITS OF SOME ARIZONA BIRDS.

FIRST PAPER.—*Icterus parisorum*.

BY W. E. D. SCOTT.

DURING the spring and summer of 1884 it was my good fortune to make the acquaintance of a number of birds whose breeding habits are at best but little known, and the following data give some of the results of such observations. Most of the notes on the species in question were made at a point, to be more fully described presently, on the San Pedro slope of the Santa Catalina Mountains, in Pinal County, Arizona Territory.

Here Scott's Oriole (*Icterus parisorum*) arrives about the middle of April, and is at once among the more conspicuous birds, both for its brilliant plumage and rich song. Few birds sing more incessantly, and in fact I do not recall a species in the Eastern or Middle States that is to be heard as frequently. The males are of course the chief performers, but now and again, near a nest, while watching the birds, I would detect a female singing the same glad song, only more softly. At the earliest day-break and all day long, even when the sun is at its highest, and during the great heat of the afternoon, its very musical whistle is one of the few bird songs that are ever present.

From the time of its arrival until July 29 I heard the song daily, even hourly, and during the height of the breeding season often many were singing within hearing at the same time.

This has been called 'a desert species,' and most Arizona birds might fall under the same grouping, at times. I suppose, but my experience with it is so very directly to the contrary that a word as to the surroundings of the home of this Oriole, as found by me, will perhaps give a better idea to the reader.

There is a cañon that begins high up in the Santa Catalinas, and, dividing the hills and table lands on either side of it by its deep furrow, it extends for two miles or more, where it joins the valley of the San Pedro River. It is the upper or more elevated part of this cañon with which we have to do, at an altitude varying from four thousand to five thousand feet. The hills on either side are high, the cañon generally quite narrow. Live oaks are the trees of the hills and hillsides, and reach in places to the bed of the cañon. Here in parts are groves of cottonwoods and sycamores, and some cedars, and, with the exception of the very bed of the cañon, where for a part of the year is a brook, the grass covers the surface of the ground. The brook begins to dry up in its exposed parts early in May, but all summer long there is running water for at least a mile in the cottonwood grove, and in a number of places, even during the driest part of the year, the water rises to the surface, making 'tanks,' as they are called. Along this running water and about the 'tanks,' bird life is very abundant, and here, surely no desert, is the summer home of many Scott's Orioles. There is very little cactus, and none of the 'chollas' that are so very characteristic of the deserts of the neighboring region.

After August 7 I missed the song, although the birds were abundant until the 10th of that month, and I saw a single bird or so for the following three days. Then I supposed they were all gone, but on the 14th of September, about dusk, I started one, an adult male, from a yucca where he had evidently gone to roost. He scolded angrily at me from the dead limb of a cedar near by for a few moments, when I left him to go to bed. Again, on the 18th of September, I heard a male in full song, and going closer found a party of four together, three old males and a young one of the year. This is my last note of their occurrence at this point.

There are many yuccas (*Yucca baccata*) in the cañon and on the hillside, none of them exceeding ten feet in height, and it was in one of these, only a few feet from a wood near where some one passed daily, and close to a 'tank' of water, that on May 24 I found the first nest. It was carefully concealed under the half dead and dry leaves that hung downward close to the trunk of the plant. Two of the long pointed blades had still been green enough to allow the pulp to be picked away, and the tough fibers had then been frayed and used as a sort of starting point or foundation for the structure which was thus 'sewed'—I know no more appropriate word—fast to the edges of the leaf. I only caught a glimpse of the female and was not sure of the bird till later, when both parents were identified to my satisfaction.

The nest contained three fresh eggs, though four is the usual number, as three nests found during the next few days proved. These nests were all built in yuccas, none were far from water, and, strangely, for a rather shy and suspicious bird, all were within ten feet of the road. The last, that of May 30, to be spoken of in detail presently, was so near a much used trail, that the passer by might have touched it with the hand. The following descriptions of the nests in detail are copied from my notes:

••Nest of May 24. Built in a yucca, four feet from the ground. Sewed to the edges of five dead leaves which, hanging down parallel to trunk of the plant, entirely concealed the nest. Semi-pensile. Composed externally of fibers of the yucca and fine grasses. Lined with soft grasses and threads of cotton-waste throughout. The walls are very thin, at bottom not more than half an inch, and on the sides from one-eighth to a quarter of an inch thick. The whole nest was rather closely woven and very strong. Inside depth, three and a half inches. Inside diameter, four inches. The whole cup-shaped. Contains three fresh eggs. The female was killed flying from the nest, or the set would have been completed. Eggs bluish-white in color, with a cluster of chocolate-brown spots, and others of lighter lilac-brown at the larger end, spotted very sparsely all over, mainly with a still lighter shade of the latter color, though a very few of these dispersed markings are also dark chocolate-brown. They measure .98 × .69, .92 × .65, 1.00 × .73 inches, respectively. I have called this nest semi-pensile, as the edges of the yucca

leaves are not simply attached to the rim or top edge of the nest, but are 'sewed' to the *sides* of the structure—one blade for three inches, three for four inches, and the other two for more than two inches and a half. The nest is sewed to the blades or leaves about seven inches from where they join the trunk of the plant, and the blades are about twenty-two inches long."

"Nest of May 27. Built in yucca, about four feet from ground. Nest sewed to the edges of three leaves, all on one side of the structure and close together, being about three-quarters of an inch apart. Other leaves project downward at an angle of about 45° , and the nest rests on them, as it would on the slanting roof of a house. It is therefore not at all pensile. Is built of grasses, yucca fiber, and has cotton twine woven into its walls. Inside it is lined to within half an inch of the rim with small pieces of cotton batting, some cotton twine, and a little very soft grass. It is sewed to the edges of each of the three leaves it rests on for six inches. The walls on the sides are an inch, and at the bottom an inch and a half thick. The general inside shape is oval, the greatest diameter being four and the least three and a half inches. The greatest depth inside is three and a half inches. The walls on sides sewed to leaves are about six inches in depth, and on the side rising from the leaves four inches. It contains four fresh eggs, that recall those of the Red-winged Blackbird (*Agelaius phœnicus*) in general appearance. They measure as follows: $.96 \times .68$, $.98 \times .66$, $.92 \times .68$, $.96 \times .68$. The nest is sewed to the leaves about ten inches from where they join the trunk of the plant, and the leaves are about eighteen inches long. Other leaves hanging downward above those on which the nest rests almost conceal it."

"Nest of May 30. Built in yucca, four feet from the ground. Composed of yucca fiber and fine grasses, and is very similar to that of May 24 in general appearance. The bottom of the structure inside is lined with a soft mat of cotton-waste. Semi-pensile, being sewed to six leaves of the plant, three of which almost conceal the nest from view. The nest measures: depth inside, four inches; depth outside, five and a half inches; inside diameter at top, four inches. The general shape of the interior is that of a rather large and shallow cup. Contains four eggs, partially incubated. Ground-color bluish-white, with much the same colored markings as those of the nest of May 24. Their

general shape differs, however, as they are much more pointed at one end and flattened at the other, the shape reminding one of the eggs of some of the Plovers. They measure $.92 \times .71$, $.93 \times .78$, $.91 \times .70$, $.88 \times .69$. The sewing of the nest reaches on two of the leaves four inches; on one, five inches; on one, three inches; and on the other two, an inch and a half. The nest is fastened to the leaves about five inches from where they join the stem or trunk of the plant, and the leaves to which it is fastened are rather more than twenty inches long. -

"Second nest of May 30.. Similar in location to the first nest of same date and built in same kind of plant. Composed of grasses and yucca fiber, the later mainly, and has in the inside at bottom a very thick lining of cotton-waste. Is semi-pen-sile, and is sewed to four green leaves—to one for six inches, the entire wall of the nest for its whole length being fastened. A second is sewed only for half an inch to the wall very close to the *bottom* of the nest. A third is very similar in its point of attachment, only that it is fastened for a little more than an inch, and the last is fastened for three inches in the ordinary way. The nest is very uneven in shape externally, being fully six inches deep on one side and not more than two inches deep on the other. The nest has an interior diameter of four and a quarter inches, and is very shallow and cup-shaped, being only two and a quarter inches deep at its deepest part. Four fresh eggs are the contents, and they vary only in not being so pointed as the other set of May 30. They are rather larger than any others measured, being $1.01 \times .72$, $1.02 \times .70$, $.97 \times .70$, $1.02 \times .73$. The general shape of the nest is an uneven, one-sided cup, with its greatest external diameter four and three-quarters inches. It is attached to the leaves about seven inches from the trunk of the plant, and the leaves to which it is attached are twenty-six inches long. It is built but little more than three feet from the ground, and partially concealed by over-hanging leaves."

The cotton and cotton-waste were doubtless picked up by the birds about the house and near a mill but a little distance away, where the waste is used in polishing machinery, etc.

Some pairs of the birds, at least, raise two broods during the season. A fifth nest, completing my series, was found just finished on June 26, and all the eggs, three in number, were deposited by July 1, when the nest was taken. It was built in a

sycamore overhanging the wood-road before mentioned, and about forty yards from water. It differs greatly from any of the others, as the appended notes show.

"Nest of July 1. Built in a sycamore tree, about eighteen feet from the ground. Pensile, being attached to the ends of the twigs. It is composed externally entirely of the fibers of dead yucca leaves, and there are hanging to and built into the walls four rather small dead leaves of this plant, that are partly frayed, so that the fiber is used in weaving them into the structure. The interior is lined with soft fine grasses, and only two or three shreds of cotton-waste appear here and there in the lining. The walls vary from a quarter to half an inch in thickness. The whole structure is very symmetrical and is a half sphere in shape. Inside the greatest depth is two and a half and the greatest diameter four inches. The entire set of eggs was laid, as the nest had been watched for a number of days; and the female was killed, when the nest was taken, and dissected. Three eggs compose the set, and differ from those already described only in being of a deeper bluish-white ground-color. They measure $.88 \times .72$, $.98 \times .70$, $.90 \times .74$, being therefore rather rounder in general outline than any of the other sets. This nest is attached to the twigs from which it hangs very much like that of a Baltimore Oriole (*Icterus baltimore*)."

Ten minutes' walk from the house would have reached any of these five nests, and three of them were within a hundred and fifty yards of one another.

The first young that I met with, that had left the nest, were seen on July 2, and on July 4 I saw many fully fledged, and apparently shifting for themselves. The following note is dated July 24: "Young males, fully fledged, evidently of the first brood, were singing very softly." "A young male taken, beginning to moult from 'first' plumage; the first noted in this condition."

The species here is a very common one, and it seems possible that after a few years' association with houses and people it may no longer be the shy, suspicious bird of the present, but become as familiar as others of the genus have. On their first arrival they were constantly in the oaks overhanging the house, and only seemed alarmed if too closely observed.

That they do not always build in the yuccas, though doubtless that is the favorite nesting place, the nest of July 1 proves, and I

feel confident that certain Orioles' nests that I have seen in the misseltoe of the oaks, and others pendant from the oak boughs themselves, are, from their general character, those of the species in question.

BIRD NAMES OF THE SELISH, PAH-UTA AND SHOSHONI INDIANS.

BY W. J. HOFFMAN, M. D.

MOST of the data herewith submitted were obtained from the Selish, or Flathead, Indians, in Western Montana, who occupy a fertile region known as the Jocko Valley, which is bounded on the west by the Rocky Mountains. Other information was also obtained from the Pah-Uta Indians in the vicinity of Pyramid Lake, Nevada; from the Uta Indians of Los Pinos, Colorado, and the Shoshoni at Fort Hall, Idaho.

To obtain the names of birds from any aboriginal tribe is no slight task. The living specimen, of any given species, may be very familiar to them, but should the dead specimen be presented for identification, there is uncertainty and doubt, and frequently it will be impossible for the collector to receive any but a generic term, if even that. The reason for this is, that Indians, while close observers regarding flight, habits, or voice of the bird, are at a loss unless they kill a species and instantly pronounce their decision, the association of their own name with it being based upon one of these peculiarities. Some marked genera are readily identified by all the members of the tribe; and even species have peculiarities in color-markings, the shape of the bill, legs, etc., so that one may not always find the difficulties referred to.

There does not appear to be a division of birds, among any of our tribes, into Land Birds and Water Birds. But, on the contrary, there is a distinction between *large birds* and *small birds*. The latter are called *tsin-ka'-la* by the Dakota; *si-su'* by the Washo; *nu-tsi-pa'* by the Pah-Uta; and *ha'-witz* by the Uta. These names include even the Grouse and Wild Turkey, but should raptorial birds be referred to, though smaller than the last-

named, the particular designation would at once be furnished without reference to size, as the Raptores have, in each instance, names of a generic and specific character, or perhaps one only, implying something with reference to peculiarities of the beak, the claws, or the manner of grasping the prey. An instance of this may be observed in a *Falco* sp? of the 'Crow' Indians, viz: the *Absároka*, after which the tribe is named. The word *Absároka* is derived from *apita*; *ap* an arrow point, a hook, and *'ta* to kill; *i.e.*, to kill with an arrow-pointed mouth. The latter portion of the word is not clear. The word for Crow (*Corvus*) in the same language is *pe-ri'-tshi*, and signifies 'to defile one's self.' With these few remarks I will proceed to the list of names, under which further discussion will be continued, when necessary. The orthography is phonetic, vowels having continental sound, and but two characters are introduced for which no representative sounds occur in English, viz: —

x, similar to the German *ch* in *nacht*, or rather the Spanish *j* in *mujer*. Equivalent to the Arabic *ghain*.

Q similar to German *ch* in *nicht*. The letters S., Sh., P., or U., in parentheses, refer respectively to Selish, Shoshoni, Pah-Uta, and Uta.

1. *Oreoscoptes montanus* (Townsend) Baird. SAGE THRASHER. *Tsónum* (P.). — In the Pah-Ute mythology this bird was a great soldier, but on account of his being a cannibal, he was transformed into his present shape, and is compelled to dodge beneath the sage-brush.

2. *Cinclus mexicanus* Swains. WATER OUZEL. *Si'am-bo'-gua-tsi* (Sh.).

3. *Sialia arctica* Swains. ROCKY MOUNTAIN BLUEBIRD. *N'l-χkwikwa'-ia* (S.). This is also used as a generic term for all small birds of a blue plumage. The Shoshoni generic term is *wo-gwit'-do-ia*.

4. *Pyranga ludoviciana* (Wils.) Bp. WESTERN TANAGER. *Wa'-nawini* (P.). The Shoshoni general term for red birds is *enk'-hu-tshue* from *enk*, red, and *hu-tshu*, bird.

5. *Loxia curvirostra americana* (Wils.) Coues. AMERICAN CROSSBILL. *Ai'-gu-sa'* (S.). The distortion of the mandibles was caused by the coyote. (*Myth.*)

6. *Xanthocephalus icterocephalus* (Bonap.) Baird. YELLOW-HEADED BLACKBIRD. *S'ke-k'itsh-klá'* (S.); *pa-ko'-rop* (P.).

7. *Agelæus phœniceus* (Linn.) Vieill. RED-AND-BUFF-SHOULDERED BLACKBIRD. *K'itsh-klá* (S.); *i a'-pan* (P.), so called on account of the spots of color upon the shoulders, as he was an officer long ago. (*Myth.*) Both terms above given are also used by the tribes as referring to black birds generally.

8. *Sturnella neglecta* Aud. WESTERN MEADOW LARK. *We-wit'-sa-lǎ*

(S.). In the mythology of the Selish, the coyote colored the Lark's breast with the yolk of an egg.

9. *Corvus corax carnivorus* (Bartr.) Ridgw. AMERICAN RAVEN. *Mō-lā'* (S.); *wi-hū'* (P.); *to-gwō'-ri-ka* (Sh.).

10. *Corvus frugivorus* Bartr. COMMON CROW. *Tsa-a'* (S.); *a-da'* (P.); *ta'-gu-uts* (U.); *kāk, kawk*, (Sh.). As above stated, the Absaroka call this bird *peritski*—that which defiles itself. Usually the term is onomatopœitic in other languages.

11. *Gymnocitta cyanocephala* Max. PINON JAY. *Wi-a'* (P.). This was the daughter of the coyote. (Myth.)

12. *Pica rustica hudsonica* (Scop.) Baird. BLACK-BILLED MAGPIE. *A'du* (S.); *ma'-gwits* (U.); *kwi'-ti-wut* (Sh.)

13. *Trochilus colubris* Linn. RUBY-THROATED HUMMINGBIRD. *Som-wē'* (P.); *qo'-nim-qo'-nim* (S.).

14. *Cypselus saxatilis* Woodh. WHITE-THROATED SWIFT. *Māb'n-kwit-sēn* (S.).—A name was given to me by the Shoshoni for one species which frequents the water, but which was not identified. It is undoubtedly another genus. They term it *pah'-sho-gum'-bits*—skim-over-the-water.

15. *Phalænoptilus nuttalli* (Aud.) Ridgw. POORWILL. *Spās* (S.); *wā'-ia-wī* (P.).

16. *Melanerpes formicivorus bairdi* Ridgw. CALIFORNIAN WOODPECKER. *S'pu'-al'-χa* (S.).

17. *Sphyrapicus varius nuchalis* Baird. RED-NAPED WOODPECKER. *Ho-to-tō'-ro-pě* (Sh.).

18. *Picus villosus harrisi* (Aud.) Allen. HARRIS'S WOODPECKER. *Stēl-qū'* (S.).

19. *Colaptes auratus mexicanus* (Sw.) Ridgw. RED-SHAFTED FLICKER. *Kul-kul-čtsh'* (S.); *i'-tsa-bū'-ni* (P.).

20. *Ceryle alcyon* (Linn.) Boie. KINGFISHER. *Smā-tskēuq* (S.).

21. *Asio americanus* (Steph.) Sharpe. AMERICAN LONG-EARED OWL. *N'spu-ish'n-t-mō'* (S.).

22. *Scops asio* (Linn.) Bp. LITTLE SCREECH OWL. *N'tshit-qē'* (S.); *hā'-mi-tse* (Sh.).

23. *Bubo virginianus subarcticus* (Hoy) Ridgw. WESTERN HORNED OWL. *Sni'-nū'-e* (S.); *mū'-mbits* (Sh.).

24. *Speotyto cunicularia hypogæa* (Bp.) Ridgw. BURROWING OWL. *Tin-tsan'-in-dē'-iq* (Sh.). This is the prairie dog's brother-in-law. (Myth.)

25. *Falco peregrinus nævius* (Gm.) Ridgw. DUCK HAWK. *Hā-tāt* (S.).

26. *Pandion haliaëtus carolinensis* (Gm.) Ridgw. FISH HAWK. *Tsi-ug-tsuq'* (S.), the coyote's cousin.

27. *Circus hudsonius* (Linn.) Vieill. MARSH HAWK. *Pāu-tsi'* (Sh.); *ki-ni'* (P.).

28. *Buteo borealis calurus* (Cass.) Ridgw. WESTERN RED-TAILED HAWK. *Tsēl-tsēl-tshi-mū'* (S.); *sa'-na-kwi'-na* (Sh.).

29. *Aquila chrysaëtus canadensis* (Linn.) Ridgw. GOLDEN EAGLE. *Mel'-kě-ně'* (S.); *kwi-na'* (P.). *Kwa-nuts'* (U.), is a term applied to Eagles generally.
30. *Haliaëtus leucocephalus* (Linn.) Savig. BALD EAGLE. *P'kal-qkě'* (S.).
31. *Cathartes aura* (Linn.) Illig. TURKEY BUZZARD. *Tsa'kō-wi-a* (S.); *to-gwō'-ri-ka*—'snake eater' (Sh.).
32. *Zenaidura carolinensis* (Linn.) Bp. MOURNING DOVE. *Wa'-u-ia'-ük* (S.); *hā-wō* (Sh.). A generic term.
33. *Meleagris gallopavo* Linn. WILD TURKEY. *Kō'-io-nit* (Sh.).
34. *Canace obscura* (Say) Bp. DUSKY GROUSE. *Wūng-gō'-wa* (Sh.).
35. *Bonasa umbella* (Linn.) Steph. RUFFED GROUSE. *Kd'-χit'-sě* (S.); *kwi'-üt* (U.).
36. *Centrocercus urophasianus* (Bp.) Swains. SAGE COCK. *S'kă* (S.); *hu-tsi'* (P.); *hu'-dsha* (Sh.).
37. *Lophortyx californica* (Shaw) Bp. CALIFORNIA QUAIL. *Ka-ka-pu'u* (P.). The last syllable is almost silent and the head, in speaking, is dropped downward on the breast. The Indians state that "this is the way the bird calls himself." Another instance of onomatopœia.
38. *Ardea herodias* Linn. GREAT BLUE HERON. *Să-mă-ku-e-ĩ'* (S.)
39. *Nyctiardea grisea nævia* (Bodd.) Allen. BLACK-CROWNED NIGHT HERON. *Sma-tskě'-uq* (S.); *ua-sha'* (P.).
40. *Numenius hudsonicus* Lath. HUDSONIAN CURLEW. *Ha-wit'-ha-wit'* (S.).
41. *Numenius longirostris* Wils. LONG-BILLED CURLEW. *Hě'-kōn* (Sh.).
42. *Fulica americana* Gmel. AMERICAN COOT. *Stěl'-ăk'-sha* (S.); *sai-a'* (P.).
43. *Grus canadensis* (Linn.) Temm. SANDHILL CRANE. *Skwal-tshin'* (S.); *kor-dě'-dě'n* (P.); *kō'-an-dă-tă* (Sh.).
44. *Olor americanus* (Sharpless) Bp. WHISTLING SWAN. *S'p'k-a-mi'* (S.); *noit'* (P.); *phă'-do-shi'* (Sh.).
45. *Chen cærulescens* (Linn.) Ridgw. BLUE-WINGED GOOSE. *Kū-si' uq* (S.); *ne'-gīt* (P.); *na'-gunt* (Sh.).
46. *Bernicla brenta* (Pull.) Steph. BRANT. *Pe-gu-kua'-tsi* (P.).
47. *Aix sponsa* (Linn.) Boie. WOOD DUCK. *Pi-hĩ'* (P.) Also used as a generic term for all Ducks.
48. *Æthya americana* (Eyt.) Bp. REDHEAD. *Nō-sō'-shĩ-ně'* (S.).
49. *Colymbus torquatus* Brünn. LOON. *O-sū'-l'uq* (S.).

ON THE VERTICAL RANGE OF BIRDS IN COLORADO.

BY FRANK M. DREW.

COLORADO, lying between 37° and 41° north latitude and 102° and 107° west longitude, is preëminently a mountain state. Of its 104,500 square miles fully one-half is mountainous, the average elevation of the State being 6000 feet, with extremes of 3500 and 14,500 feet. Rising slowly from the Missouri River, the treeless plains, having already reached an altitude of 3500 feet at the eastern border of the State, thence continue to rise more rapidly, but yet gradually, to nearly half way across the State. There, at an elevation of about 6000 feet, the outlying foothills throw up a dam stretching north and south the full length of the State. Up into these foothills surge the waves of bird migration in spring to about 8000 feet — the altitude of the Great Parks which stretch their huge treeless surfaces atop the hills. And down these hills comes the return tide of birds in fall, a few to linger near the base, but by far the greater part passing on and down to an altitude lower than any found within the State.

Despite its latitude, which causes very hot summers, the average temperature is below that of other States in corresponding parallels. At an elevation of about 7000 feet, an approximate average for the year gives a temperature of $+47^{\circ}$ F.; for winter — December, January, February — of $+26^{\circ}$; spring — March, April, May — of $+47^{\circ}$; summer — June, July, August — of $+69^{\circ}$; autumn — September, October, November, — of $+46^{\circ}$. Missouri, in nearly the same latitude, has an approximate mean annual temperature of $+55^{\circ}$.

The average temperature on the higher peaks, reaching up to from 12,000 to 14,000 feet, usually ranges from 20° to 30° lower than these figures, the difference being greatest in summer. Continued observations at several stations give an average of about $+48^{\circ}$ for the mean annual temperature at 6000 feet, and of $+38^{\circ}$ at 10,000 feet elevation. Timber-line, which varies from 11,000 feet to 12,000 feet, has an average annual temperature — according to Gannet — of $+30^{\circ}$. Notwithstanding the heavy and long-continued snows of winter, and the frequent rains in summer,

the mean annual precipitation will not exceed 20 inches,—being 12 to 14 inches on the plains, and increasing to 32 inches in the mountains.

As is well known, the flora of the plains is strongly characterized by buffalo grass, sun flowers, and cacti, and as a natural result, Fringillidæ and Raptores predominate there over all other forms of bird life.

Entering the foothills, which reach an average elevation of 8000 feet, the piñon (*Pinus edulis*) and dwarf oak (*Quercus alba gunnisoni*) at once become abundant, and their matted clumps and tangled underbrush make hiding places for many Warblers. On the shoulders of the foothills rest the mountain parks, with a mean elevation of 8000 feet. They are treeless and plain-like, being covered with grass and sage, save where the grass has been killed out by grazing herds; then the shifting sands prevent aught but sage from maintaining a foothold.

The bases of the main peaks have an elevation of about 8000 feet; thence they rise rapidly, drawing themselves aloof from the life of the plains. And, indeed, it is only those birds which pass up into these uppermost levels which can properly be called mountain inhabitants, the great parks thus forming the real dividing ground between the summer camps of the hardier lowland birds and the homes of those to the manor born. Nor do the straggling migrants but rarely wander over the mountains themselves, but, instead, into these parks.

The latitudinal range of birds in the United States has been quite fully worked out, and notes on the close connection between vertical and geographical distribution are not few; yet, so far as I know, no one has tabulated the vertical range. References to elevations at which birds have been found in summer are quite frequent. Especially is this the case in Allen's 'Ornithological Reconnoissance in Kansas,' etc., and Ridgway's 'Ornithology of the 40th Parallel,' and many are given by Mr. T. M. Trippe in Coues's 'Birds of the Northwest.' I have freely borrowed from these sources, as well as from Henshaw's 'Report' on birds in volume V of Wheeler's Surveys, and from Ridgway's paper on Colorado Birds in 'Bull. Essex Inst.', Vol. V, No. 11.

One working in different parts of the State will soon perceive the floral limits to be quite sharply defined. To a certain, though less extent, the birds also are shut in by almost intangible barriers.

But so evident is it that food supply is the main factor in bird distribution—this regulated by vegetation, and this in turn by climatic influences—that it only needs be said that where food is, there the birds will be found: as, *e. g.*, Creepers and Woodpeckers at 11,000 feet in winter, and Ouzels at the same season feeding in the icy torrents as high as 9000 feet.

Most birds range high up in summer and lower in fall; some have a range the reverse of this; while others early reach their nesting-sites and remain until the time for the complete semi-annual migration comes round.

Mr. T. M. Trippe, in 'Birds of the North-West.' p. 228, has noted the over-migration in spring of *Oreoscoptes montanus*. This trait is common to many, if not all, birds in vertical migration, though I believe not in latitudinal movements. Another peculiarity of vertical migration is the upward range of many birds during the Indian summer days of autumn, *e. g.*, *Sturnella neglecta*, *Scolecophagus cyanocephalus*, *Gymnocitta cyanocephala*. This I believe to be the result of a scarcity of food at lower levels, though a somewhat similar reverse migration has been noted at the same season on the New England coast. (See B. N. O. C., Oct., 1880, p. 237, and Coues, B. N. W., p. 521.)

The following list, containing the results of five years' work in the State, is believed to be a complete one of the birds found within the boundaries of Colorado. To the south, in New Mexico, climate, and to the north lower average elevation of the mountains, causes considerable variation in the vertical range of birds. But in Colorado, I think, this range is nearly uniform, there being but few birds of the list not of general distribution in the State, and these are chiefly found in the southern portion. Mountain ridges *en échelon* combine to catch many a stragglng bird. Several such are entered on but a single record, and while showing nothing of distribution, yet may be of interest in future work. Some of those accredited on scanty data are followed by the name of the authority. In the parks are found the only apologies for lakes which the State affords, and around them the few Water Birds which remain during the summer cluster to breed. In many of the upper valleys beaver streams often provide suitable homes for isolated pairs of Ducks, but by far the greater number of our Water Birds are migrants.

No claim of completeness is made, the notes being offered as a basis on which to engraft other observations, and which,

with further notes on temperature and the flora, may eventually serve to show to what extent there is a correspondence between vertical and latitudinal distribution. As most of the birds noted are summer visitants, the column showing winter range is mostly blank. The upper nesting limit is usually easily determined; the lower not so readily, as many species, in suitable localities, nest down to sea-level. But in some cases, as in *Lagopus leucurus*, *Regulus calendula*, and some others, quite well-defined limits exist, above or below which few, if any, of these birds are found during the nesting season.

Lophortyx californianus, *Ortyx virginianus*, and perhaps some others, have been introduced in the vicinity of Denver, but probably as yet their range does not extend above 5000 feet.

The figures in the columns under the headings, 'Spring,' 'Summer,' etc., refer to elevations in feet above sea-level. The 'Breeding Range' will give the full summer distribution of those remaining through that season. In the records of spring and fall migrants I have aimed to show how *high* the birds wander, and so have merely noted the upper limit of the range of birds which are generally distributed below the altitude given. But in the case of birds of erratic or little-known distribution, both the upper and lower levels inclosing their range are given. A ? following the figures in a few cases means probability amounting almost to certainty. The 'Plains' include a large part of adjoining Kansas.

The nomenclature is that of Ridgway's 'Catalogue of the Birds of North America.' But if sub-species '*montana*' is merely a modified form of *Certhia familiaris rufa*, why not put it so, and let it be understood that the last-named form is merely a modification of the preceding, as is now so well accepted in the case of varieties of the first remove? The same applies to *Pipilo maculatus arcticus megalonyx*.

		Upper Limit of range in—				Breeds—	
		Spring	Summer	Autumn	Winter	from	to
1.	<i>Hylocichla fuscescens salicicola</i>		8000			5000	8000
2.	<i>Hylocichla ustulata swainsoni</i>	6000	11000	9200		Plains	11000?
3.	<i>Hylocichla ustulata auduboni</i>	9500	11500	10000		5000	11500
4.	<i>Merula migratoria propinqua</i>	10000	11500	13000		Plains	11500
5.	<i>Oreoscoptes montanus</i>	6000	9500	9500		"	9500
6.	<i>Minus polyglottus</i>	6000	8000	5000		"	8000
7.	<i>Galeoscoptes carolinensis</i>	9200	8000			"	8000
8.	<i>Harporhynchus rufus</i>	7500	7500			"	7500
9.	<i>H. cinereus bendirei (Brewst.)</i>	9000					
10.	<i>Cinclus mexicanus</i>	10000	11500	10000	9-6000	5000	10000
11.	" <i>Saxicola œnanthe</i> " (<i>Minot</i>)	5500					
12.	<i>Sialia sialis</i>		5500				
13.	<i>Sialia mexicana</i>	9000	7500			5000	7500
14.	<i>Sialia arctica</i>	6-10000	11500	13000		5000	11500
15.	<i>Myiadestes townsendi</i>	9500	11500	10-9000		8000	10000
16.	<i>Poliophtila cerulea</i>		7000			5000	7000
17.	<i>Regulus calendula</i>	7000	11500	10000		7000	11000
18.	<i>Regulus satrapa</i>	9000	11000	10000		9000?	11000
19.	<i>Lophophanes inornatus griseus</i>	5000		9200	5000	5000	
20.	<i>Parus montanus</i>	6-9500	11500	13500	5-9000	8000	11500
21.	<i>Parus atricapillus septentrionalis</i>	8000	11000	11000	2-8000	Plains	10000
22.	<i>Psaltriparus plumbeus</i>				6500	"	7000
23.	<i>Sitta carolinensis aculeata</i>	6000	11000			5000	11000?
24.	<i>Sitta canadensis</i>		8000			5000	8000
25.	<i>Sitta pygmaea</i>		10000			6000	10000
25.	<i>Certhia familiaris rufa montana</i>	Ranges to timber line the year round					11500
27.	<i>Salpinctes obsoletus</i>	6000	12000	13000		Plains	12000
28.	<i>Catherpes mexicanus conspersus</i>	"Resident at 6000 ft."—Aiken.					6000
29.	<i>Troglodytes ædon parkmani</i>	7000	11000	10000		Plains	10000
30.	<i>Anorthura frog. hyemalis (Ridgw.)</i>						
31.	<i>Telmatodytes palustris paludicola</i>	6000	8000	9500		"	8000
32.	<i>Anthus ludovicianus</i>	9500	13000	14000		12000	13000
33.	<i>Mniotilta varia</i>		5500				
34.	<i>Helminthophaga virginia</i>	6000	7500	8000		5000	7500
35.	<i>Helminthophaga rupicapilla (Ridgw.)</i>						
39.	<i>Helminthophaga celata</i>	6000	9000			6000	9000
37.	<i>Helminthophaga peregrina</i>	5500					
38.	<i>Parula americana</i>	5500					
39.	<i>Dendroica æstiva</i>	9000	8000			Plains	8000
40.	<i>Dendroica coronata</i>	9000					
41.	<i>Dendroica auduboni</i>	7500	11000	9500		7500	11000
42.	<i>Dendroica maculosa</i>	5000					
43.	<i>Dendroica cerulea</i>	5000					
44.	<i>Dendroica striata</i>	6000	11000				11000
45.	<i>Dendroica graciae</i>		7000			6000	7000
46.	<i>Dendroica nigrescens</i>	9500	7800			5500	
47.	<i>Dendroica townsendi</i>	500	8000	10000		5500	8000
48.	<i>Siurus auricapillus</i>	8000					
49.	<i>Siurus naevius</i>	8000					
50.	<i>Geothlypis macgillivrayi</i>	6000	9000	9500		5000	9000
51.	<i>Geothlypis trichas</i>	6000	6000			Plains	6000
52.	<i>Icteria virens longicauda</i>	6000	6500			"	6500
53.	<i>Wilsonia pusilla</i>	9500	12000	11000		6000	12000
54.	<i>Setophaga ruticilla</i>	6000	8000			Plains	8000
55.	<i>Vireosylva gilva swainsoni</i>	6000	10000	7000		5000	10000
56.	<i>Lanivireo solitarius plumbeus</i>	6000	9000	7500		5000	9000
57.	<i>Lanius borealis</i>	6-10000		12500	*-9500		12000?
58.	<i>Lanius ludovicianus excubitoroides</i>	9500		9500		Plains	9500?
59.	<i>Ampelis garrulus</i>		9000		8000		9000
60.	<i>Ampelis cedrorum</i>				5500		
61.	<i>Petrochelidon lunifrons</i>	6000	11000	9500		"	10000
62.	<i>Hirundo erythrogaster</i>	7000	11000			"	10000
63.	<i>Tachycineta bicolor</i>	8000	11000			"	10000
64.	<i>Tachycineta thalassina</i>	7000	11000	9500		5000	10500
65.	<i>Cotile riparia</i>		6000			Plains	6000
66.	<i>Stelgidopteryx serripennis</i>	6000	7000			"	7000
67.	<i>Progne subis</i>		8000			6000	8000
68.	<i>Pyrranga ludoviciana</i>	6000	9000	10000		6000	9000
69.	<i>Pyrranga æstiva cooperi</i>	5000					
70.	<i>Hesperiphona vespertina</i>	5000	8000				
71.	<i>Pipicola nuculeptera</i>	10000	11500	10000	*-10000	10000	11500

* Plains.

		Upper Limit of range in—				Breeds—	
		Spring	Summer	Autumn	Winter	from	to
72.	<i>Carpodacus cassini</i>	6000	10000	9000	*-7000	7000	10000
73.	<i>Carpodacus frontalis</i>		8000		5000	4000	8000
74.	<i>Loxia curvirostra americana</i>	6000	8000		Plains	5000	8000
75.	<i>Loxia leucoptera</i>				10000		
79.	<i>Leucosticte tephrocotis</i>				6000		
79.	<i>Leucosticte tephrocotis littoralis</i>				5-5000		
77.	<i>Leucosticte atrata</i>				5000		
79.	<i>Leucosticte australis</i>	12000	13500	13000	6-10000	12000	13500
80.	<i>Ergiothus linaria</i>	7-10000			*-10000		
81.	<i>Astragalinus tristis</i>	6000	10000	5000		Plains	9000
82.	<i>Astragalinus psaltria</i>	5000	9500	9000			9500
83.	<i>Chrysonitris pinus</i>	6-10000	11500	10000	*-10000	7000	11500
84.	<i>Plectrophanes nivalis (Ridgway)</i>						
85.	<i>Centropheanes lapponicus</i>			7500	5000		
85.	<i>Centropheanes ornatus</i>	5000			5000		
87.	<i>Rhynchophanes macconni</i>	6000			5000		
88.	<i>Centronyx bairdi</i>	5000	8000	7000		Plains?	
89.	<i>Passerculus sandwichensis savanna</i>	5000	5000				5000
90.	<i>Passerculus sandwichensis alaudinus</i>	8000	12000			Plains	12000?
91.	<i>Poœcetes gramineus confinis</i>	4-10000	12000	12500		"	12000
92.	<i>Coturniculus passerinus perpallidus</i>		6000			"	6000
93.	<i>Chondestes grammacus strigatus</i>	6-9000	10000	9000		"	10000
94.	<i>Zonotrichia leucophrys</i>	6-10000	12500	10000	6000?	8000	12500
95.	<i>Zonotrichia gambeli intermedia</i>		6000				
95.	<i>Spizella montana</i>		9500			9000	
97.	<i>Spizella domestica arizonæ</i>	6000	9000	9000		5000	9000
95.	<i>Spizella pallida</i>	6300	6000			Plains	6000
99.	<i>Spizella breweri</i>	6-9000	8000			"	8000
100.	<i>Junco ateni</i>	5-10000		9000	*-8000		
101.	<i>Junco hiemalis</i>	8000			*-7000		
102.	<i>Junco oregonus</i>	6000		11500	*-6000		
103.	<i>Junco anaethens</i>	6-10000		10000	5000		
104.	<i>Junco cauceps</i>	6-10000	12000	9000	5000	7500	12000
105.	<i>Amphispiza belli (Ridgway)</i>		6500				6500
105.	<i>Amphispiza belli nevadensis</i>		7000				7000
107.	<i>Melospiza fasciata fallax</i>	6000	8300		5000	5000	8000
108.	<i>Melospiza lincolni</i>	6500	11500	9000		5000	11500
109.	<i>Passerella iliaca schistacea (Ridg.)</i>		7000				7000
110.	<i>Pipilo maculatus arcticus megalonyx</i>	9500	9000	8000	5000	5000	9000
111.	<i>Pipilo chlorurus</i>	7500	11500	9000		5000	11500
112.	<i>Pipilo fuscus mesoleucus</i>				5000		
113.	<i>Pipilo aberti</i>		8000				8000?
114.	<i>Zamelodia melanocephala</i>	6000	8300	8000		Plains	8000
115.	<i>Guiraca cerulea</i>		5500			"	5500
116.	<i>Passerina cyanea (Ridgway)</i>						
117.	<i>Passerina amoena</i>	6000	7000	7000		"	7000
118.	<i>Cardinalis virginianus</i>				5000		
119.	<i>Spiza americana</i>		6000	6000		"	6000
120.	<i>Calamospiza bicolor</i>	6-9200	8000	8000		"	8000
121.	<i>Dolichonyx oryzivorus</i>	6000					
122.	<i>Molothrus ater</i>	6000	8000			"	8000
123.	<i>Xanthocephalus icterocephalus</i>	6000	9500	9500		"	7500
124.	<i>Agelaius phœniceus</i>	6000	9000	7000		"	8000
125.	<i>Sturnella neglecta</i>	6000	9200	10000		"	8000
125.	<i>Icterus spurius</i>		5000			"	6000?
127.	<i>Icterus galbula</i>		5000			"	6000?
128.	<i>Icterus bullocki</i>	6000	10000			5000	10000
129.	<i>Scelopcephalus cyanocephalus</i>	6000	10000	13000	4-9000	Plains	10000
130.	<i>Quiscalus purpureus œneus</i>		5000				5000
131.	<i>Corvus corax carnivorus</i>		13000	14000	5-10000		
132.	<i>Corvus cyptoleucus</i>		6000		5000	4000	6000
133.	<i>Corvus frugivorus</i>		7000	7000			7000
134.	<i>Picicorvus columbianus</i>	9000	11500	13000	7-9000	6500?	11500
135.	<i>Gymnocitta cyanocephala</i>	5000	8000	6-13500	6000	5000	8000
135.	<i>Pica rustica hudsonica</i>	9000	11000	10000	3-9000	4000	10000
137.	<i>Cyanocitta stelleri macrolopha</i>	6-10000	11500	13000	5-10000	5000	11500
138.	<i>Aphelocoma woodhousei</i>	5000	8000	9500	5000	5000	8000
139.	<i>Perisoreus canadensis capitalis</i>	†	†	†	†	8000	11500
140.	<i>Eremophila alpestris leucolama</i>	5-10000	13000	13000	5-9000		13000

* Plains.

† Keeps near timber-line the year round.

Upper Limit of range in — Breeds—

	Spring	Summer	Autumn	Winter	from	to
141. Eremophila alpestris chrysolama		7000			Plains	7000
142. Tyrannus carolinensis	7500	6000			"	6000
143. Tyrannus verticalis	6000	7000			"	7000
144. Tyrannus vociferans	6000	7000			"	7000
145. Myiarchus cinerascens		7000			4000	7000
140. Sayornis sayi	6000	8000			Plains	8000
147. Contopus borealis	6000	12000	10000		7000	12000
148. Contopus richardsoni	6000	11500	10000		Plains	11000
149. Empidonax difficilis	6000	10000	10000		"	10000
150. Empidonax pusillus		8000	8000		"	8000
151. Empidonax minimus	6000				"	
152. Empidonax hammondi	6000	8000			"	8000
153. Empidonax obscurus	6000	10500			7500	10500
154. Trochilus alexandri (Ridgway)		6000				6000
155. Selasphorus platycercus	5000	13000	9000		4000	11000
150. Selasphorus rufus		15000			6500	10500
157. Cypselus saxatilis	6000	13500			6000	12500
158. Cypseloides niger borealis		14000	14000		10000	12000
159. Phalaenoptila nuttalli	6000	8000			Plains	8000
160. Chordeiles popetue henryi	5000	12000	9500		"	11000?
161. Picus villosus harrisi	6-10000	11000	10000	5-10000	4500	11500
162. Picus pubescens gairdneri	6-10000	12000	10000	5-10000	4500	11500
163. Picoides tridactylis dorsalis	10000	12000	10000	10000	8000	12000
164. Sphyrapicus varius (Ridgway)						
165. Sphyrapicus varius nuchalis	8000	12000	9500		4000	12000
166. Sphyrapicus thyroideus	6000	10000	7000		5000	10000
167. Centurus carolinus (Ridgway)						
168. Melanerpes erythrocephalus	6000	11000	5000		Plains	10000
169. Melanerpes torquatus	6000	8000	7000	4-7000	5000	8000
170. Colaptes auratus mexicanus	6-10000	12000	12000	3-5000	Plains	12000
171. Ceryle alcyon	9500	9500			"	9500
172. Geococcyx californianus		5000			5000	5000
173. Coccyzus americanus		8000			4000	8000
174. Colinus carolinensis	†	†	†	†		
175. Asio americanus	6000	11000	10000	*-10000	Plains	11000
176. Scops asio maxwellæ		6000	5000	5000	4000	6000
177. Scops flammeolus		8000				8000
178. Bubo virginianus arcticus	11000	11500	13000	*-11000	4000	11500
179. Speotyto cucularia hypogæa	†	†	†	†	Plains	9000
180. Hierofalco mexicanus polyagrus	6000	10000	10000		"	10000
181. Falco peregrinus nævus		10000			"	"
182. Æsalon columbarius		9500			"	10000
183. Æsalon richardsoni	6000	11000			"	"
184. Tinnunculus sparverius	6-10000	11500	13000		"	11500
185. Pandion haliaëtus carolinensis		9000	10500		"	9000
186. Circus hudsonius	6000	10000	13500		"	10000
187. Accipiter cooperi	6000	9000			"	9000
188. Accipiter fuscus	9500	9000			"	9000
189. Astur atricapillus striatulus	9500	10000			"	10000
190. Buteo borealis calurus	11000	12000	13500	*-10000	9500	12000
191. Buteo cooperi (Ridgway)						
192. Buteo swainsoni	6-10000	10000	13000		"	11500
193. Archibuteo lagopus sancti-johannis				6000		
194. Archibuteo ferrugineus	6000			6000		10000?
195. Aquila chrysaëtus canadensis	6-10000	12000	14000	*-11000	6000	12500
196. Haliaëtus leucocephalus	8000					
197. Cathartes aura	6000	10000	11000		Plains	8000
198. Columba fasciata	7000	8000	8000		5000	10000
199. Zenaidura carolinensis	6000	11000	12000		Plains	10000
200. Melopelia leucopetra		11500				
201. Meleagris phasianellus columbianus		7000				7000
202. Canace obscura	10000	11500	12500	7-10000	6000	11500
203. Bonasa umbella umbelloides		7000				7000
204. Lagopus leucurus	12000	13500	12000	8-12000	11500	13500
205. Cupidonia cupido	5000	5000	5000	*	Plains	5000
206. Pedicætes phasianellus columbianus	7000	7000	7000	*-7000	"	7000
207. Centrocercus urophasianus		9500			"	9500
208. Ardea herodias		5000			"	5000
209. Garzeta candidissima	§	§	§	§		

* Plains.

† See B. N. O. C., Vol. II, No. 2, p. 50.

‡ Resident and breeds up to 9000 feet.

§ See American Naturalist, Vol. X, p. 430.

Upper limit of range in— Breeds—

	Spring	Summer	Autumn	Winter	from	to
210. Nyctherodius violaceus (Ridgway)					Plains	7000
211. Botaurus lentiginosus	5000	7000				
212. Tantalus loculatus (Ridgway)		7000				7000?
213. Plegadis guarauna						
214. Charadrius dominicus (Ridgway)					"	10500
215. Oxyechus vociferus	9000	10500			"	8000
216. Podasocys montana	6000	8000	5000			
217. Gallinago media wilsoni	10000	10000		5000	6000	10000
218. Macroramphus griseus	6000	5000				5000?
219. Actodromas maculata			10500			
220. Actodromas bairdi		7000	13000			7000?
221. Actodromas minutella		7000				7000?
222. Pelidna alpina americana (Ridgway)						
223. Ereunetes pusillus	7000		7000			7000?
224. Limosa fedoa			7500		Plains	
225. Totanus melanoleucus		7000				7000?
226. Totanus flavipes		7000				7000?
227. Rhyacophilus solitarius	6000	10000			5000	10000
228. Symphemia semipalmata	6000	7000				7000
229. Bartramia longicauda	6000	6000			Plains	6000
230. Trioides macularius	6000	13000	9000		"	11000
231. Numenius longirostris		5000			"	5000
232. Lobipes hyperboreus	9500	8000		5000		
233. Steganopus wilsoni (Ridgway)		6000				6000
234. Recurvirostra americana	5000	8000			"	8000
235. Himantopus mexicanus	5000	8000			"	8000
236. Rallus virginianus		5000				5000?
237. Porzana carolina (Ridgway)		7000				7000
238. Gallinula galeata (Allen & Brewster)	6000					
239. Fulica americana		8000			"	8000
240. Grus americana (Ridgway)						
241. Grus canadensis		7500	14000		5000	7500
242. Chen hyperboreus			8000	7500		
243. Bernicla canadensis	10000	10000				10000
244. Bernicla canadensis hutchinsi				5000		
245. Anas boschas	6000		10500	*9500	5000	9000
246. Anas obscura (Ridgway)		8000	10000		Plains	8000
247. Chaulelasmus streperus		8000	10000			6000
248. Dafila acuta		6000		5000		6000
249. Mareca americana		8000	8000		"	8000
250. Spatula clypeata	6000	8000			"	8000
251. Querquedula discors	10000	8000	10000			8000
252. Querquedula cyanoptera	6000	8000	10000		5000	8000
253. Nettion caroliensis	10000	8000	10000		Plains	8000
254. Aix sponsa		8000				8000
255. Fulix marila			9000			
256. Fulix affinis			9000			
257. Fulix collaris			6000			
258. Aethya vallisneria				5000		
259. Aethya americana (Ridgway)						
260. Clangula islandica		8000				8000
261. Clangula glaucium americana			9000			
262. Clangula albeola			6000			
263. Histrionicus minutus		10000	10000		7000	10000
264. Oedemia americana (Ridgway)						
265. Erisinatura rubida		10000	11000		7000	10000
266. Mergus merganser americanus		11500				
267. Lophodytes cucullatus (Ridgway)						
268. Pelecanus erythrorhynchus (Ridg.)		4000				4000
269. Larus delawarensis	6000	6000	9500			6000
270. Xema sabinei (Ridgway)						
271. Sterna forsteri (Aiken)	6000					6000
272. Hydrochelidon lari. surinamensis				5000		
273. Stercorarius parasiticus (Ridgway)						
274. Podiceps holboelli			10000			
275. Dytes auritus californicus	7000	8000				8000
276. Podilymbus podiceps (Ridgway)						
277. Colymbus torquatus (Ridgway)						

* Plains.

OBSERVATIONS ON *ELANOIDES FORFICATUS*
AND *ICTINIA SUBCÆRULEA* IN KANSAS.

BY N. S. GOSS.

THE Swallow-tailed Kite is an irregular summer resident along the timbered streams, being abundant some seasons and rare others. It arrives early in May, and devotes the first few days to courtship and mating, the next to selecting nesting places, which I have so far found to be in the small branches near the tops of the tallest trees. By the last of the month the nests are completed, and as the trees by that time are in full leaf they are largely hidden from view. They are made of sticks loosely interwoven and lined sparingly with the soft, ribbon-like strippings from the inner bark of old, decaying or dead cottonwood trees. The eggs are oval; the ground-color is cream white, irregularly spotted and blotched with dark reddish brown, running largely together towards the small end. The measurements of three are 1.84×1.48 , 1.87×1.50 , 1.90×1.50 .

As the nests are hard to reach, I have been able to examine but four. Three of these had only one egg in each; in the other there were two eggs, nearly ready to hatch, and the shell of one at the foot of the tree; but I have it on good authority that in the near vicinity a nest with four, and another with six, eggs have been found. The males assist in building the nest, alternate in sitting and in feeding the young, and, in fact, appear as attentive as the females.*

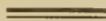
April 27, 1876 (the earliest arrival noticed), a pair put in an appearance at Neosho Falls, and as they continued to circle in their graceful flights over the same grounds—the edge of the prairie and timber on the Neosho River—I became satisfied that their nesting places would be selected within the circle, and I devoted my leisure moments to watching their movements. On the 5th of May they were joined by another pair, and later in the day, to my great surprise and joy, two pairs of Mississippi Kites

* I saw a pair of these birds once in the act of copulation. They were sitting on a small, horizontal limb close together and facing each other, when, quick as a flash, the female turned or backed under the limb, the male meeting her from the top.

appeared and also joined in the circling flights. It was a beautiful and, to me, exciting sight to watch their various motions and coqueting evolutions, sailing high in the air, swooping down with partially closed wings, skimming along the prairie, lost for a moment in the woods, ascending in spiral flights, gliding from slow to swift and swift to slow without a flit or break, like Swallows. For grace and symmetry of action I would rank them first among the aërial birds, attaching the blue ribbon to the Swallow-tailed. Unfortunately I was called away on the 8th and did not return until the 18th. At first I thought the birds had left, but I soon occasionally noticed one here and there flying low down and often disappearing in the tree-tops. I lost no time, but hastened, with glass and gun in hand, for the timber embraced in their former flights, and in a short time had the pleasure of finding a pair of the Swallow-tailed Kites building a nest in the top of a large hickory tree, the nest being about two-thirds completed; by cautiously approaching and lying down behind a fallen tree I was enabled to watch them unobserved, and, with the aid of the glass, to plainly see them at their work. When either came to the nest alone with a stick it would place it hurriedly upon the nest, but when both met at the nest they would at once commence fussing about, pulling at the sticks and trying to arrange the material, first one getting upon the nest, and then the other, turning around as if trying to fit a place for their bodies. I think at one time they must have worked at least ten minutes trying to weave in or place in a satisfactory manner a stripping from the inner bark of the cottonwood. As builders they are not a success. After a little over two hours of watching I turned my attention to hunting for the nests of others. In this I failed, but found near by, sitting on the dead limb of an oak, a pair of Mississippi Kites, busily engaged in dressing up their feathers. My anxiety to secure a pair for my collection overcame the desire for their eggs, especially as the birds are rare in the State and the finding of their nest doubtful; I believed I could get both by shooting one from the tree and the other on the wing as it left; so I carefully crawled to within easy shooting distance, sprang to my feet, shot one, and to my surprise the other did not fly, but with outstretched wings looked down with astonishment at its mate fluttering upon the ground. It was too good a shot to lose and I dropped it beside the other,

and proudly started for home, more than satisfied with my success.

On the 27th of the same month I found the other pair of Mississippi Kites nesting in the fork of a medium sized oak, about forty feet from the ground. It was *an old Crow's nest* fitted up with a few extra sticks and green twigs in leaf for lining. In the nest there was one egg. I returned on the 2d of June for the eggs, found the nest robbed and the birds sitting in a tree near by, but they appeared to take no notice of, or interest in, the nest as I approached it. On July 5, in strolling over the grounds, I noticed one of the birds on the same nest. In it there was one egg in an advanced state of incubation, but with care I was able to save it. Color, pure white; measurements, 1.70 × 1.35. This nest and the ones examined of *E. forficatus* were on the breeding grounds of the common Crow, which accounts for the robbery and the few eggs found.



MANITOBAN NOTES.

BY ERNEST E. T. SETON.

ON the 8th of May I found a pair of the *Bubo virginianus arcticus* in possession of an old nest, in the 'Big Swamp' on the Assinaboine River, south of the 'Big Plain.' This nest was indistinguishable from that of a Red-tailed Buzzard. On the 15th of May I went with my friend Dr. Gilbert and we brought home the three young ones and the adult female. The nest contained two Partridges (*Bonasa*) and a hare. The young ones appeared to be about three weeks old; the largest weighed 1 lb. 5 oz., and was about the size of an ordinary pullet. One of the young ones was but half the size of the others; all were clad in white down, with the rudiments of black and white feathers showing in the wings and on the back. Their horns were plainly visible in the form of down tufts.

The young ones favored us with the usual amount of bill-snapping and hissing, but did not use their tremendous claws. One of them was injured and died before we got home, the

others thrived and readily ate from our hands from the first. They solicited food by a short scream very like that of a Night-hawk; they menaced by snapping their bills and hissing, and they expressed surprise and anger by a querulous, rattling whistle.

By the time they were about two months old they were fully fledged and could fly fairly well. In general color they were pale buff with black bars; a little lighter than the typical *Bubo virginianus*, but considerably darker than the mother. At this time the horns were less conspicuous than when in the down.

They ejected a pellet about five times per week, and if supplied with more food than they require for present use they hide it until they are hungry.

At first we (Dr. Gilbert and myself) were in hopes of taming them, but their ferocity grew with their growth; and when they were able to fly, so far from submitting to handling, it was not safe for a stranger to come near them. No better illustration of their temper could be given, than the fact that on one occasion when they were left without food for a longer time than usual, they killed and ate a fine, full-grown Swainson's Buzzard, which was confined in the same barn. And on a second occasion they did the same with another Swainson's Buzzard which I had always thought quite strong enough and quick enough to take care of himself.

At the age of about ten weeks, a perceptible change in their plumage began to take place; the buffy feathers of the breast gradually giving place to the pure white of the old birds; amounting almost to a transition from the *B. virginianus* form to that of the *B. v. arcticus*. They are now over four months old, and are still growing. They require about half a pound of meat per day, and eat with relish only that which is perfectly fresh; indeed, all that I have seen of them—their untameable ferocity, which is daily more apparent, their magnificent bearing, their objection to carrion and strictly carnivorous tastes—would make me rank these winged tigers among the most pronounced and savage of the Birds of Prey.

I find that the Common Harrier (*Circus cyaneus hudsonius*) indulges in a series of curious manœuvres, which have hitherto escaped the eyes of field-men. During the breeding season the male often flies about over his own particular marsh, with

excessively exaggerated undulations; squeaking like a Snipe as he rises, and dashing down silently. When at the highest point he frequently turns a somersault. I have seen this many times, and shot the bird in the act.

It may surprise some to learn that the Lapland Longspur (*Plectrophanes lapponicus*) is very abundant here in the spring and fall.

Our *Plectrophanes* are:—

P. nivalis, abundant in winter—a few staying to breed.

P. lapponicus, enormously abundant in May and September.

P. pictus, very abundant, accompanying the last-named.

P. ornatus, abundant, breeding.

During the months of July and August the Bay-winged Bunting (*Poæcetes gramineus*) ceases its usual vesper song, and vents his feelings in a loud, wild, Lark-like chant, which is poured forth as the bird rises high in the air; he begins to sing as he leaves the prairie, and sings and soars till he has reached a height of fifty or sixty feet, when he again returns to earth.

This air-song is not heard nearly as frequently as the common perching-song is in its proper season, nor have I heard both at the same time of year. The perching-song alone is heard during May and June, and again after the fall moult there is a renewal of the spring chantings—an aftermath of song, for the bird ceases his soaring lay, and once more sings for the setting of the sun.

Another peculiar effusion of the Bay-wings is a prolonged twittering, uttered after dusk, as the bird runs on the ground. It is like a soft, continuous whispering of extracts from his various other musical performances.

As little seems to be known about Leconte's Sparrow (*Coturniculus lecontei*) I may describe some of its habits. This bird frequents the damp meadows which are a mixture of red-willows and sedgy grass. It is commonly found in the willows at all seasons, uttering its peculiar ventriloqual *tweete tweete*, whence I knew it as the 'Willow-tweete,' long before I ever heard of Leconte or of any name for this bird. But in spring the male may be seen perched on some low twig in the meadow, pouring out his little soul in a tiny, husky double note, like *reese reese*. This is so thin and weak as to be inaudible at thirty yards, yet in uttering it he seems to labor hard, his beak being wide open and pointed straight up to the zenith; he delivers it with such unction

that afterwards he seems quite exhausted, and sits very still until at length the fit comes on again, as it is sure to do in about ten seconds.

On the 26th of June, 1882, I found the nest and eggs, which I believe were previously unknown. The nest was by a willow bush in the damp meadow; it was apparently on the ground, but really raised six inches, being on the tangle of grass, etc. It was composed entirely of fine grass. The eggs—three in number—were of a delicate pink, with a few spots of brownish and of black towards the large end. The pink was lost on blowing them. One measured $.75 \times .50$ inches. Yet I must confess I did not shoot the birds at the nest; I only saw them a few yards off and heard their familiar *twecte*. So that there is possibility—though little probability—of error here.

ON THE FUNCTION OF THE INFERIOR LARYNX IN BIRDS.

BY J. M. W. KITCHEN, M. D.

Assistant Surgeon to the Metropolitan Throat Hospital, N. Y.

IN looking over the literature pertaining to the comparative anatomy and physiology of the vocal organs, we have repeatedly met certain statements which we think are incorrect physiological deductions, following the anatomical study that has been given to the vocal organs of Singing-birds. The great Cuvier was apparently one of the first scientists who gave this subject much study; and, with one exception, all subsequent writers whom we have read, whether French, German, or English, have substantially reiterated Cuvier's statements as to this matter. Indeed, there has been such unanimity of expression, and such similarity in the cuts shown in illustration of the subject, that one is induced to believe that Cuvier's exposition of the subject has been copied *in toto*, without personal investigation on the part of the writers.

The essential part of these statements is that the inferior larynx of birds, or syrinx as it is often called, is the principal agent employed in producing the tones of bird-song, and that the superior larynx is not a phonator, but only acts as a valve, preventing air and food from passing the laryngeal fissure. S. Messenger Bradley is the only writer whom we have read, who dissents from this deduction; and in this dissent we also take part. To be sure, our dissent is only a matter of opinion, and one that we are not prepared to substantiate by actual scientific proof, but it is an opinion that is the outcome of a very considerable study of the working of the human larynx, both in health and in disease, and one capable of considerable sustenance through analogous reasoning. It is an interesting subject on which more light is needed, and when one considers that the physiology of the human larynx is not yet fully understood, it will be conceded that there is a wide field still open for study of the vocal apparatus of birds. It is hoped that some one endowed with sufficient leisure and enthusiasm may take up the subject and pursue it to a successful issue.

The vocal mechanisms in man and bird differ very considerably, though there are analogous structures and functions in both animals. Birds have true voice, and even speech, though the speech of birds is very simple in character, and relates more to the *feelings* than to the *thoughts* of these creatures; but the so-called singing of birds is not song as rendered by man, who has no similar production of sounds, though an asthmatic wheeze produced in the bronchial tubes, and whistling with the tongue and teeth, or with the lips, approximate, in their mode of production, to the vocal efforts of the Song-birds. To thoroughly understand the subject, one must have a fair idea of the anatomy and physiology of the vocal apparatus in man.

It is presumed that the reader understands the ordinary laws pertaining to acoustics; that sound is the effect of air in peculiar vibratory motion upon the auditory apparatus; and that the character of vocal sounds as to pitch, intensity, timbre, etc., are due to the frequency and amplitude of the vibrations, and to the peculiarities of the structures that originate them as to shape, density, etc. The vocal sounds of man are produced by an apparatus that in gross, is substantially as follows: (1) A bellows or air propeller, consisting of the lungs, surrounded by the chest

walls at the sides, and by the diaphragm at the bottom. The muscular motion in these parts alters the shape of the chest, alternately enlarging its cavity and drawing air into the lungs; and then compressing those organs, driving out the air *via* the bronchial tubes, trachea, larynx, nasal passages, and mouth. (2) The phonating structure, which is the larynx, having a framework of cartilages known as the thyroid, the cricoid, and the two arytenoids; but whose essential parts are the two fibrous lips, or projections from the sides of the larynx, known as the vocal cords or ligaments, and the muscles that are attached to these ligaments and cartilages, for the purpose of rendering the former more or less tense, of drawing them apart, or of approximating their edges to various degrees, and of regulating their shape. The interposition of these vocal ligaments in various degrees of tension, approximation, etc., in the tract of the air-blast coming from the lungs, is the means of breaking up the air-column into the vibrations which produce the effect upon the ear known as vocal sounds. (3) The resounding cavities, which modify the sounds as to their power and other qualities. These cavities are the trachea and bronchial tubes, which reverberate the chest tones, and the throat, mouth, and nasal passages, which are instrumental in forming the head tones. The various positions and actions of these latter cavities and their contained parts, such as the tongue and soft palate, give the various effects of articulation to speech, as well as song. It must be noted that there is no dividing line between speech and song, the one gliding into the other, and that articulation is distinct from phonation. A whisper may be articulated speech, without sound being produced by the larynx.

This in brief being the structure of the human vocal apparatus, how does that of birds differ from it? (1) In the respiratory method, and in the structure of the respiratory mechanism. Almost the whole body of the bird is the air-bellows and reservoir. There is no diaphragm separating the chest cavity from the abdominal cavity, or at least it is very rudimentary, excepting in some birds like the *Apteryx*, where it is more nearly like that of mammals. Air passes through the bird's lung and out of it by numerous apertures on the pulmonary surface, to the various air cavities of the abdomen, neck, bones, etc. Here is a very large pneumatic storage cavity. In birds, the

expiration of air is effected by a decided muscular effort, drawing the largely developed breast-bone towards the spine, and this forces the air out of the body, while inspiration, or the drawing of air into the body, is the result of the resilient recoil of the breast-bone, and the rest of the tissues making up the chest walls. This action is just opposite to the respiratory method in man, where ordinary inspiration is effected by decided action on the part of the respiratory muscles, especially of the chief respiratory muscle, the diaphragm. This physiological peculiarity in birds gives them the ability to emit such powerfully loud and long-continued notes with little apparent effort. This is particularly to be noticed in small birds, such as the Canary and Black-poll Warbler. (2) The resounding cavities and articulating structures are very different from those in man. The trachea is a very much more distensible tube. Its rings are bony and complete. It is formed so as to be retracted or distended to a remarkable degree, through the action of the peculiar external tracheal muscles. This construction enables the organ to produce the effects of pitch or range in the notes of the musical scale, and also makes a good resounding medium, being in this respect analogous to an organ pipe. In the throat and mouth we find no soft palate, or pharyngeal vault, and hardly a trace of an epiglottis. Birds are very deficient in their powers of articulation, owing to the peculiarities of construction in the throat and mouth. The fleshy tongue of the Parrot gives that bird exceptional powers in this respect; but even the stiff, horny, and comparatively immobile tongue of other birds is capable, by its action, of producing the 'twittering,' 'whistling,' and other effects. The muscular flooring of the mouth, by its ability of contracting in a rapid fluttering manner, is very evidently capable of producing the 'warbling' effect. (3) The third and most marked deviation in birds from the vocal mechanism of man, is in the phonating or tone-producing structure. Instead of having one concentrated 'vocal box,' located at the top of the trachea, and which in itself contains all the parts necessary for regulating the pitch and some other qualities of the tone produced, birds have two larynges: the superior larynx being located as in man at the top of the trachea, while the inferior larynx or syrinx, is located at the inferior extremity of the trachea, at its point of bifurcation into the right and left bronchial tubes. This complex construction, that may be used for

vocal purposes, at first view seems very much like certain musical wind instruments. The true rima glottidis at the upper part of the windpipe simulating the outlet of the instrument, while the bronchial larynx is furnished with a peculiar tense membrane that looks as if it might perform the same duty as the reed in a clarinet. This is probably true in a certain degree, but no instrument has ever yet been able to imitate the best of bird-song.

The *superior larynx* is noted for its simplicity of construction and moderate functional action, in comparison with the larynx of man. As one examines it, the rigidity of the organ is conspicuous. Several of the upper tracheal rings are fused together and represent the human cricoid cartilage. Resting on this, forming the anterior part of the rim of the structure, is an oval or triangular thyroid cartilage. But at the rear of the organ, in place of the two pyramidal arytenoids, as in man, we find a large broad sesamoid plate running across the posterior wall, and on either side are two small cartilages connecting this plate with the thyroid, thus completing the circle of the laryngeal framework. The two arytenoids rest on top of this framework on either side, running well forward, and their inner margins form the rima glottidis, and this rim is the only substitute for the vocal cords of man. As we look inside of the organ we find no trace of those ligaments. The muscles of this structure are two. A surrounding sphincter muscle which closes the rim of the organ more or less tightly; and a pair of *thyreo-arytenoidei* which open the laryngeal fissure by drawing apart its rims. This fissure, in opening, is drawn furthest apart anteriorly, while in the human larynx the attachment of the vocal ligaments are close together in front, and they open widely at the back of the organ when the glottis is dilated during inspiration. Although this simple larynx has small functional ability, it is the point at which the true voice of birds is formed; especially the voice that is analogous to that of man; the voice that is peculiar to all the Clamatores. The Oscines are really not *singers* in the fullest sense of that word. Besides being able to break up the outgoing current of air into the vibrations which produce the rather coarse, harsh, and monotonous voice of the Clamatores, the rim of the glottis, in certain degrees of approximation, can produce the 'hiss' and a sort of 'whistle' similar to the

sound produced by the double concave, perforated tin mouth-piece of the children's toy that is frequently seen. This rim, by its vibrations when articulated by the highly developed tongue of the Parrot, produces the nearest approach to human singing of which birds are capable. Of course the much repeated ditty of a trained Polly is nearly destitute of variation in the pitch of the tones produced, any range in this respect being produced by differences in the strength of the air-blast, distension of the trachea, and change in shape of the mouth cavity. There is no muscular apparatus furnished for making any tension on the extremities of the rim of the glottis in birds.

The *inferior larynx*, or *syrinx*, is an organ peculiar to birds. Its parts are merely a different evolution and functional development and modification of the cartilaginous rings, mucous membrane, and muscular fibres seen in the trachea and bronchi of mammals. The structure varies widely in different birds, being most complex as a rule in the most able songsters. It may be highly developed in birds which are not ranked among the singers. This organ seems to have originally been called forth as a secondary valve, acting as an auxiliary to the superior larynx in closing the air passage leading to the lungs, during submersion of the heads of the aquatic birds. In most Ducks the lower larynx is expanded into an irregular bony case, divided into two unequal cavities. These cavities would undoubtedly add resonance to voice formed at the superior larynx. They would also act as a float, tending to make the upper part of the chest more buoyant. The inferior larynges in those birds examined by the writer are so constructed that some of the parts are very delicate, thin, and easily folded, thus enabling a closure of the air tract at this point to be easily accomplished, even by a simple recession of the neck. The bronchi are especially compressible and easily lacerated. They are strengthened by half-rings on the outer side, the inner being formed by a membrane that has been called the *membrana tympaniformis*. In most vocal birds the syrinx has a double glottis, one on either side of a bony bar, called the *os transversale*, which runs from before backward at the apex where the inner sides of the bronchi join. It supports a thin membrane which ascends into the trachea, and terminates in a thin, concave margin, called the *membrana semilunaris*. This is most developed in singing birds, and being vibratile forms an important part of their

'trilling' apparatus, the air passing to and from the lungs on each of its sides. Some of the outer bronchial half-rings are susceptible of a rotary motion on their axes, and are important agents in modifying the voice. Opposite the *os transversale*, on the outer sides of the bronchi, is a sort of fold of mucous membrane that presents a lip or projection something like the vocal ligament in the human larynx. There is one to each bronchus. This projection is probably formed by the process of the shutting up of the syrinx when the neck is retracted, and is really more the analogue of the ventricular fold in the mammalian larynx than of the vocal cord. There is no doubt but that this lip, when approximated to the 'cross-bone,' is capable of throwing the air current coming from the lungs into vocal, or rather sound vibrations. Every one has heard the 'squeak' that a fowl often emits when hopping about with its head cut off, and it is probable that the sound is produced by the syrinx. Several small muscles, varying in number from two to five, and which appertain to the lower larynx exclusively, coil around it, and enable it to make tense the tympaniform membrane, to close up the glotti, and to rotate its framework. An examination of the syrinx indicates that it undoubtedly may have an influence in the modification of the voice in its intensity, and in production of the 'trill.' The valve being shut, and the muscles of expiration being brought into play, a greater air pressure in the body can be brought to bear on the structures which throw the air-blast into vibration, and the gradual opening and shutting of this valve would give crescendo and decrescendo effects to the notes. It is even probable that some of the notes originate here, and are only modified on their way to the outer world through the upper air-passages, but this cannot be to so great a degree as is widely stated. The Blackbird has a curious 'querl' in its song, that seems as if it originates as deep down in the bird as this organ is located. We have spent many a spare moment observing the Blackbird in the Aviary at Central Park, trying to detect the exact location of the production of this sound. It is related that Cuvier cut the trachea across the neck at the middle, and even took away the upper part of the trachea in the Magpie, and yet, it is stated that the bird continued to cry as before the operation, the voice not being less strong or sharp. We should want to thirst for a knowledge of comparative physiology more than at present before repeating so cruel

an experiment; but we doubt the accuracy of this narration, and we should want to hear the subject of such an experiment really sing before believing that the syrinx is the seat of tone production. It would be enormously difficult to keep a bird alive after such an operation, to say nothing as to its regaining a condition of full health, or a condition in which it would feel like singing. A mere production of audible sound from the inferior larynx would not be accepted as the song tones of the bird. Man can produce a tone by the vibrations of the lips, but the vocal ligaments are the voice phonators for all that. The syrinx of a bird may be able to make a noise, but that does not prove that the superior larynx has nothing to do in the formation of the song of birds. However, we are open to conviction, and would gladly be set right by proof positive that our opinion as to this matter is wrong.

NOTES ON THE OCCURRENCE OF CERTAIN BIRDS IN THE MISSISSIPPI VALLEY.

BY W. W. COOKE.

DURING the progress of my studies of migration, I have been in correspondence with most of the active ornithologists in the Mississippi Valley. Among the notes they have contributed are some which seem worthy of being put on record. They may not all of them be first records for their section of country, but the occurrences are at places remote enough from the ordinary habitat to be worthy of note.

Hawk Owl in Northeastern Mississippi.—Among a list of birds occurring at Corinth, Miss. sent me by Dr. Rawlings Young, was the name of the Hawk Owl (*Surnia funerea*). Upon asking for the particulars of its capture, I received the following letter:—

“In reply to your question, I would say that I have never heard of but one being killed near here and that I shot myself. In 1882 I was shooting Quail over a brace of setters in thick sedge grass, three or four hundred yards from the timber, and while working up a scattered bevy the dogs pointed. Walking in, the Hawk Owl, much to my astonishment, got up from the grass, right under the dogs’ noses. As he went off I cut him down and had no trouble in identifying him from the cuts seen in Wilson.”

Abundance of Black-bellied Plover (*Squatarola helvetica*) in Eastern Nebraska.—In the bird list sent by F. Powell, Alda, Neb., occurs the item: "Black-bellied Plover, usually rare, but May 21, 1883, I saw thousands of them on the Platte River." In reply to further questions he writes: "The weather had been rainy for a few days before I saw the Black-bellied Plover, with the wind from the south, but on that day the wind blew stiff from the north, with broken clouds flying and the air pretty cold. The birds were on the hay flats on the south side of the river. I drove up the valley seven or eight miles and was not out of sight of large flocks any of the time. They were very wild and I only killed three."

Perissoglossa tigrina in Nebraska.—The same observer also states: "On May 12, 1883, I took a Cape May Warbler, an old male in good plumage. A few days later, I thought I saw three more, but had no gun with me."

Protonotaria citrea in Wisconsin.—In Dr. P. L. Hatch's 1880 list of Minnesota birds this Warbler is not given, nor can I find any Wisconsin record. It is therefore with the greatest pleasure that I am able to record that Dr. J. C. Havoslef of Lanesboro, in Southeastern Minnesota, shot one on Aug. 16, 1874, near the mouth of the Root River, on the Wisconsin bank of the Mississippi.

Lark Bunting in Southeastern Minnesota.—In the same list of Minnesota birds *Calamospiza bicolor* is given as occurring in the northeastern part of the State. Since then it has been found—whether accidentally or not remains to be seen—in the southeastern part. Dr. Havoslef sends the following particulars: "Saw one, a magnificent male, on the very high prairie seven miles north of Lanesboro, June 19, 1883. It was not at all wary, so that I very easily got within a few yards of it, and could even see the peculiar shape of the bill. My shot, however, was not successful, as the weapon was only a small pistol, and the wind was blowing a gale. Business prevented my returning with a shot gun." This spring he writes me that "May 11, on the high prairie, nine miles east of Lanesboro, I again saw a *Calamospiza bicolor*; there was only one and it was wild, while the one I saw a year ago was quite the reverse."

Junco aikeni in the Indian Territory, Kansas, and Wisconsin.—While standing at the window of my house in Caddo, Ind. Terr., which is in the southeastern part, about thirty miles from the Texas line, my attention was drawn to a small party of Fringillidæ in the yard, about fifteen feet from me. There were half a dozen Tree Sparrows, a few Juncos, and a stray *Passerculus*, but what attracted my attention was one of the Juncos. It was slightly larger than the others, much darker, and across its wings stretched two broad bands of white. I had heard and read of the White-winged Snowbird, but had never seen one. As I watched it intently it spread its tail and revealed at least four feathers entirely white, and apparently white spots on four more. Turning now to the others I found that one very dusky individual had faint wing-bars and the extra white tail feathers. The moment I started for a gun the whole party left. On men-

tioning the fact to my wife, she told me she had also noticed one in the forenoon, but knew not that it was of special interest. This was Feb. 14, 1884. The next day I examined over fifty individuals of Junco but never a wing-bar was visible. Under Feb. 21, I find the following entry in my diary: "At 8.30 A. M. I shot in my yard a White-winged Snowbird. It is in worn plumage, but appears to be a typical bird; both wing-bars show plainly, the tail has two feathers on each side pure white, and the third one more than half white. It was in company with a second which appeared to be in brighter plumage. This makes five specimens seen, two bright and three dull ones. They were each time associated with a party of Tree Sparrows that has stayed around my premises all winter, so that there may have been but two individuals and the same ones seen several times." On March 7 a single one was seen. This completes the record for Caddo.

Late in the winter a box of skins arrived from Wisconsin which I had prepared the previous spring. On comparing my new Snowbird with the old ones, I was not a little surprised to find among them its counterpart. This second specimen bore a tag which showed its history to be as follows. The morning of Jan. 14, 1883, it was found alive in my woodshed at Jefferson, Wis., in the southern part of the State. It was kept alive three days, and when it died its skin was saved. Both specimens are still in my possession.

This species was originally described by Mr. Aiken in 1872, from specimens taken in the mountains of Colorado, where the species is abundant. Three years later it was taken at Ellis, in Western Kansas, by Dr. L. Watson. It has been found nowhere else. The past winter Dr. Watson again found the species in the same locality, so that it may be considered a regular winter visitant to Western Kansas, but its occurrence in the Indian Territory, and especially in Wisconsin, is probably fortuitous.

THE NESTING HABITS OF THE CAPE MAY WARBLER (*DENDRÆCA TIGRINA*).

BY MONTAGUE CHAMBERLAIN.

My first acquaintance with the Cape May Warbler in its home was made during the summer of 1882, when our party secured several specimens in the heavy woods back of Edmundston, near the northern boundary of New Brunswick. Previous to this I knew nothing of the occurrence of this species in this Province except what I had learned from Mr. Boardman of its

occasional appearance near the Maine border during the breeding season. A year later, in July, 1883, Mr. Arthur P. Chadbourne captured a solitary example at Rothesay, some nine miles east of this city (St. John), and this completed the record until June, 1884, when the nest and eggs were discovered just outside the city limits by my friend and co-worker in this locality, Mr. James W. Banks. For this is Bank's story that I am telling, he, with characteristic generosity, desiring my name to be associated with its rehearsal.

The birds seen and heard at Edmundston were invariably on the topmost branches of the tallest evergreens (usually spruces) growing in the neighborhood. Our experience furnished us with good and sufficient reason for remembering this fact. As the birds were constantly singing, their general whereabouts was easily discovered, but no small amount of patient searching was required to catch sight of them; and we soon found out that after sighting and shooting a bird there was still much to be gone through before it was in hand; for after tumbling a short distance it usually staid. The trees were too stalwart to be moved by any shaking power we could command, so every successful shot entailed a climb—and such a climb! The branches of these spruce trees were so close together we had to call up all our reserve of muscle and skill to squirm through; and in addition to this we had to encounter the annoying twigs—rough, sharp little things, with which the branches were thickly studded, and which tore clothes, scratched faces, pricked the flesh as they rolled down underneath our flannels, and made themselves generally disagreeable. And so it came about that the Cape May was associated in my mind with the stately trees and the solitude of deep forests—a solitude broken by the merry notes of these songsters, the chatter of squirrels, the sigh of the swaying boughs, and by the strong language of exhausted and exasperated collectors; and, because of these recollections, I was altogether unprepared for my friend's announcement that a pair had built in a location of an almost exactly opposite character. This nest found by Banks was hid among a cluster of low cedars growing in an exposed position, on a rather open hill-side, near a gentleman's residence, and within a stone's throw of a much frequented lane. The nest was placed less than three feet from the ground and within six inches of the tips of the branches, amid the densest part of the

foliage, by which it was well screened from observation. It was fastened to two of the tiny branchlets—pendent from one and resting upon the other—and secured to each by strawberry vines and spider silk.

On June 10 Mr. Banks was sauntering past the cedar and quite accidentally brushed the branches aside, disclosing an incomplete nest, and he observed on a bush near by a bird whose appearance was unfamiliar, apparently not much disturbed, but evidently interested in Bank's presence. At that time the daylight was too far gone to admit of any accurate account being taken of the form or color of the bird, but sufficient was noted to identify it afterwards as a female Cape May Warbler. And here I may add that though the nest was frequently visited during the following week, the male was not seen, nor was the song heard.

On June 13 the nest was completed and two eggs were laid. During this visit the female was near at hand, and when Banks and a comrade withdrew to the shade of an adjoining tree she followed them and gave ample opportunity for a close and satisfactory examination—coming within a couple of yards and coolly pluming the feathers of wings and tail, all the time keeping her eye upon the intruders, but exhibiting no alarm nor uttering a single note.

On June 16 the hen was discovered on the nest and was driven off. She did not fly more than a few yards, and then perching on a bush plumed her feathers while watching her disturbers, occasionally uttering a faint chirping note. This note did not seem like a call, nor an alarm; nor did the bird appear at all excited.

To insure the identification being perfect the bird was secured before the nest was taken. This structure and the completed clutch of four eggs are before me as I write. The walls of the nest are composed of minute twigs of dried spruce, grasses, and strawberry vines, with spider's webbing interwoven with the coarser fabrics and knotted into numerous little balls, which are bound upon the surface as if for ornament. The exterior is rather roughly made, but is more compact, and bears evidence of more art than is shown in the nest of the Magnolia Warbler, which it somewhat resembles. The interior, however, is much more neatly and artistically formed in the Cape May's than in its congener's.

The lining is composed entirely of horsehair, and this is laid with precision, and shaped into a prettily formed cup, the brim being turned with exquisite grace. The dimensions of the nest are, outside, $2\frac{1}{4}$ inches high and $2\frac{3}{4}$ to 3 inches across the mouth; inside, $1\frac{1}{4}$ inches deep and $1\frac{3}{4}$ inches wide.

The eggs are of much the same dull white ground-color, of a slightly ashen hue, as that of the Magnolia's. The form of the egg is different, however, the Cape May's being less pyriform—the point less acute. The markings are of light and dark lilac, and yellowish and reddish tints of brown; the brown being on the surface and the lilac underneath, the coatings of shell producing the various shades. As a rule the spots are circular and very small—many being quite minute—and are irregularly distributed, no two eggs bearing the same pattern, though in all four there is decided tendency to concentration in a ring near the large end; but on some there are spots over the larger part of the entire shell, while the small end of others is immaculate. The measurements are $.69 \times .49$, $.65 \times .49$, $.66 \times .49$, $.66 \times .48$.



BIRD NOTES FROM LONG ISLAND, N. Y.

BY WILLIAM DUTCHER.

I. *Passerculus princeps* *Maynard*. IPSWICH SPARROW.—Wishing to ascertain whether this species is as rare as it has been generally supposed to be, or was overlooked from the inaccessibility of its winter habitat, I arranged with two of my correspondents to send me all the individuals of this species that they could secure. Both of them spend the winter months on the beach, one at Fire Island Inlet and the other at Shinnecock Bay, which is some forty miles further east. That they might be perfectly familiar with these birds, I sent them early in the autumn a skin of one as a sample. December 29, 1883, I received from my Fire Island correspondent twenty-nine specimens which he shot between December 17 and 29. He informed me that he had looked carefully but unsuccessfully for them until December 17, when he found six and secured them all. Subsequent to that time and prior to the 29th he secured twenty-three additional specimens. He also added that he usually observed them in pairs, although sometimes there would be three or four together. They were always found feeding on the seeds of tall grasses and weeds that

were above the snow level. January 30 he wrote, "I have not seen any Sparrows lately." My Shinnecock Bay correspondent did not succeed in getting any specimens until February 4, 1884, when he sent me four, and also stated, "these birds are very scarce." February 27, 1884, he succeeded in securing two additional specimens, which he sent to me, and again directed my attention to their scarcity. February 22, 1884, I hunted carefully for this Sparrow on Rockaway Beach, but unsuccessfully. I am quite positive, however, that I saw three or four individuals, but they were so wild I could not secure them. March 7, 1884, my correspondent at Fire Island wrote that he had seen but one Sparrow since the first cold spell when he sent me twenty-nine, and that he was at a loss to know whether he had killed them all or whether they had gone away. Of the thirty-five specimens received five measured 6.75 inches in length, and only two were under 6.15 inches. The largest and smallest birds measured respectively:

Length, 6.75; extent, 10.50; wing, 3.20.

" 6.10; " 9.25; " 2.65.

The average of the thirty-five specimens was: length, 6.49; extent, 10.02; wing, 3.03.

2. *Nyctea scandiaca* (Linn.) *Newt.* SNOWY OWL.—The entire absence from Long Island during the winter of 1883 and '84 of this Owl is noteworthy. During the winter of 1882 and '83 it was, on the other hand, remarkably plenty. None of my correspondents, about thirty in number, record a single individual seen. These Owls, being so much sought after for ornamental purposes, are watched for very closely by the professional gunners, and thus rarely escape being at least noted if they are not secured.

3. *Ægialites melodus* (Ord) *Bp.* PIPING PLOVER.—March 24, 1884, Mr. Newbold T. Lawrence, while at Shinnecock Bay, saw one of these Plovers which had been shot that day by a sportsman stopping at Capt. Lane's. Noted as an early date.

4. *Macrorhamphus griseus scolopaceus* (Say) *Coues.* RED-BELLIED SNIPE.—July 23, 1884, while shooting at Shinnecock Bay, three individuals of this species came to my stools at the same time, two of which were secured. I sent them to Dr. A. K. Fisher of Sing Sing, N. Y., with particulars of their capture. He wrote me as follows: "I should consider No. 55 a fair example of *M. griseus scolopaceus*. No. 56 is one of those, doubtful; just on the line; but if the note was different it might be considered the mate of No. 55, as they were male and female." The bill of the larger specimen measured 2.83 inches and of the smaller 2.38 inches.

5. *Larus glaucus* *Brünn.* GLAUCOUS GULL; BURGOMASTER.—March 11, 1884, I purchased one of a pair of Gulls of this species, which had been shot by a gunner at South Oyster Bay. The specimen I bought is in very nearly the same plumage as the one recorded by Dr. E. A. Mearns in the 'Bulletin of the Nuttall Ornithological Club,' Vol. V, p. 189. The other one is a younger bird.

6. *Sterna anglica Montag.* GULL-BILLED TERN.—I shot a female in full plumage July 8, 1884, at Shinnecock Bay, while watching for *Limicolæ*. There were five in the flock, it being without doubt a family of two adults and their brood of the present year. They were migrating westward along the coast and must have bred further east than Long Island.

7. *Utamania torda (Linn.) Leach.* RAZOR-BILLED AUK.—January 15, 1884, I received from a correspondent at Southampton, a specimen of this species accompanied by the following note: "The bird I send you was found dead on the seashore. It is likely it was drowned in the heavy surf we had just before. It was a new bird to me." February 2, 1884, I received another from a correspondent at Smith's Point, which was also found dead on the beach. February 6, 1884, I received still another from Southampton, not, however, from the same correspondent who sent me the one January 15. With it came the following interesting note: "I found this bird on the beach last night while on my patrol, and as it was a stranger to this coast I send it. I have been in the Life-Saving Service nine years and have never seen one before." All three birds were remarkable for the poor condition they were in, and also for the total absence of food of any kind in their stomachs.

8. *Lomvia arra bruennichi (Sch.) Ridgw.* BRÜNNICH'S GUILLEMOT.—Between January 8 and March 24, 1884, I obtained twelve specimens and noted about thirty additional individuals of this species from the south side of Long Island. A large majority of the specimens obtained were either found dead on the beach, generally frozen, or else so weak from hunger that they were easily captured by hand and died within a few hours. The only exception to the above was two that were shot by a gunner at Rockaway, who had them come to his Duck decoys. Dr. C. Hart Merriam mentions the same circumstance of starvation in connection with the Foolish Guillemot in his 'List of Birds ascertained to occur within ten miles from Point de Monts, Province of Quebec, Canada.*' "They were all in very poor flesh, some being little more than animated skeletons, and a great many died and were washed ashore."

The notes accompanying the specimens indicate that this species is a very uncommon winter visitor to the western end of Long Island, and an irregular winter visitor to the extreme eastern portion of the Island. From a correspondent at Ditch Plain, which is very near the eastern extremity of the Island, I get the following note: "The bird sent was picked up dead on the beach after an easterly storm. At such times we have quite often found them, and have also seen them alive. I think they are driven on our shore by severe northeast gales, as after such storms is about the only time we find them." Another correspondent, from Shinnecock Bay, which is about thirty miles west of Ditch Plain, writes: "They are rather a rare bird on this coast, but during the winter in severe storms you will see one occasionally." A correspondent from Smith's Point, which is about midway between New York City and Mon-

* Bulletin of the Nuttall Ornithological Club, Vol. VII, p. 242.

tauk Point, says, "Do not see them every winter. They appear to be a very dumb bird. I picked this one up on the beach alive, and was going to send it to you that way, but it died before I could do so. The Captain of our Station says 'to the best of his knowledge he has never seen one before.' He has been in the Life-Saving Service twelve years." At South Oyster Bay and Rockaway, which are but a few miles from the western end of the Island, the gunners and Life-Saving men had never seen them before, and at the former place the single one shot was considered so rare that it was preserved and mounted.

FIELD NOTES FROM PICTOU COUNTY, NOVA SCOTIA.

BY JAMES MCKINLAY.

SHORTLY after the commencement of the present century the Pictou Academy was founded, and its first superintendent was Dr. Thomas McCulloch, a gentleman of high literary attainments, who numbered among his friends the illustrious Audubon. With a view to promote the various branches of scientific research he early directed his attention to the establishment of a museum in connection with the Academy, intending among other objects to gather there a complete representation of the zoölogy of the Province of Nova Scotia, especially that of the eastern portion, at that time called the District of Pictou. So energetically was the scheme prosecuted that little more than a quarter of a century had elapsed ere the enterprise had attained a high degree of excellence, and the collection was pronounced by Audubon, who visited it, to be surpassed by none other, at that time, in America. Unhappily, however, that valuable collection was suffered to pass entirely out of our Province, which is the more to be regretted as many of the species represented have since become extinct or extremely rare to our fauna.

This applies to the mammals as well as to the birds, but the change is most marked numerically in certain aquatic species of the feathered race, for instead of the vast multitudes which in former days were wont to visit our bays and harbors in early spring and in autumn, now we meet but a few small and scat-

tered flocks. Their remarkable declension may be mainly attributable to over-much annoyance and disturbance by the increased traffic of vessels, and perhaps more especially by the unrestrained and incessant use of firearms by an increasing class of gunners, whose aim is to destroy fowl of every description irrespective of the season, merely to gratify an ungovernable propensity for destruction, and without heed of the consideration that such practices must result in the annihilation of entire tribes.

Among the ranks of the graminivorous and insectivorous species of birds the numbers that annually visit this locality appear much the same as they were half a century ago. These are rarely found within the deeper forests, but spread over the more open country bordering on the settlements, some species taking up their abode in our gardens and byways.

The numbers of the Ruffed Grouse have been seriously diminished, but I notice that in those districts where they are most harrassed they have become exceedingly wary and cunning. I have also observed that among these birds the size of the brood has decreased, for instead of clutches of nine, ten, or a dozen, I now rarely find one-half that number.

The Eskimos assert that during the period of incubation the Ptarmigan cease to give off any scent by which they can be traced; and my experience leads me to think that our Ruffed Grouse possess the same peculiarity, else how could they so universally escape alike from furred and feathered foes, as they certainly do at this season.

The several species of the 'noble order' of birds are not so numerously represented here as formerly, influenced, I think, to a very great extent, by the destruction of our forests by fire and other causes.

Perhaps no bird is more regretfully recalled by our older sportsmen than is the Wild Pigeon. The first inhabitants of this Province found this elegant and savory member of the Columbidae abundant everywhere.

Their spring arrival usually occurred early in the month of May, and the bulk seldom made their autumnal exit until the middle of October. They constructed their simple nests in the branches of lofty trees, especially hemlocks, beneath whose foliage they found a grateful shade from the midday sun, and from which they seldom issued except at early dawn or at evening. In olden

times their food was very abundant, and consisted chiefly of strawberries, raspberries, and blueberries, which now-a-days are, unaccountably, found only in very meagre quantities, quite too limited to supply the vast flocks of Pigeons which formerly resorted here. This failure in their provisions appears to me the best reason to give for their withdrawal from this section, and is the same reason given by Audubon for their leaving some more southern localities.

I can not so readily account for the marked decrease in the numbers of Plovers visiting us. These swift and graceful fliers usually made their first appearance about the end of August, or much earlier in seasons that were wet and stormy, with prevailing northerly gales. The major part, however, usually delayed until the first week in September.

Contemporary with these heavier flocks, composed entirely of the Black-bellied species, came the Eskimo Curlews, which sometimes intermingled with their smaller congeners. The Golden Plover was usually the last of the Charadriidæ to depart, staying until the latter end of October. This species was never so numerous here as was the Black-bellied, but both are rarely met with here now. The Long-billed Curlew has forsaken our shore entirely, save a few stray birds which drop in upon us about the first of September, or a small flock is started in some remote and sequestered beach. They rarely venture upon the uplands, as I can remember them doing years ago. None of the family ever visit us in the spring now-a-days; it is only in their autumnal migrations that they favor us with a visit, and even now flocks are seen passing over the country high in the air and steering due south. I can remember when Wilson's Snipe came here in immense flocks, but about a quarter of a century ago they began to lessen in numbers, and now they are far from common. Woodcock on the other hand, are more plentiful now than they were fifty years ago. When Pictou County was first settled none were found here, and in 1830 the first specimen was placed in the museum of the Academy. From this date they increased rapidly until about fifteen years ago, when their numbers appeared to decrease, from what cause I can only conjecture. Almost every season a few of this species are met with here in March, when the earth's surface is frozen and covered deep with snow, excepting in a few favored spots. These spots are, however, spied out by these

hungry birds, and they may be seen here diligently probing for a dinner.

Pictou, owing to its geographical position, lies within the line of bird migration, and is annually visited by many of the aquatic species.

The earliest to arrive here during the vernal migration is the Canada Goose, and even if the weather has been stormy the advance guard usually put in an appearance during the first week in March, followed by a large flock some ten days later. Should southerly winds prevail, other large flocks appear, moving at a much greater altitude than did the first comers. About the 8th or 10th of April the bulk have reached here. From this point northward their movements seem to be much influenced by the weather, and often after leaving here and encountering ice and head winds they have returned. About the 20th of April the main portion are usually away, though a few stragglers are met as late as the middle of May. Those which tarry longest with us often pair before proceeding northward.

In the autumn, should the temperature suddenly lower and cold north winds prevail, the first comers—small parties, mainly young birds—are seen as early as the first week in September, and their appearance is considered a sign of an early winter, though this does not always prove correct. The largest flights pass us from the first to the middle of October. A large number generally withdraw to some favorite feeding ground in a well screened cove, and feasting on nutritious sub-marine plants, reach the extraordinary weight of eighteen pounds. Many of these stay until the waters are on the point of freezing, and occasionally some which have tarried for the last possible mouthful have been seen as late as Christmas, hurrying southward at a great height.

The Brants arrive here in the spring, later than the Geese, and remain a month longer. On their first arrival they are in very poor condition and do not appear to recruit much before the middle of May, after which their obesity increases perceptibly, and by the first of June they attain their highest state of edible perfection.

For a few days previous to their starting northward they visit the seashore and sand-beaches where they can obtain small quartz pebbles, locally termed 'ballast,' and then, congregating at one central rendezvous, they await for a southerly breeze, when,

the entire body rising together, after a few circuits in the air, they fly directly north. Their customary time to leave us in the spring is exceedingly precise, rarely varying more than from the 9th to the 12th of June.

The Eider Ducks, called by our gunners 'Sea Ducks,' visit us in the autumn in immense throngs. Flying close to the water in horizontal lines, they pass along our shore early in November, and continue on through the Straits of Canso and along the eastern shore of Nova Scotia to the mouth of the Bay of Fundy. Occasionally, however, a flock with more sagacity has been seen to mount into the air and fly across the land to the head waters of the Bay. None of this species have been observed on our coast during the spring months, when their line of flight is said to be along the north-eastern shore of Cape Breton and to the Straits of Belle Isle. In all the throngs of this species that pass us no adult males are ever seen.

Occasionally birds have been met with in this vicinity that have evidently been driven off their usual haunts. For instance, some twenty years ago considerable numbers of Scarlet Tanagers were found here about the 10th of May. Some were dead, and all were in an emaciated condition. None have been seen here since.

About the same year the Glossy Ibises were seen on the margin of a small lake near here, and one was captured by a countryman.

ANALECTA ORNITHOLOGICA.

Fourth Series.

BY LEONHARD STEJNEGER.

XVII. ON THE ORIGIN OF THE WORD *Quiscalus*.

THE words *Quiscalus* of Vieillot and *quiscula* of Linnæus* seem to have perplexed 'ornithophilologists' considerably, and

* Both combined in the terms *Quiscalus quiscula* (Lin.), *Quiscalus quiscula aglæus* (Baird), and *Quiscalus quiscula æneus* (Ridgw.) for the Purple Grackles (Ridgw., Nomencl., Nos. 278, 278 a, and 278 b).

Professor Newton says that he has not been able to trace the latter further back than to Linnæus's 10th edition (*cf.* Coues's second Check-list, p. 64, where he enlarges upon the subject). The word *Quiscula* is, however, to be found as early as the middle of the 16th century, for Gesner gives among the names of the Quail (*Coturnix coturnix*) "*Qualea & Quiscula Recentioribus*," and Pater Rzaczynski in his 'Historia Naturalis curiosa Regni Poloniae,' etc. (1721, p. 376), names it "*Coturnix seu Quiscula, Quisquila*." The word is probably an onomatopoeiticon, and the different names Quail, Quatla, Quaglia, Caille, Cuaderviz, Quackel have perhaps a kindred origin. I also find quoted as late Latin "*quaquila, quaquilia, qualia* and *qualea*," while '*calha*' and '*quisquila*' are given as Portuguese vernaculars of the Quail; and Ph. Stadius Müller (S. N., II, 1773, p. 196) says: "Der Linnæische Name *Quiscula* Könnte eine Wachtel bedeuten." The Mexican origin, as suggested by some (*cf.* Auk, 1884, p. 57), seems not probable in view of the above.*

XVIII. *Colinus*, NOT *Ortyx*.

Good taste and common sense should have prevented a not unfrequent usage among older writers of adopting a classic Greek or Latin name of a well-known European species as generic term for an exotic or even Neogæan group of birds. That the early immigrants from 'the old country' transferred the names of familiar birds to the species of similar appearance in their new home, was natural and cannot be blamed; that they called the 'Bob-white' Quail is just as natural as the course of Stephens in imposing upon the exclusively American genus the classic name *Ortyx* is condemnable; for *ορτυξ* is the ancient Greek name for the common European Quail (*Coturnix coturnix*).

Still, this consideration would not affect the availability of the name as a generic appellation, and when we now propose to give it up it is because we are compelled to do so for other reasons. The fact is that *Ortyx* is preoccupied.

As I have no means of looking up the reference "*Ortyx* Oken, Lehrb. Naturg., VI, 1816, p. 611," which I suppose is used by

*It should also be mentioned that *Quiscalus* is used in botany, for which reason Swainson substituted *Scaphidurus*.

him *in lieu* of *Coturnix*,* I shall only call attention to *Ortygis* Illiger, 1811. Bestowing this name upon the genus best known as *Turnix* he evidently transliterated the Greek *ορτυξ*, which he quotes in parenthesis after the Latin appellation. There are other Latin transcriptions of the same name, *Ortygia* and *Ortyga*, and the reason why Illiger did not select the strict transliteration *Ortyx* was probably that in ancient Latin the latter is only used for a plant.

Ortygis and *Ortyx* are identical in meaning and derivation, only differing in their grammatical ending, and consequently the latter will have to give way.

The next name for the genus is Lesson's *Colinus* (Nuttall's *Colinia* was given four years later without knowledge of Lesson's name), derived from the vernacular French name Colin "contracted by Buffon from the barbarous appellation of some Mexican species," for instance Acolin, Cacacolin, Oacolin, etc.

The synonymy of the genus stands as follows :

Genus *Colinus* Lesson.

1819.—*Ortyx* STEPHENS, Gen. Zool. XI, p. 376 (type *O. borealis* = *virginianus* LINN.) (nec *Ortyx* OKEN 1816, nec *Ortygis* ILLIG. 1811).

1826.—*Ortygia* BOIE, Isis, 1826, p. 977 (same type).

1828.—*Colinus* LESSON, Man. d'Orn. II, p. 190 (same type).

1832.—*Colinia* NUTTALL, Man. Orn. Landb. p. 646 (same type).

1854.—*Philortyx* DES MURS (nec GOULD 1845).

The names of the North American species are therefore :

480. † *Colinus virginianus* (Linn.). BOB-WHITE.

480 a. *Colinus virginianus floridanus* (Coues). FLORIDA QUAIL.

480 b. *Colinus virginianus texanus* (Lawr.). TEXAN QUAIL.

480₁ *Colinus graysoni* (Lawr.). GRAYSON'S QUAIL.

Any one having the opportunity of ascertaining the true nature of the above quotation would confer a favor upon the author by publishing a brief statement of it in the next number of "The Auk."—Since the above was written Mr. Allen has been kind enough to look the matter up, and has communicated to the author an extract from Oken's work, from which it is evident that he used *Ortyx* instead of *Turnix*, and not, as I supposed, for *Coturnix*. It is only necessary to quote the following: "I. Gattung. *Ortyx*, *Turnix*, *Tridactylus*, Queil; Hühnerschn. mässig, schwächig, Nasl. in Mitte, Kopf befiedert," etc. Oken simply 'emended' Illiger's *Ortygis*.

† Ridgway's 'Nomenclature,' 1881.

XIX. IS THE NAME *Ortyx massena* TENABLE?

In the synonymies of the species known as the 'Massena Quail' the earliest name is quoted as "*Ortyx massena* Less., Cent. Zool., 1830, 189," this name taking the preference over "*Ortyx montezumæ* Vig., Zool. Journ. V, 1830, 275."

In turning to Lesson's work, quoted above, we find first that *Ortyx massena* is a mere *nomen nudum*. The following is all that is said about it: "Ce colin [*O. elegans* Less.] provient de la Californie, ainsi qu'une autre belle et nouvelle espèce, que nous avons nommée *ortyx Massena*, et qui se trouve dans la collection de M. le duc de Rivoli. Les *ortyx elegans* et *Massena* sont très-distincts des *ortyx picta* et *ortyx Douglasii*, décrits dans le tome 16 (pag. 243) des Transactions de la société Linnéenne de Londres." The name does not occur in the same author's 'Traité' published in 1831.

But, even apart from the unavailability of Lesson's name because unaccompanied by a diagnosis, description, or figure, there seems to be little doubt that *Ortyx montezumæ* has the priority. The title-page of Lesson's 'Centurie Zoologique' certainly bears the date 1830, and the dedication to M. Geoffroy-Saint-Hilaire is dated, "Janvier 1830." The work seems to have been issued in parts, the title-page and the dedication having been annexed to the first part, which may have been published in 1830, for the title on the paper-cover has the year 1832, and the 'Post-Scriptum' on p. 229 is written in "Février 1831." The article from which the above quotation is taken pretends to be *written* in June 1830, according to a remark at the bottom of the page, but on the same signature and four pages earlier is an article written in November of the same year, so that it is safe to presume that the part containing the name *ortyx Massena* was not printed and *published* before 1831.

Therefore, the Massena Quail, or, perhaps better, the Massena Colin, should stand as

485. *Cyrtonyx montezumæ* (Vig.).

XX. *Cyanolesbia*, 'STRICTLY CORRECT'!

The Trochiline genus *Cynanthus*, as at present accepted by 'plurimis auctoribus,' offers a curious transposition of types, not

less remarkable for the fact that the transposition has been generally admitted.

In his 'Synopsis of the Humming-birds' Mr. Elliot remarks in a footnote (p. 150): "This genus was first established by Swainson in 1827, Zool. Journ., p. 357, and contained species belonging to various genera, all of which he called types. In 1837 (Cl. B., II, p. 330), he ejected the species from *CYNANTHUS*, which he had previously placed in it, and inserted *T. forficatus*, Linn., only, which now stands as *the* type of the genus." From this quotation it is evident that a species has been selected for type which was not originally included in the genus when established, and that none of the species first placed therein—one of which, of course, must be the type—was admitted into the *new* genus *Cyananthus* of 1837. Whatever may be Swainson's *Cyananthus* of 1827, certain it is that it is not the genus of which *Trochilus forficatus* Linn. is the type.

As no other already proposed name 'seems to be available for that group I have called it

Cyanolesbia,

derived from *cyaneus* and *lesbia*, on account of the blue reflections on the tail, and the near relationship to the typical species of the genus *Lesbia*, which have the metallic gloss on the tail greenish.

It includes *Cyanolesbia forficata* (Linn.), the type, and *Cyanolesbia smaragdina* (Gould) (= *C. mocoa*).

XXI. CONCERNING THE NAMES OF SOME NORTH AMERICAN SPIZINÆ.

A few more of the names of the North American Spizinæ require a revision, as will be apparent from the following remarks.

As *Spermophila* Swains., 1827, is preoccupied by *Spermophilus* Fleming, 1822, we will have to adopt Cabanis's *Sporophila*,* and our species will stand as

R. 252. *Sporophila morelleti* (*Puch.*) *Cab.*

Professor Cabanis has persistently used the generic term "*Euethia* Reichenb. 1850" in preference to the commonly adopted

* Deriv. σπόρος, seed, and φιλέω, I love.

"*Phonipara* Bonap. 1850," and a close examination shows that he is right in using the former. Although based upon different types, the two names apply strictly to the same genus, and Reichenbach's *Euetheia* has a slight priority of nearly two months over *Phonipara*.

The synonymy of the genus stands thus:

Genus *Euetheia** *Reichenb.*

Euetheia REICHENBACH, Av. Syst. Nat., Knacker, pl. lxxix "June 1, 1850" (type *E. lepida* LINN.).

Phonipara BONAPARTE, Consp. Av. I, p. 494, "July 30, 1850" (type *Loxia canora* GM.).

Euethia CABANIS, Mus. Hein. I, 1851, p. 146 (emend.).

The species entering the North American Fauna must be called

R. 253. *Euetheia bicolor* (Linn.) Gundl.

and not *Euetheia zena* (Linn.). Linnæus, in the tenth edition, described two different species under the very same name *Fringilla zena*,† our bird being the last one of the two. It will therefore have to give way for *F. bicolor*, a name substituted by Linnæus himself when becoming aware of his carelessness. I quote the following from the synonymy of the species:

1758.—*Fringilla zena* LINN., S. N. 10 ed. I, p. 183 (*nec op. ej. p. 181 quæ Spindalis zena*).

1766.—*Fringilla bicolor* LINN., S. N. 12 ed. I, p. 324.

1874.—*Euethia bicolor* GUNDLACH, Journ. f. Orn. XXII, p. 312.

* Deriv. εὐθηα, ἡ, simplicity. It is not to be confounded with *Eutheia*, 1830, applied to a coleopterous insect by Stephens, and derived from εὐθύς, εἶα, ὕ, meaning *straight*.

† *Zena*, if a Greek word, may have been intended for *Xena*, ξένη, a (female) guest or stranger, a not infrequent corrupt transliteration, e. g., *Zenia* Gray, *Zenopeltis* Boie, *Zenophasia* Sw., *Zanthomyza* Sw., *Zenitis* Boisd., *Ziphius* Cuv., *Ziphorkynchus* Sw., *Ziphotheca* Val. & Cuv., *Zyphothyca* Sw. for *Xenia*, *Xenopeltis*, *Xenophasia*, etc. Against this is the fact that Linnæus in both instances wrote *Zena* with the initial letter capitalized. Ζήνα is the objective case of Ζεὺς, Zeus, Jupiter. I find that Pater Rzaczynski (p. 370, *vide antea*), among other names, quotes '*Zena Belonii*' for the European Goldfinch (*Carduelis carduelis*), and also that the same bird was styled '*Fringilla Jovis*,' i. e., Jupiter's Finch, by Klein (Hist. Avium Prodr. 1750, p. 97). *Cj. Coues*, 2d Check List, p. 59.

It will be seen that the name applied by Townsend to the Lark Bunting, viz., *Fringilla bicolor*, was already disposed of by Linnæus, and is thus unavailable for any other bird. As there seems to be no synonymy, a new name will be required, for which I propose

R. 256. *Calamospiza melanocorys*.* LARK BUNTING.

XXII. THE CORRECT NAME OF THE AMERICAN COWBIRD.

In 'The Ibis' for 1883, p. 583, Dr. Sclater has a note headed as above, in which he concludes that it should remain *pecoris* and not be changed to *ater* as proposed originally by Gray and, later on, by Coues, and adopted by Ridgway. The following are my reasons for not agreeing with him.

Pl. Enlum. 534 is identified and named by Boddaert (Tabl. Pl. Enl. p. 31) thus:

"534. Trupiale noir BUFF. V. p. 301. BRISS. II. p. 103. *Oriolus niger* mihi LINN. Gen. 52.0."

On p. 37 he identifies Pl. 606, fig. 1 (which represents the bird in question) thus:

"606. 1. Petit Troupiale noir, BUFF. V. p. 303. BRISS. *Ornith.* II. p. 103. pl. XI. LINN. Gen. 52.0. *Oriolus ater*, black oriole LATH. *birds* I. p. 445. n. 37."

Now, Dr. Sclater reasons thus (*l. c.*): "On reference to Boddaert's Table. p. 37, it will be observed that he does not propose to give a *new name*, '*Oriolus ater*,' to Daubenton's '*Troupiale de la Caroline*' (Pl. Enl. 606. fig. 1), but merely quotes (as a synonym of Daubenton's figure) '*Oriolus ater*, Black Oriole. Lath. *Birds*, i. p. 445. n. 337.' But the synonym is incorrect, for Latham's '*Black Oriole*' is quite another bird. Moreover, when Boddaert intends to make an original name he usually adds after it the word '*mihi*.'"

We now turn to Latham, and find nowhere the name '*Oriolus ater*.' It is therefore clear that Boddaert does not quote "*Oriolus ater*, Black Oriole. Lath.." etc., as a synonym, but simply the latter part of it, imposing the name *Oriolus ater* upon the bird represented on the plate, and not named systematically either by Buffon, Brisson, or Linnæus. That he adduces Latham's '*Black Oriole*' wrongly as a synonym does not invalidate the name which

* Deriv. μέλας genit. μέλανος, black, and κόρυδος, contr. κόρυς, a Lark.

is based upon the plate 606. It seems, moreover, evident, that his quotation of Latham's 'Black Oriole' is not due to a misidentification of Latham's description, but rather to a lapsus of the pen, for under the 'Black Oriole' Latham quotes Pl. Enlum. 534, the same figure which Boddaert a few pages earlier (p. 31, see above) named *Oriolus niger*, while again Latham quotes Pl. Enl. 606, f. 1. under the 'Lesser Black Oriole,' the bird in question, to which Boddaert, therefore, most probably intended to refer.

That '*Oriolus ater*' lacks the appendix *mih*i is totally insignificant. A few examples, picked up at random, are sufficient to show that: *Hirundo albiventer* (pl. enl. 564. 2, Bodd. p. 32), *Muscicapa fusca* (574, 1, p. 34), *Muscicapa eques* (831, 1, p. 51), *Tringa miles* (835, p. 51), *Formicarius cayanensis* (821, p. 50), *Motacilla naevia* (752, 1, p. 47), *Motacilla eques* (730, p. 46), *Tanagra nigricula* et *T. pileata* (720, 1 and 2, p. 45), *Tanagra grisea* (714, 1, p. 45), *Tanagra rufa* (711, p. 45), *Parus cinctus* (708, p. 44), etc. The last seven are particularly interesting as compared with the name given to the bird on plate 712. The latter is based upon exactly the same authorities and in precisely the same manner as the above, to which '*mih*i' is not appended, and still the species figured on pl. 712 is called '*Alauda capensis mih*i.*

Somebody might perhaps object, that '*Oriolus ater*' belongs as a quotation to 'black oriole' (see Boddaert's text as quoted above) because only separated from it by a comma. In reply I shall only refer to Bodd., p. 44, and the following quotation to prove that the comma is of no account:

"704. 2. Figuier Protonotaire, BUFF. IX. p. 465. BRISS. *Ornith.* III. o. *Motacilla citrea*, LINN. *Gen.* 114. o."

On the same page are two examples, 701, 2, and 706, 1.

There is, therefore, in my mind no doubt but what Dr. Coues was perfectly justified in proposing the change from *Molothrus pecoris* to *Molothrus ater* for the American Cowbird.

* Numerous similar examples might be quoted, as pl. 700. 1 and 2, compared with 701, 2, 702, 703, 1 and 2; 706. 1 compared with the same pl. fig. 2, all these on p. 44. In many of these cases the absence of '*mih*i' is very notable, as both the generic and the specific names were new and given by Boddaert.

XXIII. REMARKS ON THE GENERIC NAME *Sayornis* AND
ON *Sayornis phæbe*.

Sayornis, as composed of the name Say and *ornis*, may be either masculine or feminine, for we find both δ ὄρνις and η ὄρνις. It might perhaps be urged that the addition of Thomas Say's name makes the gender masculine, but holding that the author who first indicated the gender is entitled to settle the question, I contend that *Sayornis* is feminine. Bonaparte, when establishing the name (Coll. Delattre, 1854, p. 87; I can find no other or earlier reference) gave no clue, as he combined it with the specific name *nigricans*, but Sclater who next adopted the term, in 1855, indicated his preference by writing *Sayornis ardosiaca* (P. Z. S., 1855, p. 149), and has consistently followed this course in all his later writings.

As to the specific names of the North American species, I have to remark that Gmelin's name *Muscicapa fusca* cannot stand for the Pewee, as not less than two other authors, independent of each other, had disposed of that name for two other birds previous to 1788. Nor can the same author's *Muscicapa atra* be employed, for a similar reason, as is apparent from the subjoined synonymy. The next name in order seems to be Latham's *M. phæbe*, which will give us the name *Sayornis phæbe*, a very fortunate change, when change must be made!

The synonymy will stand thus:

R. 315. *Sayornis phæbe* (Lath.). PHÆBE; PEWEE.

Muscicapa carolinensis fusca, BRISSON, Orn. II, p. 367 (1760).

Dusky Flycatcher, PENNANT, Arct. Zool. II, p. 389 (1785).

1788.—*Muscicapa fusca* GMELIN, S. N. I, p. 931 (based on BRISS. l. c.; nec MÜLLER, 1776, quæ Pl. Enl. 568 fig. 2; nec BODDAERT, 1783, quæ Pl. Enl. 574 fig. 1).

1788.—*Muscicapa atra* GMELIN, S. N. I, p. 946 (based on PENNANT, l. c.; nec MÜLLER, 1776, quæ Pl. Enl. 572 fig. 3).

1790.—*Muscicapa phæbe* LATHAM, Ind. Orn. II, p. 489 (based on PENNANT, l. c.).

1810.—*Muscicapa nunciola* WILSON, Am. Orn. II (p. 78, pl. xiii, fig. 4.).

XXIV. ON THE PROPER GENERIC NAME OF THE PILE-
ATED WOODPECKER AND ALLIES.

The generic name *Hylotomus* for the Pileated Woodpecker cannot stand, because preoccupied by *Hylotoma* Latreille

(given to an hymenopterous insect in 1804). Cabanis was aware of the fact and changed the name in 1862 to *Ceophloeus*, in which genus he placed *lineatus*, *scapularis*, *erythrops*, and *pileatus*, with the first mentioned as 'typus generis.' The following year, however, he separated *pileatus* from the others, bestowing upon it the name *Phlocotomus*. As Mr. Ridgway has convinced me, *pileatus* and *lineatus* are strictly congeneric, and, consequently, the generic appellation of the latter applies as well to the former.

GENUS *Ceophloeus** *Cab.*

<1831.—*Dryotomus* SWAINSON, Faun. Bor. Am. II, pp. 303 & 104 (type *P. martius*).

<1849.—*Dryopicus* MALHERBE, Mém. Acad. Metz, 1849, p. 320 (same type).

<1850.—*Dryopicus* MALHERBE, Classif. Picin. Sept. 1850 (same type).

×1854.—*Driopicus* BONAPARTE, Consp. Zyg. Estr. At. Ital., No. 8, May 1854, p. 8 (type *pileatus*).

=1858.—*Hylatomus* BAIRD, B. N. Am. p. 107 (type *pileatus*).

=1862.—*Hylotomus* CABANIS, Journ. f. Orn, 1862, p. 176 (emend.).

=1862.—*Ceophloeus* CABANIS, Journ. f. Orn. 1862, p. 176 (type *lineatus*).

>1863.—*Phlocotomus* CABANIS, Mus. Hein. IV. p. 102 (type *pileatus*).

At first sight it might seem as if Malherbe's *Dryopicus* would be available, but a closer investigation shows that this author only emended Boie's *Dryobates* and Swainson's *Dryotomus* to suit his new nomenclature, in which all the four-toed Woodpeckers had names ending in '*picus*' or '*picos*' (!). The two generic names just referred to have expressly *martius* for type, and *Dryopicus* may therefore be considered as having the same type.

The North American species will stand as

R. 371. *Ceophloeus pileatus* (*Linn.*) *Cab.* PILEATED
WOODPECKER,

the authorities being

1758.—*Picus pileatus* LINN., S. N. 10 ed. I. p. 113.

1862.—*C[ceophloeus] pileatus* CABANIS, Journ. f. Orn. 1862, p. 176.

SMITHSONIAN INSTITUTION,
Washington, D. C., Dec. 1, 1884.

* Deriv. κέω = I split, φλοιός = bark.

PRELIMINARY REPORT OF THE COMMITTEE
ON BIRD MIGRATION.

BY C. HART MERRIAM, M. D.

OWING to the large quantity of material in possession of the Committee on Bird Migration, the several superintendents, with two exceptions, have been unable to complete the reports for their respective Districts. Hence it is impossible, at this time, to do more than call attention to the extent of the work of the Committee, and to present a few brief examples of the results thus far attained. Any attempt, on the part of the Chairman, to generalize upon the as yet meagre amount of classified data at his command, would obviously be premature.

It is unnecessary to dwell upon the labor involved in the distribution of six thousand circulars, by which means the Committee has secured the co-operation, in addition to the keepers of lights, of nearly seven hundred observers, of which number twenty-five are women—and very excellent observers they make. These observers are distributed as follows: Mississippi Valley District, Prof. W. W. Cooke, Superintendent, 150; New England District, John H. Sage, Superintendent, 144; Atlantic District, Dr. A. K. Fisher, Superintendent, 128; Middle-Eastern District, Dr. J. M. Wheaton, Superintendent, 92; Quebec and Maritime Provinces, Montague Chamberlain, Superintendent, 56; District of Ontario, Thomas McIlwraith, Superintendent, 38; Pacific District, L. Belding, Superintendent, 40; Rocky Mountain District, Dr. Edgar A. Mearns, Superintendent, 15; Manitoba, Prof. W. W. Cooke, Superintendent, 10; British Columbia, John Fannin, Superintendent, 5; North-West Territories, Ernest E. T. Seton, Superintendent, 5; Newfoundland, James P. Howley, Superintendent (returns not yet received).

Through the courtesy of the Hon. Wm. Smith, Deputy Minister of Marine and Fisheries of Canada, and of Commander Henry F. Picking, U. S. N., Secretary of the Lighthouse Board of the United States, the Committee has secured the co-operation of these departments, which, it is hardly necessary to add, is indispensable to the success of the undertaking. The Department of Marine and the Lighthouse Board have distributed over one

thousand sets of blank schedules and circulars to the lighthouses, lightships, and beacons of the United States and British North America. Several hundred of these schedules have already been returned to the Committee, and almost every mail brings one or more. A large number of the heads and wings of birds which dash themselves against the lights have been sent to the Chairman for identification. Among them is one of the rarest of North American birds—Swainson's Warbler (*Helonæa swainsoni*)—which was kindly forwarded by the keeper of the lighthouse at Sombrero Key. The schedules entitled "Birds striking the Light" contain data of an exceptionally valuable character, and throw much light on several problems not within reach of the ordinary observer.

The Committee has now established observation stations in every State in the Union, and in every Territory, excepting Nevada; and it is gratifying to know that returns have already been received from nearly one thousand observers. Comparatively few of these observers are ornithologists, or even bird collectors, the great bulk being intelligent farmers, tradesmen, and light-keepers. Those who know only the commonest birds, such as the Robin, Bluebird, or Chimney Swift, can contribute data of great value, and their services are eagerly sought.

The area over which the observation stations are scattered is co-extensive with the boundaries of the inhabited portions of the North American Continent. In the East, the southernmost station from which returns have been received is Sombrero Key, off Southern Florida (latitude $24^{\circ} 37'$); and the northernmost, Belle Isle, off Labrador (latitude $51^{\circ} 53'$). In the West, reports have come to hand from Arizona and Southern California, and from Point Barrow, the most northerly point of Arctic Alaska (latitude $71^{\circ} 18'$). The easternmost station from which data have been received is St. John's, Newfoundland (west longitude $52^{\circ} 45'$), projecting well into the Atlantic; while on the Pacific the Committee has observers at various points in California, Oregon, Washington, and British Columbia.

Hence it appears that the migration stations of the American Ornithologists' Union are sprinkled over $46^{\circ} 41'$ of latitude (approximately three thousand two hundred miles in a north and south direction), and $72^{\circ} 15'$ of longitude (approximately three thousand five hundred miles in an east and west direction). The

distance in a straight line between the most remote points (Sombrero Key and Point Barrow) is about four thousand three hundred miles.

The amount of material now on hand is so great that the Committee cannot hope to fully elaborate it without considerable pecuniary assistance. Reports on the Robin (*Merula migratoria*), Catbird (*Mimus carolinensis*), Martin (*Progne subis*), Baltimore Oriole (*Icterus galbula*), and Nighthawk (*Chordeiles popetue*), have already been prepared by the superintendents of the districts east of the Rocky Mountains, and were presented at the last Congress of the Union.

At the end of this article will be found a summary of the records of the Martin, together with Professor Cooke's report on the northward movement of the Baltimore Oriole in the Mississippi Valley.

Mr. John Murdoch, Superintendent of Alaska, has completed a very interesting report upon the times of arrival and departure of the species that visit Alaska, supplementing his personal observations (which will be found appended to the present paper) by the published records of previous explorers.

The most valuable report yet received is that of Mr. L. Belding, Superintendent of the Pacific District. It contains notes on no less than two hundred and eighty species, and is such an important contribution to the ornithology of our western coast that the Committee hopes to publish it in full at an early date.

Professor Cooke's report for the Mississippi Valley will soon be ready for printing, and contains a vast amount of useful information. In addition to the report proper, consisting of original notes on three hundred and eighty-three species (which fills about four hundred pages of foolscap), there is a supplemental annotated list of one hundred and twenty-six species which have been found in the Mississippi Valley, but which have not as yet fallen under the notice of the Committee's observers. The total of birds known to visit the Mississippi Valley is thus increased to the surprising number of five hundred and nine species. But this by no means concludes the report, for Professor Cooke also traces the 'bird-waves,' treats of the rate of speed at which certain species migrate, and gives a tabulated statement of the contemporaneous phenomena observed. Furthermore, the report will be accompanied by weather maps, prepared by the able

hand of Mr. Otto Widmann, with explanatory text by Professor Cooke.

The Mississippi Valley—a mighty river basin penetrating the heart of a great continent from a semi-tropical climate on the South well into the cold-temperate regions of the North, and unobstructed by mountain barriers or large bodies of water to deflect the current of bird life from the smooth channel through which it flows, yet sufficiently diversified to present a variety of minor physiographical conditions—affords peculiar facilities for the study of many phases of bird migration, and is well worthy of the labor bestowed upon it in this report.

The Chairman takes pleasure in announcing two additions to the personnel of the Committee. Mr. William Dutcher has been appointed Superintendent of Long Island, New York, in which district he has for several years been successfully at work. The readers of 'The Auk' are already familiar with some of the results of his investigations, but the greater portion is still unpublished.

Mr. Lyman S. Foster has been appointed Superintendent of the Lighthouse District of Spanish America, and has already brought together a large amount of valuable material. Mr. Foster began the collection of data from this source independently of the Committee. On the 25th of April, 1884, he mailed a circular-letter, inclosing return blanks, to the keepers of two hundred and fifty-five lighthouses in the West Indies, Central, and South America. The responses were so numerous and satisfactory that, on the 25th of July, he mailed a second letter, containing more detailed instructions, and accompanied by a little book, in the Spanish language, as a guide to the keepers in their ornithological investigations. A very voluminous polyglot correspondence followed, and is still progressing. It was ascertained that large numbers of birds are annually killed by striking the lighthouses on both coasts of South America and in the West Indies—particularly along the northern coast of Cuba. Florentina Alvares, keeper of the lighthouse at Paredon Grande, Cuba, picked up more than a hundred birds one morning. Pedro Maury reports that two hundred and seventy-eight birds killed themselves against the lighthouse near Cardenas during the night of October 4-5, 1884. Francisco Megide writes from Bahia de Cadiz, "one night an infinity of birds struck, and the

tower men utilized them for food." Francisco Bautista states that at San Antonia from five to six hundred birds have been picked up in a single morning.

From seven lighthouses upon the northern coast of Cuba Mr. Foster has received much confirmatory evidence of the fact, clearly pointed out by Professor Baird nearly twenty years ago, that in autumn an immense bird-wave reaches the Cuban shores from Florida—a movement which renders insignificant the migration from Florida westward along the northern coast of the Gulf of Mexico.*

MIGRATION OF THE MARTIN (*Progne subis*) IN THE SPRING OF 1884.

The common Purple Martin is an excellent species by which to trace migration, for it is well-known and widely distributed, and its habit of occupying boxes erected for its use in towns and villages renders its movements far easier of observation than in the case of forest-dwelling birds. In winter the Martin visits South America, but the last of the fall migrants rarely leave our southern border before December. Returning, the advance guard usually enters the Gulf States toward the latter part of February. During March the great army arrives and spreads over the whole of the Southern States, the van appearing in many parts of Virginia, Kentucky, Southern Illinois, Missouri, and Kansas, some enterprising individuals reaching even as far north as latitude 40°. If not retarded by cold, the first week of April finds them pushing swiftly northward, and by the end of the month they have distributed themselves over nearly the whole of the United States east of the Rocky Mountains, and are already common in some parts of Canada. The exact time of their appearance at any given locality in the Northern States varies as much as two weeks from year to year. During the spring of 1884 they were recorded from Water Valley, Miss., March 1; Gainesville, Texas, March 5; Caddo, Indian Territory, and Newport, Arkansas, March 9; St. Louis, Mo., March 24; Manhattan, Kansas, March 25; Southern Iowa, March 30. During April they move through Northern Illinois and parts of Wisconsin and Minnesota, arriving at latitude 45° about the end

* The full results of Mr. Foster's investigations, including notes on one hundred and fifty species, were presented before the Linnaean Society of New York, September 21, 1884.

of the month. May 19 they reached Portage la Prairie in Manitoba. East of the Mississippi Valley they were seen in Jessamine County, Kentucky, March 18; at Buffalo, West Virginia, March 22; Camden, Indiana, March 28; New Lexington, Pa., April 16; Columbus, Ohio, April 15; Niagara Falls, April 18; Auburn, New York, April 20; Belleville, Ontario, April 22; Ottawa, Canada, April 27. In New England the returns show them at Saybrook, Conn., April 19; Greenfield, Mass., April 27; Moosehead Lake, Maine, April 23. They were seen at St. John's, New Brunswick, May 2; Chatham, N. B. (Mirimichi Bay, facing the Gulf of St. Lawrence), May 10; and at Cape Breton Island, north of Nova Scotia, June 1.

Turning now to the other side of the Continent, their progress is found to have been much affected by the unfavorable weather. In California Mr. L. Belding has records from San Diego, April 28; Stockton, March 1; Marysville, March 17; Poway, May 1; San José, May 3; Olema, May 8; and Chico, May 22.

MIGRATION OF THE BALTIMORE ORIOLE (*Icterus galbula*)
IN THE MISSISSIPPI VALLEY DURING THE SPRING OF 1884.

By W. W. COOKE.

The first record we have of this species is April 7, when it appeared at Rodney, Mississippi, latitude $31^{\circ} 52'$; and the last, May 25, at Oak Point, Manitoba, latitude $50^{\circ} 30'$. This would make an average speed of twenty-seven miles a day. As we found last year that the Oriole was a bird of quite uniform speed, let us trace the record this year and see how it agrees. St. Louis, Mo., latitude $38^{\circ} 40'$, is reached April 26, which would be at the rate of twenty-five miles a day, but if we go directly north we find a record on the 25th at Hillsborough, Illinois, latitude $39^{\circ} 12'$, which would make a speed of just twenty-seven miles a day. About April 29 and 30 there seems to have been much movement of this species; not so much the advance of the van as the filling up of the country already traversed, bringing the bulk to the country from latitude $39^{\circ} 30'$ southward and the van to latitude 41° , and in the west to Manhattan, Kansas, latitude $39^{\circ} 12'$. At twenty-seven miles a day they should have advanced by May 6 to about latitude $43^{\circ} 30'$. Now we have to hunt for records of this advance. May 5 and 6 are days of

especial movement in Iowa, Minnesota, Illinois, and Wisconsin. During these days there are records of 'first' all over Northern Illinois and Southern Wisconsin to latitude $43^{\circ} 16'$, with a stray one at latitude $44^{\circ} 22'$ in Wisconsin; and the State of Minnesota shows records up to latitude $43^{\circ} 43'$, with an extra advance along the Mississippi River to latitude $44^{\circ} 32'$. May 12 should have found them at latitude 46° , and we are furnished the record of its appearance at latitude $45^{\circ} 25'$ and $46^{\circ} 33'$ in Minnesota, so that although there are slight variations in speed, as would be expected, the species shows quite a remarkable uniformity in its rate of migration throughout this long distance. There is, however, no trace of the increase of speed from the south northward which was noticed last year; the highest rate being in the middle districts the first week in May. In the prairie region the records are somewhat late, the birds reaching latitude $39^{\circ} 12'$ in Kansas April 30, latitude $40^{\circ} 53'$ in Nebraska May 9, and latitude $44^{\circ} 21'$ in Dakota May 22. Farther west, and almost at the extreme limit of its western dispersion, it was observed at Gainesville, Texas, and Ellis, Kansas.

The full record at St. Louis is: April 26, first, three males at stand, calling. April 28, bulk of males arrive (the bulk of the species averages in all the notes about four days behind the first). May 3, first female (the average for females is about seven days behind the first, and as the arrivals of bulk may be separated into two series, one of about two or three days in the rear, and the other of seven or eight, it is evident that the first series indicates the arrival of the bulk of the males, while the second indicates the increase of the species as a whole, caused by the arrival of the females). May 5, bulk of females arrives, and many transients, making this day the height of the season (as has already been stated, this day and the next are *the* days of movement for this species, and that, too, apparently over an immense country, stretching from latitude 34° to latitude 44°). May 10, first male of last year; May 11, species very much excited, and transient birds of last year present. May 31, set found of six incubated eggs.

[East of the Mississippi Valley this species was reported from Jessamine County, Kentucky, April 18; Camden, Ind., April 24; College Hill, O., April 27; Columbus, O., April 28; Petersburg, Mich., April 30; Cleveland, O., and Battle Creek, Mich..

May 1; New Lexington, Pa., April 28; Brooklyn, Pa., May 6; Long Island City, and Sing Sing, N. Y., May 2; Lockport, N. Y., May 4; Painted Post, N. Y., May 5; Locust Grove, and Auburn, N. Y., May 6; Watertown, N. Y., May 11; Lake George, and Hammondville, N. Y., May 13; London, Ont., May 8; Hamilton, Ont., May 9; Ottawa and Listowel, Ont., May 13; Portland, Conn., May 2; East Hartford, Conn., May 4; Holyoke, Mass., May 6; Greenfield, Mass., and Hanover, N. H., May 15; Thetford, Vt., May 10; Waterboro, Fryeburg, and Brewer, Me., May 16; Moosehead Lake, Me., and Montreal, Canada, May 24. The Baltimore Oriole is rather a late comer, usually waiting for settled weather before venturing northward. Hence its progress, being subject to comparatively few interruptions, is much more regular than in those species which migrate earlier.—C. H. M.]

BIRD MIGRATION AT SOMBRERO KEY, FLORIDA. BY C.
HART MERRIAM, M. D.

The southernmost station in the United States from which the Committee has received returns is Sombrero Key, one of the Florida Reefs, in latitude $24^{\circ} 37'$. The lighthouse stands on iron piles, over a sunken reef, and bears a fixed white light of the first order, which is one hundred and forty-four feet above sea-level, and is visible eighteen miles in clear weather. The keeper, Mr. M. E. Spencer, has taken great pains to supply the Committee with reliable data, and has sent several packages of heads and wings for identification. His report, owing both to the absolute trustworthiness of the data it contains (examples of every species mentioned having been seen by the Chairman), and to the geographical position of the station, may fairly be regarded as the most valuable of the lighthouse returns thus far received. It is given in full below.

Mr. Spencer states that more birds are killed by striking the iron framework and cylinder of the tower than by striking the lantern, and that the numbers killed must be far greater than found, because they seldom strike except on dark, stormy nights, when the wind naturally carries the greater number into the surrounding water, there being no land on the reef. He also says that many birds are seen fluttering for a few minutes in the rays of the light and then fly away, without striking.

List of Birds which struck the Lighthouse at Sombrero Key, Florida Reefs, from April 29 to September 25, 1884. By M. E. Spencer, Keeper.

Name of bird.	Date and hour of striking.	No. of Birds striking glass of Lantern.		Direction and force of Wind.	Weather.	Remarks.
		Striking.	Killed.			
<i>Dendroca striata</i>	Apr. 29, 3 A.M.	2	1	S. E. Fresh	Clear	♂
<i>Siurus auricapillus</i>	" " 2 "	2	1	" "	"	
<i>Dendroca striata</i>	May 1, 1 "	1		E. Moderate	"	
" "	" 2, 1 "	1		E. Fresh	"	
" "	" 2, 2 "	1		" "	"	
<i>Setophaga ruticilla</i>	" 3, 3 "	1	1	E. Moderate	Cloudy	♂ & ♀
<i>Dendroca striata</i>	Aug. 6, 10 P.M.	4		S. W. Squall	Rain	♂ & ♀
" "	" 14, 2 A.M.	16	9	E. S. E.	"	♂ & ♀
" "	" 14, 2 "	3	2	" "	"	"
" "	" 19, 10 P.M.	2		" "	"	"
<i>Setophaga ruticilla</i>	" 19, 10 "	3		" "	"	♀
Other small birds, unknown	" 19, 10 "	4	1	" "	"	
<i>Setophaga ruticilla</i>	" 20, 2 A.M.	5	2	E.	Cloudy	♂ & ♀
Unknown	" 20, 2 "	3	2	" "	"	
<i>Setophaga ruticilla</i>	" 21, "	1		" "	"	♂
<i>Siurus motacilla</i>	" 21, "	1	1	" "	"	
<i>Parula americana</i>	" 29, 1 A.M.	1	1	" "	"	
" "	Sept. 7, 1 "	1	1	S. E. Moderate	Clear	
" "	" 8, 3 "	2	1	N. E.	Rain; squally	
" "	" 8, 3 "	1		" "	"	
<i>Dendroca striata</i>	" 10, 9 P.M.	6		S. Light	Cloudy	
<i>Parula americana</i>	" 10, 9 "	4		" "	"	
Other small birds, unknown	" 10, 10 "	1		" "	"	
<i>Siurus motacilla</i>	" 10, 10 "	1		" "	"	
<i>Cardinalis virginianus</i>	" 10, 10 "	1		" "	"	
<i>Parula americana</i>	" 12, 8 "	1		Calm	Clear	
" "	" 14, 8-10 "	8		N. E. Fresh	Rain; squally	
" "	" 14, 8-10 "	20	6	" "	"	♂ & ♀
<i>Setophaga ruticilla</i>	" 14, 8-10 "			" "	"	

Name of bird.	Date and hour of striking.	No. of Birds striking glass of Lantern.		Direction and Force of Wind.	Weather.	Remarks.
		Striking.	Killed.			
<i>Dolichonyx oryzivorus</i>	Sept 14, 8-10 P.M.	1	1	N. E. Fresh	Rain; squally	
<i>Helonæa swainsoni</i>	" 14, 8-10 "	10	2	" "	" "	♀
<i>Dendrocæa cærulescens</i>	" 14, 8-10 "	4	2	" "	" "	♂
<i>Mniotilta varia</i>	" 14, 8-10 "	3	2	" "	" "	♂
<i>Geothlypis trichas</i>	" 14, 8-10 "	2	1	" "	" "	
<i>Dendrocæa discolor</i>	" 14, 8-10 "	1	1	" "	" "	
<i>Siurus motacilla</i>	" 14, 8-10 "	200 or more	25	" "	" "	♂ (also a few ♀)
<i>Dendrocæa cærulescens</i>	" 15, 9-12 "	25	10	" "	" "	
<i>Parula americana</i>	" 15, 9-12 "	20	8	" "	" "	
<i>Setophaga ruticilla</i>	" 15, 9-12 "			" "	" "	
<i>Dolichonyx oryzivorus</i>	" 15, 9-12 "			" "	" "	
<i>Helonæa swainsoni</i>	" 15, 9-12 "			" "	" "	
<i>Mniotilta varia</i>	" 15, 9-12 "			" "	" "	
<i>Geothlypis trichas</i>	" 15, 9-12 "			" "	" "	
<i>Dendrocæa discolor</i>	" 15, 9-12 "			" "	" "	
<i>Siurus motacilla</i>	" 15, 9-12 "			" "	" "	
<i>Dendrocæa cærulescens</i>	" 17, 12-4 "	10	2	E. Moderate.	Misty	♂
<i>Parula americana</i>	" 17, 12-4 "	100	15	" "	" "	♂ & ♀
<i>Setophaga ruticilla</i>	" 17, 12-4 "	7	1	" "	" "	♂
<i>Mniotilta varia</i>	" 17, 12-4 "	3	1	" "	" "	♂
<i>Helmitherus vermivorus</i>	" 17, 12-4 "	1	1	" "	" "	
" "	" 21, 8-10 "	40	8	E. S. E.	Rain; squally	
<i>Porzana carolina</i>	" 21, 8-10 "	2	2	" "	" "	
<i>Parula americana</i>	" 21, 8-10 "			" "	" "	
<i>Setophaga ruticilla</i>	" 21, 8-10 "			" "	" "	
<i>Siurus motacilla</i>	" 21, 8-10 "			" "	" "	♂ & ♀
<i>Helonæa swainsoni</i>	" 21, 8-10 "			" "	" "	
<i>Dendrocæa cærulescens</i>	" 21, 8-10 "			" "	" "	
A scattering assortment	" 22, 2-4 A.M.	23	4	E. Fresh	Rain	♀
<i>Parula americana</i>	" 25, 1-4 "	38	8	S. E. "	Rain; squally	
Scattering varieties	" 25, 1-4 "	50	10	" "	" "	

About as many of each struck as on the previous night, but more were killed or else fewer blown away. Less struck of *Siurus motacilla*.

Since the above went to press I have received from Mr. Spencer another schedule. It contains fifty additional records, and supplements the above list by three species—*i. e.*, *Coturniculus passerinus*, *Melanerpes erythrocephalus*, and *Ionornis martinica*.

BIRD MIGRATION AT POINT BARROW, ARCTIC ALASKA.

By JOHN MURDOCH.

From Observations made at the United States Signal Station Ooglaamie, in North Latitude 71° 18', from Sept. 1881, till Aug. 29, 1883.

Species.	FIRST SEEN.		LAST SEEN.		
	1882.	1883.	1882.	1883.	
1. Saxicola œnanthe	May 10		May 22		Rare
2. Cotile riparia	July 29		Aug. 10		"
3. Ægiothus canescens exilipes	June 13		July 3		"
4. Plectrophanes nivalis	Apr. 9	Apr. 19	Sept. 20		Plenty
5. Centrophean laponicus	May 20	May 23	Sept. 4		"
6. Zonotrichia gambeli intermedia	Sept. 4				Very rare
7. Junco hyemalis			May 24		"
8. Nyctea scandiaca	Resid't				Rare
9. Hierofalco gyrfalco sacer	"				"
10. Lagopus albus	"				"
11. Lagopus rupestris	"				"
12. Strepilas interpres	June 12	June 12	Aug. 29		Plenty
13. Squatarola helvetica	June 21				Rare
14. Charadrius dominicus	May 21	May 24	Aug. 28		Plenty
15. Macrorhamphus griseus scolopaceus	June 19	June 25	Aug. 17		"
16. Tringa canutus	June 11	May 30	July 5		Rare
17. Actodromas maculata	June 15	May 30	Sept. 6		Plenty
18. Actodromas fuscicollis		June 6		July 6	Very rare
19. Actodromas bairdi	May 30	May 29	July 6	Aug. 12	Plenty
20. Pelidna alpina americana	May 31	May 29	Sept. 7		"
21. Pelidna subarquata		June 8			Very rare
22. Ereunetes pusillus	July 29	July 25	Aug. 18	Aug. 15	Plenty
23. Limosa lapponica novæ-zealandiæ	Aug. 12	Aug. 11	Aug. 18		Rare
24. Tryngites rufescens	June 8	June 6	July 2	July 27	Plenty
25. Numenius borealis	May 20		July 6		Rare
26. Phalaropus fulicarius	June 4	May 30	Oct. 10		Plenty
27. Lobipes hyperboreus		June 11			Rare
28. Grus canadensis		June 2		June 20	"
29. Chen hyperboreus albus	May 16	May 5	June 23	Aug. 15	Plenty
30. Anser albifrons gambeli	May 16	May 25	Aug. 18	July 18	"
31. Bernicla nigricans	June 13	June 7	Sept. 21		"
32. Dafila acuta	June 18	July 26	Sept. 7	Aug. 12	Rare
33. Harelda glacialis	May 18	May 24	Oct. 9		Plenty
34. Polysticta stelleri	June 5	June 11	Aug. 3	Aug. 16	"
35. Lampronetta fischeri	May 29	May 26	June 18	(Aug. 24)	Not plenty
36. Somateria v-nigra	May 10	May 19	Aug. 18		Plenty
37. Somateria spectabilis	Apr. 27	May 5	Dec. 2		"
38. Pagophila eburnea	May 22		Oct. 10		Rare
39. Larus glaucus	May 11	Mar. 29	Nov. 1		Plenty
40. Rhodostethia rosea	Sept. 10		Oct. 9		"
41. Xema sabinei	June 2	June 6	Aug. 3	(Oct. 22, '81)	"
42. Sterna macrura	June 10	June 10	Aug. 25		"
43. Stercorarius pomatorhinus	June 24	June 6		Aug. 15	Not rare
44. Stercorarius crepidatus	July 5	May 30	July 7	Aug. 12	" "
45. Stercorarius parasiticus	May 31	May 29	Aug. 27	Aug. 5	Plenty
46. Colymbus adamsi	May 15	May 25	July 30	Aug. 28	"
47. Colymbus pacificus	June 4	June 13	Sept. 28	(and later)	"
48. Colymbus septentrionalis		June 5	Aug. 15	Aug. 16	"
49. Uria grylle	Aug. 14			Feb. 3	Not plenty
50. Lomvia arra	May 22	July 7	Dec. 9		Rare

The Station was abandoned on August 29, 1883, so that dates of departure for species which remained later than this date are unknown.

BIRD MIGRATION AT THE STRAITS OF MACKINAC. BY C.
HART MERRIAM, M. D.

DATA resulting from a single season's observations seem to indicate that the Straits of Mackinac lie in the line of a somewhat remarkable avenue of migration. It is probable that the great bulk of those birds which, on their way to the upper peninsula and Canada, pass between the west end of Lake Erie and the southernmost point of Lake Michigan, cross the Straits of Mackinac. The southern peninsula of Michigan, with a narrow strip from the northern borders of Ohio and Indiana, may be regarded as a great wedge with a base two hundred miles in length. Birds entering this wedge are apt to follow it northward, hemmed in on the east by Lake Huron, and on the west by Lake Michigan, till they arrive at its apex, at Mackinac. Hence it appears, in the spring migration, that the Canada-bound birds which, between the south end of Lake Michigan and the west end of Lake Erie are spread over a tract two hundred miles broad, are gradually condensed, so to speak, during their northward passage, till, in crossing the Straits of Mackinac, they occupy a belt but a few miles in width.

It must not be understood that all the birds which cross the base line between lakes Michigan and Erie, and enter the Michigan wedge, pass out at the Straits. From this total must be subtracted all those that breed in the southern peninsula—over an area of forty-one thousand, six hundred square miles—and those (a far smaller number) that migrate by other channels. The remainder, constituting the great bulk of the northern peninsula and Canada-bound individuals, cross at or near Mackinac. It is evident, therefore, that stations located in this vicinity possess unusual facilities for the study of successive bird-waves; and that the keepers of lights in these waters can, with little trouble, furnish the Committee with information of the utmost value.

Spectacle Reef, in Lake Huron, lies just east of the entrance of the Straits, and about midway between shores. The lighthouse rises directly from the water and is surrounded by a wooden pier ninety-five feet square. The light is of the second order and shows alternately a red and white flash every 30 seconds. It is eighty-six feet above sea-level and is visible, in clear weather,

at a distance of sixteen and one-half miles. The keeper of this light, Mr. William Marshall, has been there seven years. He states that during the migrations, in misty and rainy nights, large numbers of birds strike. On a single morning he has picked up one hundred and fifty on the pier surrounding the tower, and thinks that ten times as many as lodge on this narrow platform fall into the water. A package of specimens which he was kind enough to send the Committee for identification, early in June last, contained the following species: *Regulus calendula* (♂), *Dendroica castanea* (♀), *Dendroica maculosa* (♂ and ♀), *Dendroica cærulescens* (♂ and 2 ♀), *Geothlypis trichas* (2 ♂ and ♀), *Geothlypis philadelphia* (♀), *Helminthophila peregrina* (♂), *Myiodiodes canadensis* (♂), *Sturnus anricapillus*, *Vireo philadelphicus* (3), *Vireo solitarius*, *Vireo olivaceus*, *Zonotrichia albicollis* (2), *Zonotrichia leucophrys* (♂), *Passerculus savanna*, *Melospiza lincolni*, *Contopus vireus*, *Empidonax flaviventris* (2).

Mr. James Davenport, keeper of the light at McGulpin's Point, near the western entrance of the Straits of Mackinac, has also furnished the Committee with valuable information.

SWAINSON'S WARBLER.

BY WILLIAM BREWSTER.

SWAINSON'S WARBLER was discovered in 1832 near Charleston, South Carolina, by the Rev. John Bachman. His experience, as quoted by Audubon—who named the species and made it the type of a genus *Helinaia*—is as follows:* "I was first attracted by the novelty of its notes, four or five in number, repeated at intervals of five or six minutes apart. These notes were loud, clear, and more like a whistle than a song. They resembled the sounds of some extraordinary ventriloquist in such a degree, that I supposed the bird much farther from me than it really was; for after some trouble caused by these fictitious notes, I perceived it near to me, and soon shot it.

* Birds of America, Vol. II, p. 84.

“The form of its bill I observed at once to differ from all other known birds of our country, and was pleased at its discovery. On dissection it proved to be a male, and in the course of the same spring, I obtained two other males, of which the markings were precisely similar. In the middle of August of that year, I saw an old female accompanied with four young. One of the latter I obtained: it did not differ materially from the old ones. Another specimen was sent to me alive, having been caught in a trap. I have invariably found them in swampy, muddy places, usually covered with more or less water. The birds which I opened had their gizzards filled with the fragments of coleopterous insects, as well as some small green worms that are found on water plants, such as the pond lily (*Nymphaea odorata*) and the *Nelumbium* (*Cyamus flavicomus*). The manner[s] of this species resemble those of the Prothonotary Warbler, as it skips among the low bushes growing about ponds and other watery places, seldom ascending high trees. It retires southward at the close of summer.”

From the above account it will appear that Dr. Bachman took at least five specimens. Of these Audubon's type, afterwards given by him to Professor Baird, is now in the National Museum, while a second is still preserved, with some other of Bachman's skins, in the Museum of the College of Charleston. The remaining three I have been unable to trace, and it is probable that, in accordance with the usage of a time when a pair of specimens was considered to sufficiently illustrate a species, they were merely examined and thrown away.

For upwards of forty years succeeding its discovery our bird was so nearly lost sight of that only three examples seem to have been taken,—the first by Mr. W. L. Jones, in Liberty Co., Georgia,* some time prior to 1858; the second by Mr. L. L. Thaxter, at Little Silver Spring, Florida, April 15, 1869,† and the third in Cuba. The last was recorded by Gundlach,‡ who, writing in 1872, merely says that it was shot at the beginning of April near Havana, by his friend Don Ramon Fons, and that it represents the only Cuban occurrence of which he has any knowledge.

* Bd., Cass. and Lawr., Bds. N. A., 1858, p. 253.

† Maynard, Birds Fla., 1873, p. 47.

‡ J. f. O. 1872, p. 412.

Next in chronological order comes a specimen which I saw in the collection of Mr. Christopher D. Wood, a Philadelphia taxidermist, in 1873, and which, if I remember rightly, was killed near Beaufort, South Carolina, in April or May of the preceeding year. This bird, so far as I know, has escaped the notice of previous recorders. At last accounts it was still in Mr. Wood's possession.

The year 1878 brought an important contribution to our knowledge of the mysterious bird from the pen of Mr. N. C. Brown, who met with three specimens at Coosada, Elmore County, Alabama, and who, after Bachman, seems to have been the first observer to learn anything respecting its habits. Mr. Brown's account* of his experience is so interesting and graphic that I transcribe it in full:

"On April 12, while forcing my way through the dark, rank forest which lies about the source of Coosada Creek, I caught the final notes of an unknown song uttered close at hand. Instantly seating myself on a fallen tree, I awaited its repetition. The woods about me were quite dry and comparatively deserted by birds, but along the neighboring creek many Vireos, Thrushes, and Swamp-Warblers were producing such a babel of sounds that I feared the voice of my unknown songster might escape me. After the lapse of a few minutes, however, a bird emerged from a thicket within a few yards of me, where he had been industriously scratching amongst the fallen leaves, flew into a small sapling, and gave utterance to a loud, ringing, and very beautiful song. Seen in the dim light of the woods, he bore a decided resemblance to the Louisiana Water Thrush, and his song might almost have passed for an exceptional performance by that bird; but I at once suspected his true identity, and in a few seconds held in my hand the lifeless body of a male Swainson's Warbler.

"During the succeeding nine days I repeatedly and most carefully searched this tract of woods and other localities apparently equally favorable, without detecting additional specimens. Finally, April 22, while exploring a slough near the union of the Coosa and Tallapoosa Rivers, I met with two more males. Piloted by their song, I readily approached them, but, unfortunately, lost one, badly wounded, in the impenetrable cane.

* Bull. N. O. C., Vol. III, 1878, pp. 172, 173.

"I was impressed by the absorbed manner in which this bird sings. Sitting quietly upon a limb of some small tree, he suddenly throws back his head and pours forth his notes with the utmost fervor and *abandon*. During his intervals of silence he remains motionless, with plumage ruffled, as if completely lost in musical reverie."

Contemporaneously with the above appeared a note* by Mr. Ridgway announcing the supposed occurrence of the species at Mt. Carmel, Illinois, where a bird thought to be Swainson's Warbler was heard and seen, but unfortunately not secured. Some three years later the same author recorded† the detection of the species in Texas, a specimen having been shot there in the Trinity River bottom, Navarro County (presumably in the spring of 1880, though the date is not given), by Mr. J. Douglas Ogilby.

Excluding certain New England citations long since shown to be erroneous, the above is believed to comprise everything essential that occurs in the records down to the year 1884. During 1884 there were two announcements, the first a mere mention by Mr. Walter Hoxie‡ of the finding the species at Frogmore, South Carolina; the other a short article by Dr. Coues.§ embodying notes furnished him by Mr. Arthur T. Wayne. As the latter paper is anticipatory to the matter which I am about to present, as well as based on data which I am in a position to elaborate more fully, as well as perhaps more accurately, than was Dr. Coues, I shall not refer to it again, except, possibly, to call attention to certain statements which are either not warranted by the evidence at hand, or directly negated by it.

In the hope of adding to the scanty store of knowledge just reviewed I visited South Carolina in May, 1883, expressly to search for Swainson's Warbler. Having letters of introduction to gentlemen in Charleston, I made that city my headquarters, and from it rambled over the neighboring country, exploring the woods and swamps with all possible care and thoroughness. Of this trip it is perhaps enough to say that it proved a failure, as far

* Bull. N. O. C., Vol. III, 1878, p. 163.

† Bull. N. O. C., Vol. VI, No. 1, Jan. 1881, pp. 54, 55.

‡ Orn. and Oöf., Vol. IX, No. 11, p. 138.

§ Forest and Stream, Nov. 6, 1884, pp. 285, 286.

as its chief object was concerned, for I was obliged to return to Massachusetts without having found the bird of which I was in quest. One promising result was accomplished, however, Mr. Arthur T. Wayne, a young local collector whom I had employed as guide and assistant, and who had become much interested in the search, being engaged to continue it in my interests. But during the year 1883 he also was unsuccessful.

Although discouraged I by no means gave up hope, but early the next spring (1884) returned to Charleston prepared to devote the greater part of the season to the pursuit. The first three weeks of April passed profitably enough, as far as general collecting was concerned, but without developing anything of special importance or interest. On the evening of April 22, however, Wayne, who had been out alone that day, called, and handed me a bird with the simple question, "What is it?" One glance was enough—the long sharp bill with its compressed ridge extending well back on the forehead, the plain olive brown back and reddish crown, and the delicate, lemon-tinted white of the under parts were all unmistakable, for of course it was not the first Swainson's Warbler I had seen. It was, however, the very first *freshly-killed* one;—and who does not know the difference!

Just a week later the second specimen was taken. I stumbled on it quite by accident while exploring a tract of oak scrub covering a dry, in fact positively sandy, ridge on James Island, opposite Charleston. It was feeding on the ground in company with an Ovenbird (*Sirurus auricapillus*), and almost immediately flew up into a sapling within a few yards of me, so near, indeed, that I had to retreat several paces before shooting. Wayne's bird was a male, this a female, with well-developed ovaries, but evidently not ready to breed by at least a week or two.

After this the tide of success rose, if not rapidly, at least steadily, and during the time that intervened before my departure for the North (May 10) seven more specimens were secured; thus I took home nine in all, or nearly as many as had been previously collected since the discovery of the species. At the time this success was sufficiently gratifying, but it proved only the earnest of what was to come, for during the following summer and autumn, Mr. Wayne sent me thirty-six more; all that he

took, so he assures me, with the exception of five others disposed of elsewhere. The total number killed by us near Charleston in 1884 is accordingly just fifty.

From the acquisition of so large a series in a single season it might be inferred that Swainson's Warbler is an abundant bird near Charleston. This, however, is certainly not the case. Indeed, there is no present evidence to show that it is even common there except in a few localities, and the keenest collector may cover miles of apparently suitable ground without finding a single specimen. Mr. Wayne has had this experience repeatedly, while in no instance save one (when he fell in with a brood of young accompanied by their parents) has he taken more than three specimens in a day. His general success was simply the result of the most persistent efforts extended over a period of several months, during which almost his entire time was devoted to the pursuit of this species alone. Most of his specimens were taken in a somewhat limited area where, during the breeding season, the females were spared that they might serve as decoys to bachelor males. So successful was this plan that in one instance no less than five males were shot to one female. Many of these were doubtless attracted long distances. After July, there was an appreciable if slight influx of young birds in fall plumage. Some of them may have been reared near at hand, but the majority evidently came from swamps further inland or to the northward. This movement continued through August, but at the close of that month it waned. The last specimen was taken September 25. Thus the stay of the species in South Carolina would seem to extend over a period of a little more than five months.

The specimen killed on James Island, and another shot two days later, about three miles to the westward of Charleston, were the only ones met with in the immediate vicinity of that city. Both were undoubtedly migrants, and it is probable that the 'sea islands' generally, with the adjacent mainland, are visited regularly during the spring and fall flights. They may harbor a few breeding birds also, but of this we have no present proof.* On the contrary, after the migrations passed, we failed to find

* Since writing the above I have examined—through the kindness of Mr. C. K. Worthen—a specimen taken by Mr. Joseph H. Batty at St. Helena Island, South Carolina, May 30, 1884. This date is fairly within the breeding season.

the species nearer Charleston than a place about six miles to the westward and directly inland. At this point the rice plantations begin. There may be no actual connection between these facts, but certain topographical as well as floral characteristics of this rice belt incline me to believe that its limits may be found to correspond more or less closely with those of the summer distribution of Swainson's Warbler in South Carolina.

While the facts already given prove incontestably that the present species may occur at times in dry scrubby woods, or even in such open situations as orange groves, it certainly haunts by preference the ranker growth of the swamps, to which, indeed, it appears to be confined during the breeding season. In South Carolina, as elsewhere, the term swamp is somewhat general in application. As our Warbler is by no means equally general in his tastes but, on the contrary, exceptionally fastidious in the choice of a summer home, it is necessary to be more explicit. The particular kind of swamp to which he is most partial is known in local parlance as a 'pine-land gall.' It is usually a depression in the otherwise level surface, down which winds a brook, in places flowing swiftly between well-defined banks, in others divided into several sluggish channels or spreading about in stagnant pools, margined by a dense growth of cane, and covered with lily leaves or other aquatic vegetation. Its course through the open pine-lands is sharply marked by a belt of hardwood trees nourished to grand proportions by the rich soil and abundant moisture. Beneath, crumbling logs cumber the ground, while an under-growth of dogwood (*Cornus florida*), sassafras, viburnum, etc., is interlaced and made well-nigh impenetrable by a net-work of grapevines and greenbriar. These belts—river bottoms they are in miniature—rarely exceed a few rods in width; they may extend miles in a nearly straight line, but ordinarily the brooks which they conceal form short tributaries of streams of larger size, which in turn soon mingle their waters with those of neighboring rivers. More extensive swamps, especially those bordering the larger streams, are subject to inundations which, bringing down deposits of alluvial soil, bury up or sweep away the humbler plants, leaving a floor of unsightly mud, interspersed with pools of stagnant water. Such places answer well enough for the Prothonotary and Hooded Warblers, which, although essentially swamp-lovers, are not to

any extent terrestrial; but you are not likely to find Swainson's Warbler in them, unless about the outskirts, or on islands elevated above the reach of the floods. Briefly, four things seem indispensable to his existence, viz., water, tangled thickets, patches of cane, and a rank growth of semi-aquatic plants.

All four conditions are fulfilled by the 'pine-land galls.' These belts, with their cool shade, running water, and luxuriant vegetation, attract many thicket-haunting birds. They invariably swarm with Cardinals, White-eyed Vireos, Carolina Wrens, and Hooded Warblers, while there are occasional pairs of Maryland Yellow-throats, and now and then a Wood Thrush, sounding his flute-like notes, or a Painted Finch, warbling softly among the bushes. From the pines outside come the sweet refrain of the Yellow-throated Warbler, the petulant cry of the Great-crested Flycatcher, and, from somewhere in the distance, the matchless reverie of Bachman's Finch.

In the early morning, before the sun's rays have evaporated the delicate frosting of dew-drops from the fronds of the ground palmetto, or invaded the swamp, still cool and fragrant after the night, one may hear fifty birds singing in such a spot. The effect is confusing at first, but the practised ear soon identifies the various performers, and a few minutes spent in this way will often give the listener a fairly accurate idea of the bird life by which he is surrounded. Amid the general din, if he be fortunate, may be heard the song of Swainson's Warbler, a performance so remarkable that it can scarcely fail to attract the dullest ear, while it is not likely to be soon forgotten. It consists of a series of clear, ringing whistles, the first four uttered rather slowly and in the same key, the remaining five or six given more rapidly, and in an evenly decending scale, like those of the Cañon Wren (*Catherpes mexicanus conspersus*). In general effect it recalls the song of the Water Thrush (*Siturus naevius*). It is very loud, very rich, very beautiful, while it has an indescribably tender quality that thrills the senses after the sound has ceased.

It is ventriloquial to such a degree that there is often great difficulty in tracing it to its source. You advance confidently enough at first, when suddenly the sound comes from behind you. Retracing your steps, the direction is again changed. Now it is to the right, shortly after to the left; one moment in the tree tops

overhead, the next among the bushes almost at your feet. Hurrying hither and thither with rapidly diminishing caution you finally lose all patience and dash through the tangle, tripping over hidden obstructions or perhaps floundering in morasses at imminent risk of being bitten by some venomous moccasin. When at length you pause near the starting point, tired of the fruitless pursuit, and convinced that your will-o'-the-wisp has been momentarily changing his position, you may perchance discover him sitting quietly near the end of some low branch, where he has probably been all the while, calmly curious perhaps with respect to the strange two-legged creature rushing about beneath, but more likely lost to everything except his own ecstatic music. At times, however, he actually will flit from perch to perch as you advance, keeping more or less concealed among the foliage.

In addition to its song this Warbler utters a soft *tchip* indistinguishable from that of *Parula americana*, but wholly unlike the cry of any Ground Warbler of my acquaintance. I heard this note on only one occasion, when the bird was excited over some disturbance in the shrubbery, perhaps the presence of a snake.

Although a rarely fervent and ecstatic songster, our little friend is also a fitful and uncertain one. You may wait for hours near his retreat, even in early morning, or late afternoon, without hearing a note. But when the inspiration comes he floods the woods with music, one song often following another so quickly that there is scarce a pause for breath between. In this manner I have known him sing for fully twenty minutes, although ordinarily the entire performance occupies less than half that time. Such outbursts may occur at almost any hour, even at noontide, and I have heard them in the gloomiest weather, when the woods were shrouded in mist and rain.

(When not singing Swainson's Warbler is a silent, retiring bird, spending nearly his entire time on the ground in the darkest recesses of his favorite swamps, rambling about over the decaying leaves or among the rank water-plants in search of the small beetles which constitute his principal food.* His gait is distinctly a walk, his motions gliding and graceful. Upon alighting in the branches, after being flushed from the ground, he assumes a statuesque attitude, like that of a startled Thrush. While singing he

* The stomachs of all the specimens that I have examined contained exclusively small Coleoptera.

takes an easier posture, but rarely moves on his perch. If desirous of changing his position he flies from branch to branch instead of hopping through the twigs in the manner of most Warblers. Under the influence of excitement or jealousy he sometimes jets his tail, droops his wings, and raises the feathers of the crown in a loose crest, but the tail is never jerked like that of a *Geothlypis*, or wagged like that of a *Siurus*. On the contrary, his movements are all deliberate and composed, his disposition sedentary and phlegmatic.) At the height of the mating season the males do occasionally show some spirit, chasing one another among the trees, or even attacking larger birds; but these lapses, like their song periods, seem to form comparatively rare breaks in a life which, for the most part, is passed in profound quiet and seclusion.

In these, as well as other characteristics, he is the very counterpart of the Connecticut Warbler, as I have observed the latter in the swamps about Cambridge. In none of them does he bear the least resemblance to the Worm-eating Warbler, with which he has been so closely associated by ornithologists. The Worm-eater is an active, restless bird, spending much of its time winding about the trunks and branches of trees in the manner of *Mniotilta*. Moreover, it breeds by preference, if not invariably, in dry situations, such as tracts of oak scrub, on the steep sides of elevated ravines or mountain slopes—precisely such ground, in short, as is resorted to by the Ovenbird (*Siurus auricapillus*). Systematists may make light of such considerations, but *H. swainsoni* has, in addition, certain structural affinities with *Oporornis* to which I shall presently call attention.

Judging by my personal experience, Swainson's Warbler is at all times a singularly unsuspecting bird. If singing he may be usually approached within a few yards, even though the crashing that inevitably marks your every movement among the thickly-growing canes has long ago alarmed and silenced the other songsters of the swamp. When flushed from the ground he flies in silence to the nearest low branch, whence he regards you with a half-timid, half-wondering expression, precisely like that of the Connecticut Warbler under similar conditions. You may startle him by an unexpected or threatening motion, for the tamest birds are subject to sudden panic; but ordinarily, if once distinctly seen he is certainly yours—barring a miss or some other accident.

The chief difficulty is to find him, for if on the ground his coloring harmonizes so well with that of the general surface that the keenest eye may overlook him, while he is not apt to start unless almost trodden on. Like most thicket-haunting birds, however, he is intensely curious, and by concealing yourself and producing a shrill screeping or chirping you may often call him directly to you. More than once has this plan been successful when I had no idea that the bird was near. On one such occasion the victim proved a female, which had unmistakably just laid her full set of eggs. I had barely begun to 'screep' on the edge of a small cane-brake bordering a brook, and surrounded by comparatively open ground swept clear of undergrowth, and the usual *débris*, by a recent fire, when there was a glimmer of wings and the Warbler appeared, alighting on the stem of a cane. Upon shooting and examining her I discovered that she was incubating. As it was near noon of a very sultry day, and birds of all kinds closely hidden, I felt sure that she had come directly from the nest. This conviction became almost a certainty when, a few paces further on, I flushed and secured her mate. Needless to say, the remainder of the day was devoted to searching that thicket. But although it covered only a few square rods of surface, the nest could not be found. Speculations as to its position are idle, but there seemed to be only two available sites—the stems of the canes and the ground.

The date of this episode was May 3, which probably represents about the beginning of the breeding season. Mr. Wayne met with a brood of three young June 9, and another of four June 11. Specimens of both broods are before me. They are in first plumage and were evidently only a few days from the nest, but sufficiently feathered to fly well. All the young taken after this date were in autumnal plumage, which seems to be very quickly put on.* They frequented the same places as the spring birds and had essentially similar habits, though, according to Mr. Wayne, they were shyer, or at least more timid.

* In his 'Forest and Stream' article Dr. Coues quotes Mr. Wayne as saying: "The first brood is abroad late in June, that is on the way [wing?]; it usually numbers four. The second brood is abroad early in August." The inaccuracy of the first statement will appear on comparing it with the dates above given; the assumption that the bird regularly rears two broods in a season is, in my opinion, equally unwarranted by the evidence at hand.

CRITICAL NOTES.—Swainson's Warbler has been considered nearly related to the Worm-eating Warbler and, by most recent writers, even placed with it in the genus *Helmitherus*. It has been occasionally separated, however, at least subgenerically, under the Audubonian name *Helinaia*. With abundant material for study and comparison, I am convinced that it merits such separation, and furthermore that *Helinaia* should stand as a full genus. It may be characterized as follows :

Genus *Helinaia* Audubon.

CHAR.—Bill long, robust at base, tapering to a sharp point, smooth or slightly notched at tip; the culmen slightly curved, its ridge compressed, elevated and extending well back on the forehead, resembling in this, as in some other respects, the bill of the Meadow Lark (*Sturnella*). Wings long, rather rounded, the first quill always shorter than the second and third, which are about equal. Tarsus stout, slightly longer than the middle toe. Feet large, flesh-colored. *Eminently terrestrial.*

Helinaia swainsoni Aud.

SP. CHAR.—(Adult ♂, breeding plumage, No. 8974, Coll. W. B., Charleston, South Carolina, May 1, 1884.) Crown and nape reddish-brown; remainder of upper parts, including the sides of neck, clear olive, the wings, tail, and upper tail-coverts tinged with reddish-brown; under parts creamy white with a lemon-yellow tinge, most pronounced on the breast and abdomen, faintest on the throat and crissum; sides of body brownish olive; sides of breast olivaceous-ashy, extending completely across the breast in a broad but rather indistinct band of pale, nebulous spots; throat, abdomen, and crissum immaculate; a dusky stripe starting at the lores (which are nearly black) passes backward along the side of the head intersecting the eye and separating a conspicuous, brownish-white superciliary stripe from the region below the eye, which is dappled with reddish-brown on a creamy-white ground. There is also a short, yellowish, concealed median stripe on the forehead. Iris hazel; legs and feet flesh-colored (notes taken from the freshly killed specimen). Sexes indistinguishable.

Dimensions.—Length, 5.65; extent, 9.00; wing, 2.82; tail, 2.03; tarsus, .74; culmen from base, .70; from feathers, .61; from nostril, .42; depth of bill at anterior corner of nostril, .18; width at same point, .13.

Juv., first plumage.—(♂ No. 224, A. T. W., Charleston, June 9, 1884.) Wings and tail essentially as in the adult; abdomen dirty-white; rest of plumage, including the crown, nape, back, rump, throat, breast, sides of head, neck and body, and the wing-coverts, nearly uniform dull cinnamon-brown, without bands, spots, or any other markings whatever, even on

the head. Another specimen from the same brood, but apparently older, has the lores distinctly black, the light space on the abdomen nearly obscured by a brownish tipping on many of the feathers, and the general coloring lighter, approaching chocolate-brown in places.

The above-described plumage is very odd and striking. In general coloring the bird seems to most nearly resemble the young of *Oporornis formosus*.* It differs so widely from the adult *H. swainsoni* that no one would suspect their identity were it not for the bill, which in the smallest specimen before me shows all the essential characteristics of the genus.

Juv., fall plumage.—(♂ No. 354, A. T. W., Charleston, Aug. 25, 1884.) Entire upper parts rich olive strongly tinged with reddish-brown, the crown scarcely deeper-colored than the back, the wings a trifle redder; loreal stripe blackish; superciliary stripe tinged with yellow; under parts strongly yellowish. Otherwise like the adult.

Variations.—Among the adults and fall-plumaged young before me there is much variation in the size and shape of the bill, as well as in general coloration. Some examples have the upper and lower outlines of the bill nearly if not quite straight; in others the culmen is curved, the gonyes often with an appreciable angle. Again some specimens have the bill decidedly *notched* at the tip, although in the majority it is plain. As a rule (but not invariably) young birds seem to have shorter, slenderer, and straighter bills than do the adults.

The color variations range between two extremes. In one the crown, wings, and tail are bright reddish-brown—almost reddish-chestnut on the secondaries—in decided contrast with the back, which is deep brownish-olive; the underparts strongly yellowish. In the other the wings and tail are concolor with the back, which is of a plain grayish olive; the crown dull reddish-brown; the underparts creamy-white, scarcely, if at all, yellowish. That these variations are not sexual is evident, for the richest-colored bird in the whole series is a female (No. 137, A. T. W., May 10), and several of the dullest are males; that they are not connected with age is equally certain, for among the young birds still bearing traces of first plumage both types occur. As a rule, however, the young in autumn are more apt to be yellow beneath than are breeding birds, but in none of the specimens which I have seen is the yellow deeper than in a male taken May 5 (No. 9015, W. B.). Adults in autumn are positively indistinguishable from breeding birds. Young in full autumnal dress may be generally, if not invariably, recognized by the darker color of the bill and the much more uniform coloration of the upper parts, the crown in some specimens being almost concolor with the back, wings, and tail, a condition never seen in spring birds.

In markings the variations are trifling. The nebulous spotting on the breast is indistinct in many birds, and in a few, barely appreciable, the ashy being practically confined to the sides, and the remainder of the

* As described by Mr. Ridgway, Bull. N. O. C., Vol. III, No. 2, April, 1868, p. 60. I have no specimens for comparison.

Measurements.

No.*	Sex	Locality.	Date.	Length.	Extent.	Wing.	Tail.	Culmen from base.	Culmen from feathers.	Culmen from nostril.	Depth of bill at nostril.	Tar.	Middle toe & claw.	Remarks.
8881	♂ ad.	Charleston, S. C.	April 22	.....	.....	2.69	2.04	.69	.56	.44	.16	.73	.69	Tail emarginate
8938	♀	"	" 29	5.15	8.70	2.78	2.08	.72	.62	.46	.16	.70	.66	" rounded
8974	♂	"	May 1	5.65	9.00	2.82	2.03	.70	.61	.42	.18	.74	.....	"
8996	♂	"	" 3	5.50	8.60	2.78	1.91	.72	.57	.46	.17	.74	.69	" emarginate
8997	♀	"	" 3	5.55	8.55	2.70	2.06	.70	.58	.45	.16	.72	.65	" square
9015	♂	Otranto, S. C.	" 5	6.50	8.90	2.80	2.17	.....	.....	.....	.17	.71	.66	" emarginate
9055	♂	"	" 8	.....	.....	2.78	2.01	.74	.64	.46	.18	.75	.73	"
137	♀	Charleston, S. C.	" 10	.....	.....	2.64	1.85	.71	.62	.45	.17	.69	.67	" square
170	♂	"	" 22	.....	.....	2.70	1.92	.65	.57	.41	.17	.65	.65	"
210	♂	"	" 23	.....	.....	2.74	2.06	.74	.66	.47	.17	.75	.70	"
222	♂	"	June 6	.....	.....	2.76	2.00	.69	.62	.45	.16	.72	.67	"
222	♂	"	" 9	.....	.....	2.66	2.05	.72	.62	.45	.16	.73	.70	"
231	♂	"	" 9	.....	.....	2.96	2.10	.70	.62	.47	.12	.73	.66	"
230	♂	"	" 9	.....	.....	2.82	1.91	.66	.62	.45	.17	.71	.67	Tail emarginate
237	♂	"	" 11	.....	.....	2.86	2.00	.70	.60	.44	.16	.68	.70	"
243	♂	"	" 11	.....	.....	2.70	2.02	.69	.59	.43	.16	.73	.66	"
252	♂	"	" 12	.....	.....	2.90	2.07	.71	.64	.44	.16	.72	.68	"
276	♂	"	" 13	.....	.....	2.80	1.99	.74	.65	.47	.16	.70	.68	"
276	♂	"	" 17	.....	.....	2.76	2.13	.65	.60	.47	.17	.71	.68	"
276	♂	"	" 19	.....	.....	2.95	2.10	.74	.62	.46	.17	.73	.70	"
1783	♂	St. Helena Id., S. C.	July 4	.....	.....	2.85	1.95	.71	.60	.45	.16	.66	.62	" rounded
1783	♂	St. Helena Id., S. C.	May 30	.....	.....	2.75	2.02	.70	.61	.46	.16	.70	.63	Coll. J. H. Batty
1783	♂	Coosada, Ala.	April 22 1878	.....	.....	2.85	2.10	.71	.60	.47	.16	.70	.65	Tail square Coll. N. C. Brown

* Numbers below 1000 are those of Mr. A. T. Wayne.

upper parts immaculate. The yellow of the median stripe on the forehead is usually restricted to the bases of the feathers, but in some specimens it extends to their tips, forming a conspicuous marking. In others again it is wholly wanting.

The place which *Helinaia* should occupy in systematic lists is a somewhat puzzling question. Its long wings, large, flesh-colored feet, and sluggish terrestrial habits indicate an affinity with *Oporornis*; its acute, compressed bill and short tarsi a perhaps stronger one with *Helmitherus*. In many respects it seems to form a connecting link between these two genera, with *Helmitherus* extending the chain towards *Helminthophila*. Baird apparently held some such view in 1858, for he placed *Helmitherus* (in which he included *Helinaia*) between *Icteria* and *Helminthophila*, and *Oporornis* immediately before *Icteria*. Subsequently he separated *Helminthophila* further from *Oporornis* by the intervention of the additional genera *Perissoglossa*, *Dendroca*, and *Siurus*, and later authorities have widened the gap still more. Leaving out of consideration the Cœrebidæ, a troublesome family which seems to grade insensibly into the Sylvicolidæ through such genera as *Helminthophila* and *Perissoglossa*, our North American Sylvicolidæ might be very naturally arranged as follows: 1, *Mniotilta*; 2, *Dendroca* (including *Perissoglossa* and *Peucedramus* as sub-genera); 3, *Protonotaria*; 4, *Parula*; 5, *Helminthophila*; 6, *Helmitherus*; 7, *Helinaia*; 8, *Siurus*; 9, *Oporornis*; 10, *Geothlypis*; 11, *Icteria*; 12, *Myiodiactes*; 13, *Setophaga*; 14, *Cardellina*; 15, *Ergaticus*; 16, *Basileuterus*. The Cœrebidæ, however, cannot be thus conveniently ignored, and the general subject is far too important and comprehensive to be discussed within the limits of the present paper.

RECAPITULATION.—Within the United States Swainson's Warbler has been taken only in South Carolina, Georgia, Florida, Alabama, and Texas. There is but one extralimital record (Havana, Cuba). It has been erroneously accredited to New England, on incomplete evidence to Southern Illinois. It is not known to winter within the United States, but on the contrary seems to emigrate southward before the approach of cold weather (latest date, September 25), returning again in April (earliest date, April 12). It has occurred in numbers only near Charleston, South Carolina, [*] where alone it has been positively ascertained

[* Cf. p. 62 of this number of 'The Auk.'—EDD.]

to breed. During the migrations it sometimes visits dry or open situations; it breeds, as far as known, only in the most tangled swamps. It is an exquisite but fitful singer; when not singing a silent bird, retiring and sedentary in disposition, eminently terrestrial in habits.

Thus much light on what has been an obscure subject! Important details remain to be worked out, such as the general distribution of the bird in the South, its manner of nesting, etc. It is to be hoped that the near future will see all these points made clear. Meanwhile we may congratulate ourselves on what in effect, if not literally, is the rediscovery of another 'lost' species.

THE HEATH HEN OF MASSACHUSETTS.

BY WILLIAM BREWSTER.

ALTHOUGH the Pinnated Grouse was found rather numerous during the first half of the present century at several localities in the Middle and New England States, no specimens from this region seem to have come under the critical notice of modern ornithologists. Accordingly it is with peculiar pleasure and interest that I have entered into an examination of three examples kindly loaned me by Mr. F. T. Jencks, who received them directly from Martha's Vineyard in the autumn of 1879. Compared with western specimens, they prove to be smaller, with relatively, as well as actually, shorter tarsi; the feathers of the neck-tufts narrower and acutely instead of obtusely lance-pointed; generally redder or rustier coloring above, and much less white or whitish below. The neck-tufts, also, have only from four to five instead of from seven to ten rigid feathers.

It may be pretty safely assumed that at the time of the first settlement of the country, when the Pinnated Grouse ranged more or less uninterruptedly from Eastern Massachusetts to beyond the Mississippi, all the birds found east of the Alleghanies were similar to these island specimens; or, to put case more comprehensively as well as definitely, that the large, light-

colored Prairie Hen of the open grassy plains and prairies of the West originally had a smaller, darker, and redder eastern representative distributed, perhaps rather locally, in scrubby pine and oak tracts, throughout Southern New England and portions of the Middle States. At that time it is not unlikely that the two forms intergraded over such intermediate ground as Western Pennsylvania and Eastern Ohio and Kentucky. However this may have been, they cannot do so now—unless fortuitously, as by reversion—for the last remnant of the eastern stock still lingering on Martha's Vineyard is separated from the extreme eastern confines of the present range of the western bird by an interval of about eight hundred miles.

As these eastern Grouse are distinguishable from their western cousins by well-marked and apparently constant characters,* and as the two birds are now so widely separated geographically that they cannot intermingle, it follows that they may be consistently recognized as distinct if closely related species, for the probability that their separation has been brought about by man's intervention, and within historic times, can have no real bearing on the case. Unfortunately the Prairie Hen must receive the new name, for there is little doubt that the *Tetrao cupido* of Linnæus was really the eastern form. This is indicated by the fact that its habitat is given as "in Virginia"†; moreover, there are good reasons for believing that Linnæus based his diagnosis (which is too brief and general to give much more than generic characters) on Catesby, whose work he cites. If this assumption be granted, the case is freed from all obscurity, for Catesby's figure, although an absurd caricature, was evidently drawn from the eastern bird, while his description mentions several of the characters which separate the latter from the Prairie Hen. Both plate and description were taken from some live specimens which Catesby saw in 1742 "at the right honourable the Earl of *Wilmington's* at *Chiswick*, who told me they were natives of *America*, but from what particular part they came his Lordship knew not." Other considerations aside, it is

* I have examined in this connection upwards of a hundred western specimens in the Boston markets.

† Doubtless a loose statement, as I cannot find that it ever occurred south of Pennsylvania.

hardly possible that in those early days they could have been obtained from anywhere west of the Alleghanies.

Having thus briefly stated a case which is not less remarkable than interesting, I propose to distinguish the forms in question as follows :

Cupidonia cupido (Linn.). HEATH HEN.

SP. CHAR. ♂. Ground-color above light reddish-brown or rusty; beneath rusty-white with transverse bars of dark reddish-brown, the dark color prevailing over the lighter on the exposed portions of the feathers; plumage of tibiæ and tarsi brownish-cinnamon thickly mottled with whitish; neck-tufts composed of from three to five narrow, acutely lance-pointed, stiffened feathers, with about the same number of overlapping coverts. Wing, 8.35; tarsus, 1.75; bill, .38 deep, by .55 long from nostril.

♀. Smaller (wing, 7.93); darker and rustier; the dark bars beneath dull black; tail dark clove-brown with numerous fine, irregular, rusty bars.

Habitat.—Martha's Vineyard, Massachusetts; formerly found at various points in Eastern Massachusetts, Southern Connecticut, Long Island, New Jersey, and Pennsylvania; perhaps also Southern New England and the Middle States generally. A woodland species, inhabiting scrubby tracts of oak and pine.

Cupidonia pinnata nov. spec.* PRAIRIE HEN.

SP. CHAR. Ground-color above brownish-ochraceous tinged with gray; beneath white with transverse bars of clear dusky brown, this color *not* prevailing over the lighter tints; tibiæ and tarsi brownish-ochraceous *not* mottled with whitish; neck-tufts comprising from seven to ten stiffened feathers, obtusely pointed or even broadly rounded at their tips. Wing, 9.00; tarsus, 2.10; bill, .40 deep by .60 long from nostril.

♀. Smaller, similar in general color and markings, but with the tail barred.

Habitat.—Prairies, from Illinois westward. A bird of the open, breeding on treeless plains, and seldom or never inhabiting timber.

Cupidonia pinnata has been too often and carefully treated under the name *C. cupido* to require further consideration here. The eastern species, however, although destined to bear a familiar name, is practically a new bird. Accordingly I find it necessary to redescribe the *original C. cupido* as follows :

♂ (No. 5330, Coll. W. B., Martha's Vineyard, Mass., Nov. 1879. From F. T. Jencks). Ground-color of upper parts light reddish-brown some-

*Types: ♂ No. 2689, ♀ No. 2690, Coll. W. B.—Vermilion, Dakota, January 20, 1877.

what ochraceous on the rump; under parts dark reddish-brown with some concealed rusty-chestnut on the jugulum, the feathers everywhere, except on the throat, anal region, and under tail-coverts, crossed by from one to five narrow, continuously-transverse bars of pale rusty or white. These bars, except on the sides posteriorly, are narrower than the brown spaces which they separate; hence the darker color predominates. Upper parts diversified by numerous ragged, irregular-shaped markings of blackish-brown or dull black, usually continuous across both webs of the feather, but never embracing its tip; forehead, sides of head above the eye, and entire occiput rusty brown mottled with dull black; crown black, each feather tipped with buff and narrowly margined with rusty; throat and lores immaculate creamy buff; sides of head below the eye of a deeper, more rusty buff, with an isolated patch of dark brown on the cheeks, and a stripe of reddish-brown, extending from the rictus to the ends of the auriculars, passing directly below the eye but leaving the eyelid buff; scapulars with large and very conspicuous terminal spots of white tinged with fulvous; primaries and tail plain brownish or dusky drab, the former with small round spots of pale rusty on their outer webs, the latter tipped narrowly with white; plumage of tibiae and tarsi pale cinnamon-brown; each feather tipped with whitish, giving the parts a mottled appearance. Crissum and under tail-coverts white, the latter with irregular marginal spots of rusty or dull black. Neck-tufts 2.60 long, composed of five narrow, acutely lance-pointed feathers, the under ones plain, the middle two with shaft-lines of buff extending from the tips an inch or less, the exterior (overlapping) ones with much broader central stripes continued nearly to the base of the feathers.

Dimensions.—Wing, 8.35; tail, 3.75; culmen from skull, 1.06; do. from feathers, .70; do. from nostril, .55; depth of bill at nostril, .38; tarsus, 1.75; middle toe, 1.60; its claw, .53.

♀ (No. —, Coll. F. T. Jencks, Martha's Vineyard). Smaller (wing, 7.93); with merely rudimentary neck-tufts; the ground tints more rusty; the dark markings coarser and blacker; the tail dark clove-brown crossed by numerous narrow, irregularly-transverse bars of rusty.

The general differences between this bird and its western representative, *C. pinnata*, are difficult of adequate definition, for the reason that they consist largely in shades of color rather than in markings. Its small size, short tarsus, acutely lance-pointed feathers of the neck-tufts, white-tipped scapulars, general reddish coloration above, and restricted light markings beneath are, however, readily appreciable and apparently constant characters. The bird above described is the *least* extreme in most of these respects. Another before me (♂, No.—, Coll. F. T. J., Martha's Vineyard) actually has the greater part of the breast posteriorly without exposed light bars, the nearly uniform reddish-brown plumage being merely tipped with hoary. This bird is also peculiar in having the neck-tufts dull brownish-chestnut.

The female above described differs more from females of *C. pinnata* than do eastern from western males. The under parts (except the crissum and tail-coverts) are barred heavily with dull black on a rusty orange ground. This rusty suffuses the lighter portions of the plumage elsewhere, even tingeing the cheeks and throat.

The Heath Hen (I use the vernacular name by which it was known to our forefathers) is still common on Martha's Vineyard, where it is mainly, if not exclusively, confined to the woods, haunting oak scrub by preference, and feeding largely on acorns. Being strictly protected by law, but few are probably killed. I am told by one of the Boston marketmen, however, that he has had as many as twenty from the 'Vineyard' in a single season. He also says that they average nearly a pound less in weight than western specimens, and on this account do not sell as readily. The bird is not found on the neighboring island of Naushon, despite statements by recent writers to that effect, nor is there any good evidence that it ever occurred there. There is also no reason to believe that the stock on Martha's Vineyard has been vitiated by the introduction of western birds. It is simply the last remnant of a once more or less widely-distributed race, preserved in this limited area partly by accident, partly by care. According to the best testimony available, the colony is in no present danger of extinction.

PRELIMINARY NOTES ON SOME BIRDS OBTAINED IN ARIZONA BY MR. F. STEPHENS IN 1884.

BY WILLIAM BREWSTER.

MR. F. STEPHENS has kindly allowed me to examine and report on some birds selected from a large collection made by him in Arizona in 1884. As the opportunity comes too late to admit of more than a brief announcement in this number of 'The Auk,' I give only the more important results, reserving the remainder for a future occasion.

1. *Turdus ustulatus* Nutt. RUSSET-BACKED THRUSH.—In my paper on the collection made by Mr. Stephens in 1881 I added* this Thrush to the fauna of Arizona with some hesitation, the single specimen taken having been merely identified in the field, without comparison, and shortly afterwards lost. This record is now satisfactorily corroborated, however, by a second example, unmistakably *ustulatus*, taken at Camp Lowell, May 21, 1884.

2. *Sialia sialis azurea* Baird. MEXICAN BLUEBIRD.—Three Blue-birds obtained in the Santa Rita Mountains in June are doubtfully referable to this subspecies. One of the two males (No. 1855, F. S., June 18) has the blue above of that greenish shade said to be characteristic of *azurea*, but the other (No. 1856, F. S.), taken the same day, does not differ in this respect from *sialis*, the tint of the blue being precisely the same. Both are peculiar in having the under parts (excepting the usual dingy white space on the abdomen, crissum, and tail-coverts) nearly uniform pale brownish-orange, paler and yellower, in fact, than in the female of *sialis*, and with scarcely a tinge of the usual deep reddish-brown. This characteristic is not mentioned in descriptions of *azurea*, nor do I find it in any of the dozen or more Mexican and Guatemalan examples before me. The Santa Rita female (No. 1897, F. S., June 20) is still paler beneath, as well as browner above than the female of *sialis*. All these specimens differ further from *S. sialis* in having rather longer wings and tails, in this respect agreeing with *azurea*. In the event of their proving distinct from the latter, which seems probable, I propose for them the name *fulva*. Whether distinct or not, the bird is new to Arizona, no form of *Sialia sialis* having been previously reported from that Territory.

Measurements.—♂, No. 1855, F. S.: Length, 6.40; extent, 12.90; wing, 4.01; tail, 2.83; culmen from nostril, .35. ♂ No. 1856, F. S.: Length, 7.10; extent, 12.50; wing, 4.00; tail, 2.85; culmen, .37. ♀ No. 1897, F. S.: Length, 6.60; extent, 11.90; wing, 3.90; tail, 2.73; culmen, .37.

3. *Cæligena clemenciæ* Lesson. BLUE-THROATED CAZIQUE.—An adult male of this fine Hummingbird, which, it is needless to say, is entirely new to our fauna, was taken by Mr. Stephens at Camp Lowell, May 14, 1884. Upon comparing it with three Mexican specimens (exact localities not recorded) in the collection of the Boston Society of Natural History, I find that it differs only in being of a darker, purer green above, and in having the ash-gray of the under parts unmixed with green except on the sides. The birds just mentioned have the upper parts of a bronzed or yellowish green, the feathers of the under parts everywhere (except on the throat) tipped with greenish. Elliot describes† the upper parts as 'bronzy-green' but says nothing about any greenish below.

Measurements.—♂ No. 1460, F. S.: Length, 5.40; extent, 7.50; wing, 3.10; tail, 1.91; culmen from nostril, .88.

* Bull. N. O. C., Vol. VII, No. 2, Apr., 1882, p. 68.

† Synopsis of the Trochilidæ, p. 30.

RECENT LITERATURE.

A Naturalist's Rambles about Home.*—Under this taking title Dr. Abbott has written a popular book—consisting in part of previously published essays—on natural history, detailing in a pleasant way his long-continued observations on the habits of the beasts, birds, reptiles, and fishes met with in his rambles in the immediate neighborhood of his home at Trenton, New Jersey. Nearly one-half of the book (pp. 96-249 and 451-475) relates to birds, which are treated in Chapters XII-XXVII, in addition to which an annotated list is given in the Appendix. As regards the birds, the author's remarks, aside from the List, relate in the main to comparatively few species, many others, however, being mentioned incidentally. The titles of the chapters are suggestive of the matter and method of treatment. Under 'Our Birds in General' are noted changes in the habits and distribution of certain species, as, for example, the Bluebird and Carolina Wren, which are regarded as now resident species, though believed to have been formerly migratory; the Summer Redbird and Mockingbird of late appear only as rare stragglers rather than as common summer residents, as was formerly their status; and other southern species are cited as of much more common occurrence in winter than they were twenty years ago. Under 'The Migration of Inland Birds' are discussed at some length various phenomena of migration, to which are added speculations regarding the cause of migration. 'A Short Study of Birds' Nests' gives detailed observations on the nesting of several species, as the Baltimore Oriole, Robin, etc., the subject being considered with reference to Mr. Wallace's well-known essay on the 'Philosophy of Birds' Nests,' whose views, Dr. Abbott finds, "to a certain extent, at least, . . . will apply to our birds." A chapter is also devoted to 'The Songs of Birds,' and others to the following subjects: 'Chats and Wrens: a Summer's Study'; 'The Carolina Wren: a Year of its Life'; 'Do Swallows Hibernates?' 'Rose-breasted Grosbeaks'; 'Feeding Habits of Kingfishers'; 'The Saw-Whet and other Owls'; 'Notes on our Herons'; 'Notes on the Wood Duck,' etc. These chapters, and others with less explicit titles, abound with observations on various species of birds, interspersed quite freely with speculations as to the cause of observed or suspected changes of habits, etc. The chapter on the hibernation of Swallows attempts to account for the belief in hibernation, and to explain the 'testimony' that has come down to us regarding alleged instances of hibernation. The hibernation of Swallows the author believes to be merely 'a fancy'; but as regards our Chimney Swift, the case seems somewhat different, and the author confesses himself 'fairly staggered.' To this subject he contributes several suggestive facts, such as the finding of living Chimney Swifts in a stove-

* *A Naturalist's Rambles about Home.* By Charles C. Abbott, New York: D. Appleton and Company, 1, 3, and 5 Bond Street, 1884. 8vo. pp. 485.

funnel in December, and others, apparently but a short time dead, in a hollow sycamore in February.

The ornithologist will be surprised at many of the facts recorded in Dr. Abbott's book, and will feel inclined to think that New Jersey birds have ways of their own, particularly as regards times of migration. The Bank Swallow, for instance, is repeatedly said to be the earliest of all the Swallows to arrive in spring, and the last to disappear in autumn, the date of arrival being 'often as early as the 10th of March,' and that they depart late in October, or may remain longer, 'undaunted by the chill November fogs.' The experience of other observers is quite different, the Bank Swallow being almost universally reported as the latest to arrive of all the Swallows, and one of the earliest to leave in autumn. Dr. Abbott's dates for the spring arrival are a month earlier than those given for the latitude of Washington, and two months earlier than the dates usually given for their arrival in the Middle and Eastern States! Instead of being the earliest of the Swallows to arrive in spring, it is commonly preceded by a full month by the White-bellied Swallow,—at least this is the uniform testimony of all previous writers. There are many other marked discrepancies between the behavior of birds in New Jersey—particularly as regards migration—as reported by Dr. Abbott, and as observed in contiguous territory by others. New Jersey Owls seem also possessed of eccentricities, since in Dr. Abbott's chapter on 'A Secluded Corner,' we are regaled with an account of a family of Short-eared Owls observed "during a pleasant moonlight evening last *October*," the younger members of which are represented as still too young to be able to fly well or to provide for themselves. Strangely, too, for Short-eared Owls, their nest was '*in a tree*.' Short-eared Owls outside of New Jersey have the habit of nesting much earlier than this, usually in the Middle and Eastern States, from April to June; furthermore, their nesting place is on the ground, usually in marshes, and not in trees. But the Owls are not the only peculiar creatures which enter into this pleasing story, New Jersey frogs having also strange habits, since the 'racket made by the frogs,' on this beautiful *October* evening, did not wholly prevent Dr. Abbott's hearing the 'varied utterances' of the Owls. Even as a piece of natural history romance, 'A Secluded Corner' is far from a success, while as a piece of sober narrative, detailing facts of observation, as it purports to be, it is a most unfortunate composition,* since such interludes of

* In the desire not to do the author injustice, his attention was called to some of the eccentricities of New Jersey birds as narrated in his book, and since the above was written we have been favored with a brief reply, in which he says he has "found *Otus brachyotus* nesting in a capacious hollow of a tree—not a cooped up hole that would suit a little Screech (*S. asio*)." He also says "October should read *August*," and that Bank Swallow "should read White-bellied." It strikes us, however, that the substitution of August for October illy harmonizes with the context, while to substitute White-bellied Swallow for Bank Swallow results in an incongruity bordering upon absurdity, as may be readily seen by referring to p. 100, and especially by reading pp. 161-163, as well as other passages in the book.

reverie reflect unfavorably, not only on other parts of the book, but upon the general trustworthiness of the author's scientific writings. Even in natural history romance, probabilities should at least be kept in view. In other parts of the book there are passages which evince a surprising degree of ignorance on points well-known to many much less pretentious observers.

Throughout the work the author betrays a penchant for gratuitous and not particularly sagacious speculation, as witness repeated attempts to account for changes in habits when the author himself admits that he is not sure that the changes have in reality occurred. There is also a looseness of expression at times that ill-becomes a writer whose rambles are made habitually with note-book in hand, recording on the spot whatever seems worthy of note. The List, in the Appendix, of 219 species of birds is practically, the author tells us, a reproduction of Turnbull's list, "with annotations based upon the observations of the sixteen years which have elapsed since Dr. Turnbull wrote his work." He says his list "may be said to constitute the ornithic fauna of Mercer County." It is, however, disappointing as a faunal list; the annotations are unsatisfactorily meagre. In many cases merely quotations from Turnbull, and in many others are marred by more or less obvious misstatements.—J. A. A.

Seebohm's History of British Birds.*—This work, the prospectus states, is intended to form three royal octavo volumes, of about 600 pages each, and will be published in six parts, illustrated with between 60 and 70 colored plates. It is the author's intention to issue a part every six months. The illustrations, executed in chromo-lithography, are to include all the known eggs of British birds, and those of several species will now be figured for the first time. Four parts have already reached this country, the first three being dated 1883 and the fourth 1884. The typographical execution of the work is excellent, and the plates are entitled to high praise. The author's style is attractive, and his fitness for the undertaking being well-known, the work cannot prove otherwise than a most important addition to the literature of British ornithology. In respect to nomenclature and classification Mr. Seebohm is conservative to a degree approaching eccentricity, but in respect to the general subject his views are liberal, philosophic, and progressive. As regards details of distribution, habits, etc., of the species treated, we are not in position to judge critically, but the work seems to carry the stamp of care and thoroughness. The illustrations have certainly rarely been equalled.

In an 'Introduction' of some twenty or more pages the author unfolds his plan and principles of work. He considers, very properly, that "the question of the development of species by evolution is one which lies at

* A History of British Birds, with colored Illustrations of their Eggs. By Henry Seebohm. London: Published for the author by R. H. Porter, 6 Tenterden Street, W., and Dulau & Co., Soho Square, W. Roy. 8vo. Vol. I, 1883, pp. xxiv + 613, pl. 20; Vol. II (Part 1, 1883, Part 2, 1884), pp. xxxiv + 600, pl. 22.

the foundation of all inquiries into the history of individual species; and when it is answered in the affirmative, the study of ornithology is found to possess a new interest, many obscure points become comparatively clear, and the old treatment of the subject requires modifying in various ways." "The acceptance of the hypothesis of evolution," he says, "implies the recognition of species in the process of formation"; and adds: "It is easy to find examples of species in every stage of development, from mere local races to well-defined sub-species." He discusses in this relation the interbreeding of birds, upon which he lays great stress as affording an explanation of intermediate forms. The influence of environment upon the evolution of species is thus to a large degree strangely ignored. As we have elsewhere said,* we cannot agree that interbreeding has anything like the importance in this connection that Mr. Seebohm assigns to it, or that it is by any means adequate to account satisfactorily, except in a small number of cases, for intermediate forms, many of which are so obviously due to environment. Neither can we quite agree that "in the tropical regions birds vary much less than they do in the arctic regions," or "that tropical species are well-defined," in comparison with those of other regions, but rather that variation within one given area as compared with another is dependent upon the relative diversity of the conditions of life in the one area as compared with the other, and in part to the varying degree of plasticity in different groups of birds.

As regards classification, Mr. Seebohm seems inclined to ignore all recent progress, because systematists have not yet come to an agreement in regard to all points, or even all important points, and so goes back to the "artificial sequence adopted by Cuvier, which has at least the practical value that it is well-known, and thus obviates to a large extent the trouble of reference to an index" (!). He accordingly begins with the Raptorial Birds, and on reaching the Singing Birds, places them all in a single 'family Passeridæ,' recognizing for British Birds eleven 'sub-families,' which are the equivalents of the *families* usually recognized by modern writers.

In respect to the 'vexed question of nomenclature,' he has throughout his work "set the Rules of the British Association at defiance, being convinced that, so far as ornithology is concerned, they have done infinitely more harm than good." His panacea for the evil is the utter disregard of the law of priority, and the adoption of an '*auctorum plurimorum*' rule; that is, the selection of "the specific name which has been *most used* by previous writers." In respect to genera, he follows the Stricklandian Code with modifications, some of which are manifest improvements. For instance, it seems sound doctrine that "Whenever the name of a species has been selected for the name of a genus, the species whose name has been so adopted becomes of necessity the type of such genus."

For subspecies he adopts what may be termed a Seebohmian system of trinomials, first instituted by him in his British Museum Catalogue of the

* Ibis, 1883, pp. 226-228.

Turdidæ,* which, as developed in the above-named and in the present work, is open to the charge of being illogical and inconsistent with the author's platform of principles. In illustration we may cite his treatment of the Gyrfalcons. He says there are "two species of Jer-Falcons, very distinct from each other, and having well-defined geographical ranges, but connected together by a series of intermediate forms in the intermediate localities." We are at a loss, however, to understand what is meant by *species*, in view of the two parts of the above quotation we have distinguished by italics. The heading here adopted is "*Falco gyrfalco* and *Falco candicans*. Brown Jer-Falcon and White Jer-Falcon." Under this the synonymy is grouped under four subheads, as follows: (1) *Falco gyrfalco*; Brown Jer-Falcon. (2) *Falco gyrfalco candicans*; Iceland Jer-Falcon. (3) *Falco candicans gyrfalco*; South Greenland Jer-Falcon. (4) *Falco candicans*; White Jer-Falcon. After detailing the various intermediate stages he says: "The selection of any one of these intermediate forms is purely arbitrary; and between the two extreme forms it is just as easy to make ten subspecies as two." His recognition of two *species* then (not *subspecies*) within this group must be purely arbitrary and without reason, as he appears to admit, species seeming to rest on no different basis from subspecies! We believe, however, that Mr. Seebohm, in theory at least, stands on firmer ground than this, and that his paper on the subject of trinomial nomenclature, read at the meeting of British naturalists convened last July to consider this subject,† indicates that he has now reached better footing.

Mr. Seebohm here and there finds occasion to criticise the work of some of his fellow ornithologists, and the unsparing hand with which he sometimes belabors his unfortunate victim indicates that he is by no means lacking in what has been termed the courage of conviction; but he very cordially invites like treatment of his own mistakes. In his accounts of the species treated, he gives special attention to their geographical distribution, their relations to allied forms, and very full details of their life-histories, often incorporating therewith much wholly fresh material. Doubtless in some instances he takes a more comprehensive view of species than some would be inclined to allow, but doubtless not wider, in most cases, than his extended experience with the forms in question would seem to warrant.

As Mr. Seebohm says: "The real history of a bird is its *life*-history. The deepest interest attaches to every thing that reveals the little *mind*, however feebly it may be developed, which lies behind the feathers. The habits of the bird during the breeding season, at the two periods of migration, and in winter: its mode of flight and of progression on the ground, in the trees, or on the water: its song and its various call- and alarm-notes: its food and its means of procuring it at different seasons of the year: its migrations, the dates of arrival and departure, routes it chooses, and the winter quarters it selects; and, above all, every

* Cf. Bull. N. O. C., VIII, pp. 100-104.

† See Auk, I, pp. 342-346.

particular respecting its breeding, when it begins to build its nest, the materials it uses for the purpose, the number of eggs it lays, the variation in their color, size and shape,—all these particulars are the real history of a bird; and in the account of each species of British birds I endeavour to give as many of them as possible." The Introduction to Volume II contains a paper of 24 pages 'On the Protective Colour of Eggs,' by Mr. Henry Dixon, which will be noticed at length in some future number of 'The Auk.'

Mr. Seebohm's work abounds in passages which invite comment, but lack of space forbids a more extended notice.—J. A. A.

Ingersoll's 'Country Cousins.*'—This well-written work, intended to entertain and assist 'those who take delight in out-door studies,' consists of twenty-one articles, devoted to a variety of subjects, reprinted from the various periodicals in which they originally appeared. Birds come in for a fair share of notice, mainly in the chapters entitled 'A Wet Day with the Birds' (pp. 21-30), 'Birds of the Brookside' (pp. 39-48), and 'A Chat about Bob White' (pp. 175-181). The book as a whole is much better written, both as regards truthfulness and style, than popular works on natural history often are, the writer for the most part contenting himself with subjects with which he is personally familiar, and in which he is especially interested. He therefore writes intelligently, largely from original observation, and in the main correctly, but there are here and there lapses which a little more care would have saved. This is not often the case in the ornithological portions of the work, but a pleasantly written account, several pages in length, of the Long-billed Water Thrush (*Siurus motacilla*) is marred at its close by the statement, "This is a northern bird." The Spotted Sandpiper, the three species of *Siuri*, and the Quail (*Ortyx virginianus*) are the species accorded most attention.—J. A. A.

Langille's 'Our Birds in their Haunts: A Popular Treatise on the Birds of Eastern North America.'†—Several months have now elapsed since the appearance of this long-promised book, on which the author has been at work, he tells us, for the past twelve years. It is a compact volume of 624 pages, sparsely illustrated by woodcuts, most of which are borrowed from the second edition of Coues's 'Key.' Its scope will appear from the opening sentence of the preface: "The first aim of this work is to render as popular and attractive as possible, as well as to bring within a small compass, the sum total of the bird-life of Eastern North America." Had

* Country Cousins: Short Studies in the Natural History of the United States. By Ernest Ingersoll, Author of 'Friends Worth Knowing,' 'Knocking Round the Rockies,' 'The Ice Queen,' etc. Illustrated. New York: Harper & Brothers, Franklin Square, 1884. 8vo. pp. 252. Plates, and woodcuts in the text.

† Our Birds in their Haunts: a Popular Treatise on the Birds of Eastern North America. By Rev. J. Hibbert Langille, M. A. Boston: S. E. Cassino & Company 1884. 8vo. pp. 624, woodcuts in the text.

the title of the work been restricted to 'Our Birds in their Haunts', and had the author contented himself with biographical sketches of the birds with which he was personally familiar, he would have escaped numerous embarrassments, and his book would have had a charm which has been largely forfeited by reason of its more pretentious scope.

A third of the preface, and occasional paragraphs throughout the volume, are devoted to the author's notions of the religious aspects of ornithology, and he often works into the narrative what he is pleased to consider evidences of a 'Creator', or of 'design', in the structure or habits of birds. Without so much as a show of either logic or modesty, he attacks the theory of migration which was proposed, independently, by Wallace of England and Palmén of Finland, and bluntly announces his conclusion that the phenomena of migration are "caused by the laws of instinct, superintended by an Infinite Intelligence." Seemingly ignorant of the laws of hereditary habit, he delights in calling upon the supernatural for the explanation of very simple facts. However gratifying this may be to his brother Divines, it is certainly out of place in 'A Popular Treatise on the Birds of Eastern North America.'

In the preface the author says that he has incorporated in his book "a good deal of direct information from Hudson's Bay, by means of an excellent correspondent. This last feature of original investigation should specially commend the work to the scientist." The book was read from beginning to end, and every record from the above source was carefully noted. The task completed, just a dozen species were found, and every one of these has been known from Hudson's Bay for at least thirty-five years, and several for a much longer period! From a clerical standpoint, the mention of a dozen birds from a given locality where they have been known for nearly half a century may be regarded as 'a good deal of direct information,' but the reviewer, who looks at the matter from an ornithological standpoint, is hardly prepared to admit, in consideration of the total absence of a new fact of any kind, that "this last feature of original investigation should specially commend the work to the scientist."

The arrangement of the subject matter is novel and not unattractive. The Chapters are entitled: 'Hoar Frost'; 'Snowed In'; 'Open Winter'; 'Below Zero'; 'A January Thaw'; 'Voices of Spring'; 'A Bluff and the Cat-tails'; 'Along the Creek'; 'Early April and the Phœbe'; 'Later in April'; 'Late in April'; 'The Third of May'; 'The Swamp, The Field, and The Lake'; 'The Tenth and Eleventh of May'; 'Peewees and the Hooded Warbler'; 'Birds around the House'; 'The First Days of June'; 'Georgian Bay'; 'Tenting on the Niagara'; 'Bird-life in Nova Scotia'; 'New Jersey Coast and the Osprey'; 'Autumnal Days'; 'Reminiscences'; 'Gleanings'. Under each of these headings a number of species are disposed of. There is a fair index, but no table of contents.

The technical descriptions are woven into the narrative (which is always a mistake) and in most cases are insufficient to admit of positive identification except in strongly marked species. The most striking defect in the book—a defect which appears with provoking frequency, and

might so easily have been remedied that it is inexcusable—is the absence of authorities for the great majority of non-original statements. A still more serious omission is the lack of precise data concerning rare or unusual occurrences which have fallen under the author's notice. Quite a number of inaccuracies have crept into the book, doubtless through want of more extended observation or reading. Their character may be seen by the following: The White-bellied Nuthatch is "at all times strictly insectivorous." The nest of the Chipping Sparrow "is never very near the ground." "Concerning all Woodpeckers, an account of the habits of one comes very near being an account of them all"; and again, the Red-headed Woodpecker, "in most respects, is so like other Woodpeckers in habit as to need but little special history in a work like this"! The Hudsonian Tit is "in all respects similar in habit" to the Black-capped Chickadee!!

After enumerating several grievous charges against the Crow he goes on to say: "But, as in the case of many other transgressors, there are some weighty things to be said in his favor. In the same field from which he steals the corn, he destroys many noxious worms and insects, especially cutworms; not to speak of the snakes, moles, and mice." Now everybody knows, or *ought* to know, that snakes rank among the best friends of the farmer; and as to moles, they certainly cannot be regarded as enemies. Moreover, it might be a difficult task to prove that the Crow does kill moles. The same remark applies to the Short-eared Owl, which, according to our author, "feeds especially on mice and moles."

The statement that the European Crested Grebe (*Podiceps cristatus*) "is common in North America" is a striking instance of the unfortunate manner in which blunders are perpetuated for many years (in this case seven) after they have been pointed out and corrected.

The Redpolls are confused under a single species (*A. linaria*), and similar errors occur in other places. There are some strange incongruities in the treatment of subspecies. One is given great prominence—the subject of a special article—while the existence of others is not even hinted at. It is a little remarkable that an author who has been for twelve years engaged in the preparation of a book on birds, and who has spent much time in the field, should not have heard the song of so common a bird as the Ruby-crowned Kinglet (*Regulus calendula*) till the end of the eleventh year (May 1883). It is also surprising, and not a little discouraging, to find doubt expressed concerning the method of so well-understood a performance as the drumming of the Ruffed Grouse.

Typographical errors are rare, though the statement that the Barn Swallow is *four* and a half inches long may probably be classed under this head. At the bottom of page 487 *Wood Thrush* is printed where *Wood Duck* is clearly meant.

Having now done duty as a critic, there remains the far more agreeable task of pointing out some of the many really valuable and praiseworthy features of the book. The reader is soon impressed with its strongest recommendation, which is the manifest trustworthiness of the original matter. The author is a good observer, and his biographies are, in the

main, accurate and well expressed. He evidently has a keen ear, and in putting bird music on paper has been more successful than many of his predecessors. He knows how to use both gun and glass, and has the good sense never to trust the latter in matters of identification.

His careful descriptions of the physical features of several localities where much of his field work has been done contribute largely to the interest and importance of the biographies that follow. The accounts of the Ducks that frequent Niagara River and Lake Ontario contain much that is new; and attention is directed to the little-known habit of the Canada Goose of foraging in wheat-fields.

Concerning the breeding of the White-bellied Swallow on the Mud Islands in Yarmouth County, Nova Scotia, he says: "I saw the nests of this species on the ground under flat stones, and in holes in the ground. They were elegantly lined with the feathers of the Herring Gull and of the Eider Duck, the feathers being so laid that the tips curved upward and nearly concealed the eggs."

His personal observations on the Horned Lark, the Butcher Bird, and many other species are full of interest and are written in a free and pleasing style. He has heard the rich night-song of the Ovenbird, and his heart has been stirred by the unspeakable melody of the Hermit Thrush. Indeed, he is a real lover of nature, and the reviewer, though forced to mention certain errors and omissions, is still in deep sympathy with much of the author's narrative.—C. H. M.

Stejneger on the Wrens of the Subgenus *Anorthura*.*—A synopsis of the various forms is given, with their synonymy. Six species and two subspecies are recognized, as follows: (1) *Troglodytes borealis*, (2) *T. parvulus*, (2a) *T. parvulus bergensis* (subsp. nov.), (3) *T. pallosceus* (sp. nov.), (4) *T. alasceusis*, (5) *T. hiemalis*, (5a) *T. hiemalis pacificus*, (6) *T. fumigatus*. The paper has special reference to Mr. Seebohm's treatment of the same group in his 'History of British Birds,' by whom all the known forms of *Anorthura* are degraded to subspecies of the European *T. parvulus*.—J. A. A.

Stejneger on the Ptarmigans of the Group *Attagen*.†—This paper embodies the results of Dr. Stejneger's extended and careful investigation of this difficult group of birds—more difficult than almost any other, owing to their nearly continuous moult, and to the scarcity of material collected at corresponding seasons of the year, and properly authenticated as to date of collection. The conclusions here reached are to some extent tentative, and the author appeals for further aid in the way of material. The species and subspecies recognized are as follows: (1) *Lagopus muta*,

* Ueber einige Formen der Untergattung *Anorthura*. By Leonhard Stejneger. Zeitschrift für die gesammte Ornithologie, I, pp. 7-14, Feb., 1884.

† A Brief Review of the Lagopodes belonging to the Group *Attagen* Kaup. By Leonhard Stejneger. Zeitsch. für die gesammte Ornithologie, I, pp. 86-92, pl. v.

Scandinavia; (1a) *L. muta vulgaris*, the Alps of Southern Europe, the Pyrenees, and probably Scotland; (2) *L. ridgwayi*, Commander Islands; (3) *L. hyperborea*, Spitzbergen; (4) *L. islandorum*, Iceland; (5) *L. rupestris*, Arctic America and the Siberian tundras; (5a) *L. rupestris reinhardtii*, Greenland; (5b) *L. rupestris nelsoni*, Unalashka; (5c) *L. rupestris atkensis*, Atkha (Alutian Islands); (6) *L. leucura*, Rocky and Cascade Mountains. The synonymy and distinctive characters of each form are briefly given. The paper is here and there marred by typographical errors, for which the author is doubtless not responsible.—J. A. A.

Stejneger on New Species of Birds from Kamtschatka and the Commander Islands.*—These are: (1) *Pica camtschatica*, (2) *Corvus grebnitzskii*, (3) *Alauda blakistoni*, (4) *Dendrocopos immaculatus*, (5) *Lagopus ridgwayi*—all closely allied to species of Siberia or Japan.

Stejneger on Recent Ornithological Publications in the United States.†—This is a carefully annotated list of all the more important works and papers published in the United States between January 1, 1883, and May 1, 1884, and numbers about 65 titles. The remarks about each are sufficient to indicate the general scope and character of the papers and works mentioned.—J. A. A.

Merriam on a Bird New to the Bermudas, etc.‡—The Song Sparrow (*Melospiza fasciata*) is added to the species of birds previously recorded from these islands, and there are observations on three other species met with there, namely, *Pyrranga rubra*, *Pelionetta perspicillata*, and *Cymochorea leucorrhœa*.—J. A. A.

Shufeldt on the Osteology of *Ceryle alcyon*.§—This is another of Dr. Shufeldt's carefully prepared osteological memoirs, and is devoted, as the title indicates, to the osteology of our common Belted Kingfisher. The osteological characters of the bird are fully detailed, and its structure compared with that of allied forms. The paper is illustrated by an excellent plate, and figures in the text of the skull of *Alcedo ispida*.—J. A. A.

* Diagnoses of New Species of Birds from Kamtschatka and the Commander Islands. By Leonhard Stejneger. Proc. Biol. Soc. of Washington, II, pp. 97-98. (Separates issued April 10, 1884.)

† Die wichtigsten ornithologischen Publicationen aus den Vereinigten Staaten vom 1. Januar 1883 bis 1. Mai 1884. Von Leonhard Stejneger. Zeitsch. für die gesammte Ornithologie, I, pp. 179-189, 1884.

‡ On a Bird new to the Bermudas, with notes upon several other species of rare or accidental occurrence in these Islands. By Clinton Hart Merriam, M.D. Bull. No. 25, U. S. National Museum, pp. 283, 284, 1884.

§ Osteology of *Ceryle alcyon*. By R. W. Shufeldt, Captain Med. Corps, U. S. Army [etc.]. Journ. of Anat. and Physiol., XVIII, pp. 279-294, pl. xiv.

Shufeldt on the Avian Patella.*—An interesting paper, giving clear descriptions and good figures of the knee-pan in *Aptenodytes*, *Corvus*, *Mergus*, *Sula*, *Podiceps*, *Colymbus*, *Fulmarus*, *Phalacrocorax*, and *Hesperornis*. The author adheres to the second view, that the patella does not represent a 'detached olecranon,' and proves it by showing that the sesamoid may coexist, as it does in *Podiceps*, with a very large enemial process of the tibia, the latter being the true antitype of the olecranon.

Nothing advances the progress of scientific ornithology more speedily or more effectually than the anatomical studies of such men as Macgillivray, Huxley, Garrod, Forbes, and Shufeldt.—E. C.

Minor Ornithological Publications.—The 'Ornithologist and Oölogist,' Volume VIII, † contains the following (Nos. 669-771):—

669. *Breeding Habits of the Carolina and American Eared Grebes.*—*Podilymbus podiceps* and *Dytes nigricollis californicus*. By B. F. Goss. *Ornithologist and Oölogist*, Vol. VIII, pp. 1, 2.

670. *Explanation.* By J. G. Cooper. With a note by the Editor. *Ibid.*, p. 2.—On the number of eggs laid by Owls.

671. *Horned Grebe* [*Dytes auritus*] in *Conn[ecticut]*. By Chas. A. Thompson. *Ibid.*, p. 3.

672. *Rare Specimens at Bangor, Me.* By E. S. Bowler. *Ibid.*, p. 3.—Hawk Owl, Rough-legged Hawks, Snowy Owls, etc.

673. *Fishing and Catching Ducks.* By Wm. P. Tarrant. *Ibid.*, p. 3.—Ducks (species not stated) caught on set-lines, in 125 and 200 feet of water in Lake Michigan.

674. *White Heron* (*Herodias alba egretta*). By Jno. H. Sage. *Ibid.*, p. 4.—Shot at Saybrook, Conn., Aug. 11, 1882. (Previously recorded by same writer in O. and O., VII, p. 189. See *antea*, No. 443.)

675. *Field Glass* [*Ornithology*]. By G. R. C. *Ibid.*, pp. 5, 6. (See above, No. 412. in Bull. N. O. C., VIII, 236.)

676. *Long-billed Marsh Wren.* By B. B. Haines. *Ibid.*, pp. 6, 7.—Nesting habits as observed in New Jersey.

677. *Crossbills* [*in Tennessee*]. By G. S. Smith. *Ibid.*, p. 7.—Relates to the instances previously recorded by same writer in Bull. N. O. C., VII, 56.

678. *Virginia Rail.* Editorial. *Ibid.*, p. 7.—Harry F. Haines collected 1,000 eggs of this species in one season on the salt meadows of Elizabeth, N. J.

679. *Notes from Hartford*, [*Conn.*]. By Harry T. Gates. *Ibid.*, p. 8.—Notes on various winter birds.

* Concerning some of the Forms assumed by the Patella in Birds. Proc. U. S. Nat. Mus. Vol. vii, 1884, pp. 324-331, figg. 1-7.

† The 'Ornithologist and Oölogist' will not be hereafter indexed, as heretofore, in the list of 'Minor Ornithological Publications,' owing in part to pressure on our space, but mainly from the fact that it has become a publication of so much importance that none of our readers should fail to have it in their libraries.

680 *Eggs in a Set.* By Snowdon Howland. *Ibid.*, p. 8.—Large clutches of Catbird, Robin, etc., reported, and the nesting in odd places by other species.

681. *Notes from Galesburg, Ill.* By C. W. Strumberg. *Ibid.*, p. 8.—Interesting notes on the nesting of several species.

682. *Oological and Ornithological.* By A. H. Mundt. *Ibid.*, pp. 9, 10.—Notes on the nesting of about 20 species at Fairburg, Ill.

683. *Cardinal Grosbeak.* By Edgar A. Small. *Ibid.*, pp. 10, 11.—Its nesting habits at Hagerstown, Md.

684. *Blue Yellow-backed Warbler's Nest.* Editorial. *Ibid.*, pp. 12, 13.

685. *Eggs in a Set.* By M. Day Murphey, Jr. *Ibid.*, p. 13.—Large clutches of several species reported.

686. *Corrections.* By Robert Ridgway. *Ibid.*, p. 13.—Of D. D. Stone's 'Notes from Colorado,' in O. and O., VII, p. 192. (See *antea*, No. 446.)

687. *Bobolinks.* Editorial. *Ibid.*, p. 14.—On their scarcity in Connecticut, and their wholesale destruction by gunners along the Delaware and southward in the fall. 1,000,000 Rails and Bobolinks killed near the mouth of the Delaware "during the month of September alone."

688. *Savannah Sparrow.* By J. M. Howey. *Ibid.*, p. 16.—"Breeds commonly throughout Western New York."

689. *Rare Birds.* By Chas. E. Bellows. *Ibid.*, p. 16.—"Common Cormorant (*Phalacrocorax carbo*)" taken at Bridgton, N. J.

690. *Among the Buteos.* By J. M. W[hipple]. *Ibid.*, pp. 17, 18.—Notes on the nesting of various species near Norwich, Conn., during the season of 1882. 104 eggs taken!

691. *Notes from Nebraska.* By H. A. Kline. *Ibid.*, pp. 18, 19.—On the nesting of several species of Hawks and Owls.

692. *The Prothonotary Warbler.* By D. E. Lantz. *Ibid.*, pp. 19, 20.—Its nesting habits at Manhattan, Kan.

693. *Clark on "Gull Island."* By John N. Clark. *Ibid.*, p. 21, with cut (of a nesting Roseate Tern, swallowing a herring of nearly its own size).

694. *Ipswich Sparrow.* By Moses B. Griffing. *Ibid.*, p. 22.—Taken on Shelter Island, N. Y., Nov. 21, 1882.

695. *Capt. Chas. E. Bendire, U. S. A.* Editorial. *Ibid.*, pp. 22, 23.—Extracts from his letter of Dec. 29, 1882, recounting the results of his natural history work the previous season, and announcing that 'it has been whispered' that he is to complete the 'North American Oölogy' left unfinished by the late Dr. T. M. Brewer.

697. *Night Herons Breeding on the Marsh.* By Delos Hatch. *Ibid.*, p. 23.—Nesting in the grass and rushes of a marsh in Wisconsin.

698. *Mississippi Valley Migration.* By W. W. Cooke. *Ibid.*, pp. 25-27, 33, 34, 41-42, 49-53, 65-67, 73-75, 81-83, 89-91.—Winter birds of St. Louis, Mo., and Manhattan, Kan., compared (pp. 25-27); spring migration of the Robin (pp. 33, 34); notes from various stations on winter

birds (pp. 41, 42); spring migration of Ducks and Geese, Blackbirds and Bluebirds (pp. 49-53); Purple Martin, Brown Thrush and Black Snowbird (pp. 65-67); Warblers (pp. 73-75, 81-83); Olive-backed Thrush, Catbird, Kinglets, Brown Creeper, House Wren, Red-eyed Vireo, White-bellied Swallow, and Scarlet Tanager (pp. 89-91).

699. *Notes from Bloomington, Ind.* By B. W. Everman. *Ibid.*, pp. 27, 28.—Notes on the Mockingbird, Summer Redbird, Bobolink, and Carolina Wren. White-winged and Red Crossbills reported as taken for the first time in the State.

700. *Odd Bird Songs.* By S. Frank Aaron. *Ibid.*, p. 28.—Relates to Golden-crowned Thrush, Black-throated Green Warbler, and Maryland Yellow-throat.

701. *The Gannet, Tula [sic] bassana, or Solan Goose.* By J. T. T. Reed. *Ibid.*, p. 30.—Its habits, etc., as observed in England.

702. *American Redstart (Setophaga ruticilla).* By Dr. H. A. Atkins. *Ibid.*, p. 31.—Dates of its arrival at Locke, Michigan, for twenty-six years.

703. *White-bellied Nuthatch.* By L. R. Rich. *Ibid.*, p. 31.—Its nest and eggs, taken at Saratoga, N. Y., described.

704. *Notes from Connecticut.* By C. M. Jones. *Ibid.*, p. 32.—A pair of Mallards shot at Eastford, Conn., Oct. 30, 1882.

705. *Phoebe Birds in Winter.* By Edgar A. Small. *Ibid.*, p. 32.—At Hagerstown, Md.

706. *Yellow Rump Warbler.* By A. Hall. *Ibid.*, p. 32.—Shot Jan. 13, 1883, in Northern Ohio.

707. *Oological.* By Snowdon Howland. *Ibid.*, p. 35.—Chiefly relates to the eggs of Clapper, Virginia, and Sora Rails.

708. *Golden Eagle's Nest and Eggs.* By Will Stembeck. *Ibid.*, p. 36.—Locality, Hollister, Cal.

709. *Ash-throated Flycatcher (Myiarchus cinerascens [sic]).* By W. O. Emerson. *Ibid.*, p. 36.—Its nesting habits, at Haywards, Cal.

710. *The Blue-winged Yellow Warbler.* By J. N. Clark. *Ibid.*, pp. 37, 38.—Its nesting in Southern Connecticut, where "it is quite common in the migrations."

711. *The Clapper Rail.* By B. B. *Ibid.*, p. 40.—Its abundance, habits, etc., in the marshes of Elizabeth, N. J.

712. *Brief Ornithological Notes from Newfoundland.* By C. Hart Merriam, M. D. *Ibid.*, p. 43.—On birds seen on a sealing cruise, and about St. John's, in March and April, 1883.

713. *Ruby-crowned Kinglet.* By Fred. T. Jencks. *Ibid.*, p. 45.—Only males found to have crests.

714. *An April Walk.* By J. M. W[hipple]. *Ibid.*, pp. 44, 45.—Desultory notes on birds observed April 10, 1883, at Norwich, Conn.

715. *Cardinal Grosbeak.* By W. T. Warwick. *Ibid.*, p. 46.—On its time of nesting at Washington, Pa.

716. *Crows Eating Herons' Eggs.* By A. G. Van Aken. *Ibid.*, p. 46.

717. *Lesser Red Poll* (*Ægiothus linaria*). By C. O. Tracy. *Ibid.*, p. 47.—“Nest and eggs of this species” found “the last of March, 1878,” at Taftsville, Vt.! The species was doubtless the Pine Finch (*Chrysomitris pinus*).

718. *Stormy Petrel* (*Thalassidroma pelagica*). By O. B. Deane. *Ibid.*, p. 47.—Shot at Springfield, Mass., “a few years ago.” (The species was evidently a ‘Stormy’ Petrel, but probably not *T. pelagica*.)

719. *Ipswich Sparrow*. By Wm. Dutcher. *Ibid.*, p. 48.—Eight, out of ten seen, taken at Great South Beach, L. I., in January and February, 1883.

720. *Plain English*. By Montague Chamberlain. *Ibid.*, pp. 53, 54.—Ostensibly a plea for plain, untechnical language in works on natural history.

721. *Bewick's Wren*. By Howard Jones. *Ibid.*, p. 54.—Description of its nest and eggs, found at Circleville, Ohio.

722. *Sharp-shinned Hawk*. *Red-headed Woodpecker*. *House Sparrow*. By W. B. Fonda. *Ibid.*, p. 55.—The Hawk nesting in a Woodpecker's hole.

723. *Birds in Confinement*. By Annie Trumbull Slosson. *Ibid.*, p. 55.—An albinistic Catbird, a Myrtle Bird, and Chewink.

724. *Curious Nesting Place*. Editorial. *Ibid.*, p. 56.—House Sparrows nesting inside of a depot gong.

725. *An Unrecorded Habit of the Red-Headed Woodpecker*. By Howard Jones. *Ibid.*, p. 56.—Robbing the nests of Cliff Swallows and sucking Hen's eggs!

726. *Ruby-crowned Kinglet*. By Wm. Brewster. *Ibid.*, p. 56.—Females, as a rule, lack the scarlet crown-patch.

727. *A Reply to Dr. Coues*. By Montague Chamberlain. *Ibid.*, pp. 57-59. (From the Quebec ‘Morning Chronicle.’) —Relates mainly to questions of nomenclature.

728. *Short-eared Owl*. Editorial. *Ibid.*, pp. 60, 61.—On its habits and distribution, with quotations from authors and interesting new matter furnished by H. A. Kline and G. A. McCallum.

729. *Long-eared Owl*. By F. H. C[arpenter]. *Ibid.*, pp. 61, 62.—Its nesting habits and eggs.

730. *Canada Jay*. By F. H. C[arpenter]. *Ibid.*, p. 62.—Description of nests and eggs found in Northwestern Maine, March 16 and 20, 1881.

731. *Woodcock and Turtle*. Editorial. *Ibid.*, p. 63.—The former caught by the latter.

732. *The Black-headed Grosbeak* (*Zamelodia melanocephala*). By C. W. Beckham. *Ibid.*, p. 63.—A male found incubating.

733. *Least Bittern*. By Snowdon Howland. *Ibid.*, p. 64.—An instance of peculiar behavior.

734. *Greater Yellow-legs*. By Thos. Morgan. *Ibid.*, p. 67.—Nest of *Totanus melanoleucus* found at Somerville, N. J. (!)

735. *Great-horned Owls*. By F. H. C[arpenter]. *Ibid.*, p. 68.—Eggs found in one nest for eleven successive years; the twelfth year it was found that the nesting-tree had been destroyed.

736. *Red Crossbills*. By A. H. Helme. *Ibid.*, p. 68.—Found breeding, and nest and eggs secured. April 10, 1883, near Miller's Place, L. I., N. Y.
737. *Barred Owl*. By F. H. C[arpenter]. *Ibid.*, pp. 69, 70.—Its nesting habits, as observed at Rehoboth, Mass.
738. *Notes from California*. By W. O. Emerson. *Ibid.*, p. 70.—Brief references to the nesting of various species.
739. *Flying Squirrels and Their Work*. Editorial. *Ibid.*, p. 70.—Suspected of destroying birds' eggs.
740. *Notes from Greenfield, Mass.* By S. W. Comstock.—Nesting of *Dendroica blackburnie* and *Sitta carolinensis*, etc.
741. *Arrivals*. By C. O. Tracy. *Ibid.*, p. 71.—Among early spring arrivals, at Taftsville, Vt., the Shore Lark is mentioned as seen for the first time at this locality.
742. *Rose-breasted Grosbeak*. By Chas. Edw. Prior. *Ibid.*, p. 71.
743. *Late Nesting*. By G. S. Agersborg. *Ibid.*, p. 71.—Marsh Hawk and Mallard with fresh eggs, July 4, at Vermillion, D. T.
744. *Swamp Sparrow*. By C. H. Wilder. *Ibid.*, p. 71.—A previous record of its breeding should be corrected to read 'Song Sparrow.'
745. *Pigeon Hawk. Sparrow Hawk*. By Charles D. Gibson. *Ibid.*, p. 72.—Both (!) species found breeding at Brandywine Springs, Del.
746. *Alex. Wilson*. Editorial. *Ibid.*, p. 76.—Portrait of Wilson, with an account of the same, etc.
747. *Boat-Tailed Grackle*. By Edgar A. Small. *Ibid.*, p. 76.—Breeds in suitable localities as far north, along the Chesapeake Bay, as Kent Co., Md.
748. *Hairy Woodpecker*. (*Picus villosus*,) By J. N. Clark. *Ibid.*, pp. 77, 78.—Nesting near Saybrook, Conn.
749. *Curious Nesting [of a Blue Jay]*. *Blue Jays Tame*. By J. N. Clark. *Ibid.*, p. 78.
750. *Nesting Notes from Connecticut*. By J. L. Goff. *Ibid.*, p. 78.
751. *Notes from San Jose, Cal.* By A. L. Parkhurst. *Ibid.*, p. 79.—On nesting of Black-headed Grosbeak, *Elanus glaucus*, *Phalacroptilus nuttalli*, etc.
752. *Audubon*. By W. S. J. *Ibid.*, p. 79.—Description of Audubon's mill at Henderson, Ky.
753. *Winter Birds [at Saybrook, Conn.]*. By John H. Sage. *Ibid.*, p. 80.
754. *White Herons*. By W. T. Warrick. *Ibid.*, p. 80.—Seven shot, and many more seen, at Washington, Pa.
755. *Pigeon Hawks*. By Charles D. Gibson. *Ibid.*, p. 80.—Affirming the correctness of his previous note (see above, No. 745), on the breeding of this species in Delaware, where, he adds, "the Pigeon Hawk is resident."
756. *Ruby-Crowned Kinglet*. By D. D. Stone. *Ibid.*, pp. 83, 84.—Its nest, eggs, and breeding habits as observed in Colorado.
757. *Short-eared Owl*. By F. H. Carpenter. *Ibid.*, p. 84.—Its breeding habits at Rehoboth, Mass.

758. *Clarke's Crow in Southern Dakota*. By G. Ayersborg [=Agersborg]. *Ibid.*, p. 84.
759. *The Hawks of '83*. By J. M. W[hipple]. *Ibid.*, p. 85.
760. *Downy Woodpecker*. By John M. Howey. *Ibid.*, p. 85.
761. *Baltimore Oriole [as a Cage Bird]*. By W. L. Scott. *Ibid.*, p. 86.
762. [*Nest of the*] *Least Bittern*. By Charles H. Neff. *Ibid.*, p. 86.
763. "*Moukey-Faced Owls*." By W. P. Tarrant. *Ibid.*, p. 87, with cut.—Obviously the Barn Owl.
764. *Interesting Notes*. By Charles D. Gibson. *Ibid.*, pp. 87, 88.
765. *A Surprised Blue Jay*. By S. H. L. *Ibid.*, p. 88. (From the Germantown 'Telegraph'.)
766. *Change of Ownership*. Editorial. *Ibid.*, p. 92.—Valedictory, and announcement of the transfer of the 'O. and O.' to Mr. Frank B. Webster of Pawtucket, R. I.
767. *Notes from Mauhattan, Kau.* By D. E. Lantz. *Ibid.*, p. 92.—On the nesting of a few species.
768. *Screech Owls Breeding in Confinement*. By F. H. Carpenter. *Ibid.*, pp. 93, 94.
769. *Snow Buntings and Pileated Woodpeckers*. By Charles D. Gibson. *Ibid.*, p. 94.
770. *Bell's Virco*—(*Virco belli*). By D. E. Lantz. *Ibid.*, pp. 94, 95.
771. *Red-headed Woodpeckers*. By Moses B. Griffing. *Ibid.*, p. 95.—At Shelter Island, N. Y.
772. *Yellow-breasted Chat*. By F. H. Carpenter. *Ibid.*, p. 96.—Breeding at Rehoboth, Mass.—J. A. A.

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GENERAL NOTES.

Albino Robins (*Turdus migratorius*).—My friend James M. LeMoine, Esq., informs me that he has just added to his fine collection at Spencer Grange, Quebec, a pure white Robin, said to be the first seen in that vicinity. I have lately examined an albino of this species recently captured near St. John. The only colored feathers to be seen on the bird are three single ones forming spots on the breast.—MONTAGUE CHAMBERLAIN, *St. John, N. B.*

Nest and Eggs of the Golden-winged Warbler (*Helminthophila chrysoptera*).—This bird selects a semi-swampy situation, overgrown with bushes, in which to nest. It commences to build the last of May or first of June. The nest is placed on the ground, and is supported laterally by three or four bushes situated from four to five inches apart. It is composed externally of dry leaves placed edgewise, and well lined with fine bark fibres, interspersed with a few coarse hairs. The nest when finished measures, inside, three and one-half to four inches in depth, and one and one half to two inches in diameter; the sides are nearly parallel, only slightly contracted above. It is well concealed by the overhanging bushes and leaves.

The eggs (four or five in number) measure: the largest, $.52 \times .70$; smallest $.46 \times .62$. The average is within a fraction of $.50 \times .68$; they are white, sparingly sprinkled and blotched with light reddish brown, more on the greater end.

I have found but two nests, one, which had young, July 17: the other I discovered while the birds were building. When secured, June 10, it contained five eggs, one of which was a Cowbird's.

Mr. B. F. Goss of Pewaukee has, in his magnificent collection, thirteen nests, containing between fifty and sixty eggs—all taken by one collector

in the town of Summerfield, Monroe County, Michigan. I doubt if all the nests together of this Warbler previously found equals this number.—P. R. HOY, M. D., *Racine, Wis.*

Nest and Eggs of the Blackburnian Warbler.—On the 23d of May, 1879, my lamented friend, the late A. Jennings Dayan, pointed out to me, high in a lofty pine, the yet unfinished nest of the Blackburnian Warbler (*Dendroica blackburnie*). The exact locality was a grove of large white pines (*Pinus strobus*) on a dry hill just east of Black River, at Lyon's Falls, Lewis County, New York. Some days previously Mr. Dayan had observed the female bird carrying in her bill a downy substance which afterwards proved to be the tufted seeds of the cat-tail. By the aid of a field-glass, after many hours of patient watching, he finally discovered the nest. On the 2d of June he ascended the tree and secured the prize. It was saddled on a horizontal limb twenty-five and a half metres (about eighty-four feet) from the ground, and three metres (about ten feet) from the trunk. The limb measured 15 mm. in diameter where the nest was attached. The nest contained four fresh eggs of the Blackburnian Warbler and one of the Cowbird (*Molothrus ater*).

Authentic published descriptions of the nest and eggs of this Warbler are so few in number, and so meagre in exact details, that I make no apology for presenting the following: the eggs measure, respectively (all measurements being in millimetres), 12.80×17.60 , 12.60×17.80 , 12.60×18 , and 12.80×17.60 . The ground-color is pale bluish-green, spotted all over with umber-brown of varying intensity, the spots tending as usual to form a ring at the large end. One differs from the rest in being well sprinkled with blotches of rich dark-umber, which coalesce into a broad zone around the large end. The nest is large, substantial, and very compact. It consists almost entirely of a thick and densely woven mat of the soft down of the cat-tail (*Typha latifolia*), with seeds attached, and is lined with fine lichens, horse hair, and a piece of white thread. On the outside is an irregular covering of small twigs and rootlets, with here and there a stem of moss or a bit of lichen. The outside diameter of this rough envelope is 125 mm.; outside diameter of cup or nest proper, 74 mm.; outside height, 53 mm. on one side and 42 mm. on the other. The inside of the cup measures 50 mm. in diameter and 29 mm. in depth.—C. HART MERRIAM, *Loonst Grove, N. Y.*

Nesting of the Worm-eating Warbler (*Helmitherus vermivorus*) in Virginia.—Although of late years the nest of the Worm-eating Warbler has been met with sufficiently often to dispel the obscurity which previous to 1869 rested upon the breeding habits of this bird, its discovery, especially in localities where it is not known to have been already found, is still a matter of considerable interest. While walking along an unfrequented road through the woods near Cobham, Albemarle County, Virginia, on May 19, 1884, my attention was attracted by the notes of a bird evidently in anxiety, and on looking for their source I found that they proceeded from one of these Warblers, which are not very rare in that vicinity in

the spring. I remained quite still, and the bird, which came very close to me, finally betrayed the position of its nest by flying towards it. This was situated about fifteen feet from the road; placed as usual on the ground, which was covered with dead leaves. It was embedded in a slight depression, and was partially concealed by a diminutive plant which grew alongside. It was neatly but not elaborately constructed of dry leaves and catkins, and was lined inside with the small, flexible, reddish brown stalks of a small plant, its dimensions being approximately as follows: external width, $3\frac{1}{2}$ inches; internal width, $2\frac{1}{4}$ inches; external depth, $2\frac{1}{4}$ inches; internal depth $1\frac{3}{8}$ inches. It contained four freshly laid eggs, the appearance of which corresponded to the descriptions of other observers. their color being white, dotted with spots of various shades of light reddish-brown, running together at the larger end, and intermingled with a few spots of lilac. They measured respectively $.66 \times .54$, $.68 \times .54$, $.67 \times .54$, and $.67 \times .54$ inches. As far as I have ascertained, the nest of this species has not before been definitely reported from any point south of the neighbourhood of Washington.—WILLIAM C. RIVES, JR., M. D. *Newport, R. I.*

Oporonis agilis and *Dendroica palmarum palmarum* at Shelburne, near Gorham, New Hampshire.—On September 14, 1884, while collecting near the 'Dryad Camp' on the side of Mt. Baldcap (altitude approximately 800 feet), I secured a female Connecticut Warbler. When seen it was hopping about in a tangle of hobble bushes and low alders, which covered a small piece of swampy ground in high open woods. No others were seen although I looked carefully for them, and went to the same place several times hoping to find more. This adds the Connecticut Warbler to the birds of New Hampshire.

I shot a typical specimen of the western variety of the Redpoll Warbler (*Dendroica palmarum palmarum*), on September 16, 1884. It was in a large mixed flock of Warblers, Chickadees, etc., which were feeding in a row of low birches by the roadside. The eastern form (var. *hypochrysea*) was not seen, although I collected steadily until September 24. This is, I believe, the first specimen of *D. palmarum* which has been taken in New Hampshire; the other five New England specimens being all from Massachusetts.—ARTHUR P. CHADBOURNE, *Cambridge, Mass.*

Swainson's Warbler off Southern Florida.—One of the most interesting facts brought to light by the Committee on Bird Migration is the discovery of Swainson's Warbler (*Helonæa swainsoni*) off Southern Florida, and the establishment of a fixed point in the line of its autumnal migration. On the night of the 14th of September, 1884, ten of these rare Warblers struck the lighthouse at Sombrero Key, one of the Florida Reefs. On the 15th about the same number struck, and on the 21st several more.

For the possession of this valuable information the Committee is indebted to the kindness of Mr. M. E. Spencer, keeper of the light, who forwarded specimens for identification—C. HART MERRIAM, *Locust Grove, N. Y.*

Swainson's Warbler—An Omission.—In my article on Swainson's Warbler in this number of 'The Auk,' I neglected to refer to an announcement by Dr. G. E. Manigault (Science Record, II, Feb., 1884, p. 34) of the capture of two specimens near Charleston by Mr. Wayne in August, 1883. It is, perhaps, enough to say in this connection that I have been since assured by Mr. Wayne that these birds were erroneously identified, and that they were certainly not Swainson's Warblers.—WILLIAM BREWSTER, *Cambridge, Mass.*

The Red Crossbill Breeding in Eastern Massachusetts.—Late in May, 1884, I received information that a flock of *Loxia curvirostra americana* had been seen on the outskirts of the town. Now this was a bird I had been looking for in vain for a number of years, my last record being about ten years ago, and that flock made but a short stay. So on the 31st I visited the locality named, which was 'just the place' for them, being a ledgy tract of pitch-pine, bordering on an alder and maple swamp. I found the flock there, about ten birds, and secured a pair, male and female, in fine adult plumage. On examination I concluded they had not yet bred, and were not likely to for some time. Thinking it probable some would nest there, I made several trips to the grove in June and July, but without result. I requested the man who owned the premises and lived near by, and who was quite interested in my search, to be on the watch for any young birds, and about the middle of July, was gratified with the information that he had twice seen at close quarters a pair of old birds feeding their young; and he has reported their presence quite frequently since, the last time being as lately as November 15.

I regret that I cannot fix the date of hatching (interesting from being so late in the season), and also that I cannot give this at 'first hand'; but my 'assistant observer' is reliable, and has often given me items of ornithological value.—F. C. BROWNE, *Framingham, Mass.*

The Ipswich Sparrow (*Passerculus princeps*) in Delaware.—Two specimens obtained Nov. 22, 1884, constitute, I believe, the first record of this species for the State, and the only record south of Seven Mile Beach, N. J. I secured them among the sandhills of Rehoboth Beach, about seven miles south of Cape Henlopen, and might have found others had not my available time been limited to one hour's search.—J. DWIGHT, JR., *New York.*

***Peucæa æstivalis* and its Subspecies *illinoensis*.**—While at Washington last April I happened to mention to Mr. Ridgway that I had taken three specimens of what seemed to be his *Peucæa æstivalis illinoensis* at Charleston, South Carolina, in May, 1883. This led to an examination of Audubon's type of *Fringilla bachmani* (preserved in the collection of the National Museum) which very unexpectedly turned out to be also referable to the red inland form instead of, as has been previously assumed, to the dark, black-streaked one of Georgia and Florida. Hence

illinoensis Ridgway, 1879, must become a synonym of *bachmani* Audubon, 1834. It may be added that there is no doubt whatever that Lichtenstein's *Fringilla æstivalis* was based on specimens of the dark race. The two will accordingly stand as follows:

Peucæa æstivalis (Licht.) Cab.—*Habitat*, Florida and Southern Georgia.

Peucæa æstivalis bachmani (Aud.) Brewst.—*Habitat*, South Carolina, Alabama, Texas, Kentucky, Tennessee, and Southern Illinois and Indiana.

The respective distribution of these two forms remains to be definitely ascertained. Charleston, South Carolina, seems to be the only point on the Atlantic Coast where var. *bachmani*—as we must now call the red bird—has been found. It breeds there in abundance, as I learned during the past season (1884), when I collected a series of about fifty specimens in April and May. Some of them are intermediates, and a few approach *æstivalis* rather closely, but the majority are essentially typical *bachmani*.—WILLIAM BREWSTER, *Cambridge, Mass.*

The Black-throated Bunting in Maine.—On Sept. 29, 1884, I shot a Black-throated Bunting (*Spiza americana*) at Job's Island, one of the smaller islands in Penobscot Bay, Maine. The bird was found in a grass-field near a farm-house, and proved to be a young male of the year in good plumage. This is, I believe, the first instance of its capture north of Massachusetts.

The fact that the specimen was a young of the year, and that it was taken during the autumn migration, would lead one to think it had been reared in the region where it was found, or even farther north.—CHARLES W. TOWNSEND, *Cambridge, Mass.*

Foster Parents of the Cowbird.—During the season of 1884 I found young Cowbirds (*Molothrus ater*) in the nests of the Kingbird, House Wren, and Chipping Sparrow.—WILLIAM L. KELLS, *Listowel, Ontario.*

Nest and Eggs of the Rusty Grackle (*Scolecophagus ferrugineus*).—I have found but one nest of this species, but its location differs so from that given in the books that I am induced to record a description of it. During the spring of 1884 a pair of Rusty Grackles were noticed for several weeks about the garden of a neighbor in the suburbs of St. John, and apparently making their head-quarters in a large spruce which grew within 30 feet of the house, on the edge of a lawn that formed the daily playground of a bevy of children.

I had spent many an hour looking for the nest of this species "among the foliage of low alders overhanging the water," "in low trees and bushes in moist places," and "in swampy tangle," and I was puzzled to determine why this pair were spending the breeding season far away from all such surroundings. There was no doubt about the identification of the birds; I had grown familiar with their appearance from handling numerous specimens, and I saw these daily, frequently within a few feet of me.

They did not appear in the least disturbed by my presence, but if a Crow invaded their territory it was at once made the object of a vigorous assault. The Grackles were, however, frequently chased by both Robins and Rey-eyed Vireos.

At last something aroused my suspicion that a nest was in that spruce, and on June 24 I climbed up to investigate the matter. When my head was about 28 feet from the ground and among the dense foliage of the upper branches I came in sight of a bulky nest—extremely large for the size of the bird—set close to the stem and loosely laid upon a limb, portions of it spreading over several smaller branches and twigs. But it was merely resting upon them, they being not imbedded in the mud which formed part of the structure. In the nest were two young birds and two eggs unhatched: the latter were secured and the youngsters left for future study.

There was considerable difference in the size of the eggs and in their coloration. The smaller of the two measured 1.09 X .76, and was very similar in color and markings to those described in 'New England Bird Life.' The largest egg was 'pipped' and was destroyed before measured. The markings on it were less distinct than on the other, giving it a somewhat clouded appearance.

On examining the nest it proved to be very roughly constructed, without any approach to artistic work. It was composed chiefly of dried vines of honey-suckle loosely entwined at the sides and by an admixture of mud welded into a solid mass at the bottom. There was no attempt at a lining of any sort.

I noticed that while the young were in the nest both parents were attentive in feeding them, though the male was more frequently found guarding the nest, of which he was most watchful.—JAMES W. BANKS.
St. John, N. B.

A White Crow (*Corvus frugivorus*).—I have to thank M. Dionne for generously granting me permission to announce the addition of an albino Crow to the Museum of Laval University of which he is in charge. The specimen was taken near the city of Quebec.—MONTAGUE CHAMBERLAIN.
St. John, N. B.

A Remarkable Migration of Canada Jays.—On the 5th of September, 1884, Mr. Napoleon A. Comeau wrote me from his home at Godbout, on the north shore of the entrance to the Gulf of St. Lawrence: "We have lately had a most extraordinary migration of the Canada Jay (*Perisoreus*). One afternoon I counted over a hundred in the open space near the old Hudson's Bay Company's house here; and almost every day since the first of this month it has been the same. I believe this unprecedented flight must be owing to scarcity of berries in the interior, and, since they happen to be plentiful along the coast this fall, the birds follow the shore to feed on them."—C. HART MERRIAM, *Locust Grove, New York*.

The Kingbird in a New Rôle.—The following note is from the pen of my friend, the Rev. Frank W. Ritchie, who has courteously permitted me to publish it.

"On the afternoon of June 15, 1884, I was walking near the bank of the Massawipi River when my attention was drawn to a pair of Crow Blackbirds by their cries of evident distress, and, upon looking to see the cause of the outcry, observed, in a tree near by, a Crow with an almost fully fledged Blackbird dangling from its beak. In a few moments afterwards the Crow started across the river, the parents of its victim in hot pursuit, and when about midway the stream was charged upon by a Kingbird with such vigor that the young Blackbird was released, and half fell, half fluttered in a slanting direction toward the shore, the Kingbird following, and by flying under and against the youngster was evidently endeavoring to assist it in reaching the shore. Some bushes intervened between me and the birds, as they approached the water, and though I rushed down quickly, to observe the end of this interesting scene, by the time I reached the edge of the bank the birds had disappeared. As I could see nothing of the young bird's body floating on the water, I concluded that the Kingbird had succeeded in its generous endeavor."—MONTAGUE CHAMBERLAIN.
St. John, N. B.

Late Occurrence of the Phœbe (*Sayornis fuscus*) at Brewer, Maine.—On Nov. 23 (1884), when the snow here was six inches deep, and the Penobscot River frozen over above the dam, a Phœbe came into my garden and remained a long time. As it was Sunday I did not shoot him, but there is no doubt as to his identity, for my daughter and I stood within a few feet of him and watched him catch insects over a smoking manure heap.—MANLY HARDY, *Brewer, Maine.*

Hawk Owls in New England.—Although the months of October and November, 1884, do not seem to have been characterized by any special meteorological phenomena, they will be long remembered by ornithologists and collectors throughout Northern New England from the fact that they brought to this region a flight of Hawk Owls altogether unparalleled in any previous year of which we have definite records. This inroad seems to have begun late in October and to have lasted nearly through November. It apparently extended over most of Northern Maine and New Hampshire, but I have no evidence that it reached Massachusetts. Some idea of the abundance of the birds may be had from the fact (for which I am indebted to Mr. Manly Hardy) that a single taxidermist in Bangor, Maine (Mr. Bowler), received no less than twenty-eight freshly-killed specimens in the course of a few weeks. Most of our Boston taxidermists also had from three to six each (all from Northern Maine or New Hampshire), and at Lake Umbagog, Oxford County, Maine, I secured four, shot respectively Oct. 25, Oct. 31, Nov. 15, Nov. 16.

These figures doubtless represent but a small proportion of the total number killed, for in the region over which the birds spread few persons

are aware that an Owl has any commercial value, although every one shoots the despised bird at sight. Thus for every one preserved a dozen were probably thrown away. As instancing this, I quote the following from a short note in 'Forest and Stream',* signed Ned Norton, and dated at Colebrooke, N. H., Dec. 1:—"Hawk Owls came three weeks ago in greater numbers than ever seen before. Farmers' sons have been killing them all over the country."

The account of this species in 'New England Bird Life' (Part II, p. 96) would lead one to infer that while "a rare and irregular winter visitor to Massachusetts," it is of regular and rather common occurrence throughout Northern New England. This is certainly a mistake, as every collector who has any practical knowledge of our fauna knows. Indeed the bird is ordinarily one of the very rarest of our Owls—so rare, in fact, that during an experience of some twenty years previous to 1884 I had never seen either a living or freshly-killed specimen.

In respect to the remarkable migration just described, it may be well to add that all the specimens which I have examined belong to the American form, *Surnia funerea* (L.) Rich. & Sw.—WILLIAM BREWSTER, Cambridge, Mass.

The Turkey Buzzard in Central New York.—I have lately examined all that remains of a *Cathartes aura* which was killed in Oneida County, N. Y., in May, 1879. When first seen he was in company with three others in a small grove in Westmoreland Township, and was shot by Mr. Lavello J. Groves, of that town, who had him mounted and preserved. This is certainly the first record for the County and, I think, for this part of the State.—EGBERT BAGG, JR., Utica, N. Y.

Recent Occurrence of the Black Vulture in Ohio.—A Black Vulture (*Catharista atrata*), in company with some Crows, flew into the Zoölogical Garden on the afternoon of Dec. 4, 1884. Spying one of the same species in one of the outer aviaries, it deserted its companions and alighted on the wire netting covering the aviary. From thence it flew on to the lower limb of a large tree just opposite, and becoming frightened at the attempts of the keepers to capture it, circled to a great height and slowly sailed off in an easterly direction.—FRANK J. THOMPSON, Zoölogical Garden, Cincinnati, O.

A New Bird for Illinois.—In a letter from Mr. Ridgway, dated Oct. 25, 1884, he says: "Among the lot of birds you sent us last week was a specimen of *Buteo borealis krideri* (orig. No. 575), a very typical specimen, from Halfday, Illinois, July 25, 1876. This specimen is particularly acceptable since the race was previously unrepresented in our collection. It also adds one bird to the fauna of Illinois!" Referring to my Record I find that No. 575 was one of two large Hawks (the other a *Buteo borealis*) brought into camp by one of our party while on a collecting trip along

* Vol. XXIII, No. 19, Dec. 4, 1884, p. 368.

the Des Plaines River, thirty miles northwest of Chicago. It is an adult female, and measured in the flesh 21.75 inches in length and 40 inches in extent. It was captured while perched on a stake in a field not far from the 'big woods.' Another large, light colored Hawk was seen which might have been the male, but it was too wary to allow a near approach.—H. K. COALE, *Chicago, Ill.*

The Great White Egret and the Yellow Rail in Ottawa, Canada.—In the ornithological collection of the Geological and Natural History Survey of Canada are two mounted specimens which, from the localities of their capture, deserve special notice. The first of these is a fine spring male of *Herodias egretta*, which was shot in the spring of 1883 at Rockliffe, Ont., by Mr. Sidney H. McIntyre, and presented by him to the Survey. In answer to a letter of inquiry Mr. W. H. McIntyre writes: "Two of these birds are all that were ever seen here. They seemed to be a pair, and after this one was shot the other stayed around for a day or two and then left, and we have seen no more like them. I cannot give date of the shooting; it was shot, however, by my son Sidney H. McIntyre within about one half mile of our house at Rockliffe." Rockliffe is on the Ottawa River, about lat. 77° 50' north, long. 46° 08' west, making, as far as I am aware, the most northerly record of the Egret.

The other specimen is a spring bird of *Porzana noveboracensis* shot on Loronto marshes in June, 1874, by Mr. Herring, the taxidermist of the Survey. Mr. Herring tells me that although this is the only specimen he has ever actually shot, he is quite certain that he has on several other occasions 'put up' specimens of this Rail in the same locality.—W. L. SCOTT, *Ottawa, Canada.*

The *Ædicnemus dominicensis* in Confinement.—In September, 1883, the Society received two Thick-knees, which were evidently young birds, with their plumage in bad condition. Being informed that they came from South America, they were provisionally called *histriatus*. It was the latter part of last September (1884) before they were properly identified as *Ædicnemus dominicensis* Cory (Auk, 1884, p. 4). They have become exceedingly tame; are in full plumage, and during the summer nights make the whole garden ring with their peculiar shrill notes.—FRANK J. THOMPSON, *Zoölogical Garden, Cincinnati, O.*

The Western Semipalmated Sandpiper on the Coast of Virginia.—As there are but few recorded captures up to this time of *Eruncetes pusillus occidentalis* in the Eastern Province, it is perhaps worth while to mention its occurrence at Virginia Beach, where Mr. Henry Seebohm and the writer met with it on Sept. 6 and 7, 1884. It was in company with *E. pusillus* and several other species of the smaller Waders, all of which appeared to be abundant. Several of the birds (*E. occidentalis*) were shot but only one was preserved, which was seen and identified by Mr. Ridgway. *E. pusillus* was also taken, so there was no chance of confounding the two forms. Virginia Beach, Va., is on the Atlantic coast, twenty miles east of Norfolk.—C. W. BECKHAM, *Washington, D.C.*

The Canada Goose.—Mr. James P. Howley, in his article entitled 'The Canada Goose (*Bernicla canadensis*),' in the October 'Auk', p. 310, lines 33 and 34, states that they "require six months to mature." This is contrary to my observations regarding the breeding of this bird. My notes, however, are entirely confined to their breeding while in a state of captivity. During the last week in May, 1879, I saw some goslings, just hatched, belonging to Capt. Lane, of Shinnecock Bay, Long Island, N. Y. August 16, I saw them again and was unable to distinguish them from the rest of the flock by their size or plumage. The present season Capt. Lane raised nineteen Geese. I saw the flock daily from June 26 to July 25, and during the latter part of the time the young birds were hardly distinguishable from the old ones, except by the solicitude the parents displayed for the safety of their progeny. Capt. Lane has had remarkable success in breeding Canada Geese in confinement, and has kindly furnished me with the following information regarding their habits during the incubating season: "They make their nests of dried grass, raising them about twelve inches from the ground. They feather them when they begin to lay, which is about May 1. None lay until three years old; the first season four eggs are laid, five the second season, and when older six and seven. A goose never has more than one mate. The gander never sits on the nest, but while the goose is sitting never leaves her. The time of incubation is four weeks. The young when hatched are strong enough to take care of themselves, that is, they eat grass and walk and swim as soon as they get dry. They will eat meal on the second day. They are in the down four weeks, and are fully grown in six weeks. When swimming, the gander goes ahead, the young next, and the goose follows, invariably."—WM. DUTCHER. *New York City.*

The Eider Ducks of the New England Coast.—In view of the general confusion and ignorance respecting New England Water Birds, it may be not amiss to call attention to the fact that two forms of the Eider Duck are found regularly in winter on our coast. Of these Dresser's Eider (*Somateria dresseri*) is the commoner, as well as probably the only one which breeds within our limits. The other, *Somateria mollissima* proper, is much less numerous, but still far from rare or accidental. It doubtless reaches Massachusetts, but I do not remember to have seen specimens from any point south of the mouth of the Penobscot River, Maine. The best authorities now regard *dresseri* as specifically distinct from *mollissima*.—WILLIAM BREWSTER. *Cambridge, Mass.*

The White Pelican on Lake Ontario.—In the last number of 'The Auk' (p. 395) Mr. McIlwraith records a visit of five White Pelicans to the west end of Lake Ontario, March 13, 1884. The birds had evidently spent some time in the neighborhood, for I learn from Capt. Thos. Campbell, Keeper of Burlington Bay Lighthouse, that four Pelicans were seen there February 5-7, 1884.—C. HART MERRIAM, *Locust Grove, N. Y.*

The Common Cormorant off Boston Harbor.—On the 22d of September, 1884, while shooting on the 'Graves,' a dry reef a few miles off the entrance to Boston Harbor, I secured a Common Cormorant (*Phalacrocorax carbo*). It was the only one seen, the rest of the Cormorants being *P. dilophus*, and at once attracted my companion's notice by its large size and whitish underparts. Inquiries made of local collectors and fishermen failed to elicit any proof of its occurrence at this point, although 'way north' they 'saw them often.'—WM. A. JEFFRIES, *Boston, Mass.*

The Common Cormorant in Massachusetts.—Although several recent authors have characterized *Phalacrocorax carbo* as a common fall or winter visitor to this State, the specimen recorded by Mr. Jeffries in the preceding paragraph is the only authentic Massachusetts one of which I have any present knowledge. Very probably there are a few others scattered about in collections, but it is nearly certain that the bird, so far from being common, is extremely rare here. Along the coast of Maine, however, it winters regularly and in large numbers, especially at some small islands near the mouth of the Penobscot River, whence I have received several specimens through the kindness of Mr. Manly Hardy. This gentleman writes me that *P. dilophus* is not found there in winter, nor have I any record of its wintering in Massachusetts, although it is a common spring and fall migrant here.—WILLIAM BREWSTER, *Cambridge, Mass.*

Rare Summer Residents in Kansas.—On the 26th of June, 1884, at Fort Wallace, on and about a pond made by damming the Smoky Hill River, I saw four pairs of American Coots (*Fulica americana*), six pairs of Shovellers (*Spatula clypeata*), one pair of Blue-winged Teal (*Querquedula cyanoptera*), a female Gadwall (*Chaulelasmus streperus*), and a small flock of Yellow-headed Blackbirds (*Xanthocephalus icterocephalus*). From the actions of the birds I think their breeding grounds were on the small, bog-like islands, covered by a thick growth of grass and weeds, and also flags in places. The next day near Ellis, on Big Creek, I saw a female Hooded Merganser (*Lophodytes cucullatus*).

On July 5 following, near Lawrence, in an old channel of the Kansas River, I saw several pairs of American Coots, one pair of Mallards (*Anas boschas*), and, skimming over and about the water, a Black Tern (*Hydrochelidon lariformis surinamensis*), and, at the edge of the timber bordering the slough, an Acadian Flycatcher (*Empidonax acadicus*), a Black-and-white Creeper (*Mniotilta varia*), feeding its young, and a pair of Blue Grosbeaks (*Gairaca cerulea*), with three young birds following them in their flights, clamorous for food; and on the 11th of the same month, at Topeka, a male Black-headed Grosbeak (*Zamelodia melanocephala*).

Both of the Grosbeaks mentioned are quite common in the western and middle parts of the State, the Blue breeding as far east as Manhattan. Their occurrence east of that locality is rare. Prior to this I had not observed the Black-headed east of Ellis, but Professor D. E. Lantz writes

me that on the 14th of August last he saw at Concordia quite a number, mostly young birds, and that Dr. C. P. Blachly has in his collection a female shot some three years ago at Manhattan.—N. S. Goss, *Topeka, Kan.*

Third Addendum to List of Birds Ascertained to Occur within Ten Miles from Point des Monts, Province of Quebec, Canada; Based Chiefly upon the Notes of Napoleon A. Comeau.—(For the original list and first and second addenda see Bull. Nutt. Ornith. Club. Vol. VII, No. 4, Oct., 1882, pp. 233-242; Vol. VIII, No. 4, Oct., 1883, p. 244; and The Auk, Vol. I, No. 3, July, 1884, p. 295.)

171. *Anorthura troglodytes hyemalis*.—A pair of Winter Wrens spent the past summer (1884) at Godbout. They were first seen July 7. This species was not observed in the Gulf by either Mr. Brewster or myself, though it is common in Newfoundland.

172. *Somateria dresseri*.—Mr. William Brewster has recently called my attention to the fact that among the skins of Eider Ducks sent me by Mr. Comeau are examples of both *S. mollissima* and *S. dresseri*.

173. *Tachypetes aquila*.—A Frigate Pelican was seen and shot at by Mr. Comeau at Godbout August 13, 1884. It had previously been seen (about the end of July) by the keeper of the lightship at Manicougan, about forty miles higher up the river.

A second specimen of the Wheatear (*Saxicola ananthe*) was taken at Godbout, September 19, 1884, and was exhibited by Mr. Comeau at the late meeting of the American Ornithologists' Union.—C. HART MERRIAM, *Locust Grove, New York.*

Albinism.—My attention was drawn to a note in the 'Oölogist' for April last, in which the writer gives his experience in albinism and asks for an explanation of these freaks of nature. In order to air my experience, and at the same time to give a probable cause, which I would like, for the sake of possible verification, other observers to look for in the future, is the object of the present note.

True albinism is of course congenital, and is a condition in which the normal pigmentary matter is deficient in the system of the individual affected; in such cases the eyes are pink, and the skin with its appendages are white or nearly so. In the case of partial albinos, however, it is difficult; their condition can probably be explained by some circumstances occurring after birth which will account for the change in the color of the skin, such for instance as the case given by the writer in the 'Oölogist,' in which the skin had been injured on the back of a Swift, and next year the patch of white feathers indicated the situation of the injury. The same thing is familiar in the case of the horse whose back or shoulder is galled by the harness; white patches appear, owing to lowered vitality of the injured part. These cases are familiar, but I wish to give possibly another cause acting in the same way, only more general. It is this. When a boy I shot among others a black squirrel peculiarly marked, it having a per-

fectly white tail, with some white about the head; on making a post mortem I discovered through a rent in the intestines a tape-worm about 20 feet in length. Did not wonder then that his head was gray. A few years after a partially white Red-winged Blackbird (*Agelaius phœniceus*) was taken, which also contained two or three tænia; next a partial albino Mallard; then a Robin (*Turdus migratorius*) with a white head and mottled back and breast. All were mounted, and are now in my collection. Each of these had two or more tape-worms in their intestines. I am aware that birds, especially some species, are particularly obnoxious to tape-worms, and the above may have been merely coincidences; still it has been observed sufficiently often to make the fact suspicious as a cause of albinism.—G. A. McCALLUM, *Dunnville, Ont.*

CORRESPONDENCE.

[Correspondents are requested to write briefly and to the point. No attention will be paid to anonymous communications.]

TO THE EDITORS OF THE AUK:—

Sirs: I see by the last number of 'The Auk' that the Committee on Nomenclature is undecided whether to adopt the name 'Junco' or 'Snowbird' as the vernacular name of *Junco hiemalis*. The bird in question is here, and in many other parts of its range, not a 'Snowbird' at all, as it almost invariably leaves for the South before there is any snow, and does not return till the ground is completely clear. I think this should be sufficient to decide the question in favor of 'Junco,' as in my opinion a bird should always bear a name which is applicable to it in every part of its range.

The same argument applies with equal or still greater force to the name 'Winter Wren.' *Anorthura troglodytes hiemalis* spends the summer in the hills near here, but is never found here during the cold weather; and people here have frequently remarked on the absurdity of our having to call an essentially summer bird the 'Winter Wren.' It may be urged that we have no choice in the matter, as there is no other name for the bird; but why cannot some descriptive name, such as 'Short-tailed Wren,' be invented. Many will doubtless say that the old name is too well established to admit of its removal; but the Committee has, I understand, in some instances made changes even more radical than this, and on no stronger ground; and it does seem a pity, when a thorough and final revision of the nomenclature is in progress, to allow a misnomer like 'Winter Wren' to stand. For surely a name must be considered a misnomer which is inapplicable in a bird's summer home—the place where by far the most important part of its life's drama is enacted.

Ottawa, November 19, 1884.

W. L. SCOTT

NOTES AND NEWS.

DR. R. W. Shufeldt, Capt. Med. Corps, U. S. Army, is now on duty in the field, being stationed at Fort Wingate, N. M. He is at present busily engaged on a memoir on the anatomy of the Alcidae, for which many of the drawings are already completed. He would, however, be glad to receive additional material in illustration of the group, either skeletons or parts of skeletons, or, still better, specimens in spirits. He would like to borrow such material, giving due credit therefor in his forthcoming memoir. *Sterna*, skeletons, and skulls may be readily sent by mail, and alcoholics in like manner, if first thoroughly drained of alcohol and then well wrapped.

DR. Wilhelm Blasius has published in the 'Journal für Ornithologie' for January, 1884, a memoir of 125 pages on the Great Auk (*Alca impennis* Linn.). He gives the history of all known extant specimens, numbering 76 skins and mounted specimens, 9 skeletons, and 68 eggs. The number of skeletons, however, should be reduced to 8, as the Museum of Comparative Zoölogy is credited with two, whereas it has but one. Dr. Blasius gives a résumé of the literature of the subject, and the history in detail of each specimen known to exist.

'THE Naturalist in Florida' is the name of an illustrated bi-monthly sheet, edited by C. J. Maynard, which it is intended "shall occupy a peculiar field of its own, . . . that of bringing before the people facts either new or interesting of the Natural History of Florida and its vicinity." Three numbers have already appeared, and contain several papers, by the editor, of interest on birds.

IN a sale 'Catalogue of Bahama Birds' Skins, Nests, and Eggs,' Mr. C. J. Maynard has described a new species of Woodpecker, under the name *Picus insularis*. Its nearest ally is *Picus villosus* of North America, from which, however, it appears to be specifically distinct. The description is published as an extract from "Mr. Maynard's forthcoming work, entitled 'A Naturalist in the Bahamas.'" The publication of new species in ephemeral sale catalogues has been repeatedly characterized as reprehensible, and the present case seems fully open to such criticism, there being no lack of proper media for such announcements. Mr. Maynard secured, on his last winter's trip to the Bahamas, fine series of several very rare species, and many interesting notes on Bahama birds may doubtless be safely anticipated in the above-named work which he proposes soon to publish.

'THE Young Oologist,' a monthly of sixteen pages, edited and published by Mr. Frank H. Lattin, of Gaines, Orleans Co., N. Y., has nearly completed its first volume. As its name indicates, it is devoted to oölogy, and is published in the interest of young ornithologists, but each number contains more or less matter of permanent value.

At a meeting of the Nuttall Ornithological Club, held Dec. 2, 1884, the annual election of officers was had, resulting in the re-election of the present incumbents, except Vice-President J. A. Jeffries, absent in Europe. The officers for 1885 are as follows: President, William Brewster; Vice-President, W. A. Jeffries; Recording Secretary, Henry A. Purdie; Corresponding Secretary, J. A. Allen; Treasurer, Charles F. Batchelder. The meetings are held the first and third Tuesdays of each month, from October to June, inclusive. At the December meetings papers were read by Mr. Brewster, on 'Swainson's Warbler,' on 'The Heath Hen of Massachusetts,' and on an interesting collection of birds made by Mr. F. Stephens in Arizona; and by Mr. Allen on 'Sexual Selection and the Nesting of Birds'; and various briefer communications were made by other members.

At the December meeting of the Ridgway Ornithological Club, donations of skins were announced from Mr. H. L. Fulton, and the following papers were read: 'The Genus *Helminthophaga*,' by Dr. Morris Gibbs; 'The White-rumped Shrike' (impaling insects on barbed-wire fence), by Geo. H. Ragsdale; 'The Economic Structure of Birds' Crests,' by H. K. Coale.

ORNITHOLOGISTS will be interested to learn that the celebrated collection of Birds' eggs and nests, belonging to the well-known ornithologist, Dr. A. C. E. Baldamus, of Coburg, Germany, is now offered for sale. This collection is without doubt one of the richest of its kind in the world, numbering nearly 2,000 species, and some 10,000 specimens. It is especially rich in the nests and eggs of European birds, and has been gathered with the greatest care as regards identification and authentication. A printed catalogue of the collection has been prepared, giving a list of the species represented, and the number and character of the specimens of each included. It is greatly to be hoped that the collection may be secured for some museum in this country.

In the October number of 'The Auk' its readers were invited, in behalf of the A. O. U. Committee on the Nomenclature and Classification of North American Birds, to notify the Editor of this Journal of their preferences in respect to the names 'Junco' and 'Snowbird,' and 'Vireo' and 'Greenlet,' for the English designations of the species, respectively, of the genera *Junco* and *Vireo*. Twenty-four persons have responded, as follows: For Junco, 18; for Snowbird, 6; for Vireo, 22; for Greenlet, 2. Several writers have given at length their reasons for preferring Junco to Snowbird, besides the formal letter given in this issue in the department of 'Correspondence.'

SUPPLEMENT.

COMMITTEE ON THE MIGRATION AND GEOGRAPHICAL DISTRIBUTION
OF NORTH AMERICAN BIRDS.

Circular for 1885.

THE Committee on Bird Migration, during the first year of its existence (1884), distributed six thousand circulars, and in reply has received returns from more than a thousand observers. The area over which these observers are scattered is co-extensive with the boundaries of the inhabited portions of the North American Continent, and includes parts of the West Indies, Central, and South America. Stations now exist in every state in the Union, and in every Territory excepting Nevada. Exclusive of Spanish America, the extreme points from which reports have actually been received will appear from the following statement: In the East, the southernmost station is Sombrero Key, off Southern Florida (latitude $24^{\circ} 37'$); and the northernmost, Belle Isle, off Labrador (latitude $51^{\circ} 53'$). In the West, reports have come to hand from Arizona and Southern California, and from Point Barrow, the most northerly point of Arctic Alaska (lat. $71^{\circ} 18'$). The easternmost station from which data have been received is St. John's, Newfoundland (west longitude $52^{\circ} 45'$), projecting well into the Atlantic; while on the Pacific the Committee has observers at various points in California, Oregon, Washington, and British Columbia.

Hence it appears that the migration stations of the American Ornithologists' Union, exclusive of those in Spanish America, are sprinkled over $46^{\circ} 41'$ of latitude (approximately three thousand two hundred miles in a north and south direction), and $72^{\circ} 15'$ of longitude (approximately three thousand five hundred miles in an east and west direction). The distance in a straight line between the two most remote points (Sombrero Key and Point Barrow) is about four thousand three hundred miles.

For convenience in collecting the enormous mass of material accumulated by the Committee, the territory under investigation has been divided into sixteen districts, each of which has been placed under the immediate direction of a competent Superintendent. The Districts, with their respective Superintendents, are:—

ALASKA, Supt., John Murdoch, Smithsonian Inst., Washington, D. C.

NORTH-WEST TERRITORIES, Supt., Ernest E. T. Seton, Assinaboia, *via* Carberry, Manitoba.

NEWFOUNDLAND, Supt., James P. Howley, St. John's, Newfoundland.

BRITISH COLUMBIA, Supt., John Fannin, Burrard Inlet, British Columbia.

MANITOBA, Supt., Prof. W. W. Cooke, Moorhead, Minnesota.

QUEBEC AND THE MARITIME PROVINCES, Supt., Montague Chamberlain, St. John, New Brunswick.

ONTARIO, Supt., Thomas McIlwraith, Hamilton, Ontario.

NEW ENGLAND, Supt., John H. Sage, Portland, Conn.

ATLANTIC DISTRICT (New York [excepting Long Island], Pennsylvania, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina), Supt., Dr. A. K. Fisher, Sing Sing, New York.

LONG ISLAND, New York, Supt., William Dutcher, 231 West 128th St., New York City.

MIDDLE-EASTERN DISTRICT (Southern Michigan, Indiana, Ohio, West Virginia, Kentucky and Tennessee east of the Tennessee River, Alabama, Georgia, Florida), Supt., Dr. J. M. Wheaton, Columbus, Ohio.

MISSISSIPPI VALLEY DISTRICT (Dakota, Minnesota, Wisconsin, Northern Peninsula of Michigan, Nebraska, Iowa, Illinois, Kansas, Missouri, Indian Territory, Arkansas, the small portions of Kentucky and Tennessee west of the Tennessee River, Texas, Louisiana, Mississippi), Supt., Prof. W. W. Cooke, Moorhead, Minnesota.

ROCKY MOUNTAIN DISTRICT (Idaho, Montana, Wyoming, Utah, Colorado, Arizona, New Mexico), Supt., Dr. Edgar A. Mearns, Camp Verde, Arizona.

PACIFIC DISTRICT (Washington, Oregon, California, Nevada), Supt., L. Belding, Stockton, California.

LIGHT-HOUSE DIVISION OF NORTH AMERICA, Supt., Dr. C. Hart Merriam, Locust Grove, New York.

LIGHT-HOUSE DIVISION OF SPANISH AMERICA, Supt., L. S. Foster, 35 Pine Street, New York City

INSTRUCTIONS TO COLLABORATORS.

The Committee particularly desires from each observer a brief but careful description of the principal physical features, including latitude, longitude, and altitude, of the locality which is the seat of his observations.

The data collected may conveniently be arranged in three general classes: *a.* Ornithological Phenomena. *b.* Meteorological Phenomena. *c.* Contemporary and Correlative Phenomena.

(*a.*) *Ornithological Phenomena.*

Each observer is requested to prepare, at his earliest convenience, a complete list of the birds known to occur in the vicinity of his Station, and to indicate (by the abbreviations enclosed in parentheses) to which of the following five categories each species pertains:—

1. *Permanent Residents*, or those that are found regularly throughout the year (R).

2. *Winter Visitors*, or those that occur only during the winter season, passing north in the spring (WV).

3. *Transient Visitors*, or those that occur only during the migrations, in spring and fall (TV).

4. *Summer Residents*, or those that are known to breed, but which depart southward before winter (SR).

5. *Accidental Visitors*, or stragglers from remote districts (AV).

It is desirable also to indicate the relative abundance of the different species, the terms to be employed for this purpose being: *Abundant, Common, Tolerably Common, Rare.*

If you are in a position to observe the lines of flight of birds, have you noticed whether or not such lines are influenced by the topography of the country, and if so, to what extent?

If a mountain intercepts the line of flight, what kinds of birds pass around it, and what kinds pass over it?

What localities in your neighborhood are sought as resting-places by the various kinds of migrating birds? Can you give any reason for this selection?

What kinds of birds generally move in flocks, and what kinds in pairs or singly?

Are you familiar with any kinds of birds in which the males and females, and old and young, fly in separate flocks? In many species the males arrive in advance of the females, hence it is important to note the sex of the first comers, and the date at which the opposite sex is first seen.

Have you observed from year to year any increase or decrease in the numbers of any kind of bird known to you? If so, do you attribute such change to altered conditions in the bird's breeding grounds? If not, can you assign a cause?

Have you observed the increase or decrease of one species to affect the numbers of another species? If so, can you explain the fact?

Has any kind disappeared altogether, and if so, can you assign a cause for this disappearance?

Among the birds which are now common about your station is there any kind that was formerly rare or absent? If so, can you explain the fact?

Among the birds which breed regularly in your vicinity have you ever observed an individual which by some personal peculiarity (such as the presence of white or dark feathers where they do not belong, or by some deformity) could readily be distinguished from others of its kind? If so, has this bird returned to the same place to nest year after year?

In recording arrivals and departures it is highly important to distinguish between the movements of irregular stragglers, of the advance guard or 'van,' and of the principal mass or 'bulk' of the species. For this purpose observers are requested to note:—

1. When the species is first seen.
2. When it is next seen.
3. When it becomes common.
4. When the bulk departs.
5. When the last individual is seen.

In addition to the above data, which *all* observers are requested to furnish, the Committee particularly desires exact records of every increase and decrease in the numbers of a given species over a given area: for it is only by the knowledge of the daily fluctuations of the same species in the same place that the progress and movements of a 'flight,' or 'bird-wave,' can be traced. Such data can be contributed by experienced observers only, and in their procurement much time must be spent in the field. During the progress of the migratory movement the observer should go over

the same ground day after day, and, if possible, both early in the morning and late in the afternoon. He should visit woodlands, thickets of dense undergrowth, and open fields; and, if possible, both swamp and upland should fall under his daily scrutiny.

The above may be regarded as *essential data*. There are many other noteworthy details that bear more or less directly upon the complicated problems involved in the study of migration. Among such may be mentioned the bodily condition of the bird (whether fat or lean), the moult, and the periods of song. The time of mating, when observed, should always be recorded.

The Committee desires positive information concerning the food of all birds.

(b) *Meteorological Phenomena.*

The Committee desires information upon:—

1. The direction and force of the wind.
2. The direction, character and duration of storms.
3. The general conditions of the atmosphere, including rainfall.
4. The succession of marked warm and cold waves, including a record of all sudden changes of temperature.

(c) *Contemporary and Correlative Phenomena.*

The Committee desires that the data under this head be as full and complete as possible, and requests exact information upon:—

1. The date at which the first toad is seen.
2. The date at which the first frog is heard.
3. The date at which the first tree-toad or 'peeper' is heard.
4. The dates at which certain mammals and reptiles enter upon and emerge from the state of hibernation.
5. The dates at which various insects are first seen.
6. The dates of the flowering of various plants.
7. The dates of the leafing and falling of the leaves of various trees and shrubs.
8. The dates of the breaking up and the disappearance of the ice in rivers and lakes in spring, and of the freezing over of the same in the fall.

It must not be supposed, because the Committee asks for a large amount of information upon a variety of subjects, that meager or isolated records are not desired. Quite the contrary is true. Comparatively few of the observers are ornithologists, or even bird collectors, the great majority being intelligent farmers, tradesmen, and light-keepers. Those who know only the commonest birds, such as the Robin, Bluebird, Bobolink, Martin, Hummingbird, and Chimney Swift, can furnish important data, and their services are eagerly sought.

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WINTER NOTES FROM NEW MEXICO.

BY CHARLES F. BATCHELDER.

IN December, 1882. I had the good fortune to pass three weeks at Las Vegas Hot Springs, New Mexico, and though at that season the species of birds met with were few in number, yet as most of them were quite abundant, I think some account of my observations may not be without interest. The following notes refer to the time between December 4 and 23.

The Hot Springs are in the northern part of New Mexico, in San Miguel County, six miles northwest of Las Vegas, and are situated in the cañon of the Gallinas River, just above where that stream emerges from the foot-hills of the mountains of the Spanish Range—the extreme southeastern range of the Rockies—into the elevated plains that are characteristic of a great part of the Territory. The town of Las Vegas, which is out on the plains, has an altitude above the sea of 6452 feet, while that of the Hot Springs is 6768 feet, the surrounding hills reaching several hundred feet higher. The climate is delightful at this time of year. The dry air and cloudless sky allow the warm rays of the sun to have their full effect, and heavy clothing is quite unnecessary, often unbearable. One can sit still on a warm sunny hillside with the birds singing around him, and look across at the shady side of the cañon opposite, yet white with snow that fell several weeks before, while on still, shaded pools on the stream below a supply

of ice is being harvested for the use of the hotels at the Hot Springs. The nights are quite cool, so that a thick skim of ice is formed nearly every night on water that is not in motion, but it disappears like magic before the morning sun. During the latter part of December there were several slight snowstorms, but the hot sun and dry air soon left no traces of them save in shaded spots out of reach of the sunshine. In the middle of the winter there is doubtless some severe cold, as would naturally be expected at such an altitude.

Just below the Hot Springs the cañon of the Gallinas gradually broadens out, and the hills become lower and farther apart before they finally sink into the plains and the cañon comes to an end. The stream itself first runs between low bluffs where it has cut its way through a small plateau of superficial gravel deposits, and then spreads itself out over a shallow, stony bed where the valley widens out as it approaches the broad plains that stretch indefinitely to the south and east, broken only here and there by some outlying low hill whose flat-topped ridge and steep, deeply eroded sides give it the appearance at a distance of a huge fortification.

In the lower part of its course the flow of the river is impeded in various places by rude dams made out of brush by the Mexican inhabitants of several little adobe villages. Small ponds are thus formed from which run ditches carrying the water to irrigate their outlying fields.

Above the springs the cañon narrows, and winds along for many miles shut in by steep, rounded hills, on whose barren sides only a scanty vegetation obtains a foothold among the gravel and loose stones and occasional ledges that form their surface. These hills are here and there varied by perpendicular cliffs that tower above the stream, while every now and then one comes upon a narrow ravine or side-cañon that winds its way back between the hills, gradually rising and becoming narrower and with steeper sides as it gets farther from the main cañon until it ends high up among the hills. These ravines are usually dry, though in some a feeble little stream struggles to exist.

The cañon itself varies greatly in its width. In some places the hills crowd down upon it until there is hardly room for a footpath between the brawling stream and the steep rocky sides. Again the hills retreat, and the cañon opens out into a little

valley whose level bottom here and there shows signs of cultivation, forcibly reminding one of the scarcity of land available for such uses. These openings are of small extent, seldom covering more than a few acres.

Through these level stretches the stream ripples along gently over its stony bed. Here it is about twenty feet wide, and is shallow, hardly more than a foot in depth, but in the narrower places it becomes more of a mountain torrent, and leaps noisily over the rocks, with clear, deep pools, and here and there a waterfall.

The bottom of the cañon, in places where it broadens out, bears patches of tall weeds and clumps of low scrub oaks, but there are few trees worthy of the name, except on the hills, which are wooded with a scattering growth of various species of Coniferae, of which *Pinus ponderosa*, *P. edulis*, *Taxus occidentalis*, and *Abies douglasi* are the commonest, named in the order of their abundance. *Pinus ponderosa* far outnumbered the others, and is most important, furnishing the chief supply of timber and firewood. On the more open parts of the hills there are low scrubby oaks growing mostly in thick clumps.

Passing the various hot springs that come boiling to the surface at numerous points along the stream, a short walk up the cañon brings you to one of the openings where the retreating hills leave a level stretch of a few acres. Among the thick clumps of low scrub oaks that are scattered over it, or in the large patches of tall dead weeds, I was sure to find companies of Juncos (*Jusco oregonus* and *J. caniceps*) busily searching the ground for fallen seeds. Of all the species that I met with, the Juncos were decidedly the most abundant. They were to be seen everywhere; it was hard to find a spot they did not like; but these were their favorite haunts. Among the pines on the hills, or in the thickets of willows down the river, they were in small parties, but here they were in large flocks. They moved about a good deal, straggling along one or two at a time, though occasionally a number would fly in a tolerably compact flock. They were shyer and more restless than *J. hyemalis*, and quicker in their motions. They were noisier, too, and their notes seemed louder, but less harsh. I noticed no difference between the habits of the two species. They were always together in the same flocks, and seemed on the best of terms.

On my arrival (December 4) *J. caniceps* was much the more numerous, there being three or four of them to one *J. oregonus*, but as the time went on its numbers diminished, while those of *J. oregonus* increased, until by the middle of the month far the greater part were of the latter species. I think they were all slowly migrating, and that *J. caniceps* went first. As its ranks were gradually thinned out, fresh arrivals of *J. oregonus* filled the vacant places, so that their abundance on the whole remained about the same. Their numbers varied a little, however, from time to time; some days there were more Juncos than on others. December 20, in particular, I noticed them in unusually large numbers. Whether this had any connection with the fact that we had a snowstorm the following day, is one of those things that unfortunately cannot be proved.

These great stretches of weeds were favorite resorts, too, of the Pine Finches (*Chrysomitris pinus*); frequently at my approach a flock of perhaps fifty would rise from the weeds where they had been completely hidden as they clung to them feasting on their multitude of seeds. Then for a long time they would circle around overhead, sometimes going as far as the further side of the cañon, again confining themselves to a much smaller orbit, their circles varying from a hundred yards to a quarter of a mile in diameter. Finally they would settle in some other weed patch a short distance off, or even in a pine on the edge of the hills, unless they decided that their suspicions of impending danger were well founded, and so disappeared behind some hill as they sought another feeding ground elsewhere. Sometimes the flock as it circled round and round would break up into two, one of which would, after a while, either depart to some more distant place or return and mingle with the other.

In crossing these level stretches, the Gallinas, in its hurrying course, has cut its channel down through the superficial deposits, of which they are formed, to a considerable depth, and along the banks thus made there grows a fringe of bushes in which I occasionally found a solitary Song Sparrow (*Melospiza fasciata montana*) that dodged back and forth with a restless shyness that made its life by no means an easy sacrifice. Here, too, one day (December 12) I came across an immature *Zonotrichia intermedia*, the only one of this species met with during my stay. Possibly it was merely a straggler there, for a bird naturally of

such gregarious habits would hardly be contented to lead a solitary life, were it possible for it to find others of its kind anywhere in the neighborhood.

Following up the cañon farther I was often tempted to turn aside and climb the steep pine-covered hills that border it. Here my first greetings were frequently the harsh screams of a small party of Long-crested Jays (*Cyanocitta stelleri macrolopha*) that were lurking warily among the pines. If I had come very quietly I sometimes found them feeding on the ground, but, ever on the alert, at the slightest alarm they would take to the shelter of the thick upper branches of the pines, where at their leisure they could silently dodge from one tree to another and disappear over the hills, easily distancing pursuit, for, in the thin atmosphere of that altitude, chasing birds up hills which offer a footing of loose stones, is no easy matter. If, however, they have not been frightened, they will stay about in the pines, giving one glimpses of their brilliant plumage as they try to satisfy their curiosity about the invader of their domain, while they fill him with amazement at the noisiness and variety of their harsh and penetrating notes. They are more often to be found on the top of the ridges than at the bottom of the ravines, and seem to prefer places where the scattered pines grow most thickly, and also trees that are not very high and whose branches are dense. Occasionally they take to the piñons at the head of a ravine, and I have even found them in a clump of scrub oaks high up on the hills.

Like others of their family, when the flock is moving from place to place they never fly all at once, but go quietly one at a time at short intervals, as if they did not like to attract too much attention to their movements. In crossing a ravine, or in any prolonged flight, they are apt to set their wings, and sail like a Canada Jay.

Their commonest cry is a *whee-eeesh*, long drawn out, rather wheezy, and with a penetrating character suggestive of the Cat-bird's cry. Another note, not heard as often, is one repeated several times, that sounds like a weak, harsh imitation of the *wake-up* of *Colaptes auratus*.

They have one noticeable habit, especially when wounded, to alighting on a lower branch of a pine close to the trunk, and then hopping up from branch to branch, with short pauses, until

lost to sight in the top of the tree. Like all Jays they are of by no means confiding nature, and though not extremely shy, are very wary. When they see you coming they will peer at you suspiciously through the branches, and then very likely conceal themselves, or prudently take flight.

Walking on across the hills, I did not often go far without coming upon a troop of Nuthatches roving about among the pines. There would be from half a dozen to a dozen or more Pygmy Nuthatches (*Sitta pygmaea*) in the party, and usually one or two of their Slender-billed cousins (*Sitta carolinensis aculeata*), frequently several Mountain Chickadees (*Parus montanus*), and occasionally a Creeper or two (*Certhia familiaris*). Two or three times I found a Gairdner's Woodpecker (*Picus pubescens gairdneri*) that had joined the company. The Pygmy Nuthatches, though the smallest, not only excelled in numbers, but were by far the most self-asserting and noisy. They were very active, moving about rapidly among the branches of the pines in their search for food. Their motions had much more of the Chickadee character and less of the Creeper than I have seen in the other American Nuthatches. They frequented chiefly the smaller branches, flying from branch to branch, perching like any other bird, swinging and bending about to reach their food like a Chickadee, and not often running along the trunks and branches *à la Certhia*. Occasionally one would stop and hammer on a branch like a Woodpecker, making a noise that seemed out of proportion to so small a bird. Indeed it could be heard at quite a little distance, and might almost be mistaken for the tapping of one of the smaller Woodpeckers.

They uttered their notes almost unceasingly, and the whereabouts of a flock could be easily discovered some distance off. None of their notes have the harsh *hank*-like character of the other Nuthatches. The one most constantly to be heard was a *chip* that had a very Sparrow-like sound. This was usually uttered several times in quick succession. Once one indulged in an attempt at song. The individual notes were much like the ordinary *chip*, but the general effect was a not unpleasing warble. He uttered mere snatches of his song, however, as if he were aware that it was out of season, and as if some passing thought of spring time had merely recalled it to his mind.

They are excitable little birds, and showed much concern when I had shot one of their company, scolding me vigorously

for my evil doing. Possibly sympathy for their companion was not the only cause of their excitement, for an unsuccessful shot aroused a great deal of noise among them for a few moments.

In their habits and notes the Sleuder-billed Nuthatches seemed to differ in no way from *S. carolinensis*, except that their cry was more plaintive and querulous, and lacked the resonant twang of the eastern bird.

The Mountain Chickadees behaved much like *P. atricapillus*, but their motions were quicker, and they seemed more restless, seldom staying long in one spot; and, perhaps for this reason, they did not appear to be as tame. Their notes are quite similar, but by no means identical. They have a *phé-be* much like that of the Blackcap, but feebler, harsher, and without its melodious qualities. They utter a *dé-dé* that is weaker and less resonant than the corresponding notes of *P. atricapillus*, and a *chick-a-cheé-chee* much like the other's *chick-a-dé-dé*, but like their other notes differing by being rather feebler and harsher.

The Gairdner's Woodpeckers were not abundant. Besides those met with in company with the Nuthatches and Chickadees on the hills, I saw only two others. These were among the low willows bordering the river below the mouth of the cañon. However, they were commoner than Harris's Woodpecker (*Picus villosus harrisi*), of which I saw not more than two or three altogether. They were on the highest parts of the hills, and were solitary birds. The only other Woodpecker met with was *Colaptes mexicanus*, which, though more numerous than Harris's, was far from abundant. I saw perhaps half a dozen during my three week's stay, all of them on the hills.

The diet of most of these birds included but a small proportion of insects. An examination of the stomach of every individual shot showed that both species of Nuthatches fed chiefly on vegetable substances, probably the seeds of the pines. They ate sparingly of insects, but the frequent presence of gravel in their stomachs showed that their habitual food was vegetable. In *Parus montanus* every stomach examined contained seeds or other vegetable substances, and in nearly every case some gravel. In two out of five there were some insects in addition to the other food. Even the Creepers ate more largely of seeds than of insects, and a Harris's Woodpecker had filled his stomach with fragments apparently either of piñon seeds or acorns, with the addition of but a few insects. Whether this diet was due to

preference or to a scarcity of suitable insects is a question for the entomologists.

On the top of one of the smaller hills one day (December 20) I came upon a small flock of Crossbills. They were scattered about among the upper branches of the pines, where they were busily feeding among a flock of Nuthatches and Chickadees. I secured one bright male, but the others took fright and were off, and I did not see them again. This one proves on comparison to be *Loxia curvirostris bendirei*, and doubtless his companions were of the same race.

I was following up one day the side of one of the ravines that run from the main cañon back among the hills, when, as I came to a point where the increasing steepness of its sides showed that I had nearly reached its head, I had my first sight of that strange and interesting bird, Townsend's Solitaire (*Myiadestes townsendi*). He was sitting motionless on one of the lower branches of a pine close to the trunk, and was singing. As he sat there he had somewhat the air of a Hermit Thrush. I could not long resist the desire for a closer acquaintance, and when I shot him he flew, wounded, and sailed with outstretched wings for some distance along the hillside. On the wing he bore such a striking resemblance to a Mockingbird, that my companion was completely deceived, and exclaimed in surprise, "You've shot a Mockingbird."

Their song I heard several times. It is not loud and striking, but is clear, sweetly modulated, and full of expression, and is long, sustained. In its character it reminded me of the Bluebird's (*Sialia sialis*) warble, while occasional notes were suggestive of the Thrushes' songs. It sounds as if it came from a distance even when the singer is quite near. Almost all that I saw or heard were high up on the steep sides of the ravines where they were narrow and deep. The steep slopes were covered with loose stones and gravel, with occasional ledges of rock, and bore scattered pines and patches of scrub oak, and near the top, piñons and occasional cedars.

Higher up on the top of the hills are the favorite haunts of the Spurred Towhees (*Pipilo maculatus megalonyx*), a species which occurs in but small numbers. Those I found were in large clumps of almost impenetrable scrub oaks, where they kept on or near the ground and were consequently not easy to obtain.

(To be continued.)

SEXUAL SELECTION AND THE NESTING OF BIRDS.

BY J. A. ALLEN.

MR. HENRY DIXON, in a paper 'On the Protective Colour of Eggs,'* follows Mr. A. R. Wallace in dividing "birds into two great classes—one in which the sexes are alike and of conspicuous or showy colours, and which nidificate in a covered site; and the other in which there is a marked difference between the colour of the sexes, the male being showy and the female sombre, and which nidificate in an open site"; and he subdivides them "into several minor groups, which will include all the 'exceptions' to either great rule." Having once written on this subject† I return to it reluctantly, and only because there seems to be something still to say on the other side.

Mr. Dixon's first group consists of "Birds in which the plumage of the male is bright and conspicuous in colour, and that of the female dull and sombre, and which nidificate in open sites." Under this heading, in referring to the fact that "the plumage of the female bird is in a great many cases far more sombre than that of the male," he says: "Until recently the cause of this phenomenon was never dreamed of. It is an ascertained fact that the colour of many female birds is connected in no small degree with their *mode of nidification*, and that the sitting bird is protected by the harmony which exists between its own sober plumage and the colour of the surroundings of its nesting-site. Let us glance over the nesting-habits of some of our best-known birds, and learn the working of this law." As examples of this great group he cites certain Pheasants and Grouse, various Ducks, the Blackbird (*Merula merula*) and Ring-Ouzel (*M. torquata*), several Finches and the Stonechat (*Pratincola rubicola*), in which 'the diversity of plumage between the sexes' shields the female during the season of nidification. In most of the instances cited this is eminently true, but there are glaring exceptions. Indeed, it will readily occur to ornithologists that several

* In Seebohm's 'History of British Birds,' Vol. II, Introduction, pp. x-xxxii.

† See paper entitled 'An Inadequate "Theory of Birds' Nests,"' in Bull. Nutt. Orn. Club, Vol. III, 1878, pp. 23-32.

species of birds of the groups here instanced—species too in which the sexual difference of plumage is at a maximum—resort to hollow trees for greater safety, as is the case with the Wood and Mandarin Ducks (genus *Aix*), the Buffle-heads (genus *Clangula*), and the Sheldrakes *Merginæ*). In other cases, as in our brilliantly colored Grosbeaks, where the female is dull-colored as compared with the male, the male shares in the work of incubation, and is even so indiscreet as to indulge in ecstatic outbursts of song while sitting on the eggs.

Mr. Dixon's second group consists of "Birds in which the plumage of both sexes is showy or brilliant in colour, and which nidificate in open nests." "This group," Mr. Dixon says, "forms one of those exceptions which, at first sight, appears seriously to affect the reliability of the whole theory"; but he believes "it can be shown that the birds included in it may possibly secure their safety in other ways." Unquestionably this is the case; at least they appear to get on quite as well as do the plain plumaged open nest builders. It certainly is true that, as our author states, many "brightly plumaged birds are safe enough in the localities where they build their nests." Mr. Dixon even suggests that "Some gaily attired female birds may have no special enemies against which to guard—their brilliant or showy dress is no disadvantage to them, as is the case with many conspicuous insects; and this fact may in itself explain why it is that they have assumed such tints." He even supposes that as some brilliant females may have become so through natural selection, they may have altered the form of their nest from an open to a covered structure: "and this would explain many of the apparent exceptions to the general rule that gaily dressed female birds sit in covered nests." Unfortunately this is not susceptible of proof, while the probabilities seem quite against the supposition. It is true, as he adds, that we should "also take into consideration what colours are showy in certain haunts,"—that while they would be "very conspicuous in some places they may be especially protective in others."

The third and last group of open nest builders instanced consists of those few species "in which the male is less brilliant than the female," as the Phalaropes, Dotterel, Emu, etc.

Passing to the second great division, 'in which the nests are concealed,' the first group mentioned is composed of "Birds in

which both sexes are brightly coloured and which rear their young in holes or covered nests." As British representatives of this group are cited the Kingfisher, the Woodpeckers, the Tits, Gold-crests (Kinglets), and Nuthatches, the "showy Swallows and Martins," the "gaudy Rollers and brilliant Bee-eaters," the Hoopoe, Wall-Creeper, and Common Sheldrake, in which both sexes are equally conspicuous and nest in holes. Reference is also made to the American Orioles (Icteridæ) and several Australian birds.

The next group consists of "Birds in which both sexes are dull in colour, and which build covered nests from motives of safety other than concealment." Respecting this group Mr. Dixon says, "I do not think that the fact of dull-coloured females sitting in covered nests can be taken as a serious objection to the law of bright-coloured females sitting in covered nests": and cites the many other obvious advantages mentioned by Darwin in his 'Descent of Man' (Vol. II, p. 168), as protection from enemies or the elements. These advantages are in many cases so evident that it seems unnecessary to call in the far-fetched explanation that plain-colored birds nest in this way because they 'may' have descended 'from some showy ancestor that built in a covered nest.' A number of instances are then cited showing the advantages other than concealment of a covered or domed nest, or of nesting in holes in trees or banks. Other instances of covered nests (presently to be cited) might have been added to show that such nests are often constructed to serve especially as protection from enemies.

The next group mentioned is that of "Birds in which the female is duller in colour than the male, and which nidificate in covered nests"; and which is cited as furnishing "convincing proofs of the theory of sexual selection" (!). Yet after mentioning various species and genera of birds in which 'the female is far less brilliant than the male,' it is suggestively admitted, "nevertheless she sits in a covered nest, although we cannot see any valid reason why she should require *concealment* during the period of incubation; in all cases her colours are dull and well adapted for safety in an open nest." Among the 'possible explanations' suggested is the very rational one that the domed nests "may be for the purpose of shielding the sitting bird and its charge from cold, or rain, or from some special

enemies." Again, it serves to conceal the eggs, where they are, as in many cases, conspicuous; and also allows the gaudily plumaged male bird to assist in incubation; yet this also happens when the nest is an open one. "If we grant," says Mr. Dixon, "that these domed nests are built for other purposes than concealment of the sitting female, it is easy to explain the great difference of colour between the sexes. The more brilliant colours of the males have been obtained by sexual selection"; and proceeds to cite cases where the domed nest is evidently not built for the purpose of concealing the female. This dictum, however, appears to be the only 'proof' deduced from the consideration of this group, which furnishes such "convincing proofs of the truths of the theory of natural selection." The author then considers 'Birds' Nests' and 'Birds' Eggs, studied in relation to their colour.' The last subject is treated at some length in a thoroughly rational and admirable manner, but respecting 'Birds' Nests' we beg to offer one or two criticisms. But first let us return to the first part of the subject, the coloration of female birds in respect to the manner of nesting.

In my former paper on this subject I ventured to say, "The most surprising thing about Mr. Wallace's 'Theory of Bird's Nests' is its inadequacy, and its irrelevancy to the facts it was proposed to explain"; and further attention to the subject only serves to confirm my conviction that the above statement was not inconsiderately made. Mr. Wallace says that the 'first thing we are taught' by a consideration of the facts involved, is "that there is no incapacity in the female sex among birds to receive the same bright hues and strongly contrasted tints with which their partners are so often decorated, since whenever they are *protected and concealed* during the period of incubation *they are similarly adorned*."* In point of fact, however, this statement is far from correct, for it often happens that where the males are especially brilliantly colored and the females are exceptionally dull-colored, they either build domed nests or nest in places of concealment, as in the Superb Warblers (genus *Malurus*) of Australia, and the great family of Sunbirds (Nectariniidæ), etc. † while on the

* The italics are Mr. Wallace's own.

† Numerous individual cases may be cited among many other families, where the rule is an open nest, and the exceptions of concealed or domed nests are presented by species in which the sexual contrast in the color of the birds is greater than among their near allies which build an open nest.

other hand nearly as many birds (probably *fully as many*, proportionately to their whole number) in which both sexes are among the dullest plumaged of all birds, build a domed nest or nest in holes. Take, for example, the great family of Wrens (Troglodytidæ), and especially the great South American family Dendrocolaptidæ, particularly its subfamilies Furnariinæ and Synallaxinæ, in which the species as a rule build a domed nest, either of mud or sticks. Some of these nests, as those of the genus *Synallaxis* and its allies, are among the most remarkable examples of bird architecture, being immense structures (compared with the size of the builders) of sticks, which they enter by narrow, winding passages, or through long tubes of interlocked thorny twigs, the whole structure being obviously contrived for the purpose of keeping out enemies. Even birds of the genera allied to *Malurus*, already mentioned, consisting of species in which both sexes have plain and 'protective' colors, also build domed nests. Even among the Swallows and Martins it is the species having the plainest colors which build in holes in banks, or in the otherwise most concealed and protected situations. Again, the Creepers (genus *Certhia*) are sexually alike in color, and of eminently plain and protective tints, yet they nest in holes. The Nuthatches and Tits, at least many of them, are no more conspicuous in respect to coloration than perhaps the average of birds which build open nests. In the great family of American Warblers (Mniotiltidæ), one of its plainest members, the Ovenbird (*Siurus auricapillus*), and one of the few species of the family in which the sexes are alike, builds a domed nest, contrary to the rule prevailing in the family. In short, scarcely a family or subfamily among Passerine birds can be named in which we do not meet with cases of just this character, some of them presenting many such. Consequently *it is not the rule* that birds which breed in domed nests or in places of concealment are brightly or gayly colored, and that "whenever they [the females] are *protected and concealed* during the period of incubation *they are similarly adorned*" (i.e., with "the same bright hues and strongly contrasted tints of their partners").

In view of the real facts in the case, it seems not rash to assume that concealment of the female during the period of incubation has nothing, or at least very little, to do with this method of nidification, since it not only does not bear out the theory erected

upon a misapprehension of the facts in the case, but is susceptible of a far more rational explanation. As already noted, Mr. Dixon frankly admits that in the case of dull-colored birds which build covered nests or which nest in holes, "other advantages may be gained irrespective of concealment," and concealment in such cases is considered as unnecessary. These advantages may be in some cases shelter from rain, protection from the sun, or sudden changes of temperature, or greater security from enemies, or concealment of the eggs, which are generally, under such circumstances of nidification, *white*, or at least conspicuous in coloration. Here, it seems to me, comes in the only function of concealment—namely, that of the *eggs* rather than the sitting female.

In my former paper on this subject I referred to this latter point in the following words: "In conclusion, I desire to call attention to an interesting coincidence between the manner of nesting among birds and the color of the eggs, and one so striking that it is almost surprising that some ingenious theorist has not seized upon it as a basis for a 'theory of birds' nests,' either independently or as a modification of that proposed by Mr. Wallace. It curiously happens that nearly all the birds that nest in holes, either in the ground or in trees, lay *white eggs*, embracing, for instance, all the Woodpeckers, Kingfishers, Bee-eaters, Rollers, Hornbills, Barbets, Puff-Birds, Trogons, Toucans, Parrots, Paroquets, and Swifts, while only occasionally are the eggs white in species which build an open nest. In only two or three groups of land birds, co-ordinate with those just named, that build an open nest, are the eggs white, namely, the Owls, Humming-Birds, and Pigeons. On the other hand, in only two or three small groups of species that nidificate in holes are the eggs speckled or in any way colored. There is, in fact, a closer relationship, or rather a more uniform correlation, between the color of the eggs and the manner of nesting than between the color of the female parent and the concealment or exposure of the nest. There are, however, here apparently too many exceptions to bring this coincidence into the relation of cause and effect."* Further examination of the matter, however, shows that the coincidence of white eggs and a covered or concealed nest is much more general than the above quotation indicates, the ex-

* Bull. Nutt. Orn. Club, III, p. 32.

ceptions to the rule being very rare; for to the above groups must be added the hundreds of species of Passerine birds which build a domed nest, as the Malurine birds, the Weaver Birds, the Munias, the Willow-warblers, the Sunbirds, the Pittas, the Tailor Birds, the great Synallaxinine series, and *many* others. In all these cases the eggs as a rule are pure white, and when deviating from this are simply pale bluish white, or white with a few minute specks, or lustrous white speckled with reddish, in such a way as in nowise to render the eggs less conspicuous than if pure white. Mr. Dixon, in his paper now under notice, has called attention to the same facts, and commenting on this coincidence says, "This law is almost universal.*"

If we pass to water birds, we find many of the Petrels nesting in holes and laying white eggs; and that the Ducks and Grebes lay white or nearly white eggs, and, though building an open nest, cover them on leaving them; and, it may be added, the same is true of many Pheasants and Partridges.

There are, on the other hand, birds which lay white eggs in an open nest, but the number is few in comparison with those which lay white eggs in nests affording concealment, or colored eggs in open nests. Again, some eggs laid in open nests are intensely white in ground-color, with markings which tend to make them more conspicuous rather than contribute to concealment. Such are the eggs of most of the great group of Tyrant Flycatchers of America. Of species laying white eggs in open nests, the Pigeons and the Hummingbirds are prominent examples, embracing as they do a multitude of species. To this list may be added a few ground-nesting Hawks and Owls which lay white, or at least whitish, eggs, and the Herons, Storks, Pelicans, and Cormorants. In respect to these exceptions, it may be said that the Tyrant Flycatchers are especially watchful of their nests and courageous in their defense, and succeed in driving away even predacious birds greatly exceeding them in size. The Pigeons and some Goatsuckers, as Mr. Dixon suggests, build a very

* He adds, however, as a part of the same sentence, "and, curiously enough, white eggs are correlated to a great extent with the brilliant plumage of the bird; for we have already seen how so many of these showy birds breed in covered nests." This latter fact, however, loses much of its significance when we remember that nearly as many other birds of equally brilliant plumage lay *colored* eggs in *open* nests, and also that nearly as many dull-colored birds as bright-colored ones lay *white* eggs in nests which afford them concealment.

slight and inconspicuous nest, and, as a rule in dense cover. He also adds, very pertinently, respecting the Herons, Cormorants, Pelicans, and Storks, that in these cases it is quite evident "that the birds by their own prowess alone shield their eggs from danger: besides, most of these birds are gregarious, and are well able to beat off any enemy that is likely to approach, if not singly, by uniting for the purpose, so that it is of no special advantage for them to conceal their eggs."

In respect to spotted eggs, laid in covered nests, in which the color is as much 'protective' in character as in the case of their allies which lay in open nests, they usually belong, it may be stated, to groups which as a rule breed in open nests, as the Magpie, for example, among the Corvidæ.

As a rule, spotted eggs are laid in open nests, and are in most cases 'protective' in coloration, as is the case generally with ground-nesting birds, in which the tints of the eggs often strikingly harmonize with their surroundings. In the case of tree-nesting species, the color of the eggs is less 'protective'; but the position of the nest is in a measure an element of safety, at least in respect to non-scansorial enemies, like many of the smaller mammals, which prey more or less upon the eggs or nestlings of ground-nesting birds.

It is therefore evident that the color of the eggs has an intimate relation to the manner of nesting, white eggs as a rule being laid in covered nests or concealed nesting-sites. But a distinction should be made in respect to different kinds of covered nests, in reference to the matter of security against enemies. The bulky nests of the Synallaxinæ, composed of coarse, interlocked, often thorny sticks and twigs, or the globular mud nests, the walls of which become of a brick-like hardness, of the species of *Furnarius*, may well be classed, on the ground of protection against enemies, with nests built in excavations in trees or in the earth, while the loosely constructed domed nest can scarcely serve otherwise than for concealment of the eggs, or young, or the sitting bird. The large size of such nests, however, must sometimes render them a too conspicuous object to give any real advantage, but in other cases, and generally when placed on the ground, the nest itself is artfully concealed. In regard to nesting in holes, in trees or the earth, the object gained is obviously protection in the broader sense rather than concealment of the female

during incubation, *on account of her bright colors*. It seems therefore needless and wholly gratuitous to resort to any theory of sexual selection to account for the diverse methods of nest-building among birds. Really, however, it is not the sitting bird, in the case of open nests built in trees, whether she be bright or dull-colored, or the contents of the nests, whether eggs or nestlings, that lead to its discovery so much as the size and conspicuousness of the nest itself. Neither is the sitting bird herself so much in danger as her charge, be it either eggs or nestlings. The chief enemies of tree-nesting birds are squirrels, monkeys, other aboreal mammals, and nest-robbing birds, to all of which the nestling birds, particularly if very young, are as welcome as the eggs, and in general they are much less conspicuous objects than are either the eggs or the sitting female.

Now a word on another point. Mr. Wallace, and after him Mr. Dixon and others, in discussing the question How do young birds learn to build their first nest? claim that 'instinct' has nothing to do with the matter,—that they learn by observation and are guided by memory! Says Mr. Wallace: "It has, however, been objected that observation, imitation, or memory, can have nothing to do with a bird's architectural powers, because the young birds which in England are born in May or June, will proceed in the following April or May to build a nests as perfect and as beautiful as that in which it was hatched, although it could never have seen one built. But surely the young birds *before* they left the nest had ample opportunities of observing its *form*, its *size*, its *position*, the *materials* of which it was constructed, and the manner in which those materials were arranged. Memory would retain these observations till the following spring, when the materials would come in their way during their daily search for food, and it seems highly probable that the older birds would begin building first, and that those born the preceding summer would follow their example, learning from them how the foundations of the nest were laid and the materials put together. Again we have no right to assume that young birds generally pair together," etc. Mr. Dixon restates the case in much the same way. Alluding to 'blind instinct' as a factor in the case, he says: "To credit the bird with such instinct, which because it seems so self-evident is taken to be matter of fact, is to admit that it

possesses intellectual powers infinitely superior to those of man; whilst the evidence that can be gathered on the subject all goes to show that its intellectual powers are of precisely the same kind as man's, but some of them, of course, are infinitely inferior in degree, whilst others are unquestionably superior." He assumes that *imitation, memory,* and hereditary habit, 'play the minor parts.' "To credit birds," he says, "with such marvellous power as blind and infallible instinct in building their nests would be to place them far beyond man himself in intelligence, and allot to them a faculty which is superhuman. . . . A bird's intellectual powers advance towards maturity much more quickly than in the human species. A young bird three or four days old is capable of considerable powers of memory and observation, and during the time that elapses in which it is in the nest it has ample opportunity of gaining an insight into the architecture peculiar to its species. It sees the position of the nest, it notes the materials, and when it requires one for itself, is it so very extraordinary that, profiting by such experience, it builds one on the same plan? Again, birds often return to the place of their birth the following season, and possibly see the old home many times ere they want one for themselves. This, aided by the strong hereditary impulse to build a nest similar to the one in which they were born, inherited from their parents, aids them in their task." This reasoning, I am free to confess, strikes me, to say the least, as extraordinary! A degree of mental power, at least of memory and of imitation, is ascribed to young birds which is not only 'superhuman,' but of which there is neither proof, nor even possibility of proof. Mr. Dixon has the 'three or four days old' nestling taking note of and memorizing its surroundings before, in the case of the higher Oscines, *it has the power to even open its eyes!* Yet with all this ascribed precosity and keenness of observation, and this wonderful power of memory and imitation in young birds, Mr. Dixon finds it necessary to call in the aid of "a strong hereditary impulse to build a nest similar to the one in which they were born," which is more than a half-way admission of all that is implied in the modern interpretation of instinct, or the 'blind instinct' of the non-scientific writer. It we interpret instinct as 'inherited habit,' what better explanation do we need of the ability of young birds to build a nest like that of their parents or of their species? In view of the slight evidence available as to how much a nestling bird can

take cognizance of its surroundings, and make mental note of them for purposes of imitation at a remote future, does not the assumption of such extraordinary powers of imitation and memory border upon absurdity? To extend the theory, which it is perfectly legitimate to do, to other classes of animals, does the tadpole, or the embryo fish (in the case of the nest-building species) also remember the exact position, structure and materials of its maternal nest? Does the young turtle remember throughout the long years of its adolescence the precise nature of the spot from which it emerged, so as to select a similar place for its own eggs? Or does the larva of an insect remember, through its various stages of metamorphosis, the exact arrangement of the egg from which it was hatched in relation to the eggs of its brother larvæ so distinctly as to be able to deposit its own eggs in a similar situation and similar order of arrangement? Why, indeed, the idea that birds are guided by 'instinct,' taking the term as interpreted by modern science, is so repugnant to a certain class of minds, or why they will persist in denying that *any evidence in its favor exists*, is to me at least incomprehensible. In short, I agree exactly with Mr. Seebohm in his footnote appended to Mr. Dixon's essay, in which he says: "I regard the word Instinct as the popular term for the mysterious impulses which scientific men call Hereditary Habit; and I think that it plays a great part, an overwhelmingly great part, not only in Bird-nest building, but in every other action of every animal, man included. . . . If Hereditary Habit have the lion's share in the production of a birds' nest, we must allow that Memory, Imitation, and a rudimentary form of Reason also play their subordinate parts." In these few words, it seems to me, we have the sum of the whole matter, and a rational answer to the question of how young birds build their first nest.

NOTES ON SOME OF THE BIRDS OF PUEBLO, COLORADO.

BY CHARLES WICKLIFFE BECKHAM.

THE following observations were made principally in the immediate neighborhood of Pueblo, Colorado, during the season of 1883.

Pueblo is one hundred and twenty miles south of Denver, at the junction of the Fontaine qui Bouille and the Arkansas River, forty miles west of the point where the latter emerges from the mountains. The surrounding country is a dreary waste of cactus, sage-brush, and soap-weed, but along the river and the creek, the vegetation is comparatively luxuriant. Naturally nine-tenths of the birds are to be found in these more favored localities. Owing to other engagements but little time could be given to collecting, and the list is therefore necessarily incomplete.

The writer is indebted to Mr. Ridgway for material assistance in preparing these brief notes.

1. *Hylocichla ustulata swainsoni* (Cab.). First observed on May 13 and by the 20th they had become very common.

2. *Merula migratoria propinqua* Ridgw. Abundant.

3. *Oreoscoptes montanus* (Townsend.). Not common. Preferring, with obviously bad taste, the cactus and sage-brush of the plains to the luxuriant vegetation along the water-courses. Its song is very soft and low, as if it were disinclined to 'waste its sweetness on the desert air.'

4. *Mimus polyglottus* (L.). Rather common on the outskirts of the town. The same versatile mimic here as everywhere else.

5. *Galeoscoptes carolinensis* (L.). Not common and rather shy.

6. *Harporhynchus rufus* (L.). An abundant bird along the streams.

7. *Cinclus mexicanus* Sw. One seen in a cañon in the Greenhorn (Sierra Mojada) Mountains, thirty miles southwest of Pueblo.

8. *Sialia sialis* (L.). A female, the only one recognized, was shot on April 25.

9. *Sialia mexicana* Sw. Rather common up to the first of May. Frequently seen out on the prairie, as well as along the streams.

10. *Sialia arctica*, Sw. More abundant than the preceding. Breeding.

11. *Myiadestes townsendi* (Aud.). First observed April 22, and they afterwards became rather common up to June 1. Much on the ground, and generally somewhat shy. Heard no note at all from them at this time, but during the last week in September they were very abundant at Manitou, forty-five miles northwest of Pueblo, in Williams Cañon and the Garden of the Gods, where their delightfully sweet songs were often the only sounds to be heard in those rocky solitudes.

12. *Parus montanus* Gamb. A small party of four or five were observed April 6 in Greenhorn Cañon, thirty miles southwest of Pueblo.

13. *Thryomanes bewicki leucogaster* Bd. The only one seen, a male, was shot out of an old stunted cottonwood, containing several abandoned Magpie nests, about which the bird dodged for fully fifteen minutes before giving me a chance to shoot. This record, I believe, considerably extends the known range of the form.

14. *Troglodytes aëdon* L. Common on the outskirts of town, but none were seen in the town itself.

15. *Dendroeca aestiva* (Gm.). First observed May 4, after which it became one of the commonest species.
16. *Dendroeca auduboni* (Townsend). First observed May 4. Rather common for several weeks; much on the ground in company with the Grass Finch.
17. *Geothlypis macgillivrayi* (Aud.). Rather common during the third week in May.
18. *Geothlypis trichas occidentalis* Brewster. Not uncommon. First seen May 6.
19. *Icteria virens longicauda* (Lawrence). Common in the thickets along the river. Much less shy than the eastern form.
20. *Setophaga ruticilla* (L.). A female, shot May 27, was the only one seen.
21. *Vireosylva gilva* (I.). Not common.
22. *Lanivireo solitarius plumbeus* (Cassin). Three or four were taken during the month of May.
23. *Hirundo erythrogastra* Bodd. Common along the river and the Fountain.
24. *Tachycineta thalassina* (Swainson). Observed but once, June 10, when a dozen or more were seen.
25. *Stelgidopteryx serripennis* (Aud.). Common along the streams.
26. *Pyrranga ludoviciana* (Wilson). No females were recognized, but the males were rather common from May 15 to June 1. A mile or so up the Fountain was a place where the offal from a neighboring slaughterhouse was dumped, and the Tanagers, in company with Bullock's Oriole and the Arkansas Flycatcher, could always be found there in considerable force, feeding on the swarms of insects attracted by the odoriferous deposit.
27. *Carpodacus frontalis* (Say). Abundant everywhere.
28. *Astragalinus tristis* (L.). Common, in same flocks with the Pine Finch.
29. *Astragalinus psaltria* (Say). Common.
30. *Chrysomitris pinus* (Wilson). Common.
31. *Poœetes gramineus confinis* Belding. Very abundant.
32. *Chondestes grammica strigata* (Say). Probably the most abundant species to be found here.
33. *Zonotrichia leucophrys* (Forster). Not uncommon in May.
34. *Zonotrichia gambeli intermedia* Ridgway. Very abundant. A lazy, sleepy sort of a bird, using a good deal in the trees.
35. *Spizella domestica arizonæ* (Cassin). Not uncommon.
36. *Spizella pallida* (Swainson). Very abundant. Almost exclusively terrestrial. Note a wheezy rattle, hardly rising to the dignity of a song.
37. *Junco oregonus* (Townsend). Apparently not very common. Only observed in March and early in April.
38. *Junco caniceps* (Woodhouse). Rather common in April. A female shot on June 1.
39. *Melospiza fasciata fallax* Belding. Apparently not very common.

40. *Melospiza lincolni* (*Aud.*). Common in undergrowth in company with other Sparrows.

41. *Pipilo maculatus arcticus* (*Sw.*). Rather common in the foothills thirty miles southwest, but only a few observed in the immediate vicinity of Pueblo.

42. *Pipilo chlorurus* (*Townsend.*). Abundant.

43. *Zamelodia melanocephala* (*Sw.*). First seen May 4, after which the males became very abundant; no females at all were recognized. A nest containing four eggs was taken on June 1, and the male shot just after leaving it. Their song, almost always delivered from the topmost branch of a tree, is very full and sonorous, and very similar to that of the Robin.

44. *Guiraca cærulea* (*L.*). A female, shot on June 10, and a male seen were the only two observed.

45. *Passerina amœna* (*Say*). Common, but none were seen until May 15.

46. *Molothrus ater* (*Bodd.*). A male, seen on May 27, was the only one recognized.

47. *Xanthocephalus icterocephalus* (*Bp.*). A large flock was several times seen a mile and a half up the river.

48. *Agelæus phœniceus* (*L.*). Abundant. A colony of them breeding within the 'city limits.' A very comprehensive term as applied to western 'cities.'

49. *Sturnella neglecta* *Aud.* Abundant. When I first heard the note I had no idea from what sort of a bird it proceeded.

50. *Icterus bullocki* (*Sw.*). Very abundant. Before the leaves appeared, their compactly woven nests (old ones, of course) were very conspicuous objects on the cottonwoods, bordering the Fountain.

51. *Scolecophagus cyanocephalus* (*Wagl.*). Common. Found breeding.

52. *Pica rustica hudsonica* (*Scop.*). Very abundant. The Magpie has a very bad name out here, but like the Devil, is not, perhaps, 'as black as he is painted.' Hundreds of them breed in the cottonwood a mile or two down the river, and their immense globular nests, made exclusively of sticks, are everywhere to be seen. They begin laying, I think, about April 15, and a month later the young are able to fly. Seven or eight eggs appear to be the usual number to a clutch.

53. *Cyanocitta stelleri macrolopha* (*Bd.*). A party of seven or eight were seen on Sept. 24 in the immediate vicinity of town. They were perfectly silent and acted generally as if they had been doing something that they ought not to have done, and were anxious to get back to the foothills. In the Greenhorn Mountains, and at Manitou, I found them very abundant. The ranchmen in the former locality accuse them of robbing hen's nests, and foraging on the garners where grain is stored.

54. *Eremophila alpestris leucolaema* *Cs.* Very common. The specimens taken are provisionally referred to this form, although, according to Mr. Henshaw, there are two distinct races whose range includes Pueblo.

55. *Tyrannus carolinensis* (*L.*). Common.

56. *Tyrannus verticalis* Say. Very abundant from May 6 to September 24.

57. *Contopus richardsoni* (Sw.). Common in open places.

58. *Empidonax hammondi* (Xantus). Common.

59. *Phalænoptilus nuttalli* (Aud.). But one seen, May 24.

60. *Chordeiles popetue henryi* (Cass.). Common during the first ten days of June.

61. *Picus pubescens gairdneri* (Aud.). Not common, apparently, as but two were seen. One of them, a female, shot May 26, had but one leg; the loss of the other was doubtless due to some accident.

62. *Melanerpes erythrocephalus* (L.). First observed on May 15. A week later they were common both in the town as well as in the country, in fact, everywhere except on the prairie.

63. *Melanerpes torquatus* (Wils.). A male, shot May 13, was the only one seen. Very wary; followed him at least half a mile before I could get a shot.

64. *Colaptes auratus mexicanus* (Sw.). Abundant.

65. *Geococcyx californianus* (Less.). Alderman Morse of Pueblo informs me that he has found the Chaparral Cock twenty miles down the river.

66. *Asio accipitrinus* (Pall.). A male, the only one observed, was shot near the river on April 1.

67. *Bubo virginianus subarcticus* (Hoy). Saw several in captivity, captured near Pueblo.

68. *Speotyto cunicularia hypogæa* (Bp.). Common in the prairie dog colonies near town. I have wasted a great deal of energy, patience, and time, vainly trying to get a shot at this very knowing bird. They always managed to keep a minimum distance of six feet or so between themselves and the ultimate range of my gun.

69. *Tinnunculus sparverius* (L.). Abundant. Not at all wary.

70. *Haliaëtus leucocephalus* (L.). Several were seen at Manitou in September. None noted at Pueblo.

71. *Cathartes aura* (L.). Observed two or three times near Pueblo.

72. *Zenaidura carolinensis* (L.). Excessively common.

73. *Ardea herodias* L. A mounted specimen in Corder's drug store, Pueblo, is said to have been shot near the town.

74. *Oxyechus vociferus* (L.). The Killdeers were quite common along the river and the Fountain, where they were breeding.

75. *Podasocys montanus* (Townsend). Not uncommon out on the dry and sandy 'prairie.'

76. *Ereunetes pusillus* (L.). But once observed, May 17, when a male was shot out of a small flock on the river.

77. *Totanus flavipes* (Gm.). But one specimen, shot May 8.

78. *Tringoides macularius* (L.). I have never found the ubiquitous 'Peet-weet' anywhere as abundant and noisy as here.

79. *Númenius hudsonicus* Lath. Mounted specimens of this and the next, in Corder's drug-store, are said to have been taken near Pueblo.

80. *Recurvirostra americana* Gm.
 81. *Rallus virginianus* L. But once observed—May 20—in a marsh near town.
 82. *Grus canadensis* (L.). One recently shot was seen in market in South Pueblo.
 83. *Anas boschas* L. Abundant in April and September on the river.
 84. *Chaulelasmus streperus* (L.). One was shot out of a flock of five on May 15.
 85. *Querquedula discors* (L.). Common in May and September on the river.
 86. *Querquedula cyanoptera* (V.). Not uncommon in May on the river.
 87. *Nettion carolinensis* (Gm.). Common on the river in April and September.
 88. *Erismatura rubida* (Wils.). A male, the only one seen, was shot on a pond May 11.
 89. *Lophodytes cucullatus* (L.). Alderman Morse of Pueblo informs me that he shot one on the river here several years ago.
 90. *Mergus merganser americanus* (Cass.). Common in April on the river.
 91. *Pelecanus erythrorhynchus* Gm. Mr. Bagley of Rye, Pueblo Co., Col., has a bill of one in his possession which he shot on a large artificial lake near Pueblo in 1880.

A STUDY OF THE SINGING OF OUR BIRDS.

BY EUGENE P. BICKNELL.

(Continued from Vol. I, p. 332.)

Spizella monticola. TREE SPARROW.

THIS hardy Sparrow, though provided through our winters with an unfailling supply of seeds from the catkins of swamp alders and the dried flower-clusters of golden-rods and other withered weeds which reach above the snow,* seems nevertheless

* The number of wild plants and trees that keep their seed through the winter is greater than the casual observer would be likely to believe. During a recent winter I gave some attention to this subject, noting down all the trees and plants found with seed. No systematic or extended search was made, yet a few midwinter walks gave me a list of about one hundred and fifty names. Some of these were of scarce plants, or those the fruit of which was hardly adapted for a bird's food, but many were of common and widely-spread species, which were well suited to form winter staples for our granivorous birds.

early to become impatient for spring. It is always ready with song for the first mild, sunshiny days after the middle of February, and I have often heard its initial notes on or about the 22d of the month. Sometimes, however, it does not begin to sing until March, and in 1877, when this month was decidedly inclement, the first day of song was March 21. My latest record for song is April 13, but in some seasons it is not heard later than the end of March.

In the fall, singing is unusual, but I have several times heard songs in November, once so late as the 17th.

Isolated dates for singing are January 11, and December 12, 1880; on the latter occasion the song was feeble and imperfect, but on the former it was complete, and several times repeated.

Besides its customary *chirp*, the Tree Sparrow has a low double note, which is uttered mainly while the birds are feeding. This simple and slightly musical sound from many birds busily feeding together produces a low conversational chirping, so pleasantly modulated as to seem like an unconscious expression of contented companionship.

Spizella domestica. CHIPPING SPARROW.

The familiar song of this domestic species we hear in almost every kind of weather, from the bird's arrival in early April on into the summer, usually with no evident falling off until towards the end of July. Then singing becomes less general with the species, and it may cease in the first week of August, though more often, perhaps, prolonged into the second week. My dates for final songs are from the 5th to the 15th, with a single record of the 18th.

Almost two months may now elapse before the song of the Chipping Sparrow is heard again; then singing is transiently resumed. This supplementary song-period occupies a few days only. I have never known it to last a full week in any one year, however abundant the birds might be. The greatest range in the dates of several years is from September 24 to October 10. The first songs of this latter period are sometimes imperfect.

Spizella pusilla. FIELD SPARROW.

This Sparrow also arrives in song, except, as with other birds, in the case of individuals of premature advent. Singing con-

tinues with some yearly regularity until the middle of August, at which time, or even a little before, it may cease; or the time of cessation may be delayed a week or ten days. Latest dates for singing are August 29 and 31. I have noticed no indication of singing in the autumn.

In several instances I have known the songs of early spring arrivals to be so aberrant as scarcely to be recognizable, and have noted similar but lesser variation in the songs of later comers. There is also considerable individual variation in the song, the normal song being sometimes prolonged into elaborate variations. Mr. J. A. Allen has written of this species, as observed in Florida (Bull. Mus. Comp. Zoöl., Vol. II, No. 3, p. 279), that "The songs of the males were so different from those of the northern bird that the species was almost unrecognizable by me from its notes." As illustrating further geographical variation in voice of this species, I may quote from a letter from Mr. Fred. T. Jencks of Providence, that "The Field Sparrow in Illinois usually twice repeats the song he gives in the East."

Junco hiemalis. SLATE-COLORED JUNCO.

Early March is most often the time when we first hear the song of this Sparrow; but, according to the character of the season, the beginning of singing may vary within two weeks in either direction from the average time. After the early days of April, singing is not commonly heard, and in some years it ceases before the end of March. April 17 is my latest record, although the species often remains into May. The Junco has two very different songs: a simple trill, somewhat similar to that of the Chipping Sparrow; and a faint whispering warble, usually much broken but not without sweetness, and sometimes continuing intermittently for many minutes. It seems to slip very readily from a simple chirping, and is always the song with which the species begins the season. Later, the first mentioned becomes the more general if not the only song, as I found it to be in the Catskill Mountains in summer, when the birds were breeding.

The Snowbird does not often sing in the autumn, but I have heard both of its songs in October and November; and it

seems always ready with a few feeble song-notes for any day that comes out sunshiny and mild in sudden change from harder weather.

Melospiza fasciata. SONG SPARROW.

This familiar Sparrow sings with greater constancy through the seasons, and with less regard to adverse weather, than any other of our song-birds. All through the hottest summer weather it is songful, though the oppressive days of late August seem sorely to try its spirit; but it recovers its cheerfulness with advancing autumn, and is one of the few birds which, in that season, repeats its full chorus of the spring. In every month of winter, too, I have heard its song. Not that it sings uninterruptedly throughout the year; for there is an intermission of singing between November and February. But the general rule of silence for these two months is not infrequently transgressed. Its song is one of the first which the waking season brings; though it is usually a little antedated by that of the Bluebird. Like the latter, the Song Sparrows are often in advance of the season, and early in the spring I have found them singing cheerily when the temperature was but little above zero (F.), and even when snow was falling thickly.

The earliest songs of which I have record date January 25 and 27. Ordinarily first songs are not until the middle of February, though it is not unusual to hear them after the first week of the month. In severe seasons they may be deferred until its latter days; but I have never known silence to be kept longer, however inclement the weather. But universal singing with this species does not always proceed directly from the first song; here the weather has much influence. Thus, in the year 1879, the first song was on February 7, but up to the end of the month singing was intermittent and timorous only, and the confident spring song was not voiced until March 5. But when singing has become general, only the most adverse weather can reduce the joyous birds to silence. When the first songs are not until late in February, the impulse to sing is likely to become pretty general in a single week. The earliest songs are sometimes nothing more than feeble warblings without definite beginning or ending, but with favorable weather they quickly pass into the full-voiced aria of spring.

Singing continues through the summer. In some years, chiefly in seasons of drought, it falters under the heats of late July; yet, even at these times, the steadfast little chanters never seem to be wholly discouraged. Through a great part of August they continue in voice; but later singing slackens, and towards the end of the month complete silence is averted only by occasional weak songs.

In August, a change comes over the songs of many of the birds. Their songs lapse into a low, desultory warbling, even more indeterminate than their first attempts in late winter, as if they had lost their early interest or lacked the power to sustain the full pitch of their notes. But it is probable that in the summer time a state of complete silence is never quite reached, though it is much more nearly approached in some years than in others. During these times of uncertain singing the low warble is the more usual song, and sometimes wholly replaces the louder one; but the latter may occur at any season. Sometimes, chiefly in the autumn, the undertoned song is remarkably prolonged, the notes being thrown together with much modulation, but without definite arrangement. In this manner singing may be continued without pause for more than a minute.

From the latter part of September to the middle of October the full song is resumed and, associated with the inferior song, is continued into November. On fine bright October and early November days, the song is sometimes as frequent and given with as much ardor as in the spring. After the first week of November singing is not longer to be depended upon, but fine weather may call it forth up to the end of the month.

Among the various notes of the Song Sparrow are two very different *chirps*, one being particularly characteristic of the species, and a peculiar low chipping. The latter seems to be uttered only in the mating season. In advanced seasons I have heard it at the end of February.

Earlier in this paper I alluded to the wide individual variation in the song of this Sparrow. While scarcely any two of the birds sing just alike, occasionally songs are heard which it is hard to believe are from this species until optical evidence forces conviction. I recall a particular instance of this kind which came under my observation at Sing Sing, N. Y., while in the company of Dr. A. K. Fisher. We were attracted by a song

which was perplexing to us both. It clearly suggested the song of the little Field Sparrow (*Spizella pusilla*), but the locality was not one which that bird would be likely to frequent. With much interest we approached the singer, half expecting to note the occurrence of a rare species. The author of our excitement was a Song Sparrow, evidently wholly unconscious that it was not singing after the manner of its fellows.

Melospiza palustris. SWAMP SPARROW.

Although a simple, unpretentious trill in April, from some wet meadow, bog, or reedy marsh, always first tells me of the presence of the Swamp Sparrow, it cannot be said that the bird arrives in song; for the nature of the places it inhabits, with its retiring disposition, might well keep the secret of its presence until it chooses to make itself known. It is probable, however, that, like most birds, it comes to us in song. Dates of first songs extend from April 4 to 24, but most often fall after the middle of the month.

Early April songs are exceptional, and not improbably are from birds which have remained over winter; as in several seasons after such early songs it has been a week or two before the species was heard again.

The song of the Swamp Sparrow comes up from the swamps and marshes until early August, then it becomes less frequent. Usually it ceases about the middle of the month, sometimes a little before, but not unfrequently it continues later, and I have heard songs even so late as early September. About a month of silence now ensues; then the species comes again into voice. My record gives dates for the recommencement of singing from September 11 (?) and 18, to 28. The time of final cessation is carried into October—15th and 17th are latest dates; but often the song is not heard after the first part of the month. In this supplementary season of song, singing is by no means general, and is usually confined to the early morning hours. But the birds seem more ambitious in their vocalism than earlier in the year. In the spring and summer the song is a simple monotone; in the autumn this is often varied, and extended with accessory notes. A few preliminary *chips*, merging into a fine trill, introduce the run of notes which con-

stitutes the usual song, which now terminates with a few slower somewhat liquid tones. This seems to be the fullest attainment of the bird, and is often only partially or imperfectly rendered.

***Passerella iliaca.* FOX-COLORED SPARROW.**

This fine Sparrow, "the noblest Roman of them all," sings for us both in the spring and in the autumn. My records are comprised between the following dates: February 29 and April 13 in the spring; and October 28 and November 17 in the fall. At neither season are they in song when they first come, unless possibly in a spring when the arrival is late; if they come exceptionally early, singing may be considerably postponed.

In the fall they are sometimes in voice soon after making their appearance; but it is usual for them to be present some time before their mellow notes add their charm to the late autumn. Singing often lasts as late as the second week of November, but rarely later, even though small flocks of the birds remain till the end of the month.

Like many other birds this Sparrow seems indisposed to sing unless present in some numbers, and in seasons when it is uncommon, whether spring or fall, its song may not be heard.

***Pipilo erythrophthalmus.* CHEWINK.**

The Towee Bunting, though it joins the bird community promptly at the first good chance after the middle of April, is sometimes a little tardy in joining the choir; and, if it meets with discouraging weather, is satisfied for a time with simply announcing itself by name. Later its short and energetic song becomes a striking feature of the bird chorus about the hedgerows, and bushy borders of woods, fields and swamps.

Singing becomes decadent towards the end of July, or early in August, and closes at any time from the first to the middle of the month—August 4-18, 20, 22. There is no well-defined second song-period, but I have heard its song several times in September, and once in October (October 7, 1881), when it was several times repeated.

In late summer, after singing has ceased, the *chewink* notes become weak and infrequent, and may be wholly intermitted for

a time, but they are resumed in their usual vehemence before the species departs.

Cardinalis virginianus. CARDINAL GROSBEEK.

This bird is of irregular occurrence, but I have heard it in full song in every month from April to August inclusive. I have also seen it in every month from October to February, but through this time its only utterance was a fine sharp *chip* or *click*.

At this northernmost limit of its habitat its voice is certainly not less loud and forcible than in the South. Before I was familiar with its notes I was startled from sleep early one July morning by a violent whistling. It sounded so nervously hurried and intentionally loud that, in my sudden awakening, I thought it an alarm intended to arouse me. A moment later could have been seen at the window a figure *en déshabillé*, and on a near grape-vine trellis a Cardinal Grosbeak in the rôle of a fiery-coated alarmist.

Zamelodia ludoviciana. ROSE-BREADED GROSBEEK.

The few Rose-breasted Grosbeaks which summer in the section of country covered by my observations sing well into the dog-days. I have heard them till the middle of August.

In the autumn the adult male seems to be uncommon, and I have never heard its song at that season; but on September 23, 1879, I shot a young male with crimsoning breast, which was in full song.

Passerina cyanea. INDIGO-BIRD.

The Indigo-bird sings faithfully through the midsummer; but the silencing influence that begins to overtake the birds at this time, reaches it about the end of July, and it is soon quieted. The last days of singing are between the end of July and mid-August; my records giving August 15 and 16 as dates of latest songs.

I have ever found this bird uncommon in the fall, and my scant data respecting its singing in that season are comprehended between the last two weeks of September.

The song-flight of the Indigo-bird I have but once witnessed—on September 23, 1879.

Regarding the singing of the Indigo-bird, Mr. Fred. T. Jencks, of Providence, writes me that he is able to distinguish by their songs the younger from the fully adult birds at a distance of at least one hundred and fifty yards. The songs of younger birds are more simple and less musical than those of adults. I am myself familiar with differences in the songs of Indigo-birds such as Mr. Jencks describes, but never traced them to their cause.

Dolichonyx oryzivorus. BOBOLINK.

During its half-year visit the Bobolink sings only in May, June and part of July. Through the remainder of its stay, it has only a single short note. This is of a softly metallic tone, and in late summer and early fall is showered down over the country, and sometimes over the city, and at night, by flocks of the birds passing on their southward way. It is also a characteristic bird-note of the late summer, about wide weedy meadows, where tall Compositæ and other rankly growing plants uphold a rich harvest of seeds.

The song of the Bobolink is one of the first to drop out of the bird-chorus. I have not often heard it in July, and never later than the middle of the month: though where the bird is more common in the breeding season than with me singing doubtless continues later.

Molothrus pecoris. COWBIRD.

The song-utterance of this species, although giving a slight reminder of its near relationship to the Blackbirds, is nevertheless strikingly unique. It has an indefinite beginning, which is continued into a high attenuated note, ending with a sound curiously like that of bubbling water. This irresistibly suggests a bubble-like bursting forth of sound after a long audible inhalation. It seems to be a sort of appendage to the ordinary song-notes, and is, perhaps, achieved only by vigorous individuals, or under the stimulus of courtship. Its production appears to be a matter of some difficulty, being attended by singular bodily contortions and a spreading and stiffening of the wings and tail.

The ardent male usually arranges to have these antics witnessed by two or more of the plainer sex, as we are forced to speak of the females of most birds, and we cannot doubt their efficacy in captivating the objects of his ambitious passion. But as the breeding season wears on, and the novelty of being many-wived has, perhaps, come to be a matter of some concern with this polygamist, its enthusiasm diminishes, and many songs fail at the terminal note of ebullition. Songs of this character are referred to beyond as half-songs.

Cowbirds are somewhat uncertain and capricious in the use of their voices, and show much variability in different years in the continuousness of song. As a general thing singing is infrequent in June, although extending through this month and into July. At this time the half-song is almost exclusively in use, but the bubble notes may be produced as long as the bird remains in voice. Dates of latest songs of the first period range from July 6 to 23.

There seems to be no regularity about singing in the fall; but I have heard imperfect notes and half-songs at different times within a month after the middle of September. Sometimes, in the autumn, when Cowbirds are assembled in small flocks, they become garrulous, when their commingled utterance of low notes produces a sound as of subdued warbling.

On October 8, 1882, I observed the male of a pair of Cowbirds striving, and with some success, to produce before its mate its full spring song, not forgetting the associated bodily contortions. Such behavior, in an autumn bird, was at least highly unseasonable, if not suggestive of illegitimate intentions.

The singular bodily action which accompanies the vocal expression of the Cowbird conveys the suggestion that the air-sacs of the body are brought into play in the production of song. The ducking of its head, the spasmodic motion of its tail, the half-opening of its wings, the swelling of its body, which collapses with the culminating notes; all this, seems to point to the utilization of the air-sacs—to their inflation and the muscular expulsion of the contained air—in the execution of its singular vocal performance. Indeed, from the peculiar bodily action of many birds while in song, it is reasonable to suppose that the air-sacs are often important adjuncts of the lungs and vocal organs. Such bodily motions during singing, and the special

muscular acts which, in many birds, are synchronous with the utterance of certain notes, may thus be motions which are necessary to the special operation of the air-sacs.

And if this be true it affords an explanation of the fact that the song of many birds is often more varied and prolonged in flight than when they are at rest, and that the highest vocal expression of some birds, as the Oven-bird, the Maryland Yellow-throat, and the Yellow-breasted Chat, for examples, is achieved only when the birds are on the wing.

The surprising length of time for which singing is often sustained argues greater resources of air supply than the mere capacity of the lungs, and here again we may have recourse to a special operation of the pneumatic system.

We have already seen that birds in general are most voiceful when having least fat; if the growth of fat on the body reduces the capacity of any of the air-sacs a reason for this is evident.

(*To be continued.*)

NOTES ON THE BIRDS OF THE NEARER ISLANDS, ALASKA.

BY LUCIEN M. TURNER.

THE localities here included embrace the islands of Attoo, Agattoo, and Semechi, with their outlying islets. The geographical position of the group lies between $185^{\circ} 30'$ and $187^{\circ} 30'$ W. of Greenwich. The parallel of 52° N. passes near their center. The group forms the westernmost portion of the Aleutian chain of islands, and, taken collectively, is known as the Bleezhnee or Nearer Islands, being so designated by the earlier explorers because they lie nearest to the Asiatic coast.

Semechi is the smallest of the three, and lies about twenty-three miles to the southeast of Attoo. It is quite low on the southern side, where are found innumerable ponds and lakes, some of the latter being of considerable area. The low-grounds are covered with vegetation of various kinds, and the shallower ponds, in some instances, yield vegetable food in abundance for the great numbers

of Ducks and Geese which breed there. On the northern side of the island the shore is precipitous, rising at several localities several hundred feet, and abounds in niches, ledges, and crevices where breed vast numbers of Puffins, Auks, Murres, and Guillemots, which find an abundance of food in the neighboring sea.

Agattoo Island forms the southwest portion of the group, and is of considerable size, being but slightly less than Attoo, and much larger than Semechi. The shores of this island are more elevated and abrupt, having many indentations, at the head of which small streams issue from the larger lakes. The general character of the surface is undulating, though much broken, being everywhere intersected by a network of ravines and valleys, separating hills and mountains, some of which latter are over 1600 feet in height. These valleys and the lower grounds contain many lakes, in which is found an abundance of fresh-water vegetation. High grasses and other plants crown the cliffs and occupy the tops of rocks, affording suitable nesting places for various Auks and Puffins. Thousands of Geese are also hatched here. Here too the Snowy Owl and two species of Hawks breed, the young of the water birds affording them abundant food. The only mammals occurring on either Semechi or Agattoo are marine species — the sea-otter, sea-lion, some three species of hair-seals. An occasional fur-seal may also be seen in the vicinity.

Attoo is the largest of the group, and has an east and west extension of nearly thirty-five miles, and a breadth of nearly fourteen miles. The shore is remarkably indented, often for several miles, forming bays and coves. The shores are mostly abrupt, with but little beach, excepting in certain places on portions of the northern side and eastern end of the island, where several wide-mouthed valleys gradually rise toward the hillsides, which in most instances are very steep. Attoo is much more mountainous than either of the other islands of the group. The mountains are high, rising in a few instances above 2500 feet, and are accessible only by most fatiguing ascents, the approaches to the summits being steep and difficult. The mountain range extends length-wise through the island, with several spurs of irregular height shooting off at various angles from the main range. The valleys, some of which are quite broad, are traversed by streams, two of which, issuing from large lakes, are of great size. The sides of the hills and the valleys are plentifully clothed with vegetation, and many berries

are to be found. In the fall of the year these are the favorite feeding-grounds of thousands of Geese, a few of which are hatched on Semechi but the greater part on Agattoo. The Geese, feeding on the ripening berries in late August, September, and October, rapidly fatten after their moult and become so heavy that I have known them to burst their skins in falling when shot on the wing. The high bluffs afford the Cormorants a safe breeding-place; the grassy ledges near the water form convenient nesting sites for Eiders; and in the recesses of the rocks Auks and Puffins abound. Here blue foxes (*Vulpes lagopus*) are found in numbers. The natives have very wisely restricted the foxes to this large island, otherwise they would not be able to procure the birds — Puffins and Guillemots — from whose skins they make a long garment for protection against the cold of winter. These garments were used nearly exclusively during the Russian *régime*, and previous to the discovery of the islands they were the only garment worn by either sex. About forty skins are required for a single garment.

These islands possess a warmer climate than the eastern portion of the Aleutian Chain, the winter temperature never falling as low as zero. The lowest degree of cold recorded by me was 10.5° F., and this in the coldest season the natives could remember. The summer is often bright and warm; the maximum temperature reaching 76° F. Much cloudy weather occurs at times, but it is generally fair from July to October. Rain falls every month in the year, although March is known as the snow month. Fogs often continue for several days at a time, but seldom overhang the land; Semechi and Agattoo, however, are more foggy than Attoo. Rain often falls heavily, but only for brief intervals. Storms are often excessively severe, and during the winter are of frequent occurrence, the winds from the southwest and southeast being often very violent, causing a terrible sea to dash against the shores.

The following list of birds consists of species actually collected, or else identified beyond possibility of error, with the addition, for the sake of completeness, of a few species not observed by the writer, but obtained or observed by Prof. W. H. Dall, and recorded in his valuable 'Notes on the Avifauna of the Aleutian Islands, especially those West of Unalashka' (San Francisco, March 14, 1874).

The list is small, but will doubtless be much increased when the locality is more thoroughly gone over, as the engrossing nature of other duties prevented me from giving as much time to the birds as was desirable. My stay on this group was from June 30, 1880, to May 19, 1881.

- 19.* *Cinclus mexicanus Swains.* A single individual, seen in August.
 66.† *Troglodytes alascensis Baird.* Abundant. Resident.
 ? *Motacilla ocularis Swinh.* A single individual, seen May 14, 1881, was referred to this species.
 70. *Budytes flavus (Linn.) Gray.* Rare. Late summer visitor. Not known to breed.
 71.† *Anthus pennsylvanicus (Lath.) Thicnem.* Not common. Summer visitor. Two pairs known to breed. No specimen secured.
 174.† *Leucosticte griseinucha (Brandt) Bp.* Common. Resident.
 186.† *Plectrophenax nivalis (Linn.) Stejn.* Common. Resident.
 187.† *Calcarius lapponicus (Linn.) Stejn.* Common. Summer visitor. Breeds.
 193.† *Passerculus sandwichensis (Gmel.) Baird.* Summer visitor. Breeds. Not common.
 232.† *Melospiza cinerea (Gmel.) Ridgw.* Abundant. Resident.
 280.† *Corvus corax carnivorus (Bartr.) Ridgw.* Abundant. Resident. Specimens not secured.
 396.† *Asio accipitrinus (Pall.) Newton.* Not common. Resident.
 406.† *Nyctea nyctea (Linn.) Licht.* Not common. Resident.
 414a.† *Falco peregrinus pealei Ridgw.* Not rare. Resident.
 430. *Circus hudsonius (Linn.) Vieill.* Rare. Summer visitor only.
 449. *Aquila chrysaëtus canadensis (Linn.) Ridgw.* Rare. An occasional visitor only.
 451. *Haliaëtus leucocephalus (Linn.) Savig.* Single individual seen.
 † *Lagopus rupestris* var. Plentiful. Resident.
 508. *Hæmatopus bachmani Aud.* Rare visitor at Attoo; occurs oftener at Semechi and Agattoo.
 509. *Arenaria interpres (Linn.) Vieill.* Rare. Only seen in summer.
 515a. *Charadrius dominicus fulvus (Gmel.) Ridgw.* Rare. Fall visitor only. No specimen secured.
Ægialites sp. Rare. Four individuals seen in September.
 531.† *Tringa maculata Vieill.* Common. Summer visitor.
 553. *Heteractitis incanus (Gmel.) Stejn.* Rare. Summer visitor.
 564.† *Phalaropus lobatus (Linn.) Stejn.* Abundant. Summer visitor.
 584. *Grus canadensis (Linn.) Temm.* Very rare. Fall straggler.
 588. *Olor columbianus (Ord) Stejn.* Winter visitor. Not seen every year. No specimen secured.

* The number preceding the species refers to the species having that number in Ridgway's 'Nomenclature of North American Birds in U. S. National Museum,' 1881. Species marked † indicate those breeding.

- 593*a*. *Anser albifrons gambeli* (*Hartl.*) *Coues*. Casual visitor, according to Dall.
- 594*a*.† *Branta canadensis hutchinsi* (*Sw. & Rich*) *Ridgw.*—Abundant. Summer visitor.
598. *Philacte canagica* (*Sevast.*) *Bann*. Winter visitor. Abundant.
601. *Anas boschas* *Linn.* Not common. Fall and spring visitor.
607. *Anas americana* *Gmel.* Rare. Summer visitor. Not known to breed.
- 612.† *Anas carolinensis* *Gmel.* Common in summer. No specimen secured.
- 614.† *Fulix marila* (*Linn.*) *Baird*. Common. Resident.
- 616.† *Fulix collaris* (*Donov.*) *Baird*. Not common. Resident.
- Clangula* sp. Rare. Seen only in winter.
621. *Clangula albeola* (*Linn.*) *Steph.* Winter visitor only.
- 622.† *Histrionicus histrionicus* (*Linn.*) *Boie*. Very abundant. Resident.
- 623.† *Harelda hyemalis* (*Linn.*) *Brehm*. Very abundant in winter. Sparingly breeds.
- 625.† *Eniconetta stelleri* (*Pall.*) *Gray*. Abundant in winter. Breeds sparingly.
- 626.† *Arctonetta fischeri* (*Brandt*) *Blak.* Common. Resident. Breeds.
- 628.† *Somateria v-nigra* *Gray*. Common. Resident. Breeds.
- 630.† *Ædemia americana* *Sw. & Rich*. Rare in summer. Plentiful in winter. Breeds sparingly.
- 633.† *Ædemia perspicillata* (*Cass.*) *Baird*. Common. Resident. Breeds sparingly.
- 637.† *Merganser serrator* (*Linn.*) *Schäff.* Common. Resident. Breeds.
- 643*b*.† *Phalacrocorax dilophus cincinnatus* (*Brandt*) *Ridgw.* Abundant. Resident. Breeds.
- 646.† *Phalacrocorax pelagicus* *Pall.* Numerous. Resident. Breeds.
- 65*Sa*. *Rissa tridactyla pollicaris* *Stejn.* Not abundant. Not known to breed.
- 659.† *Rissa brevirostris* *Brandt*. Abundant. Breeds. Not observed in winter.
- 662.† *Larus glaucescens* *Licht.* Abundant. Breeds.
- 687.† *Sterna paradisæa* *Brünn.* Plentiful. Breeding on Semechi.
- 698.† *Stercorarius parasiticus* (*Linn.*) *Schäff.* Common. Breeds on Agattoo.
699. *Stercorarius longicaudus* *Vieill.* Rare at Attoo. Two individuals seen.
701. *Diomedea albatrus* (*Temm.*) *Pall.* Rather common in March and April only.
- 705*a*. *Fulmarus glacialis glupischa* *Stejn.* Rare. Occurs mostly at Semechi.
- 723.† *Cymochorea leucorrhœa* (*Vieill.*) *Coues*. Breeds abundantly, according to Dall.
- 726.† *Oceanodroma furcata* (*Gm.*) *Reich.* Breeds. Specimens from Dall in U. S. Museum.

Colymbus sp.—Winter. An individual seen at Attoo.

739.† *Urinator pacificus* (Lawr.) Stejn. Common. Breeding.

740.† *Urinator lumme* (Brünn.) Stejn. Abundant. Resident. Breeds.

744.† *Fratercula corniculata* (Naum.) Gray. Extremely abundant. Breeds. Not resident.

745.† *Lunda cirrhata* Pall. Extremely abundant. Breeds. Not resident.

747.† *Cyclorhynchus psittacula* (Pall.) Stejn. Plentiful on Agattoo. Breeds. Not resident.

748.† *Simorhynchus cristatellus* (Pall.) Merrem. Plentiful. Breeds. Not resident.

749.† *Simorhynchus pygmæus* (Gmel.) Brandt. Abundant. Breeds. Not resident.

750.† *Simorhynchus pusillus* (Pall.) Schleg. Abundant. Breeds on Agattoo. Not resident.

753.† *Synthliboramphus antiquus* (Gmel.) Brandt. Abundant. Breeds. Sparingly resident.

Brachyramphus sp. Seen in late fall and early winter only.

761.† *Cepphus columba* Pall. Common. Breeds. Not resident.

763a.† *Uria lomvia arra* (Pall.) Ridgw. Abundant. Resident.

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ON THE BREEDING HABITS OF SOME ARIZONA BIRDS.

BY W. E. D. SCOTT.

SECOND PAPER *Icterus cucullatus*.

THE individual taste of birds in the matter of their nests is so well exemplified by the great differentiation in the nests of the Hooded Oriole (*Icterus cucullatus*), which is a very common breeding bird in the cañon described in the former paper of this series, that I propose to give a detailed description of ten nests taken here during the past summer, and incidentally to call attention to other nests of the same species taken in regions close at hand.

The birds arrive here about the middle of April, and are to be found until the last of September, and a few even well into

October. Such, at least, was my experience during the season of 1884. They are not great songsters, but are very conspicuous, both by their plumage and by their peculiar call or rattle, which is very similar to that of the Baltimore Oriole, only it is more prolonged. Two broods are raised, and not infrequently three, during their stay here, and a new home is built for each brood. The old birds are great workers when building their nests, and the rapidity with which so elaborate a structure is completed is astonishing. Three or four days at most generally suffice to complete the structure. No detailed description of the eggs will be essential in this connection, they have been so often carefully described, and only when unusual shall I dwell upon them. Three or four is the usual number laid, though after the first set four is unusual.

The ten nests to be presently described were all taken from three kinds of trees, cottonwood, sycamore, and a kind of ash; and, considering that the location of all were not a mile apart, it would seem that taste or fancy had much to do with producing in the same locality, where the materials used by all of the builders are abundant and easily obtained, structures varying so widely in general appearance, in the materials of which they are built, and in their method of building, as well as in mode of attachment to the tree.

Some of the nests, it will be seen, are as truly pensive as those of *Icterus galbula*; others are more like those of *Icterus spurius*; while one at least rests on a stout twig and is hardly to be regarded as a hanging nest at all.

The following data are taken from the nests before me and from notes made when the nests were collected.

No. 1. Nest of May 28. In a cottonwood, forty-five feet from the ground. Contained a full set of three eggs, which were fresh and of the usual coloration. They measure $.92 \times .60$, $.92 \times .63$, and $.85 \times .62$, respectively. The nest is a rather bulky structure, and is built externally of coarse green grasses, rather loosely woven, but so knitted and tied together as to form a very strong wall. The general appearance of the surface is smooth, though the contour of the whole is unsymmetrical. There is a distinct lining, which is of fine dried grasses very compactly laid together, but not woven, in parallel circles, one above the other, reaching to the rim of the nest. Just in the bottom there is one large feather of a Hawk and a little down.

The nest is attached to three main twigs at the extremity of a branch, and one of these twigs is again divided into three smaller twigs. One of the main twigs has many leaves, and is fastened to the wall of the nest for five inches, and some of the leaves are woven into the structure. A second twig is attached at a point about an inch and a half from the first to the wall of the nest for four inches, and has three leaves, all of which are fastened to the nest. The twig spoken of as being divided into three branches has a very strong band and reeving of grasses joining it to the nest just where it forks, and one branch is attached to the side of the nest for four inches, one for two, and one for one inch. Outside the greatest depth is six inches, while inside the greatest depth is three inches and a half, so that the bottom of the nest is very thick; in fact the walls are thick throughout, being fully half an inch at the rim of the nest where they are thinnest. The diameter of the inside of the nest at the top, where it is largest, is four inches, and the shape inside is that of a shallow cup.

No. 2. A nest taken the same day, and in the same kind of tree, about forty feet distant from that just described, is almost identical with it in structure. It is attached on its sides to four twigs, the attachments varying from three to five inches. It was about twelve feet from the ground and contained three fresh eggs.

No. 3. Nest of May 29. Ash tree. Thirty feet from ground. Three eggs slightly incubated. Typical. Rather a bulky, purse-shaped structure but with a very wide opening. The walls are not thick, except at the bottom of the nest, and are composed of dry yucca fibre rather loosely woven. The lining is of the same material, only finer and softer. The nest is fastened to two twigs and the clusters of leaves belonging to them. One twig is attached to the side of the nest for four inches, the other only slightly to the rim. The exterior depth is six and the interior depth four inches, and the diameter of the opening is three inches.

No. 4. Nest of the 17th of June; in an ash tree, about twenty-five feet from the ground, and contained four eggs. It is a true pensile nest and is built of yucca fibre and grasses externally, the whole very loosely put together and but slightly woven. There is a very slight lining of a few horse hairs and a little cotton-waste. The walls are thick and the opening small. The

general shape is that of a purse or pouch. The exterior depth is seven and the interior depth five inches. The opening, which is covered by leaves hanging over it, is oval, with a greater diameter of two and a half and a lesser diameter of two inches. The eggs are typical. There are a number of bits of long grasses and yucca fibers pendant from the walls outside, not having been woven into the structure.

No. 5. Nest of June 18. In a sycamore tree, twenty feet from the ground. Four typical eggs. Fresh. Closely resembles the ordinary structure of *Icterus galbula*, but is rather shallower and the opening larger. Is attached to the tree only at three points on the rim of the nest, and truly pensile. Built of same material inside and out, *i. e.* fine dried grasses. The walls are about the same thickness throughout—about a quarter of an inch. It is very compactly woven and is symmetrical. The depth outside is three inches and inside two and three-quarter inches, and the opening has a diameter of three inches.

No. 6. Nest of June 20. Had four fresh eggs, which are smaller and less sharply pointed than typical eggs, and have the markings confined to the cluster of coloring at the larger end. They measure $.84 \times .63$, $.80 \times .65$, $.86 \times .63$, and $.83 \times .65$. The whole structure is very like that built ordinarily by *Icterus spurius*. Fine green grasses closely woven form the walls, and there is a lining of very fine silky dry grasses and some plant down like that from thistles. It is small and compact, having an exterior depth of three and a half and an interior depth of three inches. Opening round, and two and a half inches in diameter. There are no attachments to twigs but at the rim.

No. 7. Nest of June 25. In a sycamore, twelve feet from the ground. Outside, coarse green grasses put together much as in No. 1 (nest of May 28). It is attached from top to bottom on its sides to two twigs, the distance being four inches, and grasses are tied and woven to one of these where it extends below the structure, forming a ball an inch in diameter on which the nest partly rests. There is a third twig also slightly fastened to the nest, and three large leaves growing from the twigs are sewed to the rim of the nest for all but about an inch and a half of its circumference, forming a roof or covering, and leaving only the small space spoken of for entrance. The measurements of

the structure are: exterior depth four and interior depth two and a half inches. The shape of the interior is oval, the greater diameter being three and a half and the lesser diameter two and a quarter inches. The whole is rather bulky and unsymmetrical, and, though smoothly lined inside with fine dry grasses and cotton string, the walls outside are rough and uneven.

No. 8. Nest of July 20. Built in a sycamore, fifteen feet from the ground, and contained four eggs slightly incubated, and one fresh egg of *Molothrus ater obscurus*, which was fresh, and measures $.75 \times .61$. This is a true pensile nest, the shape being that of a deep purse. It is built of the same materials throughout—very fine dried grasses—and is almost concealed by several large leaves, depending from twigs close by, being 'sewed' to its walls outside. The walls are not at all thick, and the nest, though deep, is not bulky. The external depth is six and the internal depth five and a half inches. The greatest external diameter is three and a quarter inches, and the diameter of the opening, which is round, is two and a half inches.

No. 9. Nest of July 1. Built in a sycamore, forty-five feet from the ground. Had an incomplete set of eggs, the female having been killed before all were laid. It is a very bulky and elaborate structure, and a general view of it gives the impression of a nest sixteen or seventeen inches in depth by seven inches in diameter externally. The outside is composed of dried grasses and the blades of a small kind of yucca, also dry. There are many of these only partially woven into the structure by their smaller ends, the rest of the blade, with its broad base, being left hanging and dangling. These blades are about sixteen inches long, are from one-half to three-quarters of an inch broad at the base, and gradually taper to a sharp point. Only half of the length is woven into the nest. It is truly pensile and the interior is of about the average size, the walls being loosely woven and very thick. The lining is of fine dried grasses and a little cotton. Outside the nest proper is eight and a half inches deep, but appears, from the dangling yucca blades, twice that depth. The greatest external diameter of the nest proper is six inches, though from the yucca blades this, too, appears larger. At one point from the rim a sort of rope of grasses is woven to attach it to a twig rather more than five inches above. The interior diameter is three and a quarter inches at the opening of the nest,

where it is largest, and the interior depth is three and a half inches.

No. 10. Second nest of July 20. Built in a sycamore, twenty-five feet from the ground. Three fresh eggs, which are unusual in being short and very much rounded. One is unfortunately broken; the others measure $.78 \times .62$, and $.84 \times .63$, respectively. A branch running out from the tree, so as to be almost parallel with the surface of the ground, has, near its extremity, three twigs that point downward. The middle one of these is about five inches from either of the others. There is little or no attempt to draw these together, and as the nest is attached to all three twigs the structure is a peculiar one. The nest proper is between two of these twigs, and about four inches below the branch. The middle twig, on which the structure mainly depends, crosses the nest at an angle, and being slightly curved reaches under and across the bottom of the nest, supporting it, and protrudes beyond. For all the distance where the nest touches it, it is firmly tied and sewed fast, and where it is again free from the structure there is a ball of tightly woven grasses like that described in the nest of May 28. One of the outside twigs, running parallel to the one just spoken of, is fastened to the wall of the nest for four inches. As these twigs are almost on opposite sides of the nest, it is so far very symmetrical, and, being composed externally of green grasses, it reminds one strongly of the nest of *Icterus spurius*. But the builders, apparently not content with the fastenings, now built a sort of rope or stay of grasses which, reaching slightly upward and to the third of the twigs mentioned, is fastened to some leaves and firmly to the twig itself. This brace is rather more than five inches long and about an inch thick, though slightly flattened. The inside of the nest is beautifully lined with woven yucca fiber and soft dried grasses. Outside it is nearly four inches deep, and inside but two and a half inches deep. The opening is oval, one diameter being two and a half and the other three and a half inches. A large leaf depending from one of the twigs is sewed tightly to the rim so nearly all the way round, and forming so complete a roof or covering, that difficulty was experienced in taking the eggs from the nest.

This completes the description of *all* of the nests, ten in number, taken in the cañon proper: a word as to some

other nests of this species, found at but a short distance away, will complete the record of nests observed. At a point on a cactus desert, about a mile from where most of the nests enumerated were taken, I found a nest of this species built on the trunk or stem of a yucca about eight feet from the ground. It contained young birds almost ready to leave the nest. The trunks of many of the yuccas are covered with dead leaves hanging downward, and this nest, which is a cup-like structure, built of green grasses closely woven, is placed on the *outside* of the dried leaves and is only attached to one of them. It is rather more than three inches deep, and is attached to a single leaf for this distance. No leaves cover it or conceal it, and the general appearance is that of a cup resting against the trunk of a tree with no apparent attachment to it.

In the mesquite regions about Tucson the nests are frequently built in the mistletoe that grows plentifully on that tree. These nests are generally symmetrical, shallow cups in shape, and are almost always semi-pensile.

ON *BUTEO HARLANI* (AUD.) AND *B. COOPERI* CASS.

BY ROBERT RIDGWAY.

SINCE the publication in 'The Auk,' for July, 1884 (pp. 253, 254), of the article suggesting the possible identity of these two birds, the National Museum has purchased from Mr. G. H. Ragsdale, of Gainesville, Texas, a specimen which proves conclusively that *B. harlani* has, like *B. borealis* and *B. swainsoni*, a light-colored phase, but at the same time, unfortunately, does not dispose of the question of *B. cooperi*. The recently acquired specimen, which is undoubtedly *B. harlani*, is even decidedly lighter in color than *B. cooperi*, the tail being almost wholly white, as are also the upper coverts, while the scapulars and wing-coverts have a much greater amount of light spotting. Notwithstanding its very light colors, however, the two particularly diagnostic characters of *B. cooperi*, mentioned in the article above referred to, viz., the unusual length of the naked portion of the tarsus, in front, and the plumbeous or almost glau-

cous color of the outer surface of the primaries, are wanting, and the type of the last-named bird, therefore, remains unique in respect to at least the last mentioned of these two characters.

The following measurements of *B. cooperi* and two light colored examples of *B. harlani* will show the differences in the measurements of the tarsi :—

Species.	Wing.	Tail.	Culmen.	Tarsus.	Bare part of tarsus in front.	Middle toe.
<i>B. cooperi</i> *....	15.75	9.10	1.05	3.15	2.25	1.70
<i>B. harlani</i> †....	16.25	10.00	1.10	2.85	1.75	1.75
<i>B. harlani</i> ‡....	16.50	9.50	1.10	3.25	—	1.80

* Type. No. 8525, U. S. Nat. Mus., Santa Clara, Cal.

† No. 99,969, Gainesville, Texas.

‡ Coll. C. E. Aiken, Colorado Springs. This specimen has been previously referred to by me as *B. cooperi*.

For reasons which are explained in the paper referred to, I am unable to give a description of the Colorado specimen; but my recollection is that it differed materially from the type of *B. cooperi* in the color of the primaries, and that there was some difference in the color of the tail; in other words, that as to the former character it was decidedly more like the Texas specimen. The latter differs from the type of *B. cooperi* in the following particulars :—

B. cooperi. Outer surface of primaries hoary plumbeous, with a glaucous cast, the shafts dusky, in strong contrast. Upper surface of tail with rufous and grayish prevailing (the former in excess of the latter), all the feathers irregularly and confusedly dashed longitudinally with dusky; about .60 of an inc from the tip (measured on middle rectrices) the tail crossed by a broad but broken band of dusky, this succeeded by rufous, the tip white; dark markings across abdomen narrowly lanceolate. Under surface of tail showing distinct but much broken subterminal dusky band.

B. harlani. Outer surface of primaries dull brownish slate, finely mottled, more or less, with lighter and darker, the shafts brownish white (more dusky terminally). Upper surface of tail white, the edges of the feathers confusedly mottled with brownish gray, the color somewhat intensified in the region of the usual subterminal band; dark markings across abdomen broadly guttate. Under surface of tail uniform white.

From the material which I have thus far been able to examine, I am, on account of the above-mentioned facts, not quite prepared to relinquish the claims of *B. cooperi* as a distinct species, although still of the opinion that additional specimens would probably break down the characters on which it at present stands.

REMARKS ON THE CALIFORNIAN VULTURE
(*PSEUDOGRYPHUS CALIFORNIANUS*).

BY ROBERT RIDGWAY.

AMONG some remarks by me respecting the distinctive characters of the genus *Pseudogryphus*, published in the 'Nuttall Bulletin' for April, 1880, p. 80, occurs the following statement: "In the enumeration of the diagnostic characters of this genus in 'History of North American Birds' (Vol. III, pp. 337, 338), . . . a very important one was overlooked, viz., the possession of fourteen rectrices, in which '*Vultur*' *californianus* apparently differs from all other *Sarcorhamphidæ*." Subsequently, Mr. J. H. Gurney wrote me asking whether all specimens in the National Museum collection possessed fourteen rectrices, and stating that he had not been able to find more than twelve in those preserved in the Norwich Museum. This prompted a reëxamination into the matter, with results tending to annul, in great measure, the statement quoted, since it is proven that the possession of fourteen rectrices by this species is, if not exceptional, at least not the rule. The writer is unable to remember the basis of his statement that *P. californianus* possessed this number of tail-feathers, but it was probably based on the adult specimen described in 'History of North American Birds,' (Vol. III, p. 339), now no longer in the National Museum collection, having been a badly prepared, unpoisoned skin, which was subsequently destroyed by insects. The only two examples now in the National Museum, both young birds, each possess but twelve rectrices, as do also two fine adults in Mr. Henshaw's collection. A specimen in the American Museum of Natural History, in New York City, however, possesses *thirteen* tail-feathers, one being wanting, so there must have been originally fourteen, which is the number represented by Audubon in his plate of this species and, according to Mr. Gurney (Cat. Diurn. Accipitres, 1884, p. 3, foot-note), being "a peculiarity first noticed by Audubon," though I am unable to find where he makes mention of it, since in his description (B. Am., oct. ed., I, p. 14) he gives the number as twelve. Swainson and Richardson (Fauna Boreali-Americana, II, p. 3) in their description of this species,

based on "male and female specimens shot by Mr. Douglas, in lat. $45\frac{1}{2}^{\circ}$ N., and now in the Museum of the Zoölogical Society," state that "the tail is even, and consists of fourteen feathers"; so there can be no doubt that the number of tail-feathers in this species is variable, and therefore not available as a generic character.

In my article referred to above, it is stated that this species is "fully the peer of the Condor in size, the wing and tail averaging even decidedly greater. It is not, however, quite so strongly built, the beak and feet being proportionately weaker." Comparative measurements were there given of fully adult males of the two species, showing that by a similar method of deduction, the alar expanse should be about 9 feet 2 inches in *S. gryphus*, and 9 feet 8 inches in *P. californianus*. I was not aware at the time that the latter figures were exactly those of an adult obtained by Douglas, as recorded by Swainson and Richardson (l. c.), nor had I read Professor Orton's paper in the 'Annals and Magazine of Natural History.' Vol. VIII, 1871, pp. 185-192, entitled 'On the Condors of the Equatorial Andes,' in which the exaggerations of writers in respect to the size of the Condor are the subject specially treated, and from which the following is quoted: "A full-grown male from the most celebrated locality in the Andes, now in Vassar College, has a stretch of nine feet. Humboldt never found one to measure over nine feet; and the largest specimen seen by Darwin was eight and a half feet from tip to tip. An old male in the Zoölogical Gardens of London measures eleven feet. Von Tschudi says he found one with a spread of fourteen feet ten inches; but he invalidates his testimony by the subsequent statement that the full-grown condor measures from twelve to thirteen feet."

The two adult Californian Vultures in Mr. Henshaw's collection, both measured and weighed by Mr. Henshaw before skinning, were males; one spread eight feet nine inches and weighed twenty pounds, while the other spread nine feet one inch and weighed twenty-three pounds. Mr. Henshaw, while in the locality where his specimens were shot, was informed by perfectly reliable persons of two killed the previous year which spread eleven feet, by careful measurement.

Mr. Henshaw's specimens are neither of them very old birds, having the bill still tinged with horn-color, and are decidedly

smaller than some that have been examined, as the following measurements, taken from the dried skins, will show. The fresh colors of the soft parts, the alar extent, and weight, noted by Mr. Henshaw before the specimens were skinned, are also given:—

Larger specimen: Wing, 32.00 inches; tail, 16.00; culmen, 1.50, depth of bill, 1.25, width, .95; length of head, from point of bill to occiput, 6.00; tarsus, 4.70; middle toe, 4.10, with claw, 5.45. Weight, 23 lbs.; spread of wings, 9 feet, 1 inch. "Head and neck light yellow, fading to pinkish on lower neck; iris reddish brown; feet dull bluish white."

Smaller specimen: Wing, 31.25 inches; tail, 15.50; culmen, 1.50, depth of bill, 1.20, width, .95; length of head, 6.20; tarsus, 4.40; middle toe, 4.00, with claw, 5.40. Weight, 20 lbs.; spread of wings, 8 feet, 9 inches. "Head and neck light orange; iris red; feet pinkish flesh color."

Since the above was put in type, four specimens in the flesh have been received at the National Museum. The weight, after their reception was not taken, on account of the specimens having been eviscerated; but they were carefully measured, with the following result:—

No. 103,064, *adult*, U. S. Nat. Mus.—Total length, 44 inches; extent of wings, 110.70 inches.

No. 103,065, *juv.* (first year).—Total length, 44.25 inches; extent of wings, 98.50 inches.

No. 103,066, *juv.* (first year).—Total length, 46.50 inches; extent of wings, 108.25 inches.

No. 103,067, *juv.* (first year).—Total length, 43.50 inches; extent of wings, 106 inches.

NOTE ON *SARCORHAMPHUS ÆQUATORIALIS* SHARPE.

BY ROBERT RIDGWAY.

IN Volume I of the 'Catalogue of Birds in the British Museum' Mr. R. Bowdler Sharpe describes, under the name *Sarcorhamphus æquatorialis* (p. 21), a supposed new species of Condor, to which the following characters were ascribed: "Smaller than *S. gryphus*; entirely brown in plumage; bill blackish." The habitat was given as Ecuador (Quito) and, with

a query, Colombia. The supposed new species was based in part on a specimen living (in 1873) in the Zoölogical Gardens at Amsterdam which was "apparently fully adult, with a perfectly formed erect wattle, but brown in colour all over," and partly on some statements made by Professor Orton in the 'Annals of Natural History' for 1871, pages 186, 187.

In a paper published in the 'Bulletin of the Nuttall Ornithological Club,' April, 1880, pp. 77-84, I called attention (on p. 81) to a Condor then living in the Central Park Menagerie, New York City, captured alive, when at least three months old, on Mount Cauquenes, Chili, received at the menagerie July 23, 1875, and which in December, 1878, or more than three years later, corresponded entirely with the *Sarcorhamphus æquatorialis* of Sharpe.

In the 'Proceedings' of the Zoölogical Society of London for 1883, page 349, Mr. Sclater mentions and figures (pl. xxxv) "a Condor from Peru, which had been presented to the Society by Mr. John J. North, on the 13th of June, 1877, and which was still living in the Society's Gardens." It is further stated that "after six years it was in nearly the same uniform brown plumage as that in which it had been originally received." Mr. Sclater, it was announced, "had now come to the conclusion that this must be a specimen of the '*Condor pardø*', or Brown Condor, spoken of by Mr. J. Orton, and subsequently named *Sarcorhamphus æquatorialis* by Sharpe in his 'Catalogue of the Birds of the British Museum' (p. 21.)."

The excellent figure given represents a bird exactly like that in the Central Park Menagerie, when seen by me in December, 1878.

The Central Park specimen having recently died and been secured by the National Museum, the following account of its progressive changes in plumage may be of interest as deciding the status of *S. æquatorialis* :—

July 23, 1875.—Specimen received at the Central Park Menagerie, said to be at least three months old when captured. Plumage uniform snuff-brown, the head and neck similar, but darker, the bill blackish.

April 1, 1876.—Memorandum by Mr. Geo. N. Lawrence: "Condor, said to be 9 months [*i.e.*, 12 months] old, bill black; cere and naked sides of head grayish black; head sparsely covered with short downy feathers of a smoky black; plumage in general dark snuff-brown."

August 1877.—Memorandum by Mr. Lawrence: “No change, except the development of the ruff, which is colored like the back.”

December, 1878.—No appreciable change in plumage.

February 10, 1880.—Under this date, Mr. W. A. Conklin, Superintendent of the Central Park Menagerie, wrote me as follows:—“The plumage remains still unchanged, except that the ruff about the neck is somewhat fuller, and has a little sprinkle of white through the down . . . It has not increased since then [the date of its arrival at the Menagerie] either in size or weight. The bill is black at the base, the apical half ivory-white. Head bare; no wattles; iris dark brown.”

February 23, 1880.—Memorandum by Mr. Lawrence: “The ruff is now more full, but no appearance of becoming white; underneath [the surface ?] the feathers [of the ruff ?] are whitish.”

November 11, 1884.—The specimen to which the above remarks and memoranda appertain received in the flesh from Mr. Conklin, it having died a day or two previously. The plumage is now in all respects that of the adult common Condor (*Sarcorhamphus gryphus*), the general color being black, with white ruff, and grayish white or pale gray wing-markings. No ‘comb,’ but throat with a slight ‘dewlap,’ and lower part of foreneck with a small pendulous wattle. Iris dark hazel; neck dirty yellowish white, slightly tinged with dull purplish flesh-color, the head more purplish; bill white, black at base, and dusky on culmen; feet blackish. Length, 45.50 inches; extent of wings, 103.25 inches; weight 17 lbs., the specimen in excellent condition. By dissection the bird proved to be a female.

After carefully weighing all the testimony, it therefore seems very doubtful whether more than one species of Condor exists in South America. It is quite likely, however, that this species (*Sarcorhamphus gryphus*) varies in size or other characters in different parts of its range, and that therefore two or more geographical races or subspecies exist; but in all probability there does not exist in any museum sufficient material to determine this question.

At any rate, it would appear to be established beyond doubt that *Sarcorhamphus gryphus* is uniform brown when young, and that it wears this plumage until at least seven years old. It would seem, also, that the ‘comb,’ or erect wattle, peculiar to the male, is developed before the bird assumes the adult plumage, as is attested by the living specimen in the Amsterdam Zoölogical Garden, referred to by Mr. Sharpe.

WINTER MOUNTAIN NOTES FROM SOUTHERN ARIZONA.

BY W. E. D. SCOTT.

THE following record was made during a four days' visit to the highest point of Los Sierras de Santa Catalina. Pima County, Arizona, the time being from November 26 to 29, inclusive, 1884. The region is a dense pine and spruce forest, with here and there a sprinkling of poplars and sycamores, and a few evergreen oaks. The readers of 'The Auk' would doubtless have a more definite idea of the exact point, could they have looked down with me on Fort Lowell, which seemed a fairy encampment directly below the solitary hut where I bivouacked. It was real winter at this altitude—a little over 10,000 feet—with from two to six inches of snow on the ground, and ice in the brooks where the current was not too rapid; and the region presented a very marked contrast to that about Fort Lowell, and just the other side of Tucson, where the cottonwood trees waved in plain view as green as in June. The four days were of such clear sunshine and blue sky as to make one forget the winter on the ground, and only at night was the cold intense. Bird life was not represented by very many species, but the individual representation of some kept the woods a very lively solitude.

By far the greater number of birds were Nuthatches, and the Slender-billed Nuthatch (*Sitta carolinensis aculeata*) was ubiquitous, though now and then fairly overshadowed by numerous companies of the Pygmy Nuthatch (*Sitta pygmaea*). Once I heard a very familiar Titmouse note but did not see the maker; and this was the only hint of a Tit noticed during my visit.

Associated with flocks of the Mexican Bluebird (*Sialia mexicana*), which was, by the way, the only kind of Bluebird observed, was always to be found one and sometimes two representatives of the Olive Warbler (*Peucedramus olivaceus*). The Bluebirds were generally feeding on some insects in the tall pines, in flocks of from six to ten individuals. The Olive Warblers were on the best of terms with their blue friends, and as the Bluebirds were shy and restless they made it difficult to obtain or observe

very closely their smaller allies. I did not in these pine woods see the two species apart, and became at length so well aware of the intimacy that existed between them, that I would fire at any small bird passing high overhead in company with Bluebirds. They were chance shots, certainly, but the only two small birds obtained flying in this way with the Bluebirds were Olive Warblers. Presently I learned, too, that the Warblers had a call-note so like that of their associates as to be almost identical. It seemed to me only a clearer whistle of more silvery tone. During my stay I obtained six representatives of the Warbler—two adult males, two adult females, and two females of the year. Five of these birds were taken on November 26, before the Bluebirds had become very wary, and on the 28th the other was taken, as I have described, from a party of Bluebirds flying over. As near as can be estimated I was able to secure rather less than half of the Warblers I saw, for there seemed to be not more than fourteen noted, altogether.

Generally they preferred the largest branches of the pines when they alighted, though I took one not more than three feet from the ground in a small bush. Their movements while feeding or searching for food are very deliberate, though I noticed now and again certain motions when at the extremity of a bough that reminded me of a Kinglet or Titmouse. No song was noted save the call described. I think there can be little if any doubt that they are residents all the year, and certainly native residents of the pine woods of this region, for aside from the fact of their presence as recorded when winter had fairly set in, Mr. F. Stephens took a single male in February, 1880, in this same range of mountains, and at a point not very distant, though at a lower altitude, he tells me. (For further record of this individual, see Bull. Nutt. Orn. Club, Vol. VII. No. 3, July, 1882, p. 136.)

A number of Ruby-crowned Kinglets (*Regulus calendula*) were seen, and two adults, males, obtained, show a peculiar grayish cast about the green of the head and back that is much more apparent than in any eastern examples of this species that I have ever seen or taken.

The Fringillidæ that were observed, and which are given in the order of their comparative abundance, the most common heading the list, were Cassin's Finch (*Carpodacus cassini*),

Junco cinereus caniceps, *Junco cinereus*, *Pipilo maculatus megalonyx*, and four individuals of the Evening Grosbeak (*Hesperophoua vespertina*). Unfortunately none of these last were secured, but the identification in life of so peculiar a species, and close at hand, is not difficult. They were feeding on small cones in a spruce tree, and were not at all shy, but my gun missing fire disturbed them and I was unable to find them again. The Oregon Snowbird (*Junco oregonus*), though abundant at a lower altitude, and observed in great numbers the day I ascended the mountain, and again on returning from the trip, was not met with in the pine woods, nor were any Crossbills observed.

Steller's Jay (*Cyanocitta stelleri macrolopha*), and the Raven (*Corvus corax carnivorus*) were the only Corvidæ noted. Neither were common, though the former was seen every day, but the latter only twice during my stay.

The Woodpeckers were represented by five species: Harris's Woodpecker (*Picus villosus harrisi*), the Brown-headed Woodpecker (*Sphyrapicus thyroides*), the Nuchal Woodpecker (*S. varius nuchalis*), the California Woodpecker (*Melanerpes formicivorus bairdi*), and the Red-shafted Flicker (*Colaptes mexicanus*). The California was perhaps most common, though Harris's and the Brown-headed were nearly as abundant, and the others rare. The Brown-headed Woodpecker was represented almost entirely by females, of which I perhaps saw twenty or more, and not a quarter as many males. It is not improbable that this is about the winter habitat of the females of this species, and that most of the males winter still further to the northward. Four species will conclude the list of birds absolutely noted at this point, though doubtless many were overlooked, or would be found during a more protracted visit. A single Sharp-shinned Hawk (*Accipter fuscus*) was taken, and two Red-tailed Hawks (*Buteo borealis*) were seen. The Band-tailed Pigeon (*Columba fasciata*) was not uncommon in small flocks and singly, and, judging from the tracks in the snow, Wild Turkeys were abundant, though only two females were seen, and none were taken.

VARIATIONS IN THE FORM OF THE BEAK,
 THAT TAKE PLACE DURING ITS GROWTH,
 IN THE SHORT-TAILED ALBATROSS
 (*DIOMEDEA BRACHYURA*).

BY DR. R. W. SHUFELDT, U. S. ARMY.

SEVERAL years ago when Dr. Bean of the Smithsonian Institution was collecting in various parts of Alaska, he succeeded in securing four heads in the flesh of the Short-tailed Albatross. These were brought back to Washington in alcohol, along with the rest of the excellent material that was gathered during these explorations in our far-off possessions. Last October, before I left Washington for my present field of research in New Mexico, Dr. Bean very kindly presented me with the entire series of the above-mentioned heads, to be used as I saw fit in some of my anatomical studies of the group.

Before parting with them, however, he invited my attention to the marked differences that existed in the form, as well as the relations of the horny parts that covered the osseous beak.

The four heads in question undoubtedly belonged to individuals of very different ages, ranging from a 'bird of the year' to an apparently full-grown adult.

The specimen from which the beak in figure 1 was drawn, has the plumage of the head a yellowish white all over, while

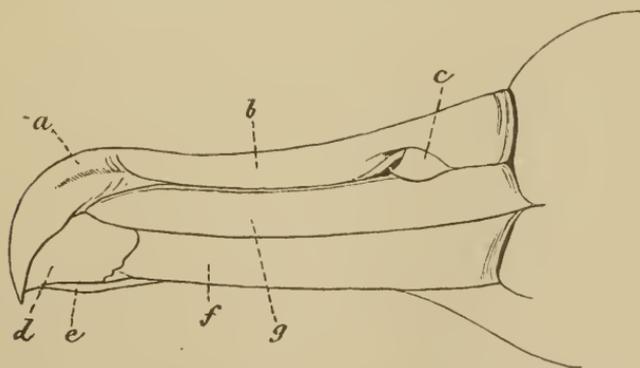


FIGURE 1. Left lateral view of the beak of *Diomedea brachyura*, adult. The letters direct attention to the various horny pieces that cover it. From nature, by John L. Ridgway and reduced one-half.

the head of the one from which figure 2 was taken has this color dashed here and there with pale brown.

In specimen No. 3 this brown becomes much deeper and is the prevailing color of the head, to the gular space and about the base of the superior mandible, in which localities it is of a dirty white. The last specimen has the plumage of the entire head a deep sooty brown, being somewhat paler in the parts where the dirty-white occurs in specimen No. 3. Of these four heads I take the specimen marked No. 1 in the figures to be the oldest, if not, as I have already said, a full-grown bird, while the others become younger and younger, as indicated by their numbers. No. 4 being the youngest of all.

The figures of these beaks were all drawn from the specimens by Mr. John L. Ridgway, a brother of the ornithologist. They are carefully and accurately done, as is all the work of this artist.

In figure 1 I have added the letters from *a* to *g* in order that we might have something to designate the parts by in referring

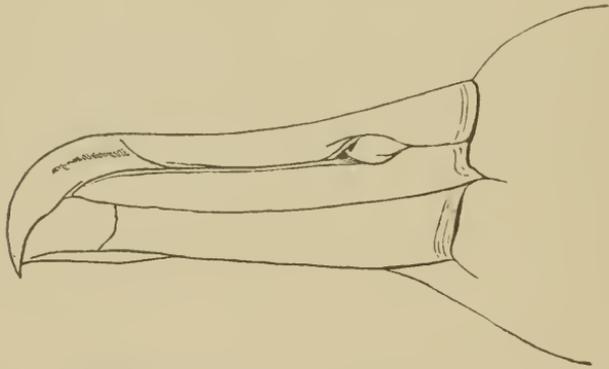


FIGURE 2. Left lateral aspect of the beak in *Diomedea brachyura*, a younger specimen than the one figured in Fig. 1. Reduced one-half from nature.

to them. The letters given in figure 1 refer to like pieces of the sheath in the other figures.

In the beak of an Albatross collected at the Cape of Good Hope, Africa, and presented to me many years ago, I find the little horny dome, covering the nostril and marked *c* in figure 1, to be a separate piece, and I presume the parts referred to by the other letters are likewise. It hardly seems possible, however, that any of these parts are ever moulted during the breeding sea-

son, a condition known to occur among the Alcidae, as has been so well described through the admirable researches of L. Bureau, Stejneger, and others.

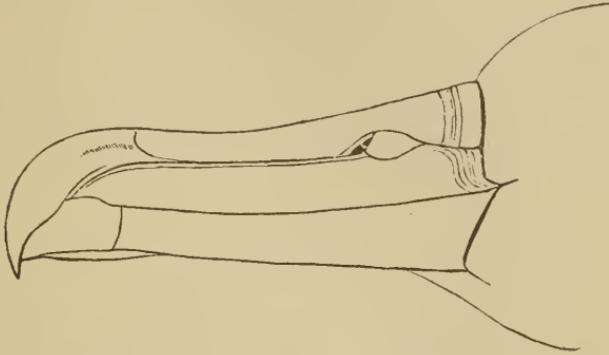


FIGURE 3. Left lateral view of the beak of *Diomedea brachyura*. A still younger specimen than No. 2. Reduced one-half from nature.

If we examine the beak of the adult Albatross shown in figure 1, it is at once noticeable that its general form differs very materially from the younger birds. This difference as a whole consists in a somewhat greater depth for the length of the beak as compared with the less matured individuals. The arch of the anterior extremity of the culmen formed by the piece marked *a* is considerably more convex in the adult than it is in figure 2, for instance, and the relation of this piece to the surrounding pieces, *b*, *d*, and *g*, is by no means exactly the same.

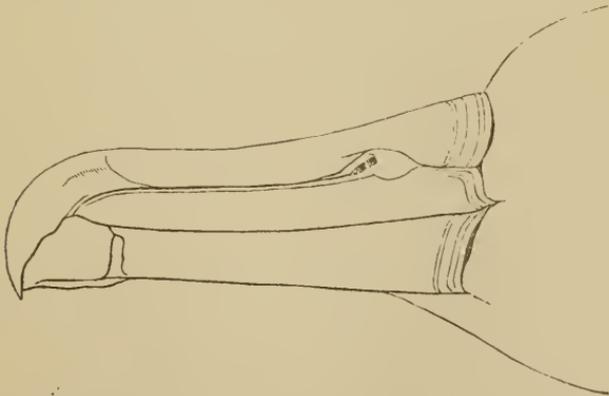


FIGURE 4. Left lateral aspect of the beak of *Diomedea brachyura*, the younger of the four shown in the figures. Reduced one-half from nature.

The piece marked *d* becomes relatively larger as the bird matures, while the piece *e* seems to vary both in form and length in the various specimens before me. We likewise notice that the forms assumed by the anterior extremities of the pieces *f* and *g* must vary with the differences already referred to, that take place in *a*, *d*, and *e*.

In the drawings here presented, which are such correct representations of the objects they depict, no doubt the reader will discover other interesting differences than those I have given above.

ANALECTA ORNITHOLOGICA.

Fifth Series.

BY LEONHARD STEJNEGER.

XXV. WHY *Chordeiles virginianus* AND NOT *Ch. popetue*?

In order to answer this question I will first have to quote the description of the author who first established the binominal *Caprimulgus virginianus*. Gmelin gives the following account of the species (S. N., I, 1788, p. 1028):

- “*Virginianus*. 3. *C. fuscus*, transversim griseo-fusco et hinc inde cinereo-variis, subtus ex rubescente albus transversim striatus, menti macula trigona alba, area oculorum et cervice aurantiis maculis varia.
- Caprimulgus minor americanus*. *Syst. nat.* XII. 1. p. 346. 1. β. *Kalm it.* 3. p. 93.
- Caprimulgus virginianus*. *Briss. av.* 2. p. 477. n. 3.
- Whip-poor-will. *Catesb. Car.* 3. t. 16. *Edw. av.* 2. t. 63. *Buff. hist. nat. des ois.* 6. p. 534.
- Longwinged Goatsucker. *Arct. Zool.* 2. p. 436. n. 337. t. 18.
- Virginia Goatsucker. *Lath. Syn.* II. 2. p. 595. n. 6. . . .
Genae ex cinereo fuscae; remiges atrae. 5 primae circa medium, rectrices extimae prope apicem macula alba notatae; pedes incarnati.”

This description, considered alone, will be seen to fit the Nighthawk (Ridgw., *Nomencl.*, No. 357) very well. Particu-

larly decisive is the reference to the white wing- and tail-spots. It will also be remarked that bristles at the mouth are not mentioned at all. So far it is all right, and as this description is the basis of the oldest binominal, I think we might content ourselves with this result. It has been urged, however, that the references belong to the Whip-poor-will (R., No. 354), that Gmelin's species is a composite one, and, therefore, untenable. Let us then examine a little closer into the references given.

We will commence with the third of Gmelin's enumeration, "Whip-poor-will, *Catesb. Car.* 3. t. 16," because it is the oldest and the one which has caused the whole trouble.

Plate 16 of the Appendix of Catesby's 'Natural History of Carolina, Florida and the Bahama Islands' represents a Goatsucker which he calls '*Caprimulgus minor Americanus.*' The figure is one of the poorer pictures of that celebrated work, but may be said to represent the Nighthawk, on account of the white wing-spot, which is very recognizable. Above and below the bill are some long and fantastically arranged bristles, which has led to the belief that the *Antrostomus vociferus* was meant, the more so since Catesby in the text calls the bird 'Whip-poor-will.' The latter mistake is very excusable, for I have been told that the people in the localities in which both species occur generally confound them, and believe that the Nighthawk utters the sound which has given 'Whip-poor-will' its name. Concerning the bristles, we are justified in presuming that they are due to an intended improvement on the part of the artist. Catesby may have seen specimens of the *A. vociferus* with the strong bristles, and, confounding the two species, introduced the bristles into his drawing thinking that they were accidentally absent from the specimen he figured, for, inasmuch as the plate is inscribed "*M. Catesby ad viv. delin.*," it is not at all probable that the white wing-spot is a freak of his fancy. There is another point of importance in that drawing, namely, the length of the pointed wings, which reach considerably beyond the end of the tail, proportions particularly characteristic of the Nighthawk. We are, therefore, justified in saying that the figure in question is a rather poor representation of the so-called 'Nighthawk.'

The next reference in time is Edwards's Plate 63. That this figure represents the Nighthawk is beyond doubt, it being a very good picture of that bird. It may be remarked that he also calls

the bird "Caprimulgus minor *Americanus*. Whip-poor-will," thus proving that the identical inscription on Catesby's plate is no objection to our identification made above.

Then follows Linnæus's "Caprimulgus europæus β ." This is originally (1758) based solely upon Catesby's and Edwards's figures; in the 12th edition he added the quotation of Kalm's 'Iter.' His reasons for making 'Caprimulgus minor americanus' a variety of the European Goatsucker he expresses in the following words: "Varietatem β . judico ex *macula alba alarum & rectricum*, ut in mare avis europeæ." Gmelin's citation of Linnæus's S. N., 12th edition, therefore, clearly belongs to the Nighthawk.

Brisson's "*Caprimulgus virginianus*," which is next in order, is based exclusively upon the two figures of Catesby and Edwards. With his usual acuteness, however, he at once saw that the picture made by the latter was the more accurate one of the two, and consequently he based his description mainly upon that, as he expressly remarks about the former, "une figure pas assez exacte," while of the latter he says, "une figure exacte." His description, therefore, unquestionably belongs to the Nighthawk, notwithstanding the fact that Catesby's drawing induced him to mention the long bristles.

Buffon's account (l. c.) is based upon the above-mentioned authors, and belongs where they belong. Moreover, he mentions especially "les cinq premières [pennes des ailes] marquées d'une tache blanche vers le milieu," and remarks: "M. Linnæus en fait une variété dans l'espèce Européenne; mais *il en diffère par la longueur de ses ailes.*"

"The longwinged Goatsucker" of Pennant (Arct. Zool. II, p. 436, No. 337) which has "primaries black, marked near the middle with a white bar," and of which the "wings, when closed, extend beyond the end of the tail," is easily identified by these characters alone as the Nighthawk. The accompanying figure does not belong there, and has evidently been, by some mistake, wrongfully inscribed.

The first one, since Catesby and Edwards, who seems to have had specimens before him, was Latham, referring, as he does, to the British Museum and the Leverian Museum. He describes his birds thus (l. c.):

"6. VIRGINIA G[oadsucker]. . . dull brown, transversely variegated
[*fuscus, transversim*]

ted and blended with rufous brown, with here and there a mixture
of ash-colour and a little portion of gray on the wings: above the eyes
griseo-fusco et hinc inde
cinereo-variis *area oculorum*
on each side, and behind the neck, a few orange spots: under the eyes
et cervice aurantiis maculis varia; genae ex
cinereous brown: on the chin a white triangular spot... beneath
cinereo fuscae; menti macula trigona alba *subtus*
reddish white, crossed with dusky streaks: quills dusky; the five first
ex rubescente albus transversim striatus; remiges atrae, 5 primae
marked about the middle with a spot of white, occupying both webs,
circa medium
except on the first, in which it is seen only on the inner: tail not unlike
the quills; the two outer feathers marked with a spot of white near the
rectrices extimae prope apicem macula alba notatae;
end: legs flesh-colour."
pedes incarnati.]

This description allows of only one interpretation: it refers
solely to the Nighthawk. From this Gmelin got his diagnosis
and description, as the interlineation of his Latin translation in
the text above conclusively proves, and we may add that his
account of the habits, etc., is likewise only a translation of that
given by Latham. Gmelin's name, consequently, is based exclu-
sively upon specimens of the Nighthawk.

It may now be regarded as fairly proven that *Caprimulgus virginianus* Gmel. (1788) is the earliest and most correct name of the bird subsequently (1807) called *C. popetue* by Vieillot. I have enlarged considerably upon this question, not because I "take a special delight in bringing forward" these changes (*cf.* Ibis, 1884, p. 453), but because I want these deplorable changes of our ornithological nomenclature stopped; because I do not want to draw straws as to what name I am going to apply to the birds I treat of; because I find the '*Auctorum plurimorum*' principle utterly unreliable, as is well shown by the present example. Besides, I thought it useful to have the question indicated in the heading of the present article settled beyond even a shadow of doubt. That this is necessary will be understood from a cursory summary of the changes the systematic name of the Nighthawk has suffered under the hands of our most prominent ornithologists. It was called *virginianus* by Swainson and Richardson, Nutall, and Audubon; Bonaparte turned from *popetue* to *virginianus*; Baird, Ridgway,

Allen, and others have applied *popetue* consistently. Coues in the first editions of his 'Key' and the 'Check-list,' as also in the 'Birds of the North West,' uses *virginianus*, but in the second editions of the two former he adopted *popetue*.

The North American species and races should stand thus :

- R. 357. *Chordeiles virginianus* (Gm.) Sw.* NIGHTHAWK.
 357a. *Chordeiles virginianus henryi* (Cass.) Coues.
 WESTERN NIGHTHAWK.
 357b. *Chordeiles virginianus minor* (Cab.) Coues.
 CUBAN NIGHTHAWK.

XXVI. ON THE GENERIC NAMES OF THE PHALAROPES.

The genus *Phalaropus* was originally established by Brisson, and made by him to contain both the narrow billed species and the broad billed one. Like all of the earlier writers he omitted to indicate a type, simply for the reason that the usefulness or the necessity of such a thing was not understood at that time. In many cases it may be possible to say with some degree of probability which species the author would have given as type in the modern sense, if it had been the custom of his age to indicate it, but the confused nomenclature resulting from such proceedings is the best proof of the insufficiency of the method, and a clear rule to the effect that the first author dividing the genus has the power of designating the type of the restricted parts of it, has been found to be satisfactory in every respect.

Turning now to the particular case, intimated above, we find that Vieillot, and not Cuvier, as generally supposed, was the first to subdivide Brisson's genus *Phalaropus*. In his 'Analyse d'une nouvelle Ornithologie élémentaire' (Paris, 1816). Vieillot undertook the division in the following terms (p. 62) :

"245. CRYMOPHILE, *Crymophilus*. *Tringa*, Linn. Gm. *Phalaropus*, Lath.

Bec un peu trigone a la base, sillonné en dessus, droit, à la point dilatée, arrondie et fléchie . . .

Esp. Phalarope à festons dentelés, Buff.

246. PHALAROPE, *Phalaropus*, Briss. Lath. *Tringa*, Lin. Gm.

Bec droit, arrondi, grêle, pointu, un peu incliné vers le bout. . .

Esp. Phalarope cendré, Buff."

* *Chordeiles virginianus* SWAINS. Faun. Bor. Am. II, p. 496 (1831).

It was not before the following year (1817) that Cuvier subdivided the same genus in a similar manner, retaining, however, the name *Phalaropus* for the group already named *Crymophilus* by Vieillot, and giving the name *Lobipes* to the latter's *Phalaropus*.

The North American species should stand thus :

R. 563. *Crymophilus** *fulicarius* (*Linn.*). RED PHAL-
AROPE.

564. *Phalaropus lobatus* (*Linn.*). NORTHERN PHAL-
AROPE.

565. *Phalaropus tricolor* (*Vieill.*). WILSON'S PHAL-
AROPE.

XXVII. *Scops* PREOCCUPIED!

The following note has for its object to call attention to the fact that the generic term *Scops*, frequently applied to the Little Screech Owl and its allies, is preoccupied in ornithology.

In 1760 Brisson named the African Umbrette *Scopus*, a name which Brännich, the well-known author of 'Ornithologia borealis,' twelve years afterwards emended into *Scops*. In 1772 he published a small octavo volume, called 'Zoologiæ Fundamenta,'† a kind of Synopsis of the Animal Kingdom, consisting of synoptical tables in the Latin and Danish languages, particularly prepared as a manual to be used by the students at his lectures. All the genera of birds known and recognized at that time are incorporated and characterized; a few new ones are established and some old ones renamed. To this book we owe the first recognition of the Great Auk as a separate genus, and the name it properly should bear, viz., *Plautus*. On p. 74 we find the Umbrette characterized as *Scops*, and that it is not a misprint or *lapsus calami* is evident from the same spelling of the word occurring on p. 70.

The first synonym of *Scops* Savigny is *Ephialtes* Keys. and Blas. (1840), which, however, is also preoccupied, having been employed by Schrank in 1802 for a hymenopterous insect.

* κρυμός = ice, φιλέω = I love.

† M. Th. Brännich; | Zoologiæ | fundamenta | Prælectionibus Academicis | Accomodata. | —Grunde | i | Dyrelæren. | —Hafniæ et Lipsiæ MDCCLXXII. | Apud Frider. Christ. Pelt. | —Litteris Godichianis. (1 vol. oct. 254 pp. Birds from p. 50 to p. 93.)

Next comes *Megascops* of Kaup, concerning the type of which authors seem to be at variance. The case, however, is plain enough. In 'Isis' for 1848, p. 769, Kaup enumerates five species under the subgenus *Megascops*, the first one being '*Sc. indica* Gmel.,' while *Sc. asio* is only mentioned as No. 4. But on p. 765, where he mentions the term for the first time, he writes "*Megascops* (*Scoops asio*, etc.)," by the species in parenthesis explaining the subgeneric appellation, which may therefore safely be said to have *asio* for type. Besides, the two species mentioned are undoubtedly congeneric, so that the name is applicable whichever may be regarded as the type.

The North-American species will stand thus:

- R. 402. —*Megascops** *asio* (Linn.).
 402a. —*Megascops asio floridanus* (Ridgw.).
 402b. —*Megascops asio maccalli* (Cass.).
 402c. —*Megascops asio maxwelliæ* (Ridgw.).
 402d. —*Megascops asio kennicotti* (Elliot).
 —*Megascops asio bendirei* (Brewst.).
 403. —*Megascops trichopsis* (Wagl.).
 404. —*Megascops flammeolus* (Licht.).

XXVIII. ON GYRFALCONS.

In Scandinavia only two Gyrfalcons are known to occur, the common so-called 'Brown Gyrfalcon,' or the typical *Falco gyrfalco*, and the form with whitish black-streaked head, usually attributed to Iceland and South Greenland (*cf.* Collett, N. Mag. Natur. XXVI, 1881, p. 329). Both of these were known to Linnæus, who described the former as *F. gyrfalco*, the latter as *F. rusticolus*. The first of these names is not any longer a matter of dispute. The latter ought not to be, for his diagnosis: "Falco cera palpebris pedibusque luteis, corpore cinereo alboque undulato, collari albo. *Habitat in Svecia*" is clear enough, and better than his diagnosis of *F. gyrfalco*. He seems not, however, to have recognized the white Gyrfalcon, which was well known to Brännich. The latter describes, under the specific name of *islandus*, three different birds, which he considers "sine dubio varietates quas soli Daniæ Regi vendere

* Deriv. Gr. μέγας = great; σκῶψ = a kind of Owl.

tenentur Islandi." The two first, his No. 7 and No. 8, are evidently only stages of the White Gyrfalcon; No. 9 is an equally undoubted description of the bird which we think Linnæus called *rusticolus*. It will thus be seen that Brünnich's species *F. islandus* is a compound one, embracing both the white and the dark species of Greenland and Iceland. The author who next treated of these birds from autopsy was Otto Fabricius, who in his celebrated 'Fauna Groenlandica,' published in 1780, applied the name *Falco islandus* to the white species—"Falco albus maculis cordatis nigricantibus, rectricibus albis nigro-fasciatis"—to which he expressly refers Brünnich's No. 8 as the young, and No. 7 as the old, while No. 9, the dark one, he without hesitation quotes as a synonym of his *F. rusticolus*. Fabricius, therefore, restricted the name *islandus* to the white species. To us who accept Brünnich's names the species must stand as

Falco islandus *Brünnich* as restricted by *Fabricius*,

while English authors—starting from the 12th edition—will have to call it

Falco islandus *Fabricius*, 1780.

It is a matter of regret that Gmelin when editing the *Systema Naturalis* eight years later overlooked Fabricius's* 'Fauna Groenlandica,' thus committing the blunder of applying Brünnich's *islandus* to No. 9, the dark one, while he treated No. 7 and No. 8, respectively, as var. β *albus* and var. γ *maculatus*, names occurring four pages earlier than his *Falco candicans* and *F. candicans* β *islandicus*, which this arch-compiler named from Brisson, not for a moment suspecting that he on an earlier page had given them other names! It would have been of very little consequence what Gmelin did if later authors had not perpetuated his blunder, though we may add at once that not all have done so. It is, perhaps, not possible to get up a *plurimorum auctorum* list, but the White Gyrfalcon (*Falco candicans* plur. auct.) may still be quoted as *Falco islandus*

† Seebohm, in his *Hist. Brit. B.* Eggs, quotes 'Faber' instead of Fabricius. Faber and Fabricius were two different persons!

Brünnich, 1764, or Fabricius, 1780 (nec Gmelin, 1788, nec auct. plur.), Latham, 1787 and 1790, Bechstein, Meyer* and Wolf, Temminck, Audubon, Swainson and Richardson, Gould, Holböll, etc. The reinstatement of the proper name may cause some inconvenience in the beginning, and somebody may ask: Must we always be correct? I will answer that we must be correct in this case as in others (cf. *Sylvia salicaria*, *Sylvia rufa*, *Sterna hirundo*, and *Stercorarius parasiticus*), and that the correct name in time will be as well understood as *Pendulinus* (intellige *Xanthornus*), *Scops giu*, *Otus accipitrinus*, *Lanius auriculatus* or *pomeranus*, or, as I should say, *Euneoctonus senator*, *Accentor collaris*, *Phylloscopus collybita*, *Anthus trivialis*, *Gallinago caelestis*, *Tringa striata*, *Totanus caesceus*, *Ardea ralloides*, *Bulweria colombina* (intellige *B. bulwerii*), *Diomedea albatrus* (intellige *D. brachyura* plur. auct.), *Balearica chrysopelargus*, *Ædicnemus illyricus*, etc., etc. There are two principles by which the question of the names can be settled, the principle of priority or the auctorum-plurimorum-principle. As to these I will make Howard Saunder's words mine, only substituting the name *Falco islandus* for that of *Lanius pomeranus*: "The earliest unimpeachable description of the White Falcon is that of *Falco islandus*, Brünnich or Fabricius; and by the existing rules we must accept it, and get used to it as soon as possible. Those who refuse to do this, and adopt names merely because they have been sanctioned by the number or the authoritative weight of employers, will certainly go further and probably fare worse." I will add, however, that the principle of priority must be carried out regardless of consequences and not in the usual slipshod manner, or else it is worse than the antagonistic system; it must also be carried out without delay, that "we may get used to the new names as soon as possible," or else these changes will go on slowly but in all future. So much for those who profess to believe that I "take a special delight in bringing forward wholesale changes of familiar names."

Having examined the large material (about 75 specimens) of

* Meyer seems to have been the first one to suspect the true relationship between *gyrfalco* and *islandus*, for in his "Vög. Liv- und Esthl." (1815) p. 20, he says: "In den Taschenbuch der deutschen Vögelkunde habe ich *Falco Gyrfalco* als eine Abart des *F. islandus* aufgeführt, allein ich bin doch jetzt geneigt, ihn eher für eine eigene Art zu halten."

Gyrfalcons in the U. S. National Museum, in company with Mr. R. Ridgway, we came to the following conclusions:

1. There are two distinct species of Gyrfalcons, the 'white,' and the 'brown.'

2. The latter is divisible into three geographical races, the typical (Scandinavian) form, the Iceland-Greenland form, and the Labrador form.

3. We are, at present, unable to appreciate the distinction of the so-called *F. holboelli* and *F. sacer* Forst.

I therefore propose that the North American forms be recognized as

- R. 412. *Falco islandus* Brünn. WHITE GYRFALCON.
 412a. *Falco rusticolus* Linn. GRAY GYRFALCON.
 412b. *Falco rusticolus gyrfalco* (Linn.). GYRFALCON.
 412c. *Falco rusticolus obsoletus* (Gm.). LABRADOR
 GYRFALCON.

The following synonyms of No. 412 and 412 a may be found useful by those wishing to go further into details:

412. *Falco islandus* Brünn. WHITE GYRFALCON.

- 1764.—*Falco islandus* BRÜNNICH, Orn. Bor. p. 2, ns. 7 & 8.—FABRICIUS, Fauna Groenl. p. 58 (1780).—LATHAM, Synops. Suppl. I, p. 282, (1787).—BECHSTEIN, Orn. Taschenb. p. 40 (1803).
 1783.—*Falco gyrfalco* BODDAERT, Tabl. Pl-Enl. p. 26 (nec LINN.).
 1786.—*Falco rusticolus* MOHR, Islandsk Naturh. p. 19 (part.).
 1788.—*Falco islandus*, ♂ *albus* GMELIN, Syst. Nat. I, p. 271.
 1788.—*Falco islandus* γ *maculatus* GMELIN, Syst. Nat. I, p. 271.
 1788.—*Falco candicans* GMELIN, Syst. Nat. I, p. 275.
 1790.—*Falco islandicus* LATHAM, Ind. Orn. I, p. 32.—MEY. & WOLF, Tasch. V. Deutschl. I. p. 65 (1810). TEMM., Man. d'Orn. 2 ed. p. 17 (1820).—SW. & RICH. Fauna Bor. Am. II, p. 27 (1831).—AUDUB. B. Am. (pl. ccclxvi) (1836).—GOULD, B. of Eur. I (pl. 19) (1837).—AUDUB. B. Am. 8vo ed. I, p. 81 (1839).—HOLBOELL, Faun. Grönl. (p. 18) (1854).
 1806.—*Falco groenlandicus* TURTON, Gen. Syst. Nat. I (p. 147) (nec DAUDIN, 1800).—HANCOCK, Ann. N. H. II, p. 249 (1839).
 1854.—*Falco islandicus candicans* HOLBOELL, Zeitschr. Ges. Naturw. III (p. 426).
 1860.—*Falco gyrfalco* var. *candicans* SCHRENCK, Reis. Amurl. I, p. 228.
 1874.—*Hierofalco holboelli* SHARPE, Cat. B. Brit. Mus. I, pl. xiii, right-hand figure.

412 a. *Falco rusticolus* Linn. GRAY GYRFALCON.

- 1758.—*Falco rusticolus* LINN. S. N. 10 ed. I, p. 88.—*Id.*, S. N. 12 ed. p. 125 (1766).—FABRICIUS, *Fauna Groenl.* p. 55 (1780).—MOHR, *Islandsk Naturh.* p. 19 (part.) (1786).—GMELIN, *Syst. Nat.* I, p. 268 (1788).—LATHAM, *Ind. Orn.* I, p. 28 (1790).
- 1764.—*Falco islandus* BRÜNNICH, *Orn. Bor.* p. 2, No. 9.—GMELIN, *Syst. Nat.* I, p. 271.
- 1776.—*Falco islandus fuscus* MÜLLER, *Prod. Zool. Dan.* (p. 73 and pag. viii, fide Fabr.).
- 1780.—*Falco fuscus* FABRICIUS, *Fauna Groenl.* p. 56.
- 1783.—*Falco gyrfalco* BODDAERT, *Tabl. Pl. Enl.* p. 13 (nec LINN.).
- 1788.—*Falco candicans* β *islandicus* GMELIN, *Syst. Nat.* I, p. 275.
- 1800.—*Falco islandicus* DAUDIN, *Tr. d'Orn.* II, p. 100 (nec LATHAM).
- 1800.—*Falco groenlandicus* DAUDIN, *Tr. d'Orn.* II, p. 107 (nec HANC.).—BREHM, *Isis*, 1826, p. 990.
- 1854.—*Falco arcticus* HOLBOELL, *Zeitschr. Ges. Naturw.* III (p. 426) (nec *F. communis* μ *arcticus* GMEL. 1788).
- 1862.—*Falco gyrfalco groenlandicus* SCHLEGEL, *Mus. P. B. Falc.* p. 13.
- 1862.—*Falco gyrfalco islandicus* SCHLEGEL, *Mus. P. B. Falc.* p. 14.
- 1873.—*Falco holboelli* SHARPE, *P. Z. S.* 1873, p. 415.
- 1883.— $\left\{ \begin{array}{l} \textit{Falco gyrfalco candicans} \\ \textit{Falco candicans gyrfalco} \end{array} \right\}$ SEEBOHM, *Brit. B. Eggs*, I, p. 16.
- 1884.—*Hierofalco islandus* a *holboelli* GURNEY, *Diurn. B. Prey.* p. 111.

SMITHSONIAN INSTITUTION,
Washington, D. C., Feb. 12, 1885.

SUPPLEMENTARY NOTES ON THE ORNITHOLOGY
OF CHESTER COUNTY, SOUTH CAROLINA.

BY LEVERETT M. LOOMIS.

THE writer, in continuing his notes on the birds of Chester County, South Carolina, would express his great indebtedness to the late Dr. T. M. Brewer, not only for the careful revision of his former work, but for many very valuable suggestions in his studies of the ornithology of this region.

Since the publication of the 'Partial List,'* thirty-eight species and two subspecies have been added to those already

* Bull. Nutt. Ornith. Club, Vol. IV, No. 4, pp. 209-218, Oct. 1879.

ascertained to occur in this locality. These, together with further data as to the abundance and period of residence of others previously recorded, are incorporated in the subjoined notes.*

The nomenclature and arrangement followed is that of Dr. Coues's 'Key to North American Birds' (second edition) and the same author's 'Check List and Lexicon.'

22. *Eremophila alpestris*. HORNED LARK.—The following tabulation exhibits the comparative abundance of this species during six winters:

1876-77 (severe). Very abundant.

1877-78 (mild). Rather common.

1878-79 (medium). One small flock.

1879-80 (medium). Occasional.

1880-81 (severe). Very abundant.

1881-82 (mild). None observed.

During the unusually inclement weather of January, 1884, I was constantly on the lookout for it, but only one small flock was noted, and that after the snow had disappeared. Its absence, in a season apparently so favorable for its appearance, is doubtless to be accounted for by the fact that the protracted cold wave came from the northwest. During the stay here, the grain fields, cotton lands, the last year's stubble, and other sparsely grassed tracts are chosen resorts.

50. *Iridoprocne bicolor*. WHITE-BELLIED SWALLOW.—Occurs quite commonly during the migrations. Most numerous in the vicinity of mill-ponds and other extended bodies of water.

65. *Melospiza palustris*. SWAMP SONG SPARROW.—A common winter resident, especially abundant during its passage. Tenants the undergrowth bordering streams, ponds, and swampy meadows.

76. *Dolichonyx oryzivorus*. BOBOLINK.—Migrant only; in spring abundant in large flocks foraging in the ripening oat-fields; in fall common, singly or in small groups; the grain fields, overgrown with rag-weeds (*Ambrosia artemisiifolia*), and the bottom lands are resorted to. Arrives about the first of May and remains a couple of weeks. Earliest autumnal record, August 26; latest, October 15.

83. *Quiscalus purpureus*. PURPLE GRACKLE.—Winter; irregular; very abundant about the middle of February, when the species is migrating northward. Often associated in great droves with Red-wings, Cowbirds, and Rusty Grackles. A few breed.

108. *Asio accipitrinus*. SHORT-EARED OWL; MARSII OWL.—Rather common late in autumn and during winter. Frequents old broom-sedge fields. Have failed to determine its presence during the breeding season.

109. *Strix nebulosa*. BARRED OWL.—Common resident.

127. *Totanus flavipes*. LESSER TELLTALE; YELLOW-SHANKS.—Migratory; not very common.

* Nos. 22-135 relate to the former 'Partial List'; Nos. 141-180 are additional.

131. *Ardea herodias*. GREAT BLUE HERON; 'BIG BLUE CRANE.'—A constant resident, but most abundant through the summer.

135. *Porzana carolina*. CAROLINA RAIL. 'ORTOLAN.'—Observed only during the migration. Have found it quite common in swampy meadows. Not easily flushed; the mowers sometimes cut the grass over one before it can be made to take wing.

141. *Turdus ustulatus aliciae*. GRAY-CHEEKED THRUSH.—Transient visitant. Apparently not common.

142. *Telmatodytes palustris*. LONG-BILLED MARSH WREN.—Chiefly spring and autumn. Rather common. A denizen of the bottoms.

143. *Cistothorus stellaris*. SHORT-BILLED MARSH WREN.—An individual was shot, September 18, 1880, in a little depression along the side of a railroad embankment. This spot, about half an acre, becomes boggy during wet weather, and is grown over with marsh grass and scrubby willows.

144. *Helminthophaga peregrina*. TENNESSEE WARBLER.—Only one instance of its capture, September 25, 1879.

145. *Dendroica palmarum hypochrysea*. YELLOW-BELLIED RED-POLL WARBLER.—Both subspecies (*palmarum et hypochrysea*) are found through the winter, but neither is very common. During the migration the species is abundant — variety *palmarum* predominating. Inhabits cotton fields, weedy lands, and old fence rows.

146. *Myiodiodes mitratus*. HOODED FLYCATCHING WARBLER.—A single specimen taken September 25, 1879.

147. *Passer domesticus*. THE SPARROW; PHILIP SPARROW; 'ENGLISH SPARROW.'—This aggressive little foreigner has become firmly established in the town of Chester, especially in the business portions. The colony doubtless descended from the half dozen brought here from New York, during the summer of 1873, by the late Dr. A. P. Wylie, and set at liberty in his grounds.

148. *Centrophanes lapponicus*. LAPLAND LONGSPUR.—A single straggler, Jan. 1, 1881, evidently driven southward by the unusual severity of the season. (Previously recorded in Bull. Nutt. Orn. Club, Vol. VII, p. 54.)

149. *Centrophanes pictus*. PAINTED LONGSPUR.—One example, December 1, 1880. (For further record, see Bull. Nutt. Orn. Club, Vol. VI, pp. 115, 116.)

150. *Coturniculus henslowi*. HENSLOW'S GRASSHOPPER SPARROW.—A tolerably common migrant, appearing early in spring and lingering late in autumn. In localities where I find *passerinus* in summer and *lecontei* in winter, I look confidently for *henslowi* during the migration. It is by far the least distrustful of any of the birds of my acquaintance. If by chance it happens to be in an open space where the grass affords no concealment, it will permit the intruder to advance within a very few feet before running away — only taking flight when forced to do so.

151. *Coturniculus lecontei*. LECONTE'S GRASSHOPPER SPARROW; LE CONTE'S BUNTING.—A common winter inhabitant, in certain localities, of

neglected 'old fields.' This Sparrow displays a very marked preference for dry ground. Nowhere is this more apparent than in the 'black-jack' fields of broom-sedge, which become somewhat boggy after protracted rains. At such times the level tracts are deserted for the gentle declivities, or, if these are wanting, for some more congenial locality, while in ordinary showers they escape from the dense grass, saturated with water, to the thinner growth of the lighter soils. When under the shelter of the thick sedge, few birds are more difficult to get on wing, as they allow themselves to be nearly trod upon before removing. On one occasion a bird rose so near me it became entangled in my shooting coat. Again, under cover, they are still more difficult to start; although the spot be carefully noted and the ground thoroughly tramped over. In my earlier experiences I was often completely puzzled, but later observation revealed uniformity in their movements. Their most common way of escape is to lie still until you have passed, then suddenly jumping up from behind, dart off to one side. An assistant, by watching this manœuvre, greatly facilitates their capture. In one instance a second ally, a keen-nosed setter, was found useful, doing effective service when all efforts had proved unavailing. Again, as the chance may be, they will steal away in the thick sedge, or fly off through the open weeds. Briers and tall swamp grass are ever resorted to for protection. To gain the latter they will fly directly by the collector, if he happens to cut off the retreat, and when once under this friendly shelter, no amount of thrashing will bring them out. Sometimes they take to bushes and saplings, beginning at the lower limbs and hopping upward. One specimen was shot about ten feet above the ground. When not concealed, but in short grass, they are very tame, allowing one to approach within a few feet, and then running off a little way and stopping to look back. Their flight is low, and usually feeble and unprotracted, but under repeated molestations it becomes rapid and prolonged. In one instance a bush some six feet in height was cleared.

During their sojourn here they become very fat. The stomachs of birds examined through the winter contained several kinds of small seeds and fine gravel.

In certain specimens before me, secured during November, December, and January, narrow streaks extend in a band, about half an inch in width, across the jugulum. These markings are also continued toward the bill, forming noticeable maxillary lines.

The measurements of fifty-four examples, taken in the flesh, are as follows:—

	Length.		Extent.		Wing.		Tail.	
	mm.	in.	mm.	in.	mm.	in.	mm.	in.
Maximum	139.7	5.50	180.8	7.12	52.3	2.06	57.1	2.25
Minimum	130.8	5.15	175.2	6.90	49.0	1.93	52.3	2.06
Average	127.0	5.00	168.1	6.62	47.4	1.87	47.4	1.87

In five instances the wing and tail were found equal, but in no case did the length of the wing exceed that of the tail. (For original South Carolina record, see Bull. Nutt. Orn. Club, Vol. VII, Jan., 1882, pp. 54, 55.)

152. *Spiza americana*. BLACK-THROATED BUNTING.—In certain partially cleared grain fields around the town of Chester, this bird is a common summer resident.

153. *Zamelodia ludoviciana*. ROSE-BREADED SONG GROSBEEK.—During the migration. Not very common. Found only on high ground, especially heavily-timbered 'ridges.'

154. *Xanthocephalus icterocephalus*. YELLOW-HEADED BLACKBIRD.—An adult male of this western species was captured at Chester C. H., April 18, 1884. (Previously noted in 'The Auk,' Vol. I, p. 293.)

155. *Aluco flammeus pratincola*. BARN OWL; 'WHITE OWL.'—Rather common during the summer season. Said to be a permanent resident.

156. *Asio wilsonianus*. AMERICAN LONG-EARED OWL.—Winter. Moderately common. Not known to breed.

157. *Circus cyaneus hudsonius*. AMERICAN MARSH HAWK, or HARRIER; BLUE HAWK; 'OLD FIELD HAWK'; 'RABBIT HAWK.'—Very common in the winter, but has wholly escaped observation during the breeding season.

158. *Elanoides forficatus*. SWALLOW-TAILED KITE; 'FORK-TAILED HAWK.'—Summer. Rare. Said to have been much more abundant before the extensive deforestation of the country.

159. *Haliaeetus leucocephalus*. WHITE-HEADED SEA EAGLE; 'BALD EAGLE'; 'BIRD OF WASHINGTON.'—Occasionally seen during the vernal migration.

160. *Pandion haliaeetus*. FISH HAWK; OSPREY.—Principally along the Broad and Catawba Rivers. One example from the water-shed, near Chester C. H.

161. *Lobipes hyperboreus*. NORTHERN PHALAROPE; RED-NECKED PHALAROPE.—One specimen, May 17, 1880, from a mill-pond near the town of Chester. (See Bull. Nutt. Orn. Club, Vol. V, p. 242.)

162. *Actodromas minutilla*. LEAST SANDPIPER.—Occurs during both migrations, but does not appear to be at all common.

163. *Totanus melanoleucus*. GREATER TELL-TALE.—Have met with this species but once. April 21, 1880, a single individual was shot, from a flock of seven, on the margin of a little mill-pond.

164. *Herodias egretta*. GREAT WHITE EGRET; WHITE HERON; 'BIG WHITE CRANE.'—Summer. Not very common, chiefly confined to the rivers. I have only one specimen in my cabinet from the dividing-ridge; a female, young-of-the-year, obtained July 12, 1881, in the suburbs of the town of Chester.

165. *Nycticorax nycticorax*. BLACK-CROWNED NIGHT HERON; QUAIL-BIRD; SQUAWK.—An immature female of this Heron was secured August 28, 1881, on a creek near the town.

166. *Rallus virginianus*. VIRGINIA RAIL.—Known only as a migrant.—Frequents swampy meadows overgrown with tall grass.

167. *Gallinula galeata*. COMMON GALLINULE; FLORIDA GALLINULE; RED-BILLED MUD-HEN.—An adult male bird was taken, on the grassy banks of a small mill-pond, May 19, 1884.

168. *Cygnus columbianus*. COMMON AMERICAN SWAN; WHISTLING SWAN.—Winter visitant. Not common.

169. *Bernicla canadensis*. CANADA GOOSE; COMMON WILD GOOSE.—Winter. Common. Mainly restricted to the Broad and Catawba.

170. *Dafila acuta*. PIN-TAIL DUCK; SPRIG-TAIL.—Only in a single instance, March 12, 1883, have I met with this species.

171. *Querquedula carolinensis*. AMERICAN GREEN-WINGED TEAL.—Winter visitor. Tolerably common.

172. *Spatula clypeata*. SHOVELLER DUCK; BROAD-BILL.—Winter, but particularly spring and fall. Not uncommon.

173. *Aix sponsa*. WOOD DUCK; SUMMER DUCK; 'THE BRIDE.'—Permanent resident. Breeds. Individuals have been seen during June in a little carp pond in the town. Several crowded tenement houses near by make the situation a very exposed one.

174. *Fuligula affinis*. LESSER SCAUP DUCK; LITTLE BLACK-HEAD.—Of regular occurrence in winter; but not abundant.

175. *Fuligula collaris*. RING-NECK DUCK. Winter sojourner. Rather numerous. Specimen taken May 7.

176. *Fuligula ferina americana*. RED-HEAD; AMERICAN POCHARD.—One case, March 1, 1883.

177. *Clangula albeola*. BUFFLE-HEAD; BUTTER-BALL; SPIRIT-DUCK; DIPPER.—Frequently taken during winter.

178. *Mergus cucullatus*. HOODED MERGANSER.—Winter resident. Plentiful. I am not aware that any remain during the breeding season in this immediate locality.

179. *Rhynchops nigra*. BLACK SKIMMER.—A female bird-of-the-year of this maritime species was taken, Sept. 10, 1882, in the town of Chester. During the morning, and on the previous day, there had been a heavy easterly gale, which evidently had driven it in from the coast; the nearest point, as the birds fly, Long Bay, Georgetown County, being about one hundred and fifty miles distant.

180. *Podiceps cornutus*. HORNED GREBE.—Noted merely on one occasion, March 4, 1880, when a specimen was secured.

THE ROCK PTARMIGAN OF NEWFOUNDLAND.

BY WILLIAM BREWSTER.

IN the summer of 1883 Mr. George O. Welch, of Lynn, Mass., collected a number of Rock Ptarmigan on Newfoundland. The series showed little variation, aside from that dependant on

age and season, and supposing them to be merely our common *L. rupestris*, with the summer plumage of which I was then unfamiliar, I bought only a single pair for my collection. It turns out, however, that they are not only distinct from *rupestris*, but very different from any other known form. As there is good evidence that their habitat is strictly isolated, intergradation with any of their allies is so improbable that I have thought it best to describe the bird as a full species, which I name after the collector of my types.

Lagopus welchi. nov. spec.

SP. CHAR.—♂ *adult, summer plumage* (No. 8246, Coll. W. B. Newfoundland, June 25, 1883. George O. Welch). Throat, wings (except inner secondaries), legs, and central portions of the body below from the breast to the crissum, white; jugulum, præpectus and sides dark brownish-gray; entire upper parts still darker gray, many of the feathers having black centres; all the feathers of the dark areas of the body, both above and below, tipped with white and crossed by numerous fine, wavy, more or less broken lines of white, grayish-white, and grayish-ochraceous; feathers of the head, neck, and sides more broadly tipped and barred, giving these parts a lighter appearance; tail uniform deep grayish-plumbeous with narrow spaces of concealed white at the bases of all the feathers and a rather broad white tipping on the central pair; upper tail-coverts like the back; under coverts plumbeous tipped with white; a broad, conspicuous, black loreal stripe; bill and claws black. Wing, 7.48; tail, 4.95; tarsus, 1.40; culmen from base, .97; culmen from nostril, .40.

Adult ♀ (No. 8248, Coll. W. B. Newfoundland, May 19, 1883. George O. Welch). Similar, but lacking the black loreal stripe, and of generally lighter color; the transverse lines broader, whiter, and in places yellower, those of the breast and under tail-coverts being clear but pale orange-yellow. The shafts of the primaries, also, are brown instead of white, as in the ♂. Wing, 6.98; tail, 4.15; tarsus, 1.50; culmen from base, .85; culmen from nostril, .42.

Habitat:—Newfoundland.

The colors in the male of this Ptarmigan are confused and blended to such a degree that a detailed description, however carefully drawn, fails to do them justice. The general effect is that of a dark, grayish-plumbeous bird (colored not unlike the Oregon form of the Dusky Grouse), plentifully besprinkled with fine dots of 'pepper-and-salt color.' Dr. Stejneger, who has very kindly compared both specimens with the extensive material in the National Museum, writes me as follows regarding them:

“Of all the specimens in the National Museum no American ones show even an approximation toward these. The nearest approach is the *female* of the Greenland and Cumberland Gulf form, *reinhardtii*, but the gray is even less tinged with yellowish than in the latter. Nearer in color come our specimens of the European *mutus* and its forms, but not even the Scandinavian specimens have so much gray in their early plumage, the Newfoundland bird being darker; besides, the amount of white at the *base* of the external rectrices is also very small. This character is of rather small account because of its variability (according to age?), but I have found that on an *average* it may be regarded as of some value in large series. From both European forms—showing that it belongs to the *rupestris* type—the Newfoundland bird may be easily distinguished in the pre-æstival plumage by the dense barring on the præpectus. With the Pacific Island forms it hardly needs comparison. It lacks the pure vermiculation of both *athkensis* and *nelsoni* in the corresponding plumage, while the latter and *ridgwayi* are the direct opposites of the Newfoundland birds as far as general color is concerned, they being the two extremes on the color-scale, *ridgwayi* being deep umber-brown—nearly black—without traces of gray.

“I therefore conclude that your Newfoundland *rupestris* is distinct, and, judging from the material, comparatively very strongly so. Should the characters prove as stable as they have in *ridgwayi*, of which I have just received additional material, it should undoubtedly stand as a species, and I think it is safest to establish the form as a binomial until further material should prove intergradation.

“The tendency to dark primaries, even in May, is an interesting parallel to *alleni*!”

According to Mr. Welch these Ptarmigan are numerous in Newfoundland, where they are strictly confined to the bleak sides and summits of rocky hills and mountains in the interior. Unlike the Willow Grouse of that island, which in winter wander long distances, and frequently cross the Gulf to Labrador, the Rock Ptarmigan are very local, and for the most part spend their lives on or near the hills where they are reared.

ADDITIONAL NOTES ON SOME BIRDS COLLECTED
IN ARIZONA AND THE ADJOINING PROVINCE
OF SONORA, MEXICO, BY MR. F. STEPHENS
IN 1884; WITH A DESCRIPTION OF A
NEW SPECIES OF *ORTYX*.

BY WILLIAM BREWSTER.

IN the last number of 'The Auk'* I announced several additions to our bird-fauna made by Mr. Stevens in Arizona during the collecting season of 1884. The following notes embrace what I have to add on the subject. Late in the summer Mr. Stephens crossed the boundary† into Mexico, traversing the Province of Sonora in a south-westerly direction to Port† Lobos, on the Gulf of California. As he has kindly promised a detailed account of this trip for publication in 'The Auk,' I shall mention here only a few of its more important results, especially such as have a bearing on our fauna, either by extending the known range of Arizona birds southward, or that of Mexican birds northward.

Harporynchus curvirostris palmeri Ridgw. PALMER'S THRASHER.—An adult male in worn breeding plumage, taken at Altar, Sonora, Mexico, Aug 14, seems to be perfectly typical of this form, which, if I am not mistaken, has not been previously found south of the United States.

Harporynchus leontii Bonap. LECONTE'S THRASHER.—The occurrence of this species well within the boundary of Mexico is attested by four specimens taken about fifteen miles inland from Port Lobos. These birds are in a plumage unlike any that I have previously seen. The upper parts are deep ashy-, almost bluish-, drab, scarcely, if at all, tinged with brown or yellow. The wings are nearly concolor with the back, the tail much darker, in fact plumbeous-brown. The throat is white, in decided contrast with the breast and sides, which are nearly as dark as the back and of somewhat the same color, but tinged with ochrey. The abdominal region is brownish-white; the crissum, under tail-coverts, and flanks are strongly rusty.

Three of these specimens were shot Aug. 19; the fourth Aug. 21. Mr. Stephens is firm in the belief that they represent a form sub-specifically distinct from that of Arizona and California. This, however, seems to me improbable, from the fact that they all have more or less extensive patches of pallid, sand-colored feathers, which match perfectly those of the summer plumage of *H. leontii* (either adults or young in first plumage). As these pallid feathers are clearly the remnants of a plumage

* Vol. II, No. 1, Jan. 1885, pp. 84, 85.

† So spelled on the labels of his specimens. Possibly Point, or Cape, Lobos!

which must have been moulted only a short time before the birds in question were killed, it would seem most reasonable to assume that the latter are simply Leconte's Thrashers in fresh autumnal dress, a condition which does not seem to have been previously examined.

I take this opportunity of describing another hitherto unknown plumage of *lecontei*.

Juv., first plumage (♀ No. 894, F. S., Aqua Caliente, California-March 28, 1884. Coll. F. Stephens). Of the same general pallid sandy-brown as the adult, but with the ochraceous of the anal region and crissum paler, the upper tail-coverts brownish-rusty, the wing-feathers (but not their coverts) delicate pearl-gray tipped with light brown, the tail dark plumbeous-brown, and the dusky loreal patch and malar stripe rather more conspicuous than in the old bird. There is no indication of other dark spots or streaks anywhere either above or beneath. This bird was evidently just from the nest when taken, as its wings and tail are not fully grown.

Although Mr. Ridgway has expressed* his inability to verify certain supposed peculiarities in the bill of this species, to which I once called attention,† I have found them nearly constant in the dozen or more specimens that have since passed through my hands.

Certhia familiaris mexicana (*Gloger*) *Ridgw.* MEXICAN CREEPER.—Two Creepers, an adult male and female, taken in the Santa Rita Mts., July 5, are nearly, if not quite, typical examples of this strongly characterized subspecies, which was added to our fauna by Mr. Stevens in 1881.

Dendroeca nigrescens (*Towns.*) *Baird.* BLACK-THROATED GRAY WARBLER.—*Juv., first plumage* (♀ No. 2072, Santa Rita Mts., July 1). Above brownish-ashy, somewhat plumbeous on the crown; below ashy-white, the throat dark ashy, the breast and sides sprinkled with fine, obscure spots of dull black. The white stripes on the sides of the head are well-defined but the lores are solidly black, lacking the yellow spot seen in the adult male.

Vireo huttoni stephensi *Brews.* STEPHENS'S VIREO.—*Juv., first plumage* (No. 2161, Santa Rita Mts., July 9). Above brownish-ashy tinged with olive on the back, the wing- and tail-feathers edged with greenish, the wing-coverts tipped with ochraceous; below ashy-white washed faintly with yellowish posteriorly.

Vireo pusillus *Coues.* LEAST VIREO.—*Juv., autumnal plumage* (♀ No. 2501, Camp Lowell, Aug. 11). Very similar to the adult, but paler and greener above, with a decided greenish edging on the wing- and tail-feathers; the under parts rather purer white.

Pyrranga hepatica *Swains.* LIVER-COLORED Tanager.—*Juv., first plumage* (♀ No. 2163, Santa Rita Mts., July 9). Above dull yellowish-green, brightest on the crown and tail, each feather with a broad shaft-stripe of dark brown; below sulphur yellow, more or less tinged with

* Proc. U. S. Nat. Mus., Vol. V, p. 45.

† Bull. N. O. C., Vol. VI, No. 2, April, 1881, p. 67.

green, the feathers everywhere—except on the crissum and under tail-coverts, which are immaculate—streaked centrally with dull black.

Pyrranga æstiva cooperi *Ridgw.* COOPER'S TANAGER.—*Juv., first plumage* (♀ No. 2500, Camp Lowell, Aug. 11). Above dull brownish-ochrey; below brownish or ashy white; the feathers of the crown and back streaked centrally with dark brown, those of the breast and abdomen with dull black. This specimen is a little past the true first plumage, patches of the autumnal feathering having already appeared in places.

The adult male of this subspecies, as shown by a specimen taken Sept. 1 at Tucson, does not have a distinctive autumnal plumage, the red at that season being quite pure and, indeed, apparently even deeper and rosier than in spring. In this respect the bird resembles its near relative *P. æstiva* and differs from *P. rubra*, the adult male of which in autumn assumes a green livery scarcely distinguishable from that of the female.

Passerculus rostratus (*Cass.*) *Baird.* LARGE-BILLED SPARROW.—Two females were taken Aug. 20 on the shore of the Gulf of California at Port Lobos, Sonora, Mexico. Mr. Ridgway, who has kindly examined them, confirms my opinion that they are typical *rostratus*.

Centronyx bairdi (*Aud.*) *Baird.* BAIRD'S SPARROW.—Two adult males, in worn and very ragged breeding plumage, were taken respectively Aug. 29 and 30, in Southern Arizona, eight miles north of the boundary line, and ten miles northeast of Sasabe, Sonora, Mexico. The dates of capture and condition of these specimens would seem to imply that the species breeds in Arizona.

Passerina versicolor (*Bonap.*) *Gray.* VARIED BUNTING.—A female, apparently adult, but in perfectly fresh, unworn plumage, was taken July 14 at Crittenden, near the Santa Rita Mts. I can find no previous record of the occurrence of this species in Arizona.

Junco cinereus (*Swains.*) *Cab.* MEXICAN JUNCO.—*Juv., first plumage* (♀ No. 2102, Santa Rita Mts., July 5). Top and sides of head dusky-ash; under parts ashy-white; chestnut of back spreading over the wing-coverts and inner secondaries as in the adult; entire plumage of head and body—except the abdomen and crissum, which are immaculate—thickly spotted and streaked with dull black; lores black.

Sturnella magna mexicana (*ScL.*) *Ridgw.* MEXICAN MEADOW LARK.—Two Meadow Larks, a male and female, taken respectively July 22 and 24 at Crittenden, Arizona, prove rather unexpectedly to be typical *mexicana*. As this form—closely related to *magna* of the East—seems never to have been detected before to the westward of Texas within the United States, its occurrence in Arizona, in the heart of the *neglecta* country, is not less interesting than unexpected.

Myiarchus mexicanus magister *Ridgw.* ARIZONA CRESTED FLY-CATCHER.—*Juv., first plumage* (♀ No. 2434, Camp Lowell, Aug. 5). Generally similar to the adult, but with the crown tinged with reddish, the back duller brown, the throat paler ash, the outer edges of all the wing-

coverts, primaries, and secondaries (except the inner two), strongly rusty, and the outer, as well as inner edges of all the tail-feathers edged with rusty.

Myiarchus lawrencei olivaceus *Ridgw.* OLIVACEOUS CRESTED FLY-CATCHER.—*Juv., first plumage* (♀ No. 2235, Santa Rita Mts., July 15). Differing from the adult chiefly in having all the tail-feathers conspicuously margined with rusty on both outer and inner webs, all the wing-feathers, including both rows of coverts, tipped and edged with rusty, the ash of the throat paler, and the yellow of the under parts much duller.

Cæligena clemenciæ *Lesson.* BLUE-THROATED CASIQUE.—The specimen announced in the last issue of 'The Auk' (Vol. II, No. 1, January 1885, p. 85) as having been taken by Mr. Stephens at Camp Lowell was really shot by Mr. F. Ball (Mr. Stephens's assistant) in the Santa Catarina Mts., a neighboring, but of course widely different locality. The bird bore a label with "Camp Lowell" printed on the face in large letters and I overlooked the inscription of the exact place of capture, which was rather indistinctly written in among some other manuscript data.

Eugenes fulgens (*Svoains.*) *Gould.* REFULGENT HUMMINGBIRD.—A female, apparently adult, was taken in the Santa Rita Mts., July 5.

Picus stricklandi *Mulh.* STRICKLAND'S WOODPECKER.—*Juv., first plumage* (♂ No. 2001, Santa Rita Mts., June 27). Entire crown scarlet; forehead smoky brown; occiput dull plumbeous; remainder of upper parts, including wings, clear olive-brown: underparts very densely spotted on a yellowish-white ground. Otherwise like the adult. A female (No. 2096, Santa Rita Mts., July 4) is precisely similar to the last, with the red crown patch fully as extended and deep in tint. Another female, rather younger, has the red of the crown restricted to the extreme tips of the feathers, as well as duller, yellower, and altogether less conspicuous.

Colinus ridgwayi *nov spec.* MASKED QUAIL.

♂ *adult.* Whole head, neck, and throat black, except the centre of the crown posteriorly and the occipital and nuchal regions, which are varied with black, white, and cinnamon, the black predominating; under parts warm brownish cinnamon, immaculate except on the flanks, where a few of the feathers are spotted marginally with white and dull black, and on the under tail-coverts, the central feathers of which are broadly tipped with brownish-white and crossed with v-shaped bars of black; inner secondaries, wing-coverts, scapulars, and fore part of back of nearly the same color as the under parts but paler and pinker, the feathers everywhere barred and mottled with whitish and dark brown or dull black; upper tail-coverts, rump, and back posteriorly grayish-drab, obscurely barred and mottled with dark brown and whitish; primaries drab, mottled with whitish on their outer webs; tail feathers bluish-ash, finely vermiculated with pale brown and whitish, most strongly on the central pair. Bill black; legs and feet horn color. Length, 9.70; extent, 14.50; wing, 4.45; tail, 2.75; tarsus, 1.20; bill, .30 deep by .34 long from nostril. Type, No. 2599, Coll. F. Stephens.

This species seems to most nearly resemble *C. coyolcos*, but differs in the restriction of the black to the head, neck and throat, in the absence of white frontal and superciliary stripes, and in its decidedly larger size.

The type specimen was taken by Mr. Stephens, Aug. 11, about eighteen miles southwest of Sasabe, Sonora, Mexico, and hence very near the boundary. Mr. Stephens on the same trip saw a precisely similar bird a few miles *north* of the line, and within Arizona and he writes me that he has recently examined two specimens which were actually taken in Arizona, thus adding the species to our fauna.

NOTES ON SOME SPECIES OF BIRDS ATTRIBUTED TO POINT BARROW, ALASKA.

BY JOHN MURDOCH.

MR. E. W. NELSON, in his paper on 'The Birds of Bering Sea and the Arctic Ocean,'* mentions several species of birds as occurring at Point Barrow, which were not afterwards observed there by our party.

His opinions are based upon observations made during a hasty visit of a day or two, when on board of the Revenue-cutter *Corwin* in 1881, and upon generalizations from the abundance of the species in more southern parts of the Territory. The results of two years' careful and continuous observation and collecting in this locality lead me to consider Mr. Nelson in error on these points, and it seems to me desirable that the correction of these errors should be published before the statements have gained currency from length of time and frequent quotation. The following are the species in question:

Ægiothus linaria. Of this species, Mr. Nelson merely says, "We found it with the preceding at East Cape, Siberia, Point Barrow, and at nearly every place we landed." As he does not appear to have obtained specimens, and as we did not obtain it in either season, his statement of its occurrence must have been founded on the supposition that the two species would always be found together. It is worthy of note that the preceding species (*Æ. canescens exilipes*) which he speaks of as "perhaps the most abundant of all the land birds . . . on the Alaskan shore . . . north to Point Barrow," was decidedly rare at Point Barrow in the season of 1882 and was not observed in 1883.

* Cruise of the Revenue Steamer *Corwin* in Alaska and the N. W. Arctic Ocean in 1881. Washington, 1883.

Passerculus sandwichensis alaudinus. This species, referred to as probably common at Point Barrow, does not occur there.

Asio accipitrinus. Mr. Nelson says, "On the Alaskan coast of the Arctic, it is found nearly if not quite to Point Barrow." It was not found at Point Barrow.

Ægialitis semipalmatus. This species was not seen, although Mr. Nelson's remarks would lead to the inference that he saw a pair there in 1881.

Ereunetes pusillus. This bird, which is said to breed at Point Barrow, only occurs in the autumn migrations, when large flocks of the young appear among the mudholes at Elson Bay, moving southwest along the coast.

Numenius hudsonicus. Referred to as occurring "north to the vicinity of Point Barrow." We did not see it, and the only species of Curlew observed (*N. borealis*) was rare and irregular.

Dafila acuta. Referred to as nesting "in the greatest abundance . . . to the farthest northern extreme of Alaska in the vicinity of Point Barrow." We found the bird comparatively rare and none breed. The natives say they are abundant inland on the rivers.

Nettion carolinensis. It does not reach Point Barrow, as Mr. Nelson thought might be the case.

Mergus serrator. Referred to as found "along the Alaskan coast of the Arctic to Point Barrow." We neither saw nor obtained it.

The following species, supposed by Mr. Nelson not to reach Point Barrow, were obtained by our party.

Limosa lapponica novæ-zelandiæ. A few immature birds were obtained in the autumn migrations.

Grus canadensis (= *fraterculus* Cass.). These birds were seen and two taken in June, 1883.

Lampronetta fischeri. This species occurs sparingly with the other Eiders in the great spring flights, and a few remain on land and undoubtedly breed, as a female was shot with an egg ready for laying in the oviduct, and half-grown young were taken in August, 1883.

WASHINGTON, D. C.

CHANGE OF COLOR IN THE WING-FEATHERS OF THE WILLOW GROUSE.

BY C. HART MERRIAM, M. D.

At the last meeting of the American Ornithologists' Union Dr. Leonhard Stejneger exhibited the type specimen of 'A new subspecies of Willow Grouse from Newfoundland,' which he named *Lagopus alba alleni*. He characterized it as follows:

“Similar to *Lagopus alba* (Gm.), but distinguished by having the shafts of both primaries and secondaries black, and by having the wing-feathers, even some of the coverts, marked and mottled with blackish. Habitat: Newfoundland.”*

In the discussion which this announcement occasioned, Mr. William Brewster expressed the opinion that the characters pointed out might prove seasonal. To this Dr. Stejneger replied that since the primaries were moulted but once a year their color could not possibly be influenced by season, but must be permanent.† I then stated that I could not agree with Dr. Stejneger, for, when in Newfoundland, I had examined several hundred specimens of this Ptarmigan in the flesh, and was fully convinced that change of color of individual feathers did take place, both independent of and coincident with the moult. In this belief I was supported by Mr. D. G. Elliot.

My views have recently been confirmed in the most gratifying manner. Mr. Napoleon A. Comeau of Godbout, on the north shore of the St. Lawrence near the Gulf, was present at the meeting of the Union and was much interested in this discussion. Since his return (in fact, between the 6th and 14th of November, 1884) he has killed no less than three hundred Willow Grouse at Godbout, and has had the kindness to send me one hundred and fifty of their wings. The locality is a little more than four hundred miles west of Newfoundland, and Ptarmigan generally appear there early in December, a few occasionally remaining till May.

They sometimes come in enormous numbers, while at other times they are not seen at all for several years. They arrived nearly a month earlier than usual this winter: two were seen November 2, and large flocks appeared on the 7th. The change from summer to winter plumage was already nearly completed.

The large series of wings sent by Mr. Comeau demonstrates beyond a question that individual feathers do change color. Most of them are already pure white excepting the shafts of the six outer primaries, which, as usual in winter specimens of *Lagopus albus*, are black. The quantity of black varies greatly in the different wings. In those in which the change is most advanced it is merely a narrow strip of pale sooty-brown extending along

* This description has since been published in 'The Auk,' Vol. I, No. 4, Oct., 1884, p. 369.

† Dr. Stejneger has since informed me that he is prepared to admit that change of color in the primaries can take place.

the middle of the upper surfaces of the shafts of the six outer primaries, and is confined to the middle half of the exposed part of each, so that the basal half, and a considerable apical portion, together with all the rest of the wing, is pure white.

In the other extreme, the black covers the exposed portions of the outer surfaces of the shafts of all the primaries (sometimes being as intense on the 8th, 9th, and 10th, as on the 2d, 3d, and 4th) and also of the 'false wing' (alula). The under surfaces show it, but in a much less degree. The black is not limited to the shafts, and in some cases all the primaries, except the first, are extensively blotched and marbled with sooty, the markings being most distinct subapically. The coverts also are occasionally clouded.

Unfortunately, the wings were severed at the carpo-metacarpal joints; consequently it is impossible to say whether the secondaries had black shafts or not. But the primaries present every intermediate phase between their normal winter condition in typical *L. albus*, and the extreme dark mottled form characterized by Dr. Stejneger.

It is worthy of note that many of these wings are deeply tinged with a delicate and very beautiful shade of rose-pink, which is more pronounced than in a freshly killed Roseate Tern. The color is very transient and has already begun to fade in specimens which have been exposed to the light but little more than a week.

RECENT LITERATURE.

Gurney's 'List of the Diurnal Birds of Prey.'*—In a compact little volume of less than 200 pages, we have the fulfilment of Mr. Gurney's promise to supplement his valuable critical notes, published in 'The Ibis' for 1875-1882, on Mr. Sharpe's 'Catalogue of the Accipitres or Diurnal Birds of Prey in the collection of the British Museum,'† by a tabular index to the species, with references and annotations. The plan,

* A list | of the | Diurnal Birds of Prey, | with | references and annotations: | also | a record of specimens | preserved in the | Norfolk and Norwich Museums. | By | John Henry Gurney. | London: | John Van Voorst, 1 Paternoster Row, E. C. | MDCCCLXXXIV. | Small 8vo., pp. i-xv, 1-187.

† Catalogue of the Birds in the British Museum. Volume I. London: Printed by order of the Trustees, 1874. 8vo., pp. i-xiii, 1-480, pls. I-XIV.

as originally announced, has been modified so as to include all the species known to the author, together with a series of 'Appendices,' fifteen in number, each consisting of a special paper reviewing critically some particular group or species. Regarding this additional matter we quote from the preface (p. vi) :—"Since my notes on Mr. Sharpe's volume were published in the 'Ibis,' I have seen occasion to modify my views as regards a few species, and have obtained additional information as to some others, and these results I have added to my present list in the form of footnotes, or, when too lengthy to be so introduced, in the shape of Appendices."

The work is based ostensibly upon the collection of Diurnal Raptores in the Norwich Museum, and indeed furnishes a list of the specimens contained in that establishment; but it is replete with interesting information derived from other sources, among which the British Museum and United States National Museum figure most prominently. The unequalled richness of the material which Mr. Gurney has had at his command may be appreciated when it is stated that of the 473 species and subspecies given in the catalogue, and embracing all that are known, no less than 385, represented by 2895 specimens, are contained in the Norwich Museum.*

The 'Appendices' which pertain specially to North American Falconidæ are the following:

'Appendix H. On the Genus *Buteola*.' Pp. 146, 147.

'Appendix N. On the Existence in North America of *Hierofalco gyrfalco*, and its possible Hybridism with *H. holballi*.' Pp. 161, 164.

Under the first heading are treated the *Buteo brachyurus* Vieill., and *B. fuliginosus* Scl., † which are considered to be light and dark (melanistic) phases of one species. Regarding the Gyrfalcons, Mr. Gurney says:

"The result of the comparisons which I have here recorded leads me to agree with the conclusion previously arrived at by Mr. Sharpe and by Mr. Dresser that *H. gyrfalco* is found in the northern parts, not only of Europe and of Asia, but also of North America. The North American range of this species, however, has not at present been very clearly ascertained, especially to the eastward, and a similar uncertainty exists as to the western limits of *H. holballi*, as also to the localities, if such there be, where both races occur and where hybridism may perhaps result from such propinquity. As I have already mentioned in my Notes, the Norwich Museum possesses three immature Falcons from Hudson's Bay, and these I believe to be referable to *H. gyrfalco*; but as they are not in adult dress, I do not feel absolutely certain of the correctness of this identification. The question of the geographical range of these Falcons is one which I think affords an interesting subject for further investigation, and which I trust will receive the attention it merits."

As to other North American species of the family there are few departures from the nomenclature of Bulletin 21 of the United States

* Of Owls, the same museum possesses 171 species and 1009 specimens!

† Cf. Bull. Nutt. Orn. Club, VI, Oct. 1881, pp. 207—214.

National Museum ('Nomenclature of North American Birds'), but the following may be noted:

Astur atricapillus striatulus is not considered a "valid subspecies."

The American Golden Eagle is not deemed separable from that of the Palæarctic Region, and is therefore given simply as *Aquila chrysaëtus*.

Buteo borealis socorroensis is ranked as a species.

Asturina nitida plagiata is given as *A. plagiata*.

Elanus leucurus is considered as a subspecies of *E. axillaris*.

Falco albigularis is given as *Hypotriorchis rufigularis*, and *Rhynchofalco fusco-cærulescens* is also referred to *Hypotriorchis*.

Tinnunculus sparverius isabellinus is treated as a species, while *Æsalon richardsoni* is reduced to a subspecies of *Æ. columbarius*.

Hierofalco mexicanus polyagrus is given as *Falco mexicanus*, under the subgeneric heading of *Gennaia*.

Hierofalco gyrfalco obsoletus is recognized as a distinct species, *Falco labradoris*, while *H. g. islandus* and *H. g. candicans* are also considered specifically distinct, under the names of *Falco islandus* and *F. candicans*, respectively.

It is worthy of remark, that in the case of subspecies Mr. Gurney does not use trinomials, the distinction from the species, so far as typography is concerned, consisting only in the heading 'Subspecies,' and the prefix 'a,' or 'b' (according to the number of subspecies) to the name.

The classification adopted strikes us as being far more natural than most of the more recent arrangements; yet we regret to observe the association of such radically distinct forms, structurally considered, as the following: *Herpetotheres* and *Circaëtus*; *Micrastur* and *Geranospizias* with *Accipiter* and allied genera; *Elanoides*, *Rostrhamus*, *Ictinia*, etc., with *Milvus*, *Haliastur*, etc., and *Harpagus* with the true Falcones. A perfectly natural classification of this most difficult group of birds is, however, not possible with our present limited knowledge of their internal structure; and, as Mr. Gurney truly remarks, "it is obvious that a serial arrangement can only record with precision the connection of each genus and of each species with two of the forms which are thus grouped around it, and is therefore so far imperfect that it must of necessity disregard other natural connections, the existence of which cannot be satisfactorily indicated by any method of consecutive linear arrangement."—R. R.

Newton's 'Ornithology.'*—The article on Ornithology in the new edition of the 'Encyclopædia Britannica,' like most of the articles on Birds in that great work, is by Prof. Alfred Newton, and could scarcely have been entrusted to better hands. The article—complementary to that entitled 'Birds' in Volume III of the Encyclopædia—is an elaborate historical résumé of the subject, critically tracing the progress of the science from

* Ornithology. By Alfred Newton, M.A., F.R.S., F.Z.S., F.L.S., Professor of Zoölogy and Comparative Anatomy in the University of Cambridge. Reprinted from the 'Encyclopædia Britannica' [Ed. 9, Vol. XVIII, pp. 1-50] by special permission. Dec., 1884.

the days of Aristotle, Pliny, and Ælian to the present time. All separate works of any importance, whether general, faunal, or monographic, are noticed at greater or less length, according to their merits or importance. except that the faunal works noticed are limited, in consequence of their being so numerous, "to those countries alone which form the homes of English people, or are commonly visited by them in ordinary travel." We miss, therefore, all reference to such important works as Tschudi's 'Fauna Peruana,' Burmeister's 'Thiere Brasiliens,' Salvin and Godman's 'Biologia Centrali-Americana,' etc. Furthermore, it was found necessary to leave unmentioned all "treatises which have appeared in the publications of learned societies, or in other scientific periodicals." While a bibliography of ornithology is here neither attempted, nor is to be properly looked for in such a connection, all works which have had important bearing upon the progress of the science are duly noted, and their influence critically weighed. The various prominent systems of classification are also set forth, and the "rise of the present more advanced school of ornithologists" is traced in considerable detail. Its origin is attributed to the 'few scattered hints' contained in Nitzsch's 'Pterographische Fragmente,' published in 1806. But the attempt made by Merrem, in his 'Tentamen Systematis naturalis Avium' (1812), "must be regarded as the virtual starting-point of the latest efforts in Systematic Ornithology." In chronological order are discussed the labors of De Blainville (1815), Jacobson (1820), Nitzsch (1820-40), L'Herminier (1827), Berthold (1831), Cuvier and Geoffrey (1832), Gloger (1834), Macgillivray (1837), Blyth (1838), Brandt (1836-39), Müller (1845-47), Cabanis (1847), Parker (1860 and later), Lilljeborg (1866), Huxley (1867), A. Milne-Edwards (1867-71), Marsh (1870), Sundevall (1872-74), Garrod and Forbes (1873-83), Selater (1880), and others less prominently identified with the subject. The classification of birds is finally discussed from the author's own standpoint, but he presents no formal system, considering it evident that our knowledge of the class is too imperfect to enable systematists to construct a phylogenetic scheme. Finally, after passing the ordinal groups in review, he deals with the supposed high rank of the Turdidæ, which he claims is not "borne out by their alliances, nor by the size of their brain, nor by character of plumage." On the other hand, he claims, with Macgillivray and Parker, "that at the head of the Class *Aves* must stand the Family *Corvidæ*, of which family no one will dispute the superiority of the genus *Corvus*, nor in that genus the pre-eminence of *Corvus corax*—the widely-ranging Raven of the Northern Hemisphere, the Bird perhaps best known from the most ancient times, and, as it happens, that to which belongs the earliest historical association with man."—J. A. A.

Ridgway on the American Red Crossbills.*—In his 'Review' of the American Red Crossbills (*Loxia curvirostra* group) Mr. Ridgway is

* A Review of the American Crossbills (*Loxia*) of the *L. curvirostra* type. By Robert Ridgway. Proc. Biolog. Soc. of Washington, II, 1883, pp. 84-107. (Separates issued April 30, 1884.)

"inclined to consider all the Red Crossbills that I [he] has seen, from whatever country, as races of *Loxia curvirostra* Linn." He recognizes three races of American Red Crossbills, one of which (*L. curvirostra bendirei*) is described as new. In size it is larger than *L. c. americana* proper and smaller than *L. c. mexicana*, "between which it may be considered as being about intermediate, so far as size is concerned." Its habitat is given as "Chiefly the western mountain regions of the United States, from Colorado to Oregon and California; in winter not uncommon in Eastern United States (Massachusetts, Maryland, etc.)." In North America the Red Crossbills decrease in size from the north southward, from the small northern subsp. *americana* to the large, heavy-billed subsp. *mexicana* of the southern border of the United States and Mexico. The Japanese Red Crossbill, from the middle or main island of Japan, which has been referred to *L. albiventris* Swinhoe, is renamed *L. c. japonica*, the name *albiventris* being preoccupied for a species of *Munia*. There are also remarks on other races of Red Crossbills, particularly the *L. curvirostra* and *L. pityopsittacus* of Europe.—J. A. A.

Ridgway on Various American Birds.—Mr. Ridgway states that while Mr. Cassin was right in separating the smaller North American Snow Geese from the larger, he erred in giving a new name (*albatus*) to the smaller form, which is identical with the *Anas nivalis* of Forster, "and may therefore be called *Chen* (or *Anser*) *hyperboreus nivalis* (Forst.)."*

Mr. Ridgway, in giving the results of a reëxamination of the types of *Muscicapa fulvifrons* and Coues's *Mitrephorus pallescens*, recognizes three species of the *fulvifrons* group of Flycatchers, as follows: (1) *Empidonax fulvifrons* (Giraud), from east of the Rocky Mountains (2) *E. f. pallescens* (Coues), from west of the Rocky Mountain; (Arizona, New Mexico, and probably portions of Mexico); and (3) *E. f. rubicundus* (Cab.), from Southern Mexico.†

He also claims that the earliest name of the Mexican House Finch (*Carpodacus hæmorrhous*) is *Fringilla mexicana* Müller and that the species should be called *Carpodacus mexicanus* (Müll.), or, should intergradation with *C. frontalis* be proven, *C. frontalis mexicanus* (Müll.).‡

As new subspecies are described§ (1) *Parns atricapillus turneri* (St. Michael's, Alaska), (2) *Psaltriparus minimus californicus* (California), (3) *Colaptes mexicanus saturator* (Northwest coast, Columbia River to Sitka), (4) *Myiarchus mexicanus magister* (Western Mexico, north to

* Note on the *Anas hyperboreus*, Pall., and *Anser albatus*, Cass. Proc. Biolog. Soc. Washington, II, pp. 107, 108. (Separates issued April 30, 1884.)

† Remarks on the type specimens of *Muscicapa fulvifrons*, Giraud, and *Mitrephorus pallescens*, Coues. *Ibid.*, pp. 108-110. (Separates issued April 30, 1884.)

‡ Note regarding the Earliest Name for *Carpodacus hæmorrhous* (Wagler). *Ibid.*, pp. 110, 111. (Separates issued April 30, 1884.)

§ Descriptions of some New North American Birds. *Ibid.*, pp. 89-95. (Separates of this and the following issued April 10, 1884.)

Southern Arizona), (5) *Myiarchus lawrencei olivaceus* (Western Mexico, north to Southern Arizona), (6) *Pediæcetes phasianellus campestris* (Plains east of the Rocky Mountains), (7) *Lophortyx californicus brunneescens* (Pacific coast, from San Francisco Bay north to Washington Territory), and (8) *Phalacrocorax dilophus albociliatus* (Pacific Coast, from California to Cape St. Lucas). The same paper contains important inedited remarks by Dr. Sclater on Kaup's types of *Tyrannula mexicana* and *T. cooperi*, and a rectification by Mr. Ridgway of an error in 'History of Birds of North America' (Vol. II, p. 333) in respect to *Muscicapa lawrencii* Giraud.

Mr. Ridgway also describes* a new American Kingfisher (*Ceryle saperciliosa sticteptera*) from Yucatan, publishes a note on *Psaltriparus grindæ*,† and another on the generic name *Calodromas* Scl. & Sal.‡ for which he proposes to substitute *Calopezus*, *Calodromas* being preoccupied for a genus of Coleoptera.—J. A. A.

Jordan's 'Manual of Vertebrates.'—The fourth edition of this excellent Manual§ (for notices of previous editions see Bull. Nutt. Orn. Club, I, pp. 93, 94, and III, pp. 145, 146) though from the same stereotype plates as the second (1878) and third (1880) is again "brought fully up to date, so far as it is possible to do so without alteration in the arrangement of the genera or insertion of additional matter." Many changes in nomenclature, however, have been made by alterations in the stereotype plates, and an appendix gives a few species additional to those contained in the body of the work.—J. A. A.

Shufeldt on the Osteology of *Numenius longirostris*.||—Besides a detailed account of the osteology of *Numenius longirostris*, illustrated with two beautiful plates, the comparisons of the osteological characters of this species with those of many other Limicoline birds add greatly to the value of this excellent monograph.—J. A. A.

Rives on the Birds of Newport, R. I.—In this paper** Dr Rives reviews in an informal manner the birds found in the vicinity of Newport,

* Description of a New American Kingfisher. *Ibid.*, pp. 95,96.

† Note on *Psaltriparus grindæ* Belding. *Ibid.*, p. 96.

‡ Note on the Generic Name *Calodromas*. *Ibid.*, p. 97.

§ Manual of the Vertebrates of the Northern United States, including the District east of the Mississippi River, and north of North Carolina and Tennessee, exclusive of Marine Species. By David Starr Jordan, Ph. D., M. D., Professor of Biology in Indiana University. Fourth edition, revised and enlarged. Chicago: Jansen, McClurg & Company, 1884. 8vo., pp. 406.

|| Osteology of *Numenius longirostris*, with Notes upon the Skeletons of other American Limicolæ. By R. W. Shufeldt, Capt. Med. Corps U. S. Army [etc.]. Journ. Anat. & Phys., Vol. XIX, Oct. 1884, pp. 51-82, pl. iv and v.

** The Birds of Newport. By William C. Rives, Jr., M.D. Proc. Newport Nat. Hist. Soc., 1883-84. (July, 1884). pp. 28-41.

mentioning briefly most of the species known to occur there. The paper contains many notes of interest, particularly respecting the rarer winter residents and various casual visitors.—J. A. A.

Bell on Birds observed between Norway House and Forts Churchill and York.—This is an annotated list * of 55 species, of much interest from the localities of observation. Though published in 1880, it has not previously been noticed in either the 'Bulletin N. O. C.' or 'The Auk.'—J. A. A.

Minor Ornithological Publications.—The concluding numbers of 'The Canadian Sportsman and Naturalist' † (Vol. III, Nos. 11 and 12, Dec., 1883) contain the following (Nos. 773-775):

773. *Animals that have disappeared in Recent Times.* *Canadian Sportsman and Naturalist*, Vol. III, pp. 278-280.—Refers to the Great Auk, the Labrador Duck, the Moas, *Notornis*, etc.

774. *American Ornithologists' Union. Bird Migration.* By C. Hart Merriam. *Ibid.*, pp. 281, 282.—Circular of the A. O. U. Committee on Bird Migration for 1884.

775. *Nesting of the Common Rail (Porzana Carolina)* Niell (= Vieill.). By William L. Kells. *Ibid.*, pp. 283, 284.

Stearns's 'Bulletin of Massachusetts Natural History,' Vol. I, Nos. 1-4, April-July (all thus far published!), contains the following (Nos. 776-782):

776. *Olden Time Notes on Natural History.* Editorial. *Bull. Massachusetts Nat. Hist.*, 1, pp. 3-6.—Mostly an extract from Timothy Dwight's 'Travels in New England and New York,' published in 1821, containing allusions to plants, mammals, and birds.

778. *American Ornithologists' Union. Bird Migration.* By C. Hart Merriam. *Ibid.*, pp. 11-13.—Circular of the A. O. U. Committee on Bird Migration for 1884.

779. *A Few Bird Notes.* Editorial. *Ibid.*, No 2, p. 4.—Notes on the arrival of birds in April at Amherst, and allusion to the finding of nests of the Duck Hawk on Mount Tom and Sugar Loaf Mountain in Massachusetts.

780. [*First Capture of the Titlark (Anthus ludoviciana)* at Amherst, Mass.] By W. A. Stearns. *Ibid.*, p. 14.

781. *Henslow's Bunting. Coturniculus henslowi (Aud.) Bp.* Editorial. *Ibid.*, Nos. 3-4, p. 2.—Refers to various previously recorded instances of its occurrence in Massachusetts, and the capture of a specimen at Amherst, June 7, 1884, where the bird is 'almost common.' Also record of the capture at Amherst of the Red-headed Woodpecker.

782. *Birds of Amherst.* [By W. A. Stearns.] *Ibid.*, pp. 6-23.—Re-

* List of Birds from the Region between Norway House and Forts Churchill and York. [By Robert Bell.] Geological Survey of Canada. Report of Progress for 1878-79 (1880). IV, Appendix VI, pp. 676-706.

† For the index to the ornithological articles in the previous numbers of this journal see Auk, pp. 185, 186, April, 1884.

printed, with additions, from the Amherst 'Record,' June-Aug., 1883. (See *antèa*, No. 448, Bull. N. O. C., VIII, p. 238.)

The 'American Naturalist,' Vol. XVIII, 1884, contains, besides various extracts and abstracts from other publications, the following (Nos. 783-792):

783. *The Carolina Wren; a Year of its Life.* By Charles C. Abbott, M. D. *American Naturalist*, Vol. XVIII, pp. 21-25.

784. *Wood Notes and Nest Hunting.* By Horace Lunt. *Ibid.*, pp. 155-160.—Pleasantly written notes about, chiefly, the Wood Pewee and Ovenbird.

785. *A Labor-Saving Fish Hawk.* By T. R. Peale. *Ibid.*, pp. 212, 213.—About the nesting of this species.

786. *Barn Owls in Missouri.* By F. A. Sampson. *Ibid.*, p. 309.

787. *Notes on the Red-wing Blackbird.* By Charles Aldrich, *Ibid.*, pp. 309, 310.—On its nesting habits and decrease in numbers through the reclamation of wet lands.

788. *Migration of North American Birds.* By C. Hart Merriam. *Ibid.*, pp. 310-311.—Circular of the A. O. U. Migration Committee for 1884.

789. *On the Shedding of the Claws in the Ptarmigan and Allied Birds.* By Leonhard Stejneger. *Ibid.*, pp. 774-776.

790. *Does the Crow Blackbird eat Crayfish?* By Clarence M. Weed. *Ibid.*, p. 832.—Part of a crayfish was found in the stomach of a young Crow Blackbird. (See on this subject, *antèa*, Nos. 478, and 480.)

791. *Innovations in Nomenclature.* Editorial. *Ibid.*, pp. 906-908.—Approves of 'trinomial nomenclature,' but objects to four other recent American 'innovations.'

792. *Note on the Pelvis in Birds and Dinosaurs.* By Dr. J. G. Baur. *Ibid.*, pp. 1273-1275.

'Science', Vols. III and IV, 1884, contains the following (Nos. 792-805):

792. *Barn-owls in southern Ohio.* By A. W. Butler. *Science*, Vol III, p. 31.—Fourteen specimens were taken, in the fall of 1883, near Cincinnati, where it had previously been of rare or accidental occurrence.

793. *Osteology of the Cormorant.* By J. A. Jeffries. *Ibid.*, p. 59.—Reply to Dr. Shufeldt (see *antèa*, Nos. 592-594) on this subject.

794. *Barn-owls in Missouri.* By F. A. Sampson. *Ibid.*, p. 116.—Unusual numbers about Sedalia.

795. *Osteology of the Cormorant.* By R. W. Shufeldt. *Ibid.*, p. 143.—In answer to Mr. Jeffries (see No. 793).

796. *Migration of birds in England.* *Ibid.*, pp. 158, 159.—From 'Nature.'

797. *Rare Vermont birds.* By F. H. Herrick. *Ibid.*, p. 216.—Notes on 14 species. Records the capture at Rutland in spring of *Oporornis agilis*, and the breeding of *Recurvirostra americana* (!), *Helminthophaga celata* (!), *Lanius ludovicianus*, *Loxia leucoptera*, *Chrysomitris pinus*, *Picoides arcticus*, and *Gallinula galeata* at different localities in the State. Notes also the capture of *Phalacrocorax carbo*, *Sterna fuliginosa*.

Hydrochelidon lariformis and *Alle nigricans*. The Cormorant and Short-tailed Terns mentioned, and perhaps some of the other instances, appear to have been previously recorded. (See below, No. 801, where *H. celata* and *R. americana* are expunged from the list.)

798. *Stones placed in pine-trees by birds*. By C. R. Orcutt. *Ibid.*, p. 395.—Stones substituted in some cases for acorns by the acorn-storing Woodpeckers in California.

799. *Osteology of the Cormorant*. By Theodore Gill. *Ibid.*, p. 404.—Refers to a special paper by Yarrell on the subject, in which the 'occipital style' of Shufeldt and Jeffries is called the 'xiphoid bone.'

800. *Osteology of the Cormorant*. By J. Amory Jeffries and R. W. Shufeldt. *Ibid.*, p. 274.—Comment on Dr. Gill's note. (See last title.)

801. *Rare Vermont birds*. By Francis H. Herrick. *Ibid.*, p. 303.—States that *Recurvirostra americana* and *Helminthophaga celata* were given in his former note (see above No. 797) on this subject "on mistaken evidence."

802. *Coues's Key to North American birds*. [By J. A. Allen.] *Ibid.*, Vol. IV, pp. 86, 87.—Notice of the work.

803. *Increase in growth of young robins*. By Charles S. Plumb. *Ibid.*, p. 159.

804. *The American ornithologists' union*. *Ibid.*, pp. 374-376.—Report of the meeting of 1884.

805. *The bird collection of the U. S. national museum*. By Robert Ridgway. *Ibid.*, pp. 496, 497.—Its history and present status.

'Science Record,' Vol. II (closing, we are sorry to say, the short-lived career of this excellent journal, 'worthy of a better fate'), contains the following (Nos. 806-811):

806. *The American Ornithologists' Union*. By E[lliott]. C[oues]. *Science Record*, II, pp. 13, 14.—Account of the founding of the A. O. U.

807. *The Blue Grosbeak*. By G. E. Manigault, M. D. *Ibid.*, pp. 33, 34.—'Quite abundant' near Charleston, S. C. Short account of its habits, and record of the capture of two specimens of Swainson's Warbler in 'August last' (1883!) The latter proves to have been based on an erroneous identification (see *Auk*, II, p. 105).

808. *Chuck-will's Widow*. By Arthur T. Wayne, *Ibid.*, pp. 82, 83.—Account of its habits as observed at Charleston, S. C.

809. *Classification of Birds*. By Leonhard Stejneger. *Ibid.*, pp. 154, 155.

810. *Note on the Bronzed Cow-Bird*. By Geo. F. Gaumer. *Ibid.*, pp. 262, 263.—Description of *Molothrus æneus*, and account of its habits as observed in Yucatan.

811. *The English Sparrow*. *Ibid.*, pp. 264, 265.—A reproduction of a humorous, erroneous, and unfair newspaper report of the Report of the A. O. U. Committee on the European House Sparrow.

812. *Ornithological Field Notes, with one Addition to the Cincinnati Avian Fauna*. By William Hubbell Fisher. *Fourn. Cincinnati Soc. Nat. Hist.*, VII, No. 1. April, 1884, pp. 10-13.—The species added is

Falco peregrinus nævius, and there are notes on *Astur atricapillus*, *Loxia curvirostra americana*, *Lanius borealis*, and *Bubo virginianus*.

813. *A List of our local Birds represented in the Museum [of the Vassar Brothers Institute]*. By W. G. Stevenson, M. D. *Trans. Vassar Brothers Institute*, II, 1883-84, pp. 153-162.—A nominal list of the species represented.

814. *Dates of the Appearance of Herring, Shad, Bass, Tautog, Scup, Frostfish, Fish-hawks, Kingfishers, and Greenland Seal in Taunton River, from 1871 to 1883, inclusive*. By Elisha Slade. *Bull. U. S. Fish Comm.*, III, p. 478, Dec. 7, 1883.—Table of dates.

815. *A Rare Visitor*. By Thirlstane [= David Thirlane Bruce]. *Brockport [N. Y.], Republic*, May 29, 1884.—Capture of *Cathartes aura* near Brockport, N. Y. (See *Auk*, I, p. 293, where the same specimen is again recorded.)

The 'American Field,' Vols. XXI, XXII, 1884, contains, besides articles from 'The American Naturalist,' 'The Auk,' 'Science,' London 'Field,' etc., the following (Nos. 816-845):

816. *Bird Migration in the Mississippi Valley*. By W. W. Cooke and Otto Widmann. *American Field*, Vol. XXI, Jan. 5, p. 9; Jan. 19, pp. 67-68; Jan. 26, pp. 88, 89. (Concluded from preceding volume. See *Auk*, I, p. 188.)

817. *The Upland Plover*. By Mont Clare (of Claremont, N. H.). *Ibid.*, Jan. 12, pp. 35-37.—On the habits of the bird.

818. *American Ornithologists' Union—Bird Migration*. By C. Hart Merriam. *Ibid.*, Feb. 2, p. 113.—Circular of the Committee on the Migration of North American Birds. (See *The Auk*, I, pp. 71-76.)

819. *Bird Migration*. By W. W. Cooke. *Ibid.*, Feb. 16, p. 162.—An appeal for correspondents in the Mississippi Valley District.

820. *Yoke-toed Birds—(Zygodactyli)*. By Col. A. G. Brackett, U. S. Army. *Ibid.*, Feb. 23, p. 185.—On North American Woodpeckers and Cuckoos.

821. *The Tittlark Sparrow (Passerculus Anthinus Bonap.)*. By B. T. Gault. *Ibid.*, Feb. 23, pp. 185, 186.—Account of three specimens, and of nest and eggs, taken in San Diego Co., Cal.

822. *The Cranes*. By Col. A. G. Brackett, U. S. Army. *Ibid.*, March 1, p. 209.—Desultory notes on, chiefly, North American Cranes and Herons.

823. *The Genus Empidonax*. By Morris Gibbs. *Ibid.*, March 8, p. 232. Interesting notes on the four species occurring in Michigan.

824. *The Humming-bird[s]—(Trochilidæ)*. By Col. A. G. Brackett, U. S. Army. *Ibid.*, March 8, pp. 232, 233.—Unimportant notes on several North American species.

825. *Perching Birds—(Insessores)*. By Col. A. G. Brackett, U. S. Army. *Ibid.*, March 15, pp. 256, 257.—Remarks on various North American species, consisting largely of quotations from authors.

826. *A Plea for the Hawks*. By G. H. Ragsdale. *Ibid.*, March 22, p. 281.—Urging discrimination in the slaughter of these birds, the greater

part of which are beneficial, they subsisting chiefly upon noxious mammals and insects.

827. *Nuttall's Woodpecker (Picus Nuttallii)*. By B. T. Gault. *Ibid.*, March 29, p. 305.—On its habits, from observations made in the San Bernardino Valley, Cal.

828. [*Woodcock Nesting in Northern Mississippi*]. By N. B. Nesbitt. *Ibid.*, March 29, p. 305.

829. *The Valley Quail*. By T. S. Van Dyke. *Ibid.*, May 17 and 24, pp. 473, 474, 496, 497.—A detailed account of its habits forms Chap. XXIII and XXIV of a series of papers entitled 'The Hills and Streams of Southern California.'

830. *Bird Migration*. By B. W. Everman. *Ibid.*, June 7, pp. 544, 545.—List of arrivals at Camden, Ind., March 30 to May 12, 1884. Also, under same heading, notes by 'W. C. A.' on a few species observed at Greensboro, Ala.

831. *A Winter Day's Observations on Birds at Dan's Station, Stark Co., Ind.* By H. K. Coale. *Ibid.*, June 7, p. 545.

832. *Habits of Geese [in Confinement]*. By Junius P. Leach. *Ibid.*, June 14, p. 569.

833. *Colonel Brackett on Cranes*. By 'Byrne.' *Ibid.*, June 21, pp. 592, 593.—Correction of errors in Col. B's article on this subject (see above, No. 822).

834. *Bob Blue [Calipepla squamata] and his Kinsfolk*. By Charles Hallock. *Ibid.*, June 28, pp. 616, 617.—On the Quails of Texas.

835. *History of a Wing-tipped Quail [Ortyx virginianus]*. By J. L. T. *Ibid.*, Vol. XXII, July 12, p. 34.

836. *A Rare Bird*. By Dr. A. Wall. *Ibid.*, July 26, p. 82.—Capture of the Wood Ibis near Bloomery, W. Va.

837. *The Birds [of California]*. By T. S. Van Dyke. *Ibid.*, Aug. 23, pp. 176, 177.—An article of three columns in length, giving remarks of some interest on various species.

838. *Foraging by Smell*. By Charles Hallock. *Ibid.*, Sept. 6, p. 255.—Detailing observations on the habits of the Turkey Buzzard in relation to its alleged keen sense of smell.

839. *What the Crow Eats*. By R. J. W. *Ibid.*, Oct. 4, p. 321.—Verdict against the Crow.

840. *Four-footed Birds*. [By Edward M. Brigham.] *Ibid.*, Oct. 25, pp. 392, 393.—On the habits and embryonic characters of *Opisthocomia cristata*, which is said to have 'quadrupedal characters' in its early stages, which it retains 'for several days' after hatching!

841. *What the Crow Eats*. By F. L. P. *Ibid.*, Nov. 8, p. 440.—Record of the killing of 'fifteen hundred' in one hunt, at Muldon, Miss.

842. *Fashionable Follies*. By Charles Aldrich. *Ibid.*, Nov. 15, p. 465.—On the 'wanton and wasteful' destruction of birds for millinery purposes.

843. *What the Crow Eats*. By Charles Aldrich. *Ibid.*, Nov. 22, p.

488.—In behalf of the Crow, and criticising the wholesale slaughter mentioned by 'F. L. P.' (see above, No. 841).

844. *The Canada Goose*. By A. A. Mosher. *Ibid.*, Dec. 6. p. 537.—Nests in large numbers about Spirit Lake, Ia.

845. *What the Crow Does Eat*. By M. G. Ellzey, M. D. *Ibid.*, Dec. 13, p. 561.—Strong charges against the utility of the Crow.

Publications Received.—Gardiner, Edward G. Beiträge zur Kenntniss des Epitrichiums und der Bildung des Vogelschnabels. Inaugural-Dissertation, etc. Svo., Leipzig, 1884, pp. 1-50, pll. 2.

Jordan, David Starr. Manual of the Vertebrates of the Northern United States, etc. 4th ed., revised and enlarged. Chicago, 1884, Svo., pp. 406.

Lawrence, George N. Descriptions of supposed New Species of Birds of the Families Tyrannidæ, Cypselidæ and Columbidae. (Ann. New York Acad. Sci., III, No. 5, pp. 156-158, Jan. 5, 1885.)

Meyer, A. B. (1) Ueber neue und ungenügend bekannte Vögel im königlich zoologischen Museum zu Dresden. (Zeitsch. f. d. ges. Ornithol., I, 1884 (30 pp., repaged, pll. vii-ix.) (2) Notizen über Vögel, Nester und Eier aus dem Ostindischen Archipel, spiciell über die durch Herrn C. Ribbe von den Aru-Inseln jüngst erhaltenen. (Zeitschr. f. d. ges. Ornithol., I, pp. 269-296, pll. xiv-xviii.)

Newton, Alfred. Ornithology. (Encyclopædia Britannica, ed. 9, Vol. XVIII, pp. 1-50, Dec. 1884.)

Reichenow, Ant., and Herman Schalow. Compendium der neu beschriebenen Gattungen und Arten. (Journ. f. Orn., 1884, pp. 399-424.)

Ridgway, Robert. Description of some new Species of Birds from Cozumel Island, Yucatan. (Proc. Biol. Soc. Washington, III, 1884-85, —4 pp. repaged.)

Salvadora, Tommaso. Uccelli dello Scioa e della regione fra Zeila e lo Scioa. Genoa, 1884, Svo., pp. 269.

Willard, S. W. Migration of North American Birds in Brown and Ontagamie Counties. (Trans. Wisconsin Acad. Sciences, Arts and Letters, 1883—pp. 20, repaged.)

American Naturalist, Feb., March, April, 1885.

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Journal Cincinnati Soc. Nat. Hist. VII, No. 4.

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Milwaukee, Second Ann. Report of Board of Trustees of the Public Museum of the City of. Svo., 1884. (2) Circular of the Public Museum of the City of Milwaukee, Nos. 1, 2.

Naturalist, The. A Journal of Nat. Hist. for the North of England. Nos. 114- , Jan.-March, 1885.

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- Ornithologist and Oölogist, Jan.-March, 1885.
 Random Notes on Natural History, II, 1885, Nos. 1-3
 Tidings from Nature, I, No. 6. Feb. 1885.
 Transactions of Vassar Brothers Institute, and its Scientific Section,
 II, 1883-84.
 West-American Scientist, I, No. 3, Feb., 1885.
 Zeitschrift für die gessammte Ornithologie, I, Heft 4, 1884.
 Zoölogist, Jan., Feb., March, 1885.

GENERAL NOTES.

The Wood Thrush in Maine.—On September 6, 1884, I shot a young male Wood Thrush (*Turdus mustelinus*) at Saco, Maine. This is, I believe, the first recorded instance of its capture along the coast north of Massachusetts, and the only one for Maine.—JOSEPH L. GOODALE, *Cambridge, Mass.*

The Occurrence of the Catbird (*Mimus carolinensis*) on the Farallone Islands, Pacific Ocean.—Our Catbird appears to be not only extending its range, but wandering into very strange places. On the third of September, 1884, the U. S. Lighthouse Steamer 'Manzarrita' landed myself and assistant on one of the Farallone Islands for the purpose of collecting sea lions for the National Museum. We were rowed ashore amid the roar of hundreds of sea lions, and the screams of myriads of birds.

Immediately upon landing I accompanied the Inspector to the lighthouse, which occupies the highest rocks three hundred feet above the sea. Near the tower, surrounded by Murres, Puffins, and Gulls, I saw a bird which of all birds was the least to be expected in such a place—a 'regular' eastern *Catbird*.

I rushed to the landing for my gun and was back on remarkably short order, considering the number of times my unfortunate stomach had paid tribute to Neptune on the passage out from San Francisco, but the bird had disappeared and could not be found. On the following day, however, it was discovered among the rocks near the sea, and its skin is now in the Smithsonian Institution, still surrounded, it is true, by Murres and Puffins, but not noisy ones. The specimen is perhaps not appreciably different from others of the same species with which it has been compared, its small bill being matched in specimens from Key West, and its light colored under parts not being exceptional.

The occurrence of this species on these islands is the more remarkable as it has not yet been recorded from California, being known on the Pacific Coast of the United States only in the region of the Columbia

River. The Farallones (Spanish, meaning pointed rocks in the sea) are disposed in three groups several miles apart, the largest being about a mile long and lying thirty miles west of the Golden Gate. They are well named, for there is neither soil nor vegetation upon them, except the guano of the birds and three species of weeds. In summer the eggs of the birds which swarm there to breed, are gathered by the barrel-full for the San Francisco market.—CHAS. H. TOWNSEND, *Smithsonian Institution, Washington, D. C.*

The Yellow-rumped Warbler Wintering in Maine.—On January 1, 1885, I shot two Yellow-rumped Warblers (*Dendroica coronata*) from a flock of six at Pine Point, Maine. On opening the crop of one, I found it filled with the seeds of the pitch pine. I believe this species has never before been taken in the winter season north of Massachusetts.—JOSEPH L. GOODALE, *Cambridge, Mass.*

The Migration of the Swallows.—I have noticed for several years that before the young Swallows were capable of enduring a prolonged flight, old and young gathered together in one vast assembly and moved gradually southward, making short stages from farm to farm; at last (in 1884, on August 9), with a favorable north wind and a clear sky, they left the Island in a body, only a few stragglers remaining, just enough to remind us that summer was still with us.—FRANCIS BAIN, *North River, P. E. I.*

Nelson's Sharp-tailed Finch (*Ammodramus caudacutus nelsoni*) on the Atlantic Coast.—Mr. Arthur T. Wayne sends me a Sharp-tailed Finch which is positively indistinguishable from Illinois specimens, but which was shot on the salt marshes near Charleston, South Carolina, Oct. 8, 1884. That it is really an inland-bred bird scarcely admits of a doubt, nor is its occurrence on this coast altogether surprising in view of the fact that other species which breed only in the interior—*Coturniculus lecontei*, for example—extend their autumnal migrations in a south-easterly direction and winter numerously very near to, if not actually on, the Atlantic seaboard.—WILLIAM BREWSTER, *Cambridge, Mass.*

Wintering of the Swamp Sparrow in Eastern Massachusetts.—The capture of two Swamp Sparrows (*Melospiza palustris*) in Cambridge, on January 11, 1883, has already been recorded,* but a second instance may be of interest.

On December 29, 1884, a flock of four were seen and one killed in a dense thicket on the Fresh Pond marshes in Cambridge, and on January 31, 1885, near the same place. I saw the remains of another, which had been partly eaten by a Shrike. Since then I have looked for them several times unsuccessfully, but think that the rest had probably been killed by Shrikes.—ARTHUR P. CHADBOURNE, *Cambridge, Mass.*

* Journal Boston Zoological Society, Vol. II (1883), p. 32.

Cyanocitta stelleri frontalis Nesting in Holes in Trees.—While collecting birds and their eggs in company with my brother, Capt. B. F. Goss, in the spring of 1884, in the vicinity of Julian, California, we found quite a number of the nests of the Blue-fronted Jay, and in all cases but one in holes and trough-like cavities in trees and stubs, ranging from four to fifty feet from the ground, generally ten to twenty feet up. The nest found outside was built upon a large horizontal limb of an oak close beside a gnarl, the sprout-like limbs of which thickly covered the nest overhead, and almost hid it from view below.

From our knowledge of the breeding habits of the family we looked for their nests on trees and bushes, and spent days in climbing over and up and down the hills and mountain-sides, carefully examining every spot that seemed to us a natural nesting place, but without success, though often finding nests of the California Jay (*Aphelocoma californica*); and I am inclined to think we should have returned without their eggs had I not, in suddenly coming to the top of a hill, discovered a pair of the birds hopping over the ground and picking up bits of sticks, which they dropped on seeing me, and flew away. Here was a pointer, and to remove any suspicion that their actions had been observed, I did not halt for a moment or change my course, but walked leisurely on until well out of sight, then swung back around the hill, and cautiously approached a ledge of rocks over-looking the ground and concealed myself behind them. On peeping out I saw the birds busily hopping about picking up material for a nest; they soon flew with it, both together or nearly so, directly to, or rather into, an opening or hollow near the base of a large tree. After watching them make a few trips I stole away and hastened to inform my brother of the lucky find. It was a surprise to us both.

The nests are quite bulky, made loosely of sticks, stems of weeds, and lined with fibrous rootlets and grasses, and as they are all built at or near the opening, the tell-tale sticks project and make the finding of their nests an easy matter. Measurements of the first two sets of eggs taken, viz., May 19: 1.20 × .87, 1.20 × .88, 1.21 × .88; May .21: 1.22 × .88 1.15 × .86, 1.19 × .86, 1.16 × .85. Color light blue, speckled and spotted with dark brown, rather thickest at large end.—N. S. Goss. *Topeka, Kansas.*

The First Nest and Eggs of Eremophila alpestris found in Niagara County, N. Y.—If there is one nest which I have looked for more than for another, it is the nest of the Horned Lark. From early in March till late in May, for the past five years, I have searched in vain. On the 17th of June, 1884, while collecting in the town of Porter, Niagara County, I was fortunate in securing the coveted prize. I was in company with a young farmer, and, as we were returning from our forenoon's tramp, he asked what bird it was, with a black throat, which he saw early in the morning and late in the afternoon, running in the road, and which breeds three times a year. I asked him if it ran or hopped, and how he knew

it bred three times a year. He answered that it always ran, and that he had seen young birds in April, June, and August. I told him that it undoubtedly was the Horned Lark, which was getting to be quite common in this vicinity, and also added, "Have you ever found its nest?" He did not know with certainty, but thought he knew where there was one, and took me to it. The nest was built in the side of a manure heap in the field, and contained four fresh eggs. I secured the male bird only, not having time to secure the female. But I was content to get what I did; and I know that I am safe in saying it is the first nest and eggs of *E. alpestris* secured in Niagara County, and think I might also include Orleans County. A week later the young man sent me a young bird alive, just from a nest, which I killed and sent to Dr. A. K. Fisher, who pronounced it 'a jewel.' I secured a number of young birds in July, but did not succeed in finding any August broods; and but for the assertion of my young friend that he had seen them in that month, I should not have expected to find them; but I am quite certain that I saw birds after the 5th of July that were breeding.—J. L. DAVISON, *Lockport, N. Y.*

The Swallow-tailed Flycatcher in Manitoba and at York Factory.—The Swallow-tailed Flycatcher (*Milvulus forficatus*) is such a characteristically southern bird, that its accidental occurrence in Manitoba is worthy of note. Last January I was shown a splendid specimen taken at Portage la Prairie by Mr. Nash. He found it lying dead on the prairie in the October of 1884. In addition to this record I quote the following rather startling statement from the 'Report' on the Hudson's Bay by Professor Bell of the Canadian Geological Survey, 1882. "But the most singular discovery in regard to geographical distribution is the finding of the Scissors-tail or Swallow-tailed Flycatcher (*Milvulus forficatus* Sw.) at York Factory . . . The specimen in the Government Museum was shot at York Factory in the summer of 1880 and I have learned since that these remarkable birds were occasionally seen at the posts of the Hudson's Bay Company, all the way west to the Valley of the Mackenzie River."

The once surprising New Jersey record is now somewhat eclipsed.—ERNEST E. T. SETON, *Toronto, Canada.*

Food of the Hummingbird (*Trochilus colubris*).—Somewhere it has been stated, that the Hummingbird derives the most of its nourishment from the minute insects which adhere to the nectar of flowers, and which are taken with the honey. Undoubtedly many insects are thus secured, and furnish their share of nutriment to the species, but in the following account of a Hummer in confinement, kindly furnished to me by Miss Hattie Brubaker, it will be seen that insects are not wholly essential to the maintenance of life, in *Trochiluscolubris* at least.

The bird, she writes, was taken September 1, near De Pere, Wis., and thrived nicely until October 28, when it met an untimely death. After

it had struggled in vain for nearly two days to escape from a room into which it had accidentally flown. it was picked up in an exhausted condition and carefully placed out of doors in an arbor, in hopes of its recovering sufficiently to fly away. A severe cold rain that night completely numbed it, so that it was again taken to the house a mere bunch of rumbled feathers—no life then being apparent. A slight warming quite unexpectedly revived it, and it was but a short time before it opened its eyes and flew to a nail, and then immediately began to rearrange its plumage. As flowers and sweetened water were offered to this captive before it was taken to the arbor, without its once noticing them, Miss Brubaker was rather at a loss to know how to feed it; but at last she conceived of placing some sugar and water in a conspicuous gladiolus blossom, which the Hummingbird soon discovered and visited, drinking greedily the honey that was in the blossom. After this it became quite lively, flying from its nail to some dried flowers and grasses in another room, where it had rested during the two days it had remained in the house without food or water.

With the aid of a petunia blossom as a decoy, this little bird was soon taught to drink from a small phial, holding about two teaspoonfuls of sugar and water (about one-third sugar), that was suspended by a string to the window casing. It was but a day or so before it seemed perfectly contented, not showing the least fear, but seemingly growing stronger as well as larger in its new home.

Miss Brubaker thinks the bird was not an old one, as its tail-feathers grew considerably after she had it. She says that at first they kept a variety of cut flowers in the room with it, but it barely alighted upon them, flying at once to the bottle which it had learned to appreciate. Somewhat after the manner of obtaining nectar from a flower, it would sip a moment at the bottle and then dart away; but it was not long in finding that the supply of sweetened water was inexhaustible, and that there was no necessity of hastening its meal. At times it would drink so much that its wings were unable to sustain the weight of the body, and a fall to the floor was the result of its excessive fondness for this artificial nectar. When left to itself and no check put upon its drinking, it would consume at least half the contents of the phial daily—at least one-half as much as its own bulk.

“We are certain,” she writes, “that for at least a month the bird had access to no flowers whatever, thus making it certain that the sweetened water furnished it its sole nourishment, and during this captivity it did not show the first signs of diminishing strength.”

At the approach of cold weather it was placed in a cage, in which its little history was brought to a close by its accidentally entangling one of its claws in a loose wire which secured a small perch in the cage, and thus suspended, with its head downward, it was found by Miss Brubaker the next morning — another ‘bunch’ of rumbled feathers. — SAMUEL WELLS WILLARD, *West De Pere, Wisc.*

The Chuck-will's-widow (*Antrostomus carolinensis*) in Massachusetts.— In the month of December, 1884, I found, in the barn of Mr. Geo. A. Tapley, in the town of Revere, Mass., the dried skin of a bird which Mr. Tapley thought was that of a 'strange Whip-poor-will.' The bird was intact, and at first sight one would suppose it to be a stuffed instead of a dried specimen. Attracted by the large size of the bird, the yellow coloration of the plumage, and other signs, I thought I had discovered a species new to this State; namely, the Chuck-will's-widow, or Southern Whip-poor-will. On presenting the specimen to Mr. Allen, of the Museum of Comparative Zoölogy, my opinion was confirmed. Mrs. Tapley says the bird was caught in October by a cat. I need not say that I am greatly pleased with having been the means of adding a new species to the list of Massachusetts birds. That the specimen was weak enough to be caught by a cat seems to indicate that it may have been *blown* to our State by a gale.— FLETCHER OSGOOD, *Chelsea, Mass.*

The Hawk Owl in Eastern Massachusetts.— Mr. Brewster's interesting article on *Surnia funerea* in the last number of 'The Auk' (Jan., 1885, p. 108) reminds me that I have in my notebook a record of an example which I have neglected to make public. This, perhaps, should be done, as it antedates, so far as I can learn, all previous records, when the year is certainly given, for Massachusetts.

The Hawk Owl is mentioned in Mr. Peabody's 'Report' of 1839, but merely in a general way—"seldom wanders into New England." It does not appear in Mr. Allen's 'List' of 1864, but is given in his 'List' of 1878, as 'very rare.' Mr. Babcock's specimen, noted in the 'American Naturalist,' 1869, was taken, as Mr. Babcock informs me, in 1862 or 1863.

In January, 1860, a neighbor called with the request that I would come and see a strange Owl he had just shot, and, being merely wing-tipped, had put in a cage with the view of making a pet of him. I found it to be of this species. His wing healed, and he became fairly tame, and on occasional visits I found he bore confinement well, and his good appetite made a constant demand on his keeper. This state of things continued more than a year; but in the spring of 1861, being exposed one night to a sudden fierce and cold storm, which beat into his cage on account of a change of wind, he was found the next morning dead under the perch. He was brought to me according to request, but his plumage, of course already injured by confinement, was in such a deplorable condition, from the soaking and filth at the bottom of the cage, that my courage was not equal to the occasion, and I reluctantly threw him away.— F. C. BROWNE, *Framingham, Mass.*

The Ptarmigan of Anticosti— a Correction. — In a recent paper* on some birds observed in the Gulf of St. Lawrence I followed Verrill † in

* 'Notes on the Birds observed during a Summer Cruise in the Gulf of St. Lawrence.' Proc. Boston Soc. Nat. Hist., Vol. XXII, Oct. 3, 1883, pp. 364-412.

† Proc. Boston Soc. Nat. Hist., Vol. IX, Dec. 1862, p. 138.

referring the Ptarmigan of Anticosti to *Lagopus albus*. My single adult specimen from that Island was a female, which, of course, lacked the black loreal stripe so diagnostic of the male of *L. rupestris*. Upon comparing it with some Rock and Willow Ptarmigan from Newfoundland (the only material available at the time) I found it resembled the latter rather closely in general coloration and in this respect differed very decidedly from the former. Accordingly I concluded that it must be *L. albus*, quite overlooking certain important discrepancies in size and proportions. To tell the truth, the comparison was made very hastily, for, from the fact that the bird had been shot in a dense forest, miles from any open rocky country such as the Rock Ptarmigan is said to inhabit, I had already quite made up my mind regarding it.

A re-examination, however, convinces me that the specimen in question is really *L. rupestris*; indeed, Mr. Ridgway, who has kindly compared it for me with the material in the National Museum, decides that it is indistinguishable from the bird found on the mainland of North America at large.

It has further transpired that the Willow Ptarmigan of Newfoundland is varietally separable from true *albus*, while the Rock Ptarmigan of that island is apparently even specifically distinct from *L. rupestris*. Thus I was misled by material which, to say the least, was far from typical.

Of course it is by no means settled that all the Ptarmigan on Anticosti are *L. rupestris*, but in view of these developments Verrill's record of *albus* there (he saw no specimens) requires confirmation.—WILLIAM BREWSTER, *Cambridge, Mass.*

A Blue Heron's Meal.—There is a heronry not far from my home, and during the breeding season the great broad-winged birds can be seen day and night flying between their nests and the seaside. I once surprised one ready to start back with its finny burden, and becoming alarmed it disgorged ten good-sized fish before it mounted into the air. Is this not an unusual load for this bird to carry?—FRANCIS BAIN, *North River, P. E. I.*

Wood Ibis (*Tantalus loculator*) in Eastern New York.—Mr. Howard Burhans, of Glasco, Ulster County, N. Y., informs me that he had a fine adult Wood Ibis sent to him for mounting. The bird was shot by the late Howard Tipp, on July 8, 1884, near Glennie Falls, which is west from Glasco, and about one and a half miles from the Hudson. It was discovered in a low swampy meadow, and was so tame that it was easily approached.—A. K. FISHER, M. D., *Sing Sing, N. Y.*

Wilson's Plover in Nova Scotia.—I shot on Brier Island, April 28, 1880, a female *Ochthodromus wilsonius*, and have the same in my collection. The wind was blowing very hard from the southeast, and I think carried the bird off the shore by and beyond her intended destination; at any rate she appeared tired, alighting directly on reaching the shore, resting

a few moments, and then running to the edge of the water and bathing freely. After dressing her feathers she started along the beach in the direction in which I was sitting, a mistake not noticed by her until too late. I can find no record of the occurrence of this species so far north, therefore think its capture worthy of note.—N. S. Goss, *Topeka, Kansas*.

The Occurrence of *Chroicocephalus franklini* in Wisconsin.—October 22, 1884, I took a female specimen of this Gull near the mouth of Fox River. Two other Gulls accompanied it, which I was unable to secure. They were probably the same species.—SAMUEL WELLS WILLARD, *West De Pere, Wisc.*

Rissa tridactyla kotzebuei in Washington Territory.—I can find no mention of the occurrence of the Pacific Kittiwake Gull south of Alaska, and therefore think it will be of interest for me to say that I killed a pair of the birds March 2, 1882, at Port Townsend, the only ones observed by me on the coast. I have the male in my collection.—N. S. Goss, *Topeka, Kansas*.

CORRESPONDENCE.

[Correspondents are requested to write briefly and to the point. No attention will be paid to anonymous communications.]

Indian Bird Names.

TO THE EDITORS OF THE AUK:—

Sirs: Under the head of 'Correspondence' in the October number of 'The Auk' Mr. Henshaw notes with surprise my statement that "They [the Chippewa Indians] have no specific name for fully one-half of those [birds] which yearly nest before their eyes or pass by in migration." He goes on to say, "That Indians should know little of the birds, especially of the smaller kinds, that visit this country only as migrants, is not perhaps surprising, but that any considerable number of birds inhabiting their country, even of the smaller and inconspicuous kinds, should not be known to Indians and be named by them is surprising." At the time I made my statement I based it on the following facts. There occur in that part of Minnesota about 250 species of birds; as the Chippewas have less than 125 bird names, they name less than half of those "which yearly nest before their eyes or pass by in migration." I did not mean by this, less than half of the migrants and less than half of the breeders, but less than half of the sum total. Since reading Mr. Henshaw's letter, I have gone over the subject again, with the following results.

Dr. Hatch, in his 1880 list of Minnesota birds, gives 281 species. Of these, at least 240 occur during some part of every year at White Earth

Agency. The Indians have names for 114 of these 240, or 47½ per cent. There are 71 non-breeders, that is migrants and winter visitants, of which 14, or about 20 per cent., are named, and 169 breeders, of which 100 or about 60 per cent., are named. So that Mr. Henshaw is correct in judging that more than half of the breeders should have names.

The past summer I spent several months among the Otoes, a small tribe in the Indian Territory, and though no complete list of their bird names was collected, yet enough was learned to indicate that in this matter they are poverty stricken.

Morehead, Minn., Dec. 4. 1884.

W. W. COOKE.

NOTES AND NEWS.

IN Dr. Merriam's 'Preliminary Report of the Committee on Bird Migration,' published in the last number of 'The Auk,' attention was called to the fact that the amount of material, in the way of returns from observers, could not be properly elaborated without considerable pecuniary assistance.' Foreseeing this state of affairs, the Union, at its last meeting (Sept., 1884), instructed the Council to prepare and present a proper memorial to Congress in behalf of the Committee. We are happy to state that the appeal was so far successful that an appropriation of \$5000 in aid of the work was secured through the Department of Agriculture. This sum will doubtless enable the Committee to not only carry on the present year's field-work successfully, but to do much toward getting the results of last year's work in proper shape for publication. As is well known, the Migration Committee and the Committee on the Geographical Distribution of North American Birds has been consolidated, and the Committee has now in hand not only the subject of migration, but also the elaboration of all available or obtainable data on the distribution of the species throughout the continent, a subject of well-known interest and importance.

IN 1883, the legislature of Maine repealed all acts providing for the appointment of taxidermists and the taking of birds, nests, and eggs for scientific purposes. Abuses had sprung up under the old statutes, and the law-makers believed that the best remedy would be found in a policy of total prohibition. For two years, therefore, ornithology has made little progress in Maine. During the past winter the Portland Society of Natural History made a determined and successful effort to secure the passage of a law in behalf of collectors. The bill presented by the Society was adopted, with several unimportant changes, but with one provision which is objectionable — which, however, was made a *sine qua*

non by the legislative committee — viz, that but ten collector's commissions shall be in force at any one time.

THE collection of birds in the Museum of Comparative Zoölogy at Cambridge numbers 33,000 specimens, about 4000 of which are mounted and on exhibition, and represent not far from 3000 species. In consequence of financial embarrassments which the Museum has recently experienced, the increase of the collection is likely to be for the present seriously checked; but it is to be hoped that this unfortunate state of affairs may be of short duration. The museum contains much valuable ornithological material, including several thousand birds in spirits, and a very good suite of skeletons, both mounted and unmounted, besides a very fair oölogical collection, which includes that of the late Dr. T. M. Brewer.

MR. J. A. Allen, who for twenty years has had charge of Mammals and Birds at the Museum of Comparative Zoölogy at Cambridge, and where for fifteen years he has held the position of 'Assistant in Ornithology,' has accepted the curatorship of Mammalogy and Ornithology in the American Museum of Natural History, Central Park, New York City. He will enter upon the duties of his new position about May 1, after which date his address will be as here indicated. Dr. C. Hart Merriam sailed for Europe January 1, for the purpose of spending several months in scientific study at Brunswick, Germany. His return is expected within a few weeks.

WE learn with deep regret of the untimely death, by accidental drowning in the river Don, of the well-known Russian naturalist and traveller, Dr. N. Severtzow, a Corresponding Member of the A. O. U. Dr. Severtzow became first known to the scientific world through the publication of the results of his explorations in Central Asia in 1857. He promptly espoused the Darwinian doctrine of evolution, and is especially known for his valuable publications on the geographical distribution of the animals of Turkestan.

AT the January meeting of the Ridgway Ornithological Club, papers were read on 'The Hummingbirds of California,' by B. T. Gault, and 'Notes on Some Australian Birds,' by Robert Ridgway, and at the February meeting a paper on 'The Vireos of Michigan,' by Dr. Morris Gibbs.

JUVENILE and amateur publications in Natural History appear in different parts of the country with bewildering frequency, not less than twelve or fifteen such publications having started within the last twelvemonth. Most of them aim to cover a wide field, and treat of ornithology only incidentally, but several are exclusively ornithological. One of the latest to claim attention is 'The Young Ornithologist,' published and edited in Boston by A. A. Child, an eight-page monthly sheet, of which Vol. I, No. 1, bears date February, 1885.

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NOTES OF AN ORNITHOLOGICAL TRIP IN
ARIZONA AND SONORA.

BY F. STEPHENS.

IN March, 1884, Mr. C. G. Pringle, of Charlotte, Vt., made a journey by wagon from Tucson, Arizona, southwest to the Gulf of California, collecting botanical specimens; on this trip he was so successful as to wish to make another. Early in August he invited me to accompany him on a second journey over the same route, an invitation I very gladly accepted. The route lay over deserts most of the way, and as horse-feed and water had to be carried in some of the most interesting portions of the route, I took but a light 50-cal. gun instead of my 12-bore,— a mistake I afterwards regretted.

I did not intend making many skins, partly because I wished to add as little as possible to the material necessary to carry, and partly because the birds were now moulting and in poor condition. Therefore this must be a record more of what I saw than of what I got. As the country traversed is almost a *terra incognita* I will describe some of its principal features, to give a better understanding of its bird life.

Leaving Tucson August 7, 1884, we drove up the valley of the Santa Cruz a few miles and turned to the southwest over a gap in the low Sierra de Tucson, and emerged on a plain. Along the higher edge of the plain are many giant cactuses (*Cereus gigan-*

teus), mesquit, palo-fierro trees, and a general assortment of smaller cactuses. In this semi-forest growth were several characteristic desert species, such as *Colaptes chrysoides*, *Centurus uropygialis*, *Campylorhynchus brunneicapillus*, and *Amphispiza bilineata*. Further along this tree and cactus growth disappeared, leaving a plain only very sparsely covered with grass, where birds were nearly absent except some *Calamospiza bicolor*, then migrating. Nearly all these were males in the black and white breeding plumage; but they had nearly all changed to the winter plumage by our return some three weeks later. On a solitary little mesquit tree in the plain I saw a Hawk, and on approaching to see what the species was I observed a large nest in the same tree. Finding the Hawk not wild I killed it. It proved to be a young *Buteo swainsoni*, and was probably reared in the tree where it was killed. At our night camp I shot a *Callipepla squamata*. The next day we drove west of south over a narrowing part of the plain. In places there was a fair growth of grass, and again more or less brush, but almost no cactuses. In the morning we watered the horses at a well one hundred and eighty-six feet deep, paying ten cents per horse. A heavy rain appeared to be falling to the south, which we were glad to see, as it insured us water for our night camp. *Peuceea cassini* was common and I heard one *P. arizonæ*.

On the morning of the 9th I heard *Callipepla squamata* ahead, and started on in advance of the wagon, but failed to get any. Shot three *Peuceea arizonæ*, and saw several *Otocorys*. After walking three or four miles I waited for the wagon, which had not come on as soon as I expected. While waiting I heard a faint *bob-white* back along the road, and started back in a hurry. After looking and listening for a mile or so along the road I saw and shot a *Callipepla squamata*. Thinking I might have mistaken the *cu-en* of this species for the other call, I gave up further search and went to where Mr. Pringle and his assistant were collecting plants. We soon drove on, but before we had gone a quarter of a mile a Partridge ran behind a bush, and I knew that a bird new to me was before me. As I jumped out of the wagon it ran on to the next bush. I flushed it from behind the cover but missed the bird as it flew away. I marked it down among some bunches of sacaton grass, but failed to find it again. It was a much darker bird than I had expected to see, its head being very

dark, and it appeared almost brick red below as it flew away. I had been led to suppose that the unknown Partridge said to occur in this region was *Ortyx graysoni*, and from its description I expected to see a bird much the color of *O. virginiana*; but this bird was evidently something else. In the afternoon I heard another *bob-white*, and guided by the notes, I found the bird, perched on a branch of a small mesquit tree. Creeping up behind a small bush I succeeded in getting within twenty yards of it, but even this short range was too far for my little gun and No. 10 shot. I had a good view of this bird, and I certainly believe *this* one was *O. graysoni*. It had none of the reddish tint of the lower parts of the other bird, and had a plain whitish stripe on the side of the head. The notes, plainly heard, were two, *bob-white*; the *bob* was as loud as the *white*, but this last note lacked the ring of the last note of *O. virginiana*. I believe this to be the only *O. graysoni* I have ever seen, if it really was *graysoni*.

In the afternoon we watered the horses at the stage station, kept by a Mexican. The water had been hauled from a spring five miles away, and they charged us twenty-five cents per horse. Camped for the night in the best grass we saw on the route. The large spiders known in Arizona as tarantulas were abundant here, and my companions were not pleased with the prospect of such bed-fellows. I had camped out too long in the deserts to care for them.

I was awakened at daybreak by the call of *bob-white*, and was not long in turning out. How I wished for my 12-bore, for I knew that I had very little chance with my little gun and No. 10 shot in this open prairie. There appeared to be several of the birds scattered singly in various directions, but after two or three calls they became silent, perhaps because of the lateness of the season. When I heard a call I would go in the direction of the sound and wait to hear it again, generally without success. After a little another would strike up in another direction, and I spent the morning wandering about, but saw only one bird, which I missed. As it flew toward the rising sun it appeared bright red beneath. The notes that I heard with distinctness were different from those I heard the preceding afternoon. They were three instead of two, like *ah-bob-white*, similar to those of *O. virginiana*, but the *ah* louder in proportion, the emphasis increasing to the *white*, which had some ring.

This camp was near the divide between the Gila and Altar Rivers, and the country became more broken, barren mesas alternating with brushy arroyos. Grass became very scarce from this on. In the forenoon we passed the Mexican custom-house of Sasabe, where we obtained written permission to travel in Sonora one month. A few miles below Sasabe I saw a pair of *Ortyx*, the male with a dark head and reddish beneath, the female (?) dull brown, and I thought its head was subcrested. They were not very wild, and I wounded the male, but it got into a thick bush and could not be found. It probably crept into some squirrel hole, of which there were several under the bush. Shot a *Pyrrhuloxia sinuata*, and saw others. Also saw several *Lophortyx gambeli* and got a chick but a few days old. On the morning of the 11th, I got three *Callipepla squamata*. This is about their southwestern limit. A little further on I saw an *Ortyx* cross the road, and made out to kill it. This proved to be a male, the type of Mr. Wm. Brewster's *Colinus ridgwayi*.* It had a dark head and reddish breast and abdomen, and was the same bird that I had seen further back.

As our night camp was made in very good collecting ground we laid over all day on the 12th. There are several volcanic hills near, and plenty of small trees and cactuses. I obtained seven *Peucaea carpalis*, including adults and young. Saw *Polioptila plumbea*, *Amphispiza bilineata*, *Centurus uropygialis*, *Colaptes chrysoides*, and many other birds.

On the 13th we drove down a narrow valley all day. It was moderately well timbered, and the cactuses, *Cercus schotti* and *C. thurberi*, began to appear. At our night camp *Progne subis* was abundant and noisy. Saw *Phainopepla nitens* during the day.

On the 14th I took a nest and set of eggs of *Pipilo fuscus mesoleucens*, killing the parent; also a *Harporhynchus curvirostris palmeri*, having a very large bill. Passed through Altar, a town of some 1200 or 1500 inhabitants, on the Altar River, here a small stream one can nearly jump across. It was the first stream we had seen since leaving Tucson. Here we took the river road to Caborca, some thirty miles distant, passing Pedroquito midway. Near Pedroquito I shot a *Scardafella inca*, and saw others. This Dove seems to prefer the small cultivated enclosures around

* See Auk, II, p. 199.

the houses, and lives more on the ground than *Chamæpelia passerina*, which is more abundant in the same region, but is commonest in brush. *S. inca* has a coarse note. I saw a little group on the ground, the males strutting around the females, carrying their tails nearly vertical, and cooing. As most of these Doves were near houses I refrained from shooting, for the people would have been alarmed by Americans firing so near them.

At a quartz mill near Caborca we found four Americans, and were glad to meet men we could converse with, our Spanish being too limited for satisfactory communication with the natives. They were even better pleased to see a party from the United States. This is a very fine collecting locality. At daybreak on the morning of the 16th, I heard the *cu-cu-cu-cu* of *Glaucidium phalænoides*, and shot it in a Thurber's cactus. There were enormous numbers of Doves in the timber. Their cooing was so loud and continuous that one could scarcely distinguish any other bird-note. *Melopelia leucoptera* was the principal noise-maker. As the sun gained height the noise diminished. We felt the heat here more than further inland, although the thermometer averaged some 15° lower than at Tucson; yet the least exertion made us drip with perspiration. There did not seem to be a breath of air. The last water of the Altar is used up here in irrigating, and we had to depend on the wells again, and they proved very few. About the Poso Moroneno (*poso* is well) the new giant cactus, *Cereus pringlei*, is abundant. This species is a giant, averaging as tall as *C. giganteus*, say 30 feet for moderately tall ones; branches more numerous and both branches and trunk more massive. Among the thousands of these cactuses I saw were scarcely any Woodpecker holes; probably insect life is too scarce, for the Woodpeckers were seldom seen. Birds of all kinds were very rare. At the San Felix mine I shot an *Auriparus flaviceps* and two *Campylorhynchus brunneicapillus*.

After leaving the San Felix mine we saw no human being until our return to the Poso Moroneno. We filled our water barrels here as a precaution, and had reason to congratulate ourselves on having done so, as we found the water at the Gringo Well so foul that neither man nor horse would drink it. On the low sandy plain, ten to twenty miles back from the Gulf, I saw thirteen *Harporhynchus lecontei* and secured three. Another wounded one escaped me by crawling into a labyrinth of squirrel holes.

Their call-notes (no song heard) were similar to those of *H. lecontei* heard elsewhere, but an undefinable difference in their actions caused me to think they might be different, which feeling was increased by their darker colors. They were in the moult, some having nearly full fall plumage, which contrasts very strongly with the much lighter, faded summer dress. Others, better competent than I to give an opinion, think them not distinct from *H. lecontei*.

About noon on the 20th we reached Port Lobos, the proposed terminus of the Tucson and Port Lobos Railroad. It is a town, strictly, in name only, as there is not a habitation nor inhabitant. The last wagon track made on the road from the mine to the Gulf was made by Mr. Pringle's wagon in his former journey. Fortunately we found the water in the old well fit for use, but grass for the horses was absolutely wanting, and we were therefore forced to turn back the next morning. I spent most of the afternoon along the beach. At high tide the surf washes the base of the high cliffs of cemented gravel. Some four or five miles to the northwest was a low rocky point (Point Lobos). By the aid of a field glass I could see many sea birds there, apparently several species of Gulls and Cormorants. Quite a number of Gulls were flying about, but few came near and I did not attempt to shoot any. A decaying Tern washed ashore, of which I wrote down a brief description on the spot, tallies pretty well with *Sterna anæstha*. Saw several Ospreys and a large Hawk, but the latter was too far away to identify. Two Sparrows shot at the foot of the cliffs Mr. Wm. Brewster identifies as *Passerculus rostratus*.* I also took a ♀ juv. *Calypte costæ*, probably migrating. Saw several large long-necked seals. Large turtles were abundant outside the surf, and several turtle shells lay along high-water mark. I should think fish were abundant. The surf was small and frequent. The tides apparently rise and fall nearly fifteen feet. In the distance we could see the higher parts of Isla Angel de la Garda, and further to the right was a faint blue line of mountain peaks on the peninsula of Lower California.

What a grand field, although a very difficult one, this Gulf and its shores present for scientific exploration! It was with regret at our inability to stay longer that we turned back in the morning. Two or three miles back from the beach I saw a small covey of

* See Mr. Brewster's paper in 'The Auk' for April, 1885, pp. 196-200.

Lophortyx gambeli. The next day I took another *Harporhynchus lecontei* and saw three more. Rain fell steadily nearly all day, and as that made us independent of wells we struck across country to the Poso Moroneno. Traveling was very bad, and we even mired twice, and were delayed by swollen streams where were dry 'washes' as we came down. The scarcity of provisions was becoming a serious matter with us, as we had not counted on delays by *excess* of water, but we finally reached Caborca, dinnerless. While camped over night twenty miles below Caborca, waiting for the water to subside enough to allow our crossing, I heard at twilight what I supposed was a *Micrathene whitneyi*, but failed to get it. The next morning I heard it again and saw two small Owls in a bush before it was light enough to tell positively what species they were, but the one I shot was *Glaucidium phalænoides*; the other disappeared, so it is possible that the two species may have similar notes, as from their actions I think these two Owls were of the same species.

Nothing further worth noting was seen until we passed Sasabe. On reaching the good grass we gave the horses a day's rest, and I searched for 'Bob-whites,' but failed to find any, but shot a *Centronyx bairdi*, and the next day a second. Each was alone, not wild; no note was heard, and its flight was zigzag.

Reached Tucson September 1, having traveled nearly five hundred miles on the round trip. While my lot of skins was small, only about fifty, Mr. Pringle brought in a large quantity of plants, very many of which proved to be new, and we voted the journey a success.

A few days later Mr. Herbert Brown showed me two male *Colinus ridgwayi*, sent him a short time before from the neighborhood of the Baboquivori Mountains, within Arizona; so this species has positively been taken within the United States.

THE GULLS OF THE CALIFORNIAN COAST.

BY H. W. HENSHAW.

IN fall and winter the coast of California, and, indeed, the whole Pacific coast from Puget Sound to Cape St. Lucas, is fairly

swarming with Gulls, and it is surprising that so little has been made known respecting the species represented and their relative numbers.

A limited opportunity for collecting and making observations on the coast from Santa Barbara to San Diego during the months of November and December of 1884, yielded some notes which seem worthy of record.

Larus argentatus smithsonianus.—This Gull has hitherto been reported from the Pacific coast only from Alaska. It is an exceedingly abundant species from Santa Barbara to San Diego, frequenting the shore and bays in numbers second only to the *Larus occidentalis*. Indeed in some localities it doubtless outnumbers the latter species as a winter resident.

Larus occidentalis.—Very numerous. This is *par excellence* the Gull of the Californian coast, being abundant at all seasons.

Larus delawarensis and

Larus californicus.—Both species are fairly numerous.

Larus philadelphæ.—This species is not uncommon in San Diego Bay in December, and I saw it on the coast farther north in November. The bulk of the species, however, probably winters to the southward.

Larus canus and

Larus brachyrhynchus.—Under these two names I mention provisionally two species of small Gulls which appear to be quite identical with two species inhabiting Alaska in summer, farther south than which they have not been known hitherto to occur. Both appear to be not uncommon along the southern coast of California, though they are, perhaps, the least common of the several species mentioned.

Whether the *L. canus* (so-called) of Alaska is identical with the European species, or whether it is a distinct form (species or variety), is at present in doubt, and much more material is necessary to settle the question than is at present contained in the National Museum collection.

The exact status of the Alaskan *L. brachyrhynchus*, its relationship to the European species and to *L. canus*, is also doubtful, from a similar lack of specimens. Mr. Walter Bryant has kindly sent me for examination a specimen of *brachyrhynchus* in immature plumage, taken in San Francisco Bay in the late fall, where he reports it as being uncommon. It is noticeable that nearly all the specimens observed by myself, together with the few taken (with one exception), were young birds, the implication being that the adults for the most part winter further north, probably from San Francisco northward, and perhaps in Puget Sound.

Stercorarius parasiticus.—This species is common in Alaska, but the bird has not been known thus far from further south than British Columbia. It appears to be common in December from Santa Barbara north.

WINTER NOTES FROM NEW MEXICO.

BY CHARLES F. BATCHELDER.

(Concluded from p. 128.)

SCATTERED along the river for a mile or so below the hotels are a number of small cliffs or precipitous outcrops of sandstone thirty or forty feet high. Their faces, which come down close to the water, are broken by many clefts and narrow gullies, and large blocks split off from their sides lie here and there piled one upon another. These were a favorite resort of the Cañon Wren (*Catherpes mexicanus*). They were not a very abundant bird, but single birds were apt to be met with in such places as these, which seemed to suit their tastes so well. What they want is rocks piled in confusion, the more abruptly perpendicular the better, among whose clefts and interstices they can skip and dodge about to their heart's content. They evidently prefer a place that is close to a stream, but in one or two instances I met with one in some dry little ravine back among the hills where he seemed contented among some loose rocks or even about fallen trees and up-turned stumps. They are quick in their motions, restless and shy. Their flight, for they occasionally fly considerable distances, is swift and low. At this season of the year I had not the pleasure of hearing their beautiful song, so enthusiastically described by more fortunate observers. However, though the breeding song was not to be heard, they were far from silent. The commonest note is a peculiar, loud, harsh, penetrating cry, not unlike the ordinary cry of the Nighthawk, and can be heard at a long distance. Besides this note I one day heard one repeatedly utter a sharp *peebody*, the first syllable being rather prolonged and having the principal accent. The quality of the notes was about the same as that of the ordinary call-note. In illustration of one peculiar habit I quote the following from my notebook under date of December 23: "This forenoon I heard a Cañon Wren under my window, and looking out I saw him hopping about on the gravel. He presently flew to the hotel's extensive wood-pile and moved about on it for some time, uttering his loud harsh cry almost incessantly. I watched him sitting on the edge of

a pile of corded firewood, and almost every time he uttered his note he would at the same instant jerk his body, not to mention his conspicuous tail, around to one side or the other, alternately to the left and right, revolving about a quarter of a circle each time. Finally he flew to a little bridge over a gully back of the house."

The only other Wren that occurred was the Rock Wren (*Salpinctes obsoletus*), of which I obtained two one cold morning (December 22) when the ground was covered with a light snow that had fallen the day before. They were at points some distance apart, each on the side of a steep, rocky hill, thus bearing out their name much better than they do in some parts of their habitat. To trespass somewhat beyond my bounds, at Riverside, California, where I found them abundant in January and February, 1883, they frequented open plains and bare hill-sides destitute of rocks, and nearly so of vegetation. Their favorite resorts there were places where the clayey soil, baked hard by the sun, had been cut out by the occasional heavy rainfalls into little gullies, perhaps ten feet deep and often less than that in width, whose perpendicular sides reproduced in miniature the form of the great cañons of some of our western rivers. In the sides of these gullies there were a great many holes, some made by the water, others by the ground squirrels or other rodents, and about these holes and around the projecting corners of the crooked, narrow gullies the birds were continually dodging back and forth, giving you a glimpse of them here, and then disappearing and turning up unexpectedly some distance off.

The same morning that I met with the Rock Wrens I shot the only Arctic Bluebird (*Sialia arctica*) that I saw during my stay. It was perched on the edge of a rudely made brush dam that held back the waters of the stream, forming a pond from which started one of the irrigating ditches, its exquisite coloring contrasting brilliantly with the new-fallen snow that covered the ground. Very likely the bird had been driven down from the mountains by the snowstorm.

There are several spots along the river that will remain fixed in my memory not merely on account of their natural beauty, but because they formed the background to scenes in which that most interesting bird, the Water Ouzel (*Cinclus mexicanus*)

played the prominent part. The Ouzels seem to show excellent taste in the choice of their surroundings. In following up the stream if you come to a place where it splashes down over the rocks in a low fall into a clear, broad pool from whose depths a few rocks here and there barely lift their heads above the surface, keep your eyes open, you may chance to see a Dipper; it is such a spot as this they fancy, and about the foot of the fall or on one of the wet rocks that rise out of the pool is where to look for him. The charm of the bird is doubtless heightened by its frequenting such picturesque places, but I fear that it is attracted to them chiefly by the abundant food that can be gleaned about the rocks at the foot of the falls, luckless insects carried down by the force of the current, or any other tidbits the stream may furnish. They are very tame, unsuspecting birds, and hardly seem to be aware when one is watching them. One morning following down the stream past a point where it is bordered by some low sandstone cliffs, I heard a loud note somewhat like the cry of a Kingfisher. Looking around I saw an Ouzel, and restraining my first impulse to shoot it, I seated myself on a rock some twenty yards away and watched its actions. There was a slight fall in the stream and below it a deep pool, across which a small log had lodged. On this log sat the Dipper. On each side the rapids above the pool were covered by several inches of loose spongy ice that had formed during the night and had not yet yielded to the sun's rays, and only the middle of the stream was free from it. On the pool there was some floating ice, the remains of a skim formed in the night, and even the log the bird was on was partly coated with it. The Ouzel stood with its legs a little bent, its body being nearly horizontal, facing across the log, and apparently watching the water for anything eatable that might come within reach. Meanwhile it repeatedly lowered and raised its body, apparently merely by bending its legs, keeping the position of the body the same all the time, *i. e.*, not tipping it forward or back. The dipping was done rapidly with an interval between each dip. I timed it by my watch, and found the motion was repeated about forty times a minute. Presently it turned around, jumped into the water, and swam quickly to the foot of the rapids, sitting on the water much like a Grebe. It poked about the rapids, walking on the stones, and when necessary swimming

from one to another, stopping now and then to duck its head in for some bit of food, and occasionally standing still on a stone. Once, at least, it stood for a few moments on a stone, the top of which was covered by the water. Whenever it stood still it kept up the dipping, but I did not detect the motion except when the bird was stationary. After poking about the rapids for a while it came out on the snowy ice and walked about on it. Then coming to the edge of the ice it dropped off into the water, and presently reappeared having swum down stream under the ice. Apparently there was room for it to do so without diving. All the while it paid not the slightest attention to me. Perhaps it was as well that it never knew the fate that was in store for it: it now occupies a place in my collection.

They were as a rule quite silent birds. Besides the Kingfisher-like cry the only note I heard from them was one day when passing the same spot, I heard a cry that sounded like a magnified song of a grasshopper or katydid. Turning, I found it came from one of two Ouzels that were chasing each other, flying swiftly along the stream at about a foot from the surface. Their flight reminds me of that of the Black Guillemot.

The Ouzels were much more numerous than writers on the subject had led me to expect. Along some ten miles of the Gallinas River there must have been as many as twenty individuals during my stay. Very likely there were more of them than in summer, for though they are not a strictly migratory species, many of the mountain streams where they make their homes must freeze in winter, and so compel them to seek a temporary habitation among the streams in the foot-hills, that are either too large or too far south to freeze up entirely.

Down the river below the mouth of the cañon, where the gravelly banks of the stream are thickly covered with a growth of low willows and other bushes, Song Sparrows (*Melospiza fasciata montana*) were to be found. With the exception of two or three on the stretches of level ground bordering the river above the springs, I found none elsewhere. As compared with the Eastern Song Sparrow I noticed no difference in habits. Their chirp, the only note I heard them utter, was indistinguishable from that of *M. fasciata*.

Here, too, I occasionally came across a little flock of Tree Sparrows (*Spizella monticola ochracea*), though they did not con-

fine themselves to such places. One day I found one fraternizing with a flock of Juncos in a bare weedy field, and another was found in a clump of scrub oaks high up on the hills. In their habits they seemed to differ in no way from their Eastern relatives.

In the willows along the river bank the Cañon Towhees (*Pipilo fuscus mesoleucus*) were sometimes to be seen, though they frequented other places as well. Among their resorts were the small cliffs scattered along the river, where they poked about among the masses of fallen rocks at their bases, and in the clefts and gullies by which they were intersected. They were apt to be found, too, about the Mexican villages, where they might be seen perched on the high adobe wall surrounding a courtyard, or exploring the ruins of some deserted house that offered a safe retreat in case of alarm. Perhaps, however, the places where they were most numerous were some small irrigated fields on the outskirts of one of these little villages. Where these fields bordered the river or an irrigating ditch, they were fringed with bushes, chiefly willows, that were a favorite haunt of the Towhees. Here one would sometimes be seen running along and then stopping, somewhat like a Robin on an earthworm hunt. Their run really consists, however, of a series of rapid hops. There is much that is Thrush-like about their air and motions, and if seen from behind one might almost be mistaken for a Robin, its form and attitudes are so similar, though it does not stand as upright as a Robin very often does. As a rule they kept on the ground, but now and then they would get up in a bush or even in a low tree, but as soon as a Towhee saw he was attracting attention he immediately shifted his position or retired silently with a swift low flight to some safer place.

Though they commonly go in small flocks I am inclined to think that some at least remain paired throughout the year. They are not infrequently found in couples; in one such case dissection proved them to be male and female; in another when I had shot one bird the survivor showed evident signs of distress.

Their ordinary note is a *chuck* a good deal like a magnified copy of the Song Sparrow's *chuck*.

Among these bushes along the river were flocks of Juncos, too, though, indeed, it would be hard to say where they were not. Here in the bushes, in the bare weedy fields, among the pines on

the hills, as well as among their favorite clumps of scrub oak in the level openings in the cañon, they were sure to be found, wherever a plentiful supply of seeds could be picked up, for they were very industrious in appeasing appetites that seemed never quite satisfied.

On the edge of an irrigating ditch one day (December 18) I came upon a Ruby-crowned Kinglet, the only one I met with. It was feeding near the ground, among the willow bushes that bordered the ditch.

Another straggler, shot down the river, was brought to me December 23. It was the Great Northern Shrike. With the exception of a specimen obtained by Dr. Coues at Fort Whipple, Arizona, in February, 1865, this is, I believe, the most southern instance of its occurrence in the West that has been yet recorded.

My friends who shot this Shrike brought me at the same time some Red-winged Blackbirds (*Agelaius phœniceus*) that they had shot from a flock down the river. Eight days before several others were brought to me, shot from a large flock near the same place. Ten birds out of eleven shot on these two occasions were apparently females, which suggests the probability that the flocks wintering in this neighborhood are made up chiefly of that sex.

A bird that I saw but once (December 20), was the Kingfisher (*Ceryle alcyon*). His habits were perhaps somewhat modified by the extreme dryness of the country, for though he was not far off from the river, yet while I saw him he stayed high up on a steep hillside where he generally chose a pine for a perch, though once or twice he alighted on a dead tree.

The only water bird that occurred was the Green-winged Teal (*Querquedula carolinensis*). They were quite plenty, and adapted themselves easily to circumstances in this scantily-watered country. Their favorite resort was an irrigating ditch that followed the course of the river some distance below where it emerges from the cañon. This ditch was not more than six feet wide, but the water was clear, and it had a swift current. The banks were thickly lined with slender low willows, that overhung the water, offering an excellent shelter that the Teal seemed to highly appreciate. They were also sometimes to be found along the river, on some of its stiller stretches that were thickly fringed with bushes. Here they led a life of comparative safety, for any one approaching through the dense growth of willows could usually be heard before he caught a glimpse of them, and rising at

the first suspicious sound, a low flight kept them screened by the friendly bushes until well out of gunshot. On the ditch they were usually scattered along singly or in twos, but on the river half a dozen or more might sometimes be found together. I probably saw not more than ten or a dozen different individuals on any one occasion along the mile or two of the river where I observed them.

Among the more open spots along this part of the river, small flocks of Pine Finches sometimes paused in their wandering, though they spent most of their time, when not moving about, in places where large stretches of tall dead weeds furnished abundance of seeds wherewith to stuff themselves. One day, leaving the river and walking out on the bare desolate plains, apparently so devoid of life, I came upon a flock that must have numbered two hundred, so busily feeding among some weeds that they did not stir until I was close to them. Then they rose and flew back and forth, circling around several times before they flew away. As the flock turned in the air the whirl of their many wings was plainly audible.

The plains, though they seem so deserted, are not without life. They have one characteristic inhabitant, the Horned Lark (*Eremophila alpestris chrysolæma*), that may be met with scattered here and there in small numbers in whatever direction you go. Their colors harmonize well with the dull tints of the surrounding ground, and as one crouches low at your approach you are very likely to overlook him. They remind one of the fact that nature, the great economist, allows no available space to be wasted and adapts all to their surroundings. The Larks certainly seem well contented with their home, bleak and barren though it may be, and are, perhaps, especially fortunate in occupying a place their title to which no other bird is inclined to dispute.

COUNTER-NOTES ON SOME SPECIES OF BIRDS ATTRIBUTED TO POINT BARROW, ALASKA.

BY E. W. NELSON.

IN 'The Auk' for April, 1885 (p. 200-201), Mr. John Murdoch makes some rather hasty criticisms upon certain statements made

by me in my notes upon the 'Birds of Bering Sea and the Arctic Ocean.'* Mr. Murdoch's strictures apply wholly to certain species which I claimed to occur at, or in the vicinity of, Point Barrow, and his tone would seem to imply that his residence for two years a few miles south of the Point proper has given him a complete knowledge of the birds of that vicinity, so that former or later observers must revise their lists to conform with his or else risk having their statements summarily discredited. I think any experienced field ornithologist will admit that Mr. Murdoch's implied claim of having exhausted the possible avi-fauna of a locality in two years' residence is the best work on record. I supposed myself to be a tolerably thorough worker in the field, but I yield the palm here. During over four years' residence on the Alaskan Coast south of Mr. Murdoch's location, I found that each succeeding season brought me a number of additions to my list of species observed and taken, and four years' longer residence would no doubt have continued to add to my list. Should I adopt Mr. Murdoch's plan of discrediting everything not taken by myself with twice two years' residence at a locality, I should reject *Cyanecula succica* from the birds of St. Michaels, and although two specimens of *Ægialites mongolicus* were taken on Choris Peninsula by the English ship 'Plover,' yet, as on my visit of several days to that locality I found none, I should reject it. Such a method, however, is scarcely a scientific one, and the following notes in reply to Mr. Murdoch's criticism will show, I believe, that in every instance the notes upon the species as printed in my works under consideration should stand as they are published.

Ægiothus linaria.—On August 17, 1881, we landed from the 'Corwin' at the extreme end of Point Barrow, and during our visit saw flying about among the native huts, or perching on the numerous wooden frameworks scattered about, quite a number of Redpolls, and among the adults were seen both the light and dark-colored forms with which I had become so familiar on the coast further south. The birds were very tame, and at the time I was perfectly satisfied of the identity of the two forms, and see no cause for altering my opinion because Mr. Murdoch did not take them afterwards.

Passerculus sandwichensis alaudinus.—Stated by me to occur "all along the coast of Bering Sea and at least to Point Hope and probably to Point Barrow." This bird certainly occurs at Point Hope where it was seen by

* Cruise of the Revenue Steamer 'Corwin' in Alaska and the N. W. Arctic Ocean in 1881. Washington, 1883.

me on several occasions, and as Point Barrow is a little further north on the same coast with a suitable country intervening, my statement that this bird 'probably' occurs north to Point Barrow is not an unreasonable one, when we consider the wandering disposition of the present form. But since Mr. Murdoch's positive statement that the bird "does not occur there," *Passerculus* may think better of it and hereafter avoid the tabooed ground.

Asio accipitrinus.—Some fragments of a skin of this bird were seen by me among the natives less than one hundred miles south of Point Barrow on the coast, and the wandering habits of the species, and its abundance on all the open coast country to the southward of the point where the fragments mentioned above were seen, gives sufficient support to my statement that the species occurs "nearly if not quite to Point Barrow."

Ægialites semipalmatus.—When we first landed at Point Barrow a pair of these birds were found feeding in a sandy pool a few steps from where our boat was beached.

Ereunetes pusillus.—From the fact that I found this bird nesting wherever I made observations in Northern Alaska during the breeding season, and as I found it numerous at Point Barrow on our visit there, I naturally took for granted that it bred upon the adjacent suitable ground a short distance back from the shore. Mr. Murdoch's observations appear to show that it did not breed close to the Point the two seasons he remained there.

Numenius hudsonicus.—Skins of this bird were brought to me by natives from the headwaters of a river rising perhaps one hundred miles inland from Point Barrow, and the fact that these birds pass Kotzebue Sound in spring bound north, were the grounds upon which I based my statement that it occurs north to the "vicinity of Point Barrow."

Dafila acuta.—Among a lot of Ducks brought on board the 'Corwin' by the natives during our stay at Point Barrow, were several adults of this species with their primaries all moulted. These came from fresh water lagoons just back from the shore. As these birds, like most others of their kind, pass their summer moult upon their breeding ground directly after the breeding season, the capture of these specimens in the midst of the moult is pretty conclusive proof that these birds do breed in the near vicinity of Point Barrow, although Mr. Murdoch may not have found them during his two seasons there.

Nettion carolinensis.—My statement that this species occurs "nearly if not quite to Point Barrow" holds true, as a small flock of them were seen by me about one hundred miles south of the Point in a lagoon bordering the shore, and a little further south they were found quite numerous in the summer of 1881.

Mergus serrator.—During a dense fog that caused us to anchor a few miles off Point Barrow on the day of our arrival at that point, a flock of some half dozen individuals of this species flew close by the stern of the ship, heading for the shore, and others were seen at various not remote points along the coast.

ON THE BREEDING HABITS OF SOME ARIZONA BIRDS.

BY W. E. D. SCOTT.

THIRD PAPER. *Phainopepla nitens.*

A FEW words as to the distribution of the species (*Phainopepla nitens*) under consideration, as I have found it occurring in Pinal and Pima Counties, Arizona, and something regarding its movements in a migratory sense, will occupy part of the present paper, which should, perhaps, more properly have to do only with data regarding the breeding season.

At Riverside, in Pinal County, during the spring of 1882, I found this species to be rather uncommon, and doubtless it will be found breeding at that point, though I failed to detect it; and during my stay of two months at Riverside I saw only three or four of the birds.

Later in May I had occasion to go into the mountains to the north of Riverside, at a considerably higher altitude than that place, and here, in what is known as the Mineral Creek District, in the Pinal Mountains, I found the species an abundant one. My stay was so short and my time was so fully occupied with other matters, that I had no leisure to do more than make the above observation.

Coming back to this same region, Mineral Creek, in late July, and remaining for about five weeks, I found that the young birds were full grown, and that the great numbers of birds I had seen in May were now only represented by a very few moulting birds, mainly young ones. Again, leaving Mineral Creek about the last of August, I returned to that point about the 10th of October and remained until December 15. Soon I found that in certain localities,—sheltered flats in broad cañons, where there is a heavy growth of a kind of juniper, then laden with fruit,—the birds were very abundant, often gathering in flocks of fifty or more, and reminding one of the common Cedar Bird (*Ampelis cedrorum*). The individuals making up these parties were mainly young birds of the year, all having *fully completed the moult*, the young males being in a curious parti-colored plumage,

sometimes almost black mixed with only a few gray feathers, and presenting every phase between this dress and an almost gray or leaden colored one, with only a few black feathers intermixed. The iris in most of these young birds was dark brown.

They feed mainly on the berries of the juniper, but often one or more might be seen passing with peculiar flight through the air, turning on its own track, descending abruptly, as abruptly rising, and all the time with very measured wing-beats, evidently in pursuit of small insects.

All the time they, both adults and young birds, male and female, were calling to each other in a peculiar, bell-like, whistling note that was very musical. This I have since found is at all times the principal song.

I observed these birds at this point well into December, and think it probable they remained as long as the food supply was abundant.

During the season of 1883 I had little or no leisure to look after birds, and so I was unable to renew my acquaintance with this species until the last part of May, 1884. I was then living at the point treated of in the former two articles of this series, a cañon* in Las Sierras de Santa Catalina, on the northern side of the mountains, and running northward and a little easterly to the valley of the Rio San Pedro.

Here in May the birds were abundant, and wherever the mesquite extended into and mixed with the live-oak belt, they followed the first mentioned kind of wood, and later in the season I frequently met single ones well away from the mesquite in the oak region. Even at this time of year (May) they show a strong preference for all kinds of small fruits, especially wild mulberries, though insects enter as no small item into their diet.

My observations of the present year lead me to believe that the birds begin to breed early in, that is by the 5th, of May, at this point, which is about a mile down the cañon from my house, and at an altitude of about 3500 feet; though the first nest I found last year (1884), and which contained perfectly fresh eggs, was on the 17th of June.

* This cañon rises high in the mountains, as before described, and runs for twelve miles to the valley above mentioned. In the first article of this series (*vide* 'Auk' for January, 1885, p. 2, line 11), an error in printing speaks of the cañon as *two* miles in length.

That there is a wide difference in the time of the breeding of different pairs in the same locality cannot be doubted, but my experience leads me to believe that here, at least, only one brood is raised during the season.

All through July and August, and for the greater part of September, the birds remained abundant, feeding on the various berries and small fruits which became ripe as the season progressed, and wherever such fruit as they liked was at all abundant they paid little attention to any other kind of food, though insect life fairly teemed in and about the berries that attracted the birds. They showed a particular fondness for a kind of wild grape, and hunted the country through for such fruit, in parties of from ten to forty. In August and early September the young and old birds were moulting, and by the end of the latter month they began to disappear from the higher altitudes, retiring gradually as the weather became cooler.

At any time during the past winter, that of 1884-85, until about the middle of March, by going down the cañon to the vicinity of the river I could find a few individuals. But after the last of October I did not find them in flocks, but generally singly, or at most two or three in the same locality; and their food after the middle of November seems to be, in this region, almost entirely insects, which is contrary to the above recorded observations at Mineral Creek.

After the middle of March of the present year, though I was constantly collecting near the river in this and adjacent cañons, and on the mesas and hills at the lower altitudes, I lost sight of the species entirely. And on my frequent journeys to Tucson, about thirty-five or forty miles south, I rarely noticed the birds until well to the south of the mountains, and then only sparingly. My first notice of their return to the point near my house is April 20 of the present year, when they immediately became common, and were in some cases, at least, mated.

A female taken April 28, 1885, had an egg-yolk fully developed, and two others almost ready to enter the oviduct, and though I had not as yet noticed the birds building, this one must have begun to build, or possibly had already finished a nest.

The following data regarding nests and eggs collected during the breeding season of 1884, are from six nests before me and from notes made during that period.

Nest No. 1. June 17, 1884. Built in an oak, twenty-five feet from the ground. Contained three fresh eggs. It was saddled on a thick limb near where it forked, and about ten feet from the main stem of the tree. It is composed mainly of the stems of a soft flowering weed abundant hereabout, and the flowers, which are worked into and form a part of the structure. Also some strips of fine bark, and various dried grasses, small twigs, and much plant down, help to make up the walls and bottom. These are thick and very soft, and the materials composing them are not woven at all, but simply laid together with some little attempt at fastening them with thread-like grasses. Externally the nest is two inches deep, and the external diameter is a little less than four inches. The greatest depth inside is one inch, and the diameter of the interior at the rim of the nest is two and three-fourths inches. It is not at all an elegant structure, though peculiar, and is very fragile, being quite as delicate and soft as that of *Trochilus alexandri*.

The eggs, three in number, are greenish white in ground color, but so completely flecked all over with faint lilac spots as to seem at a very short distance of that general shade. Again, all over the lilac spotting, are very strongly defined spots of deep umber brown, almost black. These spots vary much in size, from that of a pin-point to as large as five one-hundredths of an inch in diameter. They are almost as various in shape as in size, and are dotted all over the egg in a rather regular manner. No. 1 measures $.90 \times .63$ inches; No. 2, $.84 \times .64$ inches, and the other is about like No. 2, but is unfortunately broken.

Nest No. 2. June 17, 1884. Mesquite, twenty feet from ground. Contained two young just hatched and an addled egg. Is a very similar structure in general appearance to the last, but the walls are much more compact, and the materials composing the whole are packed much more firmly together, being evidently secured together and plastered with saliva, especially on the rim of the nest and inside. The nest is saddled on a large limb, at least two inches in diameter, and is additionally supported by a twig that is about a third of an inch thick, and which, branching from the limb referred to at a point near the nest, passes through the wall on one side of the nest and is firmly built into the structure. The external diameter of the nest is four inches, and the external depth rather less than two inches. The internal diameter is two and

one-half, and depth one and one-quarter inches. The single egg remaining is entirely similar to those described, as far as color goes, and measures $.91 \times .64$ inches.

Nest No. 3. June 17, 1884. Mesquite, ten feet from ground. Contained *three* young, just hatched. Saddled very securely on a limb four inches in diameter; it is very like Nest No. 2, only that it is rather smaller and deeper. The materials are the same, and the gluing with saliva is very apparent.

Nest No. 4. June 21, 1884. Oak, ten feet from ground. Contained *three* eggs, partly incubated. These differ from those already described in having the ground color greenish white, unspotted for the half toward the smaller end, and in lacking almost totally the faint lilac spotting, and further in having the dark amber markings almost confined to a circular band passing wreath-like around the larger end. They measure $.88 \times .70$, $.90 \times .70$, and $.88 \times .68$ inches, respectively. The nest does not differ materially from those already spoken of, but is placed in a fork so that two branches support it, while it rests partially on a third limb.

Nest No. 5. June 21, 1884. Mesquite, ten feet from ground. Contains two eggs about to hatch. Is identical in material and position with No. 4, being placed in a fork of the limbs which support it. The eggs are not to be distinguished from those of nest No. 1.

Nest No. 6. June 29, 1884. Sycamore, forty feet from ground. Contained two young, half-grown. Is a loosely made structure, like No. 1, and is built on and attached to *four* rather small limbs where they branch.

This is not the only nest of this species which I have observed at a considerable height from the ground, at least three more being noted last year, but as they are built invariably, so far as I know, in such cases near the extremity of the branch, they are often unattainable.

The number of eggs would seem to be quite as frequently *three* as *two*; and it will be noticed that considerable latitude in choice is manifested as to the kind of tree built in, the height from the ground, and the position and method of placing the structure on the limb or in the forks of a branch.

HYBRID QUAIL (*LOPHORTYX GAMBELI*
× *L. CALIFORNICUS*).

BY H. W. HENSHAW.

As instances of undoubted hybridization among birds are comparatively rare, the following case, or rather two cases, of hybridization between the Californian Valley Quail (*Lophortyx californicus*) and the Gambel's Quail (*Lophortyx gambeli*) deserve record.

While bearing a superficial resemblance to each other, these two Quails seem to be specifically quite distinct. The former is pretty closely confined to the West Coast, *i. e.*, from the western slope of the Sierras to the ocean. In the mountains it attains a vertical range of 7000 or 8000 feet. The general area occupied is well wooded and has a considerable rain-fall, though it is probable that in the peninsula, where it appears to be abundant, it becomes more or less of a desert bird. The Gambel's Quail is confined to the southern portions of the Interior Basin, where it inhabits only comparatively low altitudes. Though perhaps hardly to be termed a desert Quail, the area it occupies receives on the whole a much less copious rain-fall, and is consequently much more arid than that inhabited by its congener. As the two species occupy regions differing considerably in physical conditions, it was with much interest that I learned during the past season that there is a locality in San Bernardino County, California, along the line of the Southern Pacific Railroad, where they come together. At this point occur hybrids.

While examining Mr. Stephens's fine collection of Arizona birds, he called my attention to a 'hybrid Quail' which he received from Mr. Herron, of Colton, which he very kindly placed at my disposal. Subsequently Mr. Herron, with equal courtesy, gave me a second hybrid, which may have come from the same brood, or which at any rate was shot in the same locality, *viz.*, the vicinity of San Geronio Pass. The following descriptions will show the chief characteristics of these hybrids.

No. 1 most nearly resembles the California Quail. The brown of the head inclines to chestnut, the latter being the color of the head in *gambeli*. The anterior white band on the forehead is mixed with black. The feathers on the sides and back of the neck, which in *californicus* have two

minute roundish white spots near the end, giving a mottled appearance to these parts, are in this specimen unmarked with white except on the sides of the neck anteriorly, where the spots appear, though less marked than in the corresponding part of *californicus*; these parts, therefore, are nearly as in *gambeli*. The wine-colored abdominal spot of *californicus* is present, but the feathers of the abdomen, instead of being tipped with a broad band of black, giving the scale-like appearance of *californicus*, are only narrowly so margined in the lower portion; while above, especially in the buff-colored area (which is as deep in this specimen as in *californicus*), the black margins are reduced to an extremely narrow fringe of black. This specimen has the sides and flanks chestnut, as in *gambeli*, but the chestnut is not so deep. The edging of the tertiaries is pale, as in *gambeli*.

No. 2 more nearly resembles *gambeli*. The crown patch is chestnut, though hardly so light as in typical *gambeli*. The bristly feathers of the forehead are much darker than in *californicus*, and nearly as in *gambeli*. The feathers of the sides and back of neck show traces of white, but, as in the other specimen, much more closely resemble *gambeli*. In the abdominal spot the wine color of *californicus* is but faintly visible, being overlaid, so to speak, with black, thus being nearer *gambeli*. The spot on the upper portion of the abdomen is yellowish-buff, but paler even than in *gambeli*, the corresponding area in which bird it resembles in size and shape. The broad black edgings to the feathers of the abdomen and breast of *californicus* are in this specimen, as in the other, mainly confined to the lower portions, leaving the upper parts nearly immaculate. In this specimen the chestnut on the side and flanks is like that in *gambeli*. The edges of the tertiaries are very pale, as in *gambeli*.

The intermediate character of the specimens thus cannot be doubted, and is visible at a glance. But, it may be asked, What certainty is there that these specimens are veritable hybrids between birds specifically distinct, and not the ordinary 'intermediates' which are usually conceded to be proof of specific identity, not diversity? To such a query answer may be made that where a species inhabits two regions so diverse in climatic and other conditions as to produce at either extreme a variety or race, the intermediate links showing that the two forms grade together must come from areas intermediate, if not in actual geographical position, at least in respect to climate, etc. In the present case no such intermediate area exists. The California Valley Quail is abundant down to the very edge of the desert, within sight and hearing, so to speak, of the home of the Gambel's Quail. Specimens shot by myself within a few miles from the desert differ in no respect from specimens from the interior valleys of California, and certainly show no indication of an approach to the characters of *gambeli*. Specimens of the Gambel's Quail, on the

other hand, from just within the desert—the exact locality where the hybrids were found—might have come from Utah or Arizona so far as comparison shows to the contrary. They are in every respect typical of the species and reveal no tendency to an approach towards *californicus* as a result of their proximity to the habitat of that bird. The specimens in question can, therefore, be nothing else than pure hybrids.

To what extent hybridization between the two species occurs at this point is at present not known, but Mr. Herron promises to pay attention to the matter and ascertain, if possible, the relative proportion the hybrids bear to the unmixed birds. It will be found, probably, that the hybrids are comparatively rare, as of a considerable number of Gambel's Quails already shot at the same locality, Mr. Herron recalls nothing peculiar. Probably it will be found that actual mating between the two species does not take place, but that the hybrids are the result of unusual meetings between the opposite sexes of the two species, which are more in the nature of accidents than anything else.

A STUDY OF THE SINGING OF OUR BIRDS.

BY EUGENE P. BICKNELL.

[Concluded from p. 154.]

Agelæus phœniceus. RED-SHOULDERED BLACKBIRD.

IN mild winters squads of Red-winged Blackbirds sometimes wander northward ahead of time. These find the swamps unprepared for them, and keep silence save for the dull *chuck* which it is customary for Blackbirds to use on all occasions. But song always accompanies the general migratory movement however early it may be entered upon, and I have known their spring concert to begin as early as February 22. No matter how backward the season, they will not brook more than a reasonable delay, and after the middle of March will come and settle and start singing even when the swamps are still ice-bound and they themselves are the only sign of spring.

March and April, and less truly May, are here their chief song-months. Later they resign the gallantry of courtship and, perhaps viewing the practical situation to which it has brought them, lose their readiness of voice, many, in fact, being reduced to complete silence. This state of things begins to be noticeable after the middle of May, and gradually becomes more apparent, although singing never wholly fails before July. By the middle of that month, even though the birds continue abundant, usually but few remain in voice. Dates of final songs bear record between July 17 and 28, and August 3.

After this time the movements of the species are rather perplexing. About the end of July almost all the adult males disappear, while the females and young remain abundant — even appear to increase in numbers — and multitudes often congregate at late afternoon in the mowed meadows. In September these have departed and the species is usually uncommon; indeed, in some years it appears to be altogether absent in this month. In October it becomes common again and singing is transiently renewed. But so fleeting is the period of autumn song that it may readily escape notice, and doubtless for this reason it is chronicled on my records only for two seasons. In 1878 it lasted from October 14 to 17, when song from a number of birds was full and perfect; in 1880 several songs of varying perfection were heard on October 17, but on no other day.

Sturnella magna. MEADOW LARK.

Though the Meadow Lark gives us many months of its music, its song finds chief place in memory among the bird voices of earliest spring. Then flocks assemble in tall trees overlooking their favorite meadows, where the medley of their mingled songs is an agreeable change from the winter silence of the sere grass lands.

Often they are preceded in song only by the Bluebird and the Song Sparrow. I have known them to be singing by February 8 (1880); but they do not often anticipate early March, and when it happens that they are not present at the breaking up of winter of course their song is not to be heard until they put in an appearance, which may not be till early April.

I have no record of their singing later in the summer than the third week of August, and often they cease earlier.

In the autumn, however, they have their voices again. In 1880, flocks in full song were noted from October 10 to November 7, and all my data of other years is comprehended by these dates.

Icterus spurius. ORCHARD ORIOLE.

We are never long left unaware of the advent among us of this active bird, for its rapid rollicking song bears a signal part in the repletion of bird voices which fill the morning hours in the early days of May. True to its tropical traditions it fairly revels in the hottest weather, and it may be heard singing with unabated hilarity all through those excessively hot days that often come suddenly upon us at the end of May or early in June.

The immature male, in the yellowish, black-throated plumage, sings as enthusiastically as his more richly attired compeers, and is often noisy with the earliest arrivals.

Singing begins to decline in July, and my record usually closes shortly after the middle of the month, sometimes barely reaching that point. But, again, songs may be scattered sparingly along till August, and I have one record of imperfect song-notes from an adult male on August 11. My record of latest songs is as follows: 1874, July 28; 1876, July 30; 1878, July 11, 17, 19, and imperfect song-notes August 11; 1880, July 11 and 18; 1881, before the 17th; 1882, July 25; 1883, July 18. Records of the singing of immatures plumaged birds run to July 10.

Icterus galbula. BALTIMORE ORIOLE.

It would almost seem as if the Baltimore Oriole timed its advent by the blossoming of the fruit trees. At all events, the blossoms and the Orioles usually come together. And when the cherry and apples trees wear their full spring array the bright birds are in high spirits, gaily flashing from one tree to another, and sounding forth their golden-toned trumpets from the fragrant clouds of white bloom, amid which they spend many an hour while the blossoms remain. And when it may, much of its time is also

passed with a splendid foreign cousin of these trees, the Japan quince,—that brilliant flowering shrub that flames about lawns and gardens in early May, and that finds a rival brightness when the Fire-bird busies itself among its scarlet blossoms.

On their arrival these Orioles are particularly vivacious and noisy, and though their spirits appear soon to subside they continue in full note. But through most of July they are feeble-voiced and often silent. There is, however, no strict silent-period, for in some summers they are less quiet than in others, and even when most reticent they seem unable to restrain occasional imperfect song-notes. But the lapse of song in mid-summer undoubtedly points to an illy-defined silent-period, for full song is resumed in August. In the latter month, chiefly in its third quarter, their notes are frequent in the early morning and become as full-toned as in spring, at times seeming to be more extended, even as the bird's plumage is brighter. Still, at this season a few simple notes is a more usual expression than the full song. The latter I hear last in August, from the 5th to 27th. The simpler notes have always closed my record of the presence of the bird—August 19 to September 6.

Mr. William Brewster gives me the following notes on the Baltimore Oriole as observed at Cambridge, Mass. :—

“Through late July and early August they are silent and retiring, but with the first cool mornings, generally about August 20, the male begins singing again and flashes in and out among the leaves with all the vivacity of June. His plumage now is even brighter than in spring. At this season he sings only in the early morning.”

***Scolecophagus ferrugineus.* RUSTY BLACKBIRD.**

Sings in the spring during its stay, which is longer than that of any other migratory bird—sometimes from early March till mid-May—and in the autumn from its arrival in September until the great body of the species has passed south. Latest songs are in October, from the 20th to 30th. “Imperfect song-notes November 5,” is down in my record.

In the mild winter of 1879-80, these Blackbirds were observed at different times, and their song-notes heard January 18 and February 29.

THE CROW BLACKBIRDS.

The Grackles are unaccountably erratic in their visitation to my neighborhood, and my notes on their vocalization are meagre and unsatisfactory.

It may be said, however, speaking of the Crow Blackbirds broadly, without distinction between the Purple and the Bronzed varieties, that they are to be numbered with the birds which have their voice in the autumn. I have heard their squeaky song-notes in October, as late as the 23d.

Corvus frugivorus. CROW.

Cyanocitta cristata. BLUE JAY.

With these birds there appears to be little relation between the use of the voice and the seasons.

The Blue Jay seems disposed towards quiet in the breeding season, particularly in the vicinity of its nest, and is most noisy during its migrations in autumn.

The cawing of Crows belongs to all seasons.*

Tyrannus carolinensis. KINGBIRD.

From the time of its arrival on through the season of family cares this bird's notes are louder and more frequent than later in its stay. But the Kingbird does not easily hold its peace under annoyance, and its harsh twitter constantly breaks forth in those dissensions which are ever rising between the irritable birds when they are flocking in the late summer preliminary to departure.

But at this season their notes are usually much abbreviated, for their voices are declining; and when the great body of the little combatants have fought their last fight and departed, which is about the end of August, it is the exception if the loiterers that continue to be met with are not mute.

* I regularly hear the strange croak of the Fish Crow (*Corvus maritimus*) from early spring until summer. The boundary dates of my record are February 22 and August 15; but I do not often hear the bird after May. Whether it is absent through the late summer, autumn, and winter, or is present but silent during this time, lies beyond my observation.

Myiarchus crinitus. GREAT-CRESTED FLYCATCHER.

In July the voice of this bird begins to fail, and a silent-period is nearly approached, if, indeed, it be not actually reached, in trying summers.

During this time of semi-silence the usual utterance is a single note, which is often faint, and with a mournful intonation as it sounds at slow intervals among the high trees of the woods.

Towards the end of August there is noticeable on the part of the birds an attempt to regain their earlier vocal prowess, but they soon return to the low note which they learned in July. This is their farewell, and is in strange contrast to the harsh outcry with which they came upon the scene.

Sayornis phœbe.* PHŒBE-BIRD.

The well-known Phœbe comes to us in the spring the first of the Flycatchers; the first, in fact, of our strictly summer birds—those that never show themselves in winter—and for this reason, as well as because it actually comes to us and need not be sought, it always meets with a special welcome among the evidences of the advancing season in March. According to custom, on the first morning of its arrival its song comes in through the windows from gable-peak or other familiar perch about the grounds, and not till then does spring seem really to have begun. But its song is one of those which appeals to the sympathies rather than to the ear, fully making up in sincerity what it lacks of music. Still, it must be reluctantly admitted that later, when more graceful and gifted songsters are with us, the plain Phœbe does appear a trifle unsophisticated, and its notes may grow monotonous. Nevertheless their jerky character seems to be held in high opinion by their author, and is admirably seconded by its tail.

Usually the Phœbe-bird must be waited for until after the middle of March; but it may put in an appearance any time between the first and last days of the month—March 5 to 30.

* Cf. Stejneger, *Auk*, Vol. II, No. 1, p. 51.

As to its singing in the summer, there is much variability in different years. In some, little will be heard from it through the greater part of July, August, and September; and in prolonged heated terms it may be generally silent for weeks at a time in any part of this period. If the weather be agreeable it is much less taciturn.

With considerable regularity singing is resumed in the latter part of September, and usually lasts into the following month.

On bright autumn days, especially, the Phœbes seem animated by the same cheerful spirit in which they passed the spring, and in their ardor of song even dare again the high pitch of note where the voice seems about to crack at every ascent. Such songs are often among the last.

My record tells of farewell songs from September 28 to October 17. These really announce the general departure of the species—the latest with us, as it was the earliest of the Flycatchers—and though single birds seem to be loath to leave and often linger late about the thinning orchards and leafless shrubbery along the borders of ponds and streams, their only note is a simple *chip*.

• *Contopus virens.* WOOD PEWEE.

When it first comes the Wood Pewee seems to be a little shy of using its voice. Perhaps, with its solitary disposition, it is not at ease amid the confusion and medley of the migrations. At all events it puts off its coming till much of this is over with; and in the summer it is most voiceful in the early morning and in the evening when it can have the woods all to itself. Often it may be heard repeating its plaintive, inquiring call when the woods are quite dark, either before the sun has risen or after it has set.

In late July or early August its voice shows evidences of decline, and gradually the species goes out of song. In some seasons singing may continue with tolerable constancy through most of August, but it is never general in September, although occasional songs are to be heard up to the time of the bird's departure. The latest songs are often stronger than those of several weeks previous. Dates of last songs for ten years are from August 28 and September 2 to September 19 and 24.

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When singing is at its weakest, the song may be reduced to a single low note, suggestive of a low note of the Yellow-bellied Flycatcher.

Empidonax flaviventris. YELLOW-BELLIED FLYCATCHER.

I have heard the song-notes of this spring and fall migrant in the last days of May, and once in mid-August (August 14, 1880); but on the fall migration it is usually silent.

Empidonax acadicus. SMALL GREEN-CRESTED FLYCATCHER.

Continues in full note through June and into July. With me its notes cease in the latter month, between the 5th and 20th, but where the species is more abundant doubtless it may be heard later.

Since this went to the printer I learn from Dr. A. K. Fisher that at Sing Sing, N. Y., where the bird is common, its notes continue nearly to the end of August, and probably even later.

Empidonax trailli. TRAILL'S FLYCATCHER.

I hear this species only while it is passing north on its migration, when it sometimes taries into June.

Empidonax minimus. LEAST FLYCATCHER.

Silence comes earlier to this species than to almost any other of our summer birds; but where I have found this to be true is near the southern limit of the bird's summer range, and it is not unlikely that it has somewhat different habits of song further within the area of its distribution.

In some years I have missed its note after the last days of June, and my latest date, July 20, is isolated in my record, the nearest approaches to it being July 12 and 14.

Trochilus colubris. RUBY-THROATED HUMMINGBIRD.

The only sound I ever heard from this bird was an excited chipping. My books show no record of this after the breeding season.

Chætura pelagica. CHIMNEY SWIFT.

The rapidly accelerated chatter which the Swift runs off so airily while on the wing, accompanies its flight through most of the summer—in fact as long as the birds remain common. This may be from early August till well on towards the end of the month.

Late in the stay of the species I have sometimes heard their full notes while watching small companies of the birds tarrying at dusk over low grounds and meadows to join the Swallows insect-hunting.

In the summer the Chimney Swifts are disposed to be liveliest late in the day, and the warm evenings are enlivened by their nervously rapid twittering as in wisps of two or three or more they race with astonishing velocity through the air.

But they are quickly affected by a fall of temperature, and in suddenly cool evenings, chiefly in late summer, are to be seen flying silently about in marked contrast with their usual noisy demeanor.

Caprimulgus vociferus. WHIP-POOR-WILL.

I have never heard the notes of the Whip-poor-will after the middle of the year, though it is well known to sing in the autumn. At Sing Sing, Dr. Fisher has heard it up to September 19; and it has been heard by different members of my family at the following times and places: Canaseraga, N. Y., July 24, 1871; Scarsdale, N. Y., August 31, 1880; Bay Ridge, L. I., August 10, 1881.

Chordeiles virginianus. NIGHT-JAR.

The sharp cry of this bird is to be heard in spring, summer, and autumn, and doubtless is independent of the seasons. I have no personal knowledge as to the seasonal limitations of its well-known 'booming,' and aerial evolutions.

Picus pubescens. DOWNY WOODPECKER.

In addition to its usual short, sharp note, the Downy Woodpecker has a rattling cry, which starts and ends with an abrupt

precision suggestive of a mechanical contrivance set off with a spring. This it uses in lieu of song. It is set off for the first time in the new year in March, usually about the middle, but sometimes earlier, and again not until the end of the month, or even early April.

It is in use through the summer and autumn, often becoming infrequent in October, and in November still more so, although in some years not ceasing altogether until the end of the month. On a few occasions I have heard it in winter.

The hammering of this little Woodpecker, which is often loud and resounding in great disproportion to the bird's size, is introduced into the woodland sounds about the time its song-notes begin. In early seasons I have heard it by the middle of February.

Sphyrapicus varius. YELLOW-BELLIED WOODPECKER.

The Yellow-bellied Woodpecker poses in a very different character as a traveller than as a settler in its summer home. By reference to Dr. Merriam's entertaining paper on this bird, in the 'Bulletin of the Nuttall Ornithological Club' for January, 1879, we learn of its habits on its arrival in Lewis County. There it is bold, familiar and preposterously noisy. In the region of which I write it is in general a reserved and quiet bird, and does not often indulge in hammering, even in the spring. Perhaps at the time it passes—April—it is not ready to begin courtship, and drumming, which, as with other Woodpeckers, in a measure takes the place of song, is deferred until the birds are ready to seek their mates.

But though the species in general is undemonstrative with us, there may be an occasional noisy individual. I can cite a good instance under date of April 8, 1880: On the morning of that day a high-plumaged male had chanced upon a wonderfully resonant hollow limb in an old chestnut tree in open woods. No true Woodpecker could miss turning such an occasion to account, and the hard barkless shell was made to do good service. With great satisfaction the bird would deliver at short intervals a loud tattoo—a run of about eight determined raps in irregular succession. After each sally it would throw back its red-patched head with an

air of satisfied achievement and survey the woods, which seemed doubly silent after the loud reveille.

I have never known this Woodpecker to drum in the autumn. At that season it seems especially reserved. Many take up their habitation in orchards or on private grounds where there are old apple trees, and from their silence and the close manner in which they hug the limbs seem to haunt them with a constant suspicion, although they are not shy of approach. In these trees they keep up a feeble, restless picking, in their microscopic search of the bark for their hidden food. This is the only sound I have heard from them in the autumn, except an occasional low scream, which may rarely be uttered in the winter.

Melanerpes erythrocephalus. RED-HEADED WOODPECKER.

This fine bird is usually uncommon about New York, and long periods may elapse when it appears to be altogether absent. But it is liable to come in flocks any autumn, when many may stay and spend the winter.

The species was common from September, 1881, until the middle of the following May. Their usual note—a guttural rattle, similar to the cry of the tree-toad (*Hyla versicolor*)—was kept up all through the winter. In April their vocabulary was augmented by a hoarse, hollow-sounding cry. Then the birds in small companies still occupied the same woods where they had passed the winter, but were more noisy and active, and would sometimes set up a confused screaming all together. The tree-toad rattle I have also heard in August.

Colaptes auratus. GOLDEN-WINGED WOODPECKER.

The well-known High-hole has, for a Woodpecker, a very varied repertoire. Its long rolling call may be taken as especially representative of song, and is a characteristic sound of the empty woodland of early spring. It is usually given from some high perch, and has a free, far-reaching quality, that gives it the effect of a signal thrown out over the barren country, as if to arouse sleeping nature. This call continues irregularly through the summer, but then loses much of its prominence amid the multi-

tude of bird voices. It is not infrequent in September, but later than the middle of October I have not heard it.

Another vocal acquirement of the High-hole is a sound much like that caused by the whetting of a scythe. These notes I have recorded from April 8 to September 5; but there seems to be no seasonal regularity about their utterance. The species has also some singular, conversational-like tones, and other notes, which are usually uttered when the birds are in company, and are sometimes attended with a great show of bowing and obsequious conduct.

It is hardly necessary to allude to the familiar call-cry of the species, which may well have conferred the name Clape which the bird bears in certain sections.

In the breeding season the High-hole seems to be quieter than either before or after, perhaps from considerations of caution.

Ceryle alcyon. KINGFISHER. .

When the Kingfisher is present in winter its loud rattle is given with as much vigor as at other seasons.

THE CUCKOOS.

Our Cuckoos have a variety of notes, some of which are certainly common to both species. I have never been fortunate enough to determine positively which were distinctive of either, and the notes of both are confused in my records.

Cuckoos continue in voice after their arrival until from the middle to the end of August. Later in the season their notes are faint and brief; latest records for such are September 4 and 14.

Scops asio. SCREECH OWL.

The Screech Owl shows a very perplexing irregularity through the year in the use of its strange quavering cry. This much is plain from my records, which, however, are not sufficiently full to give a clear reading of the larger facts. But that the bird is noisy or the reverse with some reference to the time of the year there can be no doubt. The late summer, far more than the

spring, seems to be the season when its cry is most frequent and most regular from year to year. Usually, after a considerable time of silence, it begins to quaver in July or in August, thence continuing off and on until winter. But there is no great regularity about this; simply my notes through a series of years cover all this period, and the bird is to be heard in one or more of the autumn months every year.

I am not without scattering records of having heard it in winter; but it is virtually a silent bird from December or earlier until March or later.

With some uniformity it is to be heard for a short time in late March or early April; but I have not a record for late April, May, and June.

Philohela minor. WOODCOCK.

Although the aerial manœuvres of the Woodcock at dusk and in the dark are, freely speaking, familiar to us all, in a stricter sense there is still a prevailing ignorance in regard to them.

My journal supplies the following, slightly adapted, under date of April 19, 1884: The birds would start up from amid the shrubbery with a tremulous whirring sound of the wings, rising with spiral course into the air. The spiral varied considerably in pitch, sometimes expanding to sweep far out over a neighboring field, when a single revolution would carry the bird upward almost to the extremity of its flight, which was sometimes directly over the point of departure. The rapid trilling sound with which it started off, as Woodcocks do, continued without interruption during the ascent, but gradually became more rapid, and as the bird neared its greatest height passed into pulsations of quavering sound. Each pulsation was shorter and faster than the last, and took the tremolo to a higher pitch, sounding like a throbbing whir of fine machinery, or suggesting in movement the accelerating rhythmic sound of a railway-car gradually gaining full speed after a stop. At last, when it seemed as if greater rapidity of utterance was not possible, the vertex of the flight would be reached, and, descending with increasing swiftness, the bird would break forth into an irregular *chippering* — almost a warble — the notes sounding louder and more liquid as it neared the earth. Suddenly

there would be silence, and a small dark object would dart past through the dusk down amid the shrubbery. Then, at silent intervals, a single strange and rather startling note — a loud, sharp and somewhat nasal *speat* or *spneat* — which sounded as if delivered with a spiteful directness at some offensive object.

I had no means of estimating the height of the bird's ascent, but in the evening dusk it went up almost out of sight.

This performance I have heard at midnight on the bird's arrival in spring. It is also said to take place in the early morning. Is it ever indulged in the autumn?

WINTER BIRDS OF PRINCE EDWARD ISLAND.

BY FRANCIS BAIN.

PRINCE Edward Island, situated in the southern basin of the Gulf of St. Lawrence, possesses in some respects a climate peculiarly its own. Sheltered from the chilling breath of the Labrador Current by the elevated primary ridges of Nova Scotia and Cape Breton, it enjoys a summer season with a more elevated temperature, a purer atmosphere, a clearer sky, and more abounding sunshine on its rich, verdure-clad swells, than are to be found on the immediate Atlantic seaboard.

In winter, on the contrary, the shallow waters of the Gulf are soon covered with ice, sometimes extending unbroken as far as the Magdalens, and the temperature of the season is uniformly severe. Snow lies deep on the ground, and the rivers and bays for four months are firmly locked in ice. The atmosphere, however, is pure and bracing, and free from the damp chilling mists of the ocean seaboard.

These conditions have an influence on our winter avifauna. Water birds which frequent bays and mouths of rivers are completely driven away. Only a few deep-sea fowl stay to glean a hardy living where the blue waves break among the parting floes. The depth of snow is unfavorable to members of the Finch tribe which, like the Tree Sparrow, seek their living from seeds on the ground. But the splendid deciduous forests which flourish

on the fertile New Red Sandstone soil, afford food to some of the tribe during the inclement season, which are not known to winter in the neighboring Provinces.

The Purple Finch frequently winters here. He does not frequent the abodes of men, but the lonely forest, where the domed summits of the great yellow birches, *Betula excelsa*, are thick-laden with strobiles, is his home. The stay-at-homes never see him. But on a keen, bright morning, when the gilded twigs are surging aloft in the frigid blue, from their loftiest tops rings out the glad, sweet carol to startle and charm the adventurous woodman.

Strange that the occurrence of a roving song bird in a district should be connected with the distribution of the ancient geological formations. But it is so. The soils of the New Red Sandstone formation sustain a class of plants affording more suitable food for the forest chresters than is to be found in the Primary districts. The Connecticut Valley is well known as the winter home of many of our song birds. Western Nova Scotia has features of bird life distinct from the surrounding districts. And Prince Edward Island affords an oasis for the wintering of certain Fringillidæ in the midst of less fertile Primary lands.

The highly cultivated character of the country, with numerous stock yards and farmsteads, favors the wintering of birds. The Song Sparrow has been supposed not to winter north of Massachusetts. But among the stock yards of Prince Edward Island we often find the jovial songster tuning his pipe in midwinter as gaily as if he was in his old New England homestead.

In the latter part of October the Snow Buntings come here. It is worthy of remark that they appear in New Brunswick considerably earlier, indicating that they arrive from the North by that way instead of by direct flight across the Gulf. At first they do not frequent the cultivated districts, but may be seen foraging along the shores and in deserted grainfields. In December, when snow and ice bury up their food in the wilds, they come about the grain stacks and farm yards in large, white flocks, whirling, like snow drifts, in the keen winter air. They are very fond of oats, for which this Island is famous. They always shell the grain before devouring it, using only the farinaceous kernel.

It is rare to hear Snow Buntings sing, but on a bright morning in March, ensconced in a sheltered nook, I have heard them sing

a low, sweet song, resembling the Linnet's in general outline, but much less strong, full, and rapid.

The Redpolls arrive the first week in November, when the ripened and gilded cloak is just reft from the forest boughs. Then we see little of them, but will occasionally hear their gentle chitter as they pass back to the groves of great yellow birches, on the seeds of which they principally feed. Free and happy is their life in the wilderness now, as you may witness if you watch a group of them whispering and calling sportively as they rifle the seeds from the crowded strobiles of a giant *excelsa*. But when winter fully comes they are driven from the forest's summit, evidently suffering from the cold. They then crowd close in shivering flocks of fifty or more, and come and feed on hay stacks and on the seeds of goosefoot, polygonum, and other weeds about the gardens. I have seen the hunger-driven flock settle on loads of hay exposed for sale in the city market. Yellow birches are our only deciduous forest trees which carry a quantity of seeds through the winter, and it is this circumstance which makes them so important for the support of the winter flocks.

The Goldfinches leave the last of October, the last individuals evidently suffering during cold storms, and their place in winter is taken by a few wild, bounding Pine Goldfinches, whose slim voices sound sweet notes round the dark spires of ancient spruces where the White-winged Crossbills feed. We sometimes have large flocks of Red Crossbills, but their coming is very uncertain. They were in force in December, 1877, and in January, 1884. Spruce seeds were abundant both these seasons.

Pine Grosbeaks come in November, but their numbers are uncertain. When coniferous seeds are plenty, flocks of fifty bright-plumed beauties, with their gentle, unsuspecting, wilderness-ways and soft voices, come frequently about the spruce groves. But when these are scarce, as they are this season, it is rare to hear the call of a solitary wanderer in the most unfrequented forest scene. But Grosbeaks are not dependent alone on a precarious supply of cone-borne seeds for a living. They feed much on the buds of the trees, and will even go to the shores for a meal, like Buntings and Robins.

In midwinter they retire to the shelter of the deep, coniferous forests. On a sunny morning, when the fir drapery flashes with crystals, the group of forest wayfarers may be found in their

sheltered home, keeping each other company with quiet flocking calls, a male constantly breaking into a delightful Linnæus-like song, with some peculiarly rich flute-notes of his own. In such circumstances they do not mount the blast-swept summits of the trees but content themselves with foraging on the lower sheltered boughs.

All these winter visitants, except Snow Buntings, are irregular and uncertain in their appearance here. During mild seasons we have them in numbers, but cold and stormy winters drive them to districts where food is more easily obtained. But Grosbeaks and Crossbills are never in numbers unless coniferous seeds are abundant.

But few Tree Sparrows winter here, although they are abundant in November. Black Snowbirds are almost equally rare, and it is only now and then that Robin favors us with his presence during the dreary months. One or two will sometimes stay where the berries of the mountain ash (*Sorbus americana*) are plenty.

Our only permanent residents really abundant in the winter months are the little Black-capped and Hudsonian Chickadees. We have rarely any Shrikes, and the Chickadees' mode of nesting secures them against the larger birds of prey, and, being the only insectivorous tribes of consequence during winter, they have an ample supply of food, so that they enjoy a regular paradise here among the groves of gray lichened firs. Everywhere you turn, even in the most severe weather, a merry *chick, pee dee* greets you, and a little black cap bobs from among the snow-laden boughs.

The Hudsonian Chickadee is less pert and obtrusive than its black-capped friend. Like a coy maiden in sober brown it keeps to the retirement of the thickets, attracting little attention with its soft, whispered notes. I think that both species, though plenty at all times, are less abundant in midwinter.

The Gold-crested Kinglet, and the Red-bellied and White-bellied Nuthatches are permanent residents, though by no means abundant. Besides the Downy and Hairy Woodpeckers, and a rare Black-backed Woodpecker, the Brown Creeper may sometimes be seen in midwinter. Blue Jays are numerous, but Canadian Jays uncommon. During severe winters Crows get very scarce, yet a few will brave the most Arctic temperature while grain stacks are to be pilfered from.

Goshawks are resident here and the terror of the desolate winter forest. Often we see the blood-stained snow and the scattered feathers of a Jay, or the fur of a hare, where this marauder has had his meal.

Among Owls, the Barred and Horned Owls are the most common. The Snowy Owl visits us in winter; and the curious bell-like tones of the little Acadian Owl form the first voice of spring in the wintry woodlands.

After the ice closes round the Island in January we see but few water fowl. Yet, in mild winters, occasional Golden eyes, Oldsquaws, Mergansers, or Eider Ducks, may be observed. Herring and Black-backed Gulls come in during softer spells and survey the ice-locked bosoms of the harbors for some quieter opening to fish in. But the Terns and the great fleets of Bonaparte Gulls, that all summer long drifted, like snow-clouds, round the blue bays, had all left in October, when these were first silvered with the breath of December.

The Kittiwake is the true bird of the wintery wave. In the narrows of the harbor, where the contracted current is swiftest, there is often a restricted opening in the ice, even in midwinter. When the deep waters of the Gulf are frozen solid as far as the eye can see from the most elevated hilltop, the Kittiwakes will come in and gather round this little spot of blue, circling and dipping and rending the keen air with their harsh *ke-a, ke-o*; reminding us, as we watch them amid nature's fiercest aspect, of the amazing possibilities of animate being.

It will be observed that our northern visitors are about the same as appear in the neighboring Provinces of the mainland. It is otherwise with our summer visitants from the South. A number of birds of more southern habit, as the Catbird, Bluebird, Scar, let Tanager, Rose-breasted Grosbeak, Indigo Bunting, Bobolink, Red-winged Blackbird, Meadow Lark, Baltimore Oriole, and Whip-poor-will, which visit New Brunswick and Nova Scotia, are never seen on Prince Edward Island. There is no reason to be found in the existing state of things why some of these birds should not stay over here and enjoy our delightful summer season, which is superior to that of the Atlantic seaboard. The reason is to be found in the fact that the Island was separated from the mainland in the earlier days of the modern period, when the climate was cooler than at present, and the more southern

tribes of birds had not yet distributed themselves in these northern Provinces. Since their distribution in these parts the Northumberland Straits have proved a barrier to their movements which they have not yet learned to overcome.

In studying the botany of the Maritime Provinces we find that the same thing exists in regard to the plants of Prince Edward Island. Many plants of more southern habit, common to the Provinces of the mainland, have been excluded from the Island by its early separation from the continent.

In the birds the fact shows the exceeding tardiness with which they adopt new lines of migration, and, consequently, the tenacity with which they adhere to established habits in their migrations and distribution.

It also reveals something of the great northward movement of the feathered tribes which must have followed the recession of the cold of the Glacial Period, pointing out those which were the last to arrive within the limits of these Provinces.

NOTES ON MANITOBAN BIRDS.

BY ERNEST E. T. SETON.

THE Peregrine Falcon (*Falco communis*) is a regular summer resident of this country, although, for some reason as yet unknown, it is not often seen on the Big Plain until August. I have had a number of good opportunities of studying the bird. It has several times visited the poultry-yard. On four occasions I have known the bold pirate to continue dashing round the barns whilst shot after shot was fired at him; on one of these he flew off after the third shot, probably hurt. On another occasion he was killed at the third shot, after killing his victim. On a third the fourth shot drove him off, and on yet another the fifth shot brought the bold bird to the ground. This last was a young male; his injuries were very slight, and so he was kept alive and sent to me. I kept him three weeks in captivity, and had a good opportunity of making notes. The vocal sounds uttered by this bird were three in number; a hissing menace, like that

of the Owls, an exceedingly loud and piercing scream of anger, and a reiterated shrieking, almost exactly like that of the Kestrel, but stronger and in a deeper key. The regal beauty of this bird, his proud, conscious look of strength and power, the snap and fire of his every movement, can only be appreciated by those who have had an opportunity of judging for themselves.

Baird's Bunting (*Passerculus bairdi*) is a species of considerable interest. It is exceedingly abundant in suitable localities of this country. I give the following in full from my unpublished notes on the Birds of Manitoba.

I found this species throughout Western Manitoba wherever the surroundings were congenial. On the Big Plain it is fairly common, but on the prairies of the upper Assiniboine it is exceedingly abundant. I traversed that country in June, 1884. At that time all the birds were in full song. The scrubby prairies, from the Finger Board to Shoal Lake, were vocal with the songs of Shattuck Buntings and Savanna Sparrows; where the prairies widened and became more clear, the loud Meadow Lark joined in, or when the trail dipped into some hollow where the red willow was thickly growing, the husky-voiced Leconte's Sparrow added his weak song to the tumult. But in the low flats by Shoal Lake, where the ground was hard-baked and sparkling with alkali, where the grass was scanty and wiry, a new voice lent its aid to the choir, for here is the favorite haunt of Baird's Bunting. Whenever the trail crossed one of these dry alkali flats, the notes of this bird were sure to be heard on all sides. The song may be rendered *trick-c-trick-c-trik-eeee-chiky-le-roit*, with a peculiar tinkling utterance that at once distinguishes it from the song of the Savanna Sparrow. Another type of song with this species is like *trick-e-trick-e-trike-e-trrrrrrrrrr*.

In the Shell River country the dry alkali bottoms were more frequent, and the Bunting became numerous in proportion. I found its nest also, but will not describe it, as I was unable to substantiate the fact by shooting the bird.

The general habits of this bird are much like those of the Savanna Sparrow. When singing it is usually perched in some tuft of grass, each foot grasping a number of stalks to furnish support. When disturbed, it flits low over the flat and drops into the grass.

A number of the specimens taken were rather larger than the measurements commonly given. The gizzards generally contained hay seeds and small insects, but a large, green caterpillar was found in one of them.

The latest record I have is September 23. Shortly after this they must have flown southward.

Another interesting resident of the northern prairies is the Missouri Skylark (*Neocorys spraguei*). It is one of the commonest of prairie birds in Western Manitoba; its loud ventriloquial voice is heard from the clouds on all hands when it is in full song. It commonly arrives on the Big Plain about the 3d of May, and by the 6th or 7th is rested and singing. In order to give a better idea of the numbers of this species, I counted those that I passed beneath in a three-mile walk across the prairie on the 10th of May; altogether there were twelve, trilling their silvery notes in the bosom of the clouds.

This song was for long a riddle past my solving. I felt sure of its being the utterance of some bird on the prairie, but where I could not tell nor trace; wherever I went, it seemed to be just a little further ahead, or to one side or another, or suddenly behind. Throughout the whole season of 1882 I was thus duped, and it was by chance that at last I found the singer to be away up in the sky, but so high that on a bright day it is impossible to follow with the eye the tiny speck whose music is shaking the air for thousands of feet around. The song is sweet and far-reaching, and Dr. Coues gives a most enthusiastic description of its moving power and melody, yet, though I am readily influenced by bird music, I never found this singer impress me with the love and reverence invariably inspired by such as the Veery utters, a bird whose notes resemble these as nearly as possible.

When the Skylark feels the impulse to sing, he rises from the bare prairie ridge with a peculiar bounding flight, like that of the Pipit; up, in silence, higher and higher he goes, up, up, one hundred, two hundred, three hundred, five hundred feet; then, feeling his spirits correspondingly elevated, he spreads his wings and tail and utters his loud song, like *tsing-tsing*, *tsingle-ingle ingleingleing*, the single vibratory note uttered faster and faster till the last ones are all fused. While this is being sung the bird is floating downwards, and as soon as it

is finished he proceeds, by the bounding-flight, to regain his elevation and once more pour out his silvery strains. On the 14th of May I noted one of these birds singing with great devotion. He had trilled his refrain at least twenty times, when it occurred to me to time and count his songs. The whole of each trilling occupied fifteen seconds, and after I began to count he repeated it from beginning to end eighty-two times; just as he should have entered on the eighty-third, his wings closed, his tail went up, and down he fell headlong, but my eyes were blinded with the brightness, and my neck refused to take part in further proceedings, so that I was not able to mark the bird for closer examination. This singer had serenaded me for about an hour, and I do not think he ranked above his fellows in staying power. Several times after a Skylark had sung and returned to earth, with the headlong descent described, I have deliberately flushed him, and at once he rises without further preamble, soberly remounts his imaginary five hundred-foot platform, and again sings his trilling slurs from beginning to end. Thus on one occasion I called the same bird three times before the curtain, but on the fourth encore he would not respond; each time that he was disturbed, he would fly off some two hundred yards, and again settle on the ground. Once, only, have I observed this species singing his full song on the ground.

The other habits and common notes of this species have a considerable resemblance to those of the Titlark. It leaves the Big Plain about the end of August.

The finding of a new form of the Ruffed Grouse within the limits of territory tolerably explored is not an occurrence that any student would have expected. Yet in the woods of Manitoba is a well-marked variety, which is known there as the Red or Copper-ruffed Partridge. In general appearance this bird differs but little from the well known *Bonasa umbellus umbelloides*, but it is distinguished by being more decidedly marked,—thus the bars on the belly are complete and nearly black,—and by having copper-colored touches on the back, the subterminal tail-band and the *ruff* a rich, iridescent, *coppery red*.

Mr. Ridgway, commenting on a specimen sent him, says: "This grouse is the handsomest bird of the species I have ever seen: so far as general plumage is concerned it is decidedly referable to *B. u. umbelloides*. . . . It is quite peculiar enough in

plumage to represent a distinct local race, provided the differences are reasonably constant."

And later, the same authority writes, "I do not think that a new race can be characterized, the 'copper-ruffed' birds forming a sort of connecting link between *umbellus* and *umbelloides*."

To this I reply, first, that we have in Manitoba a *Bonasa* which, in its entirely rufous tail and general color, is very closely allied to *B. umbellus*. if, indeed, it is not absolutely that form. Second, we have the well-known *umbelloides*. Third, there are all grades between these two. Fourth, the form with the copper ruff. And all of these are found in the same woods, sometimes in the same pack. The relative proportion of each is, perhaps: *umbellus* 10 per cent; *umbelloides*, 20 per cent; grades between these, 60 per cent; copper-ruffs, 10 per cent. So far I have not seen any indications of intergradation in color between the last-named and the other forms.

Mr. C. W. Nash, an accomplished naturalist and sportsman, now residing at Portage la Prairie, Manitoba, writing me on the subject, strongly objects to the form being considered only a chance variation, as it is the most stable of those found in the country. He asserts that 10 per cent is too small a proportion, and adds that the most brilliant ruffs he ever saw belonged to a bird which had the purest gray tail of any he had shot, and which was also the largest bird he killed last season.

Dr. Brodie informs me that many years ago this variety was of frequent occurrence in the country north of Toronto. The settlers recognized it as, in a measure, distinct from the common Partridge, and superior to it in size and beauty.

If this form can be shown to be geographical I shall claim for it the rank of a variety, but with my present information can but think with Mr. Ridgway that not only this, but perhaps all of our Canadian *Bonasa*, are more or less referable to the form *umbelloides*. The brilliant coloration of the Grouse may prove analogous to the remarkable variations exhibited by several of our Hawks and Owls.

LONG ISLAND, N. Y., BIRD NOTES.

BY NEWBOLD T. LAWRENCE.

IN the following notes, I take pleasure in recording several additional captures to those already mentioned in a list of 'Rare Birds taken on Long Island, N. Y.', published in 'Forest and Stream,' May 2, 1878.

1. *Polioptila cærulea*. BLUE-GRAY GNATCATCHER.—Shot a female of this species at Far Rockaway, April 18, 1874.

2. *Dendroeca castanea*. BAY-BREASTED WARBLER.—Secured an adult male in a small grove of oaks at Far Rockaway, June 23, 1870. Mr. Eugene P. Bicknell has a record from Riverdale, N. Y., dating July 26, 1875. He also informs me that, from records kept of this bird for a number of years at Riverdale, N. Y., in its regular migration, the latest spring record is the end of May, and the earliest fall record the middle of August.

3. *Vireo philadelphicus*. PHILADELPHIA VIREO.—Mr. Eugene P. Bicknell, while staying with me at Far Rockaway, had the good fortune to secure a fine specimen of this Vireo on September 25, 1879. I had the pleasure of skinning the bird, which proved to be a male. This is the first record of its capture on Long Island.

4. *Zonotrichia leucophrys*. WHITE-CROWNED SPARROW.—Shot a specimen of this bird at Far Rockaway, May 30, 1882. Another was noticed in its company but not secured.

5. *Passerculus sandwichensis savanna*. SAVANNA SPARROW.—This bird, I think, may now be included among the winter residents on Long Island. I have taken specimens at Far Rockaway during November and December, and one (male) January 1, 1884. Mr. Wm. Dutcher secured two specimens at the same place on February 23, 1885.

6. *Ammodromus maritimus*. SEA-SIDE FINCH.—One specimen (female) taken on the salt meadow at Far Rockaway, February 22, 1884. Another was noted, but not secured, November 25, 1885.

7. *Caprimulgus vociferus*. WHIP-POOR-WILL.—On April 26, 1885, Mr. Henry DeForest found a nest of this bird at Oyster Bay, containing two eggs; the following week, May 3, he again visited the spot, and found young birds that had evidently been hatched several days. I record the above as an unusually early date. J. P. Giraud, Jr., speaking of this bird in 'The Birds of Long Island,' says, "It arrives on Long Island about the first of May, from the South; in the latter part of the same month the female commences laying."

8. *Nyctale acadica*. SAW-WHET OWL.—Mr. Osborne killed one of these birds on Montauk Point, November 20, 1885.

9. *Ardea cærulea*. LITTLE BLUE HERON.—On April 3, 1885, while taking a tramp over the salt meadows at Far Rockaway, I started a Little

Blue Heron from a small pond near the sand hills. The bird flew almost out of sight. It finally lighting, I walked to about where I thought the bird had gone down, and on following the banks of a small creek, had the good fortune to flush the bird within twenty-five feet, when I secured it. It proved to be an adult male. This is my first record of the Little Blue Heron on Long Island, and I think it is an unusually early date.

10. *Ochthodromus wilsonius*. WILSON'S PLOVER.—Mr. Harold Herrick secured a male of this species at Far Rockaway, May 17, 1879. Two others were seen by myself the same day but not secured.

11. *Macrorhamphus griseus scolopaceus*. GREATER LONG-BEAK.—Secured a specimen in Fulton Market, New York, October 15, 1884, killed on the south side of Long Island.

12. *Micropalama himantopus*. STILT SANDPIPER.—I have always found this bird unusually common in the vicinity of Far Rockaway, and should like to give my experience with it on two occasions during the past two years. On September 10, 1883, I was shooting on the meadows; wind east; rained from six A. M. until twelve M. On that day I had three flocks come to my decoys, composed of Little Yellow Legs and Stilt Sandpipers, and numbering from fifty to one hundred birds in each. I killed nineteen, twenty-one, and ten, respectively; among them were twenty Stilts.

On July 28, 1884, there occurred one of the largest flights of Bay Birds at Far Rockaway that I have seen in a number of years. The day was bright and clear, with a light southerly wind; it had stormed hard from the East all the preceding day. The flight was composed almost entirely of Little Yellow Legs and Stilt Sandpipers, every flock containing more or fewer of each. Saw several flocks composed entirely of Stilts. One numbering twelve came to my decoys and I killed them all. I secured that day twenty Stilt Sandpipers, all old birds. On both the dates mentioned a great many flocks of traveling birds were seen flying very high; some of them must have numbered over two hundred individuals.

13. *Actodromas bairdii*. BAIRD'S SANDPIPER.—Shot a female of this species on the salt meadow at Far Rockaway in August, 1882. Entirely alone when captured.

14. *Numenius borealis*. ESKIMO CURLEW.—During a period of about twelve years' Bay Snipe shooting at Far Rockaway and vicinity. I have only four records of this bird,—one September 12, 1875, one September 10, 1876, and two September 26, 1884.

15. *Numenius longirostris*. LONG-BILLED CURLEW.—My experience with this bird in the vicinity of Far Rockaway is to find it more uncommon than the preceding, having but two records during the same period of time. The first, a female, was killed on the ocean front of the outer beach, in company with a flock of Bartram's Sandpipers (*Bartramia longicauda*), August 20, 1873. The second was shot on the salt meadow, August 26, 1885. I might mention here that the *Numenius hudsonicus* is common, the flight generally taking place from the 10th to the end of July.

16. *Steganopus wilsoni*. WILSON'S PHALAROPE.—On October 10, 1874, I had one of these birds settle in my decoys, swimming among them quite

fearlessly. On October 15, 1879, I saw one swimming in the East River at the foot of Pine Street, New York City. It was very gentle, the steamer I was on passing within twenty-five feet of it, when it started, flew a short distance, and settled on the water again.

17. *Rallus longirostris crepitans*. CLAPPER RAIL.—This bird seems to be a winter resident on Long Island. Mr. Wm. Dutcher informs me that the gunners at South Oyster Bay see a few every winter. I have the following records from Far Rockaway: Nov. 9, 1872; Nov. 25, 1883; Dec. 5, 1884. Messrs. Wm. Dutcher and L. S. Foster found a freshly killed specimen on the outer beach, February 23, 1885.

18. *Porzana noveboracensis*. YELLOW RAIL.—At Far Rockaway, Oct. 15, 1883, while crossing a large field within a short distance of the salt meadow, I started one of these Rails, but having no gun I did not secure it. It was very gentle; I flushed the bird three times, it rising at first within a few feet and flying but a short distance. Mr. Harold Herrick informs me that he started a Yellow Rail on the Jamaica Bay meadows, near Far Rockaway, in October, 1882, but failed to shoot it.

THE BLACK-CAPPED VIREO AND NONPAREIL IN SOUTHWESTERN KANSAS.

BY N. S. GOSS.

WHILE collecting and observing the birds in Comanche County, from May 7 to 18 inclusive, 1885, I captured three pairs of *Vireo atricapillus*, and saw quite a number, all in the deep ravines in the gypsum hills on the Red or Salt Fork of the Arkansas River, near the town of Rumsey. The birds were quite bold and noisy, but this may be the case only during mating and the early part of the breeding season. They are very pleasing singers, their song being not like the 'who's-afraid,' jerky notes of the White-eyed Vireo, nor as loud as those of the Red-eyed, but a more warbling and varied song than that of any of the family which I have heard.

On the 11th I found a nest near the head of a deep cañon, suspended from the forks of the end of a horizontal branch of a small elm tree, about five feet from the ground. It was screened from sight above by the thick foliage of the tree, and the larger surrounding trees; but beneath for quite a distance there was nothing to hide it from view. The material, however, of which it was made so closely resembled the gypsum that had crumbled

from the rocks above and thickly covered the ground, that I should have passed it by unnoticed had I not on my near approach been attracted to the spot by the scolding and the excited actions of the birds. On discovering the nest I did not stop to examine it, but kept leisurely on my course until out of sight; then cautiously turned back, and at a safe distance had the pleasure of seeing both the birds busily at work building their nest, then about two-thirds completed. The nest is hemispherical in shape, and composed of broken fragments of old bleached leaves, with here and there an occasional spider's cocoon, interwoven together and fastened to the twigs with fibrous strippings and silk-like threads from plants and the webs of spiders, and lined with fine stems from weeds and grasses. On the 18th, my last day in the vicinity, I went to the nest confidently expecting to find a full set of eggs, but on account of the cold, wet weather, or from some other cause, the bird had not laid, and I had to content myself with the nest.

That the bird is quite a common summer resident in the vicinity may be safely set down as certain, and I think the species, now so little known, will prove to be abundant in suitable locations from Medina and Comal Counties, Texas, where they were found nesting in the spring of 1878, by Mr. Geo. H. Ragsdale and Mr. W. H. Werner (see Bull. Nutt Orn. Club, Vol. IV, No. 2, pp. 58, 99, and 193), north to and into the gypsum formation in Southwestern Kansas.

The description of the color and markings of the species has been so correctly given by others that I do not think it necessary to take up further space than to touch upon the points respecting which the accounts differ, viz.: The broad white orbital ring does not meet over the eyes, the black running down and separating it for a space of about .10 of an inch. The top and sides of the head in front, in the female, are blackish, fading gradually posteriorly to ashy slate. The other markings are similar to those of the male, but not so bright.

The following notes, from my catalogue and register, are from memoranda taken at the time of killing:—

Sex.	Length.	Alar extent.	Wing.	Tail.	Tarsus.	Bill.
♂	4.65	6.95	2.15	1.80	.73	.39
♂	4.60	6.90	2.12	1.75	.73	.39
♀	4.40	6.80	2.10	1.70	.73	.38
♀	4.40	6.80	2.10	1.70	.73	.38

Iris light *brick* red; upper mandible black; lower mandible blue; edges and tip of both whitish; legs, feet, and claws deep blue.

I found *Passerina ciris* also quite a common summer resident in the same vicinity and localities. The birds were very shy. I succeeded, however, in shooting a pair. Their sweet song greeted me along the streams and in nearly every ravine or cañon that I entered.

THE BIRDS OF SOUTHEASTERN DAKOTA.

BY G. S. AGERSBORG.*

CLAY County, and also parts of Union and Yankton Counties, have been thoroughly searched by the writer for the last sixteen years, especially Clay; also parts of Lincoln and Minnehaha Counties, with an occasional trip further north. The topography of this part of the country is not very varied, being mainly high, undulating prairie, and low, often marshy, bottom lands. The counties are bordered on the south by the Missouri River, and traversed from north to south by the Big Sioux, Vermilion and Dakota Rivers. It is essentially a prairie country, there being very little timber except along the Missouri, and at different places on the Big Sioux. We find no true lakes, but a number of reedy swamps, which are the resort of myriads of water birds during the migrations. Collecting trips have also been extended to Cedar and Dixon Counties in Nebraska, separated from Dakota by the Missouri River. The topography of these counties differs somewhat from that of Southeastern Dakota, the land being higher, drier, better timbered, and more broken by deep ravines. The avifauna is the same, but many of our Dakota birds, as Swainson's Buzzard, the Turkey Buzzard, and the Swallow-tailed Kite find there better breeding resorts, and consequently are there more abundant.

Several birds given by Professor Aughey in his 'Report on the Nature of the Food of the Birds of Nebraska,' which I have failed

* Revised by Prof. W. W. Cooke.

to find, after the most diligent search, in the counties named by him, but I hope sooner or later to add them to my list.

I would further state that all the species of the subjoined list are given on the basis of actual capture.

1. *Merula migratoria*. AMERICAN ROBIN.—A not very abundant summer resident. I have known it to winter here four times. A temperature of 39° below zero did not seem to drive them off. In winter they feed on the berries of *Rhus glabra* and *Symphoricarpus vulgaris*, occasionally visiting decayed trees for larvæ, cocoons, etc. Eggs ready to hatch found as early as May 1.

2. *Hylocichla ustulata swainsoni*, OLIVE-BACKED THRUSH, and its variety *aliciæ* are common spring and fall migrants, *aliciæ* being the more abundant of the two. Arrive the last week in April, and remain for three weeks, during which time they grow very fat. Their return passage in the beginning of October is rather hurried.

3. *Hylocichla fuscescens*. WILSON'S THRUSH.—A rare summer resident; have never found its nest.

4. *Hylocichla mustelina*. WOOD THRUSH.—Very rare. Breeds along the Missouri and Big Sioux Rivers.

5. *Galeoscoptes carolinensis*. CATBIRD.—A very abundant summer bird. Arrives about May 10 and leaves last week in September. Breeds everywhere.

6. *Harporynchus rufus*. BROWN THRASHER.—Abundant all summer. Breeds. Nests found mostly in gooseberry bushes, sometimes on the ground.

7. *Sialia sialis*. BLUEBIRD.—Can barely call this a common bird here; have noted its arrival as early as February 1.

8. *Regulus calendula*. RUBY-CROWNED KINGLET.—Passes through here in small numbers about the middle of May; have never seen it in the fall.

9. *Regulus satrapa*. GOLDEN-CROWNED KINGLET.—More rare than the foregoing, and not met with every spring.

10. *Lophophanes bicolor*. TUFTED TITMOUSE.—Although given by Professor Aughey as abundant in Dakota County, Nebraska, only thirty-five miles distant, I have been unable to find it, the only Chickadee found here being

11. *Parus atricapillus septentrionalis*, LONG-TAILED CHICKADEE, which is an abundant species, especially in winter. Breeds.

12. *Sitta carolinensis aculeata*. SLENDER-BILLED NUTHATCH.—Resident; not common.

13. *Sitta canadensis*. RED-BELLIED NUTHATCH.—Also found in Dakota County, Nebraska, by Professor Aughey, but I have never seen it here.

14. *Certhia familiaris rufa*. BROWN CREEPER.—Not common; resident.

15. *Salpinctes obsoletus*. ROCK WREN.—Reported from Dakota County, Nebraska; not found here. It probably can not find congenial resorts with us.

16. *Troglodytes aëdon*. HOUSE WREN.—Common; breeds.
- 16 a. *Troglodytes aëdon parkmani*. WESTERN HOUSE WREN.—Rare; breeds here.
17. *Telmatodytes palustris*. LONG-BILLED MARSH WREN.—Summer resident; breeds.
18. *Cistothorus stellaris*. SHORT-BILLED MARSH WREN.—Very rare summer visitor; breeds.
19. *Anthus ludovicianus*. AMERICAN TITLARK.—A very rare bird here. Only noticed twice; both times early in the fall.
20. *Mniotilta varia*. BLACK-AND-WHITE CREEPER.—A not very common bird during spring and fall migrations.
21. *Helminthophaga celata*. ORANGE-CROWNED WARBLER.—One specimen taken, May, 1879.
22. *Dendræca æstiva*. SUMMER YELLOWBIRD.—Abundant everywhere in summer; breeds.
23. *Dendræca cærulea*. CERULEAN WARBLER.—Found in Dakota County, Nebraska, by Professor Aughey; has not been noticed here.
24. *Dendræca coronata*. YELLOW-RUMPED WARBLER.—Common spring and autumn migrant.
25. *Dendræca striata*. BLACK-POLL WARBLER.—Abundant for two or three days in spring; have never seen it in the fall.
26. *Dendræca maculosa*. BLACK-AND-YELLOW WARBLER.—Very rare migrant.
27. *Dendræca discolor*. PRAIRIE WARBLER, and
28. *Dendræca pinus*. PINE-CREEPING WARBLER.—These species, although found in the neighboring counties in Nebraska, I have never seen in Dakota.
29. *Siurus auricapillus*. GOLDEN-CROWNED THRUSH.—A not very common summer resident; breeds.
30. *Siurus nævius*. SMALL-BILLED WATER THRUSH.—Passes through here every spring in large flocks; have never met with it in the fall.
31. *Geothlypis trichas*. MARYLAND YELLOW-THROAT.—Common summer resident; breeds.
32. *Geothlypis philadelphia*. MOURNING WARBLER.—Single specimens occasionally found during the spring migration.
33. *Icteria virens*. YELLOW-BREASTED CHAT.—Summer resident; breeds; rather rare.
34. *Myiodioctes pusillus*. BLACK-CAPPED YELLOW WARBLER.—Rare spring migrant.
35. *Setophaga ruticilla*. REDSTART.—Common summer resident; breeds.
36. *Pyranga rubra*. SCARLET TANAGER.—Rare summer resident; breeds.
37. *Hirundo erythrogastra*. BARN SWALLOW.—Common summer resident; breeds.
38. *Tachycineta bicolor*. WHILE-BELLIED SWALLOW.—Very rare.

39. *Tachycineta thalassina*. VIOLET-GREEN SWALLOW. — Probably accidental; breeds.
40. *Petrochelidon lunifrons*. CLIFF SWALLOW.—Common all summer; breeds.
41. *Cotile riparia*. BANK SWALLOW.—Common; breeds.
42. *Stelgidopteryx serripennis*. ROUGH-WINGED SWALLOW.—Much rarer than the preceding; breeds, in common with that species, along the Vermilion and Big Sioux Rivers.
43. *Progne subis*. PURPLE MARTIN.—Common every summer. Found breeding only in our towns; not met with in the country.
44. *Ampelis garrulus*. NORTHERN WAXWING.—In some winters a very common species. Its appearance in great numbers seems to depend upon the abundance of the wild grapes, on which it exclusively feeds. When the grape crop fails the Waxwing can not be found. It arrives late in December and remains till the last week of March.
45. *Ampelis cedrorum*. CEDAR WAXWING.—A rare winter visitor; also probably attracted by the wild grapes.
46. *Vireo philadelphicus*. PHILADELPHIA VIREO.—Reported by Professor Aughey from Northeastern Nebraska. I have never seen it here.
47. *Vireo olivaceus*. RED-EYED VIREO.—Occasionally one is secured late in the spring.
48. *Vireo gilvus*. WARBLING VIREO.—Rare spring migrant; found breeding by Professor Aughey across the Missouri River in Nebraska. I have never succeeded in finding its nest, nor have I seen the bird in summer.
49. *Vireo solitarius*. BLUE-HEADED VIREO.—Very rare during spring migrations.
50. *Lanius borealis*. GREAT NORTHERN SHRIKE.—A regular winter visitant; arrives early in October and leaves again in April. It seems to follow in the wake of *Spizella monticola*, and leaves in the spring at the same time.
51. *Lanius ludovicianus excubitorides*. WHITE-RUMPED SHRIKE.—A species we should expect to find here but which I have never seen. That it is not far away is proved by Professor Aughey in his Report. I may yet be able to add it to the list of Southeastern Dakota birds.
52. *Hesperiphona vespertina*. EVENING GROSBEAK.—A rare winter visitor: seen during severe winters only, and then in small flocks of from two to twelve. Feeds on sumac berries and elm buds.
53. *Carpodacus purpureus*. PURPLE FINCH.—Passes though here every spring in small numbers.
54. *Ægiothus linaria*. COMMON REDPOLL.—Seen in large flocks nearly every winter.
55. *Astragalinus tristis*. AMERICAN GOLDFINCH.—Common resident. In severe winters it may be absent for several weeks.
56. *Plectrophanes nivalis*. SNOW BUNTING.—Formerly abundant every winter but now only occasionally met with, and then associated with the Horned Lark. Its absence may be due to the changes through husbandry which this country has lately undergone; very little small grain is now raised, the chief crop being corn.

57. *Centrophanes lapponicus*. LAPLAND LONGSPUR.—A not very common winter visitor; always to be found on the bare fields or, towards spring, near creeks, in company with Horned Larks.

58. *Centrophanes pictus*. SMITH'S LONGSPUR.—Shot one a few years ago; it was alone in a flock of the following species.

59. *Centrophanes ornatus*. CHESTNUT-COLLARED LONGSPUR.—Passes though here every spring in large numbers, a few remaining to breed. About one hundred and fifty miles north of here they are common all summer. The males arrive in large flocks the last week in April, to be followed ten or twelve days later by the females, going in smaller and more straggling flocks.

60. *Passerculus sandwichensis savanna*. SAVANNA SPARROW.—Common summer resident; breeds mostly on the high table lands.

61. *Poœcetes gramineus*. GRASS FINCH.—Summer resident; breeds.

62. *Coturniculus passerinus*. YELLOW-WINGED SPARROW.—Summer resident; breeds.

63. *Coturniculus lecontei*. LECONTE'S SPARROW.—Abundant for a few days the last of May. Found a nest on the Vermilion prairie, June 19, 1883, with five eggs ready to hatch. In coloration and shape they looked like miniature eggs of the Horned Lark. Some of the eggs were on the point of being opened by the chicks when found, and not being hard-hearted enough to rob the bird I left them alone. I am almost sorry now that I did not put them in alcohol.

64. *Melospiza lincolni*. LINCOLN'S SPARROW.—Reported from this locality by Lieut. Warren's expedition. I have never found it.

65. *Melospiza palustris*. SWAMP SPARROW.—Not very common summer resident; breeds.

66. *Melospiza fasciata*. SONG SPARROW.—Like the foregoing, this species is not a common summer resident.

67. *Junco hyemalis*. BLACK SNOWBIRD.—Very abundant in spring and fall; none remain here during winter. This bird is said to be a resident of Northeastern Nebraska by Professor Aughey, and it has also been noted from Fort Patten, Dakota, four hundred miles north of here. Why it shuns this locality, which abounds in food the year around, I am unable to guess, unless it is not elevated enough.

68. *Spizella monticola*. TREE SPARROW.—Our most abundant winter visitant. Large flocks seen everywhere in willow thickets and sunflower patches. Arrive early in October, and they do not all leave us before May 1.

69. *Spizella domestica*. CHIPPING SPARROW.—Not common; breeds.

70. *Spizella pallida*. CLAY-COLORED SPARROW.—This little bird is abundant in spring and fall, lingering here for nearly three weeks in the spring. Every thicket, copse, and weed-patch is full of them; not only the underbrush along the rivers, but young cottonwood groves and weedy fields far out on the prairie. Expect some day to find this bird breeding here, as it does, according to Professor Aughey's Report, just across the Missouri River, only a short distance away.

71. *Spizella pusilla*. FIELD SPARROW.—Not uncommon in summer; never found it nesting.

72. *Zonotrichia albicollis*. WHITE-THROATED SPARROW.—Common migrant.

73. *Zonotrichia leucophrys*. WHITE-CROWNED SPARROW.—Not so common as the preceding species.

74. *Zonotrichia querula*. HARRIS'S SPARROW.—One of our most abundant migrants. Arrives about May 1, and remains for nearly three weeks, becoming very fat. It is found in the brush along the rivers, and far out on the prairies wherever there are a few plum trees or willow bushes in the ravines. It is a very tame bird and easily secured. About October 1 it returns and does not leave until severe frosts occur, about November 1. I do not think it breeds here. I found one the middle of June, three or four years ago, and watched it closely for hours, hoping to find its nest; finally, tired of waiting, I shot the bird and found it to be an old male with atrophied testicles, which probably accounts for its remaining here when its companions went away.

75. *Chondestes grammica*. LARK FINCH.—Very common in summer; breeds early, as I have found its nest with a full complement of eggs as early as May 1. The first brood is raised from nests placed in unplowed fields; the second and third are generally built among potato vines or vegetables with heavy foliage. Have no doubt that three broods are often raised.

76. *Passerella iliaca*. FOX SPARROW.—A not very common migrant. Only single birds have been noticed.

77. *Calamospiza bicolor*. LARK BUNTING.—Common summer resident. It prefers the low bottom lands with their tall growth of grass for nesting places. Several nests may sometimes be found within an area of a quarter section. The male is conspicuous during the whole season; the female less so, being rarely seen, especially during incubation. The eggs of this species and of the Black-throated Bunting are so similar that it is necessary to be very careful in identifying the nest and birds. Of the many nests I have seen, those of the Lark Bunting were invariably placed on the ground between the grass tufts; those of the Black-throated Bunting sometimes on the ground, at other times in the middle of a tuft, the growing grass elevating it for several inches. The nest of the Lark Bunting is, as a rule, not so well upholstered with horse hair as that of the Black-throated. Snaring is often the surest means of correct identification, but this may mislead, as it once did me. Setting a steel-trap on a Duck's nest to catch the mother, I was surprised next morning to find in my trap the 'wrong bird,'—an oölogist commonly styled 'Skunk.'

78. *Spiza americana*. BLACK-THROATED BUNTING.—Common summer resident; breeds everywhere; seeks generally a more elevated place for breeding than the foregoing.

79. *Zamelodia ludoviciana*. ROSE-BREADED GROSBK.—A not very common summer resident; breeds.

80. *Zamelodia melanocephala*. BLACK-HEADED GROSBK.—Much rarer than the foregoing; have never found it breeding here.

81. *Passerina amœna*. LAZULI FINCH.—A few stray birds seen every summer. Its nest I have never found, though it certainly breeds here.

82. *Pipilo maculatus arcticus*. NORTHERN TOWHEE.—Rare.
83. *Pipilo erythrophthalmus*. TOWHEE.—Common summer resident; breeds.
84. *Dolichoonyx oryzivorus*. BOBOLINK.—Abundant; breeds. The males arrive early in May in flocks of thirty to fifty; the females a little later and singly; at least, I have never seen any in flocks.
85. *Molothrus ater*. COWBIRD.—Altogether too abundant; it outnumbered the Red-winged Blackbird in this locality. Remains longer in the fall and arrives earlier in the spring than any of the other Icteridæ, with probably the exception of *Sturnella neglecta*.
86. *Xanthocephalus icterocephalus*. YELLOW-HEADED BLACKBIRD.—Abundant in summer. The farmer's best friend, following the plow in large numbers, often in company with Franklin's Gull and the Purple Grackle, picking up larvæ, etc.
87. *Agelæus phæniceus*. RED-WINGED BLACKBIRD.—Abundant; breeds.
88. *Sturnella neglecta*. WESTERN MEADOW LARK.—Abundant. One of our earliest arrivals, and the last to depart. The eastern form, *S. magna*, has not as yet made its appearance here.
89. *Icterus spurius*. ORCHARD ORIOLE.—Common; breeds.
90. *Icterus galbula*. BALTIMORE ORIOLE.—Breeds.
91. *Icterus bullocki*. BULLOCK'S ORIOLE.—More common than the last.
92. *Scolecophagus ferrugineus*. RUSTY GRACKLE.—Rare during the migrations; in some years I have not seen it.
93. *Scolecophagus cyanocephalus*. BREWER'S BLACKBIRD.—Like the foregoing, is rare here. Breeds in limited numbers.
94. *Quiscalus purpureus æneus*. BRONZED GRACKLE.—Nearly as abundant as the Cowbird. Breeds along all our streams.
95. *Corvus corax carnivorus*. RAVEN.—Formerly more abundant than now. Occasionally observed in winter, intermingling with Crows. I doubt its breeding here.
96. *Corvus frugivorus*. CROW.—Abundant; resident; breeds.
97. *Picicorvus columbianus*. CLARKE'S NUTCRACKER.—Accidental. Two seen and one shot, October, 1883.
98. *Pica rustica hudsonica*. BLACK-BILLED MAGPIE.—This bird, which was formerly very common here in winter, frequenting trappers' camps and farmyards, has within the last four years disappeared entirely. Those seen as late in the summer as July by Professor Aughey must have been exceptional, as they never remained here longer than till the last week of March.
99. *Cyanocitta cristata*. BLUE JAY.—Now quite common the year round. It came here when the Magpies left, at first in small numbers, but now is to be seen everywhere.
100. *Otocoris alpestris*. HORNED LARK.—Resident; breeds; very abundant in some winters. This species seems to be represented here in summer by var. *leucolæma*; for our winter birds are much brighter than

those of summer, and the change of color is so sudden as to preclude its being due to the spring moult.

101. *Tyrannus carolinensis*. KINGBIRD.—Abundant summer resident; breeds.

102. *Tyrannus verticalis*. WESTERN KINGBIRD.—Rare; breeds. Does not seem to go so far away from its nesting-places as the Kingbird, and is hardly ever found any distance out on the prairies. More common a hundred miles north of here, along the Big Sioux River, than at this place.

103. *Sayornis fuscus*. PHŒBE.—Very rare; breeds.

104. *Empidonax minimus*. LEAST FLYCATCHER.—Abundant; breeds.

105. *Empidonax hammondi*. HAMMOND'S FLYCATCHER.—Not common; breeds. Only two fully identified nests with eggs found.

106. *Caprimulgus vociferus*. WHIP-POOR-WILL.—Summer resident; breeds.

107. *Phalænoptilus nuttalli*. POOR-WILL.—More abundant than the foregoing; breeds.

108. *Chordeiles popetue*. NIGHTHAWK.—Abundant during the migrations, intermingling with var. *henryi*, which latter form is the only one I have found breeding here. Its favorite nesting places seem to be large isolated rocks or boulders, which here and there crop out on the prairies.

109. *Chætura pelagica*. CHIMNEY SWIFT.—Rare; breeds.

110. *Trochilus colubris*. RUBY-THROATED HUMMINGBIRD.—Rather common; breeds.

111. *Ceryle alcyon*. KINGFISHER.—Not very common; only a few pairs seen each summer; breeds.

112. *Coccygus erythrophthalmus*. BLACK-BILLED CUCKOO.—Common; breeds.

113. *Coccygus americanus*. YELLOW-BILLED CUCKOO.—I have so far failed to find this species here, although it is said by Professor Aughey to be common a few miles south of here, in Cedar and Dixon Counties, Nebraska.

114. *Hylotomus pileatus*. PILEATED WOODPECKER.—Probably only a winter visitor in the heavy timber along the Missouri River. Have never seen it later than the last week in April.

115. *Picus villosus harrisi*. HARRIS'S WOODPECKER.—Common; breeds. Much more abundant in winter than in summer.

116. *Picus pubescens*. DOWNY WOODPECKER.—Same as the last.

117. *Centurus carolinus*. RED-BELLIED WOODPECKER.—Rare summer visitor; probably breeds.

118. *Melanerpes erythrocephalus*. RED-HEADED WOODPECKER.—Common summer resident; breeds. Have on several occasions noticed its habit of storing grasshoppers in cracks and crevices for further use. Necessity often compels this bird to build its nest under roofs or in any dark hole it may find on the treeless prairie farms, a habit it has in common with the next.

119. *Colaptes auratus*. GOLDEN-SHAFTED FLICKER.—This bird's principal food seems to be ants' eggs, which it adroitly extracts with its long tongue from the holes in the ground. Var. *hybridus* is not rare, and last spring I witnessed the courting of a true *auratus* and a *hybridus*; their nest and progeny I sought for in vain.

120. *Aluco flammeus americanus*. AMERICAN BARN OWL.—Recorded from the neighboring counties of Dakota and Dixon, in Nebraska, by Professor Aughey, but has never been seen here by any one, so far as I can ascertain.

121. *Bubo virginianus*. GREAT HORNED OWL.—Common resident; breeds. Var. *subarcticus* visits us nearly every winter; var. *arcticus* only accidentally; two specimens shot.

122. *Scops asio*. SCREECH OWL.—Resident; not common.

123. *Asio americanus*. LONG-EARED OWL.—Resident; breeds; rare.

124. *Asio accipitrinus*. SHORT-EARED OWL.—Common; resident; breeds. The low bottom lands along the Missouri River seem specially suited to the habits of this species. It breeds later than other Owls, with the exception of the Burrowing Owl.

125. *Strix nebulosa*. BARRED OWL.—Common winter resident. Single birds probably stay through the summer.

126. *Nyctea scandiaca*. SNOWY OWL.—Winter resident; in snowy winters often abundant.

127. *Nyctale acadica*. SAW-WHET OWL.—Resident; very rare; breeds.

128. *Speotyto cunicularia hypogæa*. BURROWING OWL.—Common resident; breeds. The full complement of eggs is, as a rule, seven; occasionally as many as nine may be found. In the winter as many as twenty of these birds may be found nestling together in one hole. They are always at such times abundantly supplied with food. I have found at one time forty-three mice and several Shore Larks scattered along the run to their common apartment. They forage in fine weather and retreat to their dirty adobes when cold weather threatens.

129. *Circus hudsonius*. MARSH HAWK.—Common resident; breeds. Of the many eggs taken I have found only four sets where they were marked with faint blotches. Five seems to be the full complement; only twice have I found six. These Hawks are most abundant in spring, when scores follow the Duck hunters to catch and devour the wounded water birds.

130. *Nauclerus forficatus*. SWALLOW-TAILED KITE.—A few spend the summer here. Have no doubt that they breed across the Missouri River in Nebraska.

131. *Accipiter fuscus*. SHARP-SHINNED HAWK.—Common summer resident; breeds.

132. *Accipiter cooperi*. COOPER'S HAWK.—Rare; probably breeds.

133. *Astur atricapillus*. AMERICAN GOSHAWK.—Very rare in winter.

134. *Hierofalco gyrfalco islandus*. ICELAND GYRFALCON.—Accidental. Shot one during a blizzard, October 21, 1880.

135. *Hierofalco mexicanus polyagrus*. PRAIRIE FALCON.— Rare during spring migrations.
136. *Falco peregrinus nævius*. DUCK HAWK.— Not very common; only seen during the migrations.
137. *Æsalon columbarius*. PIGEON HAWK.— Rare during migrations.
138. *Æsalon richardsoni*. RICHARDSON'S MERLIN.— Not so rare as the preceding; migrant.
139. *Tinnunculus sparverius*. SPARROW HAWK.— Common during migrations. A few remain all summer and breed.
140. *Buteo borealis*. RED-TAILED HAWK.— Rare resident; breeds.
141. *Buteo swainsoni*. SWAINSON'S BUZZARD.— The most abundant Hawk in this locality. Summer resident; breeds. Of the many eggs taken but four have been unmarked; full complement three, sometimes two. In its melanotic form it is not uncommon here.
142. *Archibuteo lagopus sancti-johannis*. AMERICAN ROUGH-LEGGED HAWK.— Common winter resident. Have seen it but once in summer, and then nesting.
143. *Pandion haliaëtus carolinensis*. FISH HAWK.— Rare during migrations. Found it breeding in a large elm tree overhanging the Vermilion River, May, 1883.
144. *Aquila chrysaëtus canadensis*. GOLDEN EAGLE.— Rare resident; breeds.
145. *Haliaëtus leucocephalus*. BALD EAGLE.— Rare in summer; breeds.
146. *Cathartes aura*. TURKEY BUZZARD.— Common in summer; breeds. A few also seen occasionally nearly every winter.
147. *Ectopistes migratorius*. PASSENGER PIGEON.— Rare in summer; breeds.
148. *Zenaidura carolinensis*. MOURNING DOVE.— Abundant summer resident; breeds.
149. *Meleagris gallopavo americana*. WILD TURKEY.— Not very common; resident; breeds.
150. *Pediœcetes phasianellus columbianus*. SHARP-TAILED GROUSE.— Winter visitor. Occasionally seen during summer. Breeds. It is getting rarer every year.
151. *Cupidonia cupido*. PRAIRIE HEN.— Resident; abundant everywhere; breeds.
152. *Ortyx virginiana*. QUAIL.— Common resident; breeds.
153. *Squatarola helvetica*. BLACK-BELLIED PLOVER.— Spring and autumn migrant; not very common.
154. *Charadrius dominicus*. GOLDEN PLOVER.— Migrates through here in immense numbers; their stay in spring is somewhat protracted.
155. *Oxyechus vociferus*. KILLDEER.— Common summer resident; breeds. It is the first Wader to arrive.
156. *Ægialitis semipalmata*. SEMIPALMATED PLOVER.— Common migrant.
157. *Ægialitis meloda circumcinta*. BELTED PIPING PLOVER.— Mi-

grant. Have seen it on the sandbars in the Missouri River late in June, probably breeding, but have found no nests.

158. *Recurvirostra americana*. AMERICAN AVOCET.—Migrant. Know of its breeding only once in this locality. A few pairs may be seen all through summer.

159. *Steganopus wilsoni*. WILSON'S PHALAROPE.—Common summer resident; breeds. A year ago I found a colony breeding on a barren, alkali-covered piece of land in the midst of the rich surrounding bottom lands. The nests were all placed on small tussocks or elevations caused by the dropping together of burnt grass, ashes, etc., and surrounded by a few inches of water. Nests are also found here and there in the tall growth of grass on the river bottoms.

160. *Philohela minor*. AMERICAN WOODCOCK.—One of our late acquisitions, and is yet very rare. Breeds, and remains until very late.

161. *Gallinago wilsoni*. WILSON'S SNIPE.—Very abundant in spring and fall, affording excellent sport. They never leave till the marshes are frozen.

162. *Macrorhamphus griseus scolopaceus*. RED-BELLIED SNIPE.—Abundant in spring and fall.

163. *Micropalama himantopus*. STILT SANDPIPER.—Rare during migrations, and always when found it has been associated with the Red-bellied Snipe.

164. *Ereunetes pusillus*. SEMIPALMATED SANDPIPER.—Common migrant.

165. *Actodromas minutilla*. LEAST SANDPIPER.—Common migrant. Probably breeds, as I have seen it here during the whole summer.

166. *Actodromas maculata*. PECTORAL SANDPIPER.—Common migrant.

167. *Actodromas fuscicollis*. BONAPARTE'S SANDPIPER.—Rare migrant.

168. *Limosa fedoa*. MARBLED GODWIT.—A common migrant; a few have been noticed here all summer, but none found breeding.

169. *Limosa hæmastica*. HUDSONIAN GODWIT.—An abundant migrant, especially in spring.

170. *Symphemia semipalmata*. WILLET.—Rare migrant; probably breeds here occasionally.

171. *Totanus melanoleucus*. GREATER YELLOW-LEGS.—Common migrant.

172. *Totanus flavipes*. YELLOW-LEGS.—Migrant; common.

173. *Rhyacophilus solitarius*. SOLITARY SANDPIPER.—Very rare migrant.

174. *Tringoides macularius*. SPOTTED SANDPIPER.—One of our rarest Waders; only half a dozen pairs are usually noticed during the migrations.

175. *Bartramia longicauda*. FIELD PLOVER.—Common summer resident. Breeds everywhere on the higher prairies.

176. *Tryngites rufescens*. BUFF-BREASTED SANDPIPER.—Abundant in spring, when it arrives in large flocks. Only very few are seen on the return passage.

177. *Numenius longirostris*. LONG-BILLED CURLEW.—Formerly abundant; now rare summer resident; breeds.

178. *Numenius hudsonicus*. HUDSONIAN CURLEW.—Common migrant.

179. *Numenius borealis*. ESKIMO CURLEW.—In spring often very abundant.

180. *Eudocimus albus*. WHITE IBIS.—Accidental; shot one of two seen in a marsh, twelve miles north of the Missouri River in May, 1879.

181. *Ardea herodias*. GREAT BLUE HERON.—Rare in summer; breeds.

182. *Butorides virescens*. GREEN HERON.—Not common; breeds.

183. *Nyctiardea grisea nævia*. NIGHT HERON.—Rare migrant; seen only on the sandbars of the Missouri River.

184. *Botaurus lentiginosus*. AMERICAN BITTERN.—Common summer resident. Breeds in old fields, but oftener in rushes and among the tall growth of *Spartina cynosuroides* and *Calamagrostis canadensis*.

185. *Grus americana*. WHOOPING CRANE.—Rare migrant.

186. *Grus canadensis*. SANDHILL CRANE.—Common migrant. A few remain during the breeding season. I have never found its nest, but am reliably informed of its breeding here.

187. *Rallus elegans*. RED-BREADED RAIL.—Rare summer resident. Have never found its nest.

188. *Rallus virginianus*. VIRGINIA RAIL.—Not common summer resident; breeds.

189. *Porzana carolina*. SORA RAIL.—Abundant summer resident; breeds in large numbers on our bottom lands.

190. *Fulica americana*. AMERICAN COOT.—Abundant summer resident; every marsh and slough is covered with Coots' nests.

191. *Olor buccinator*. TRUMPETER SWAN.—Migrates through here in small numbers in spring and fall.

192. *Anser albifrons gambeli*. AMERICAN WHITE-FRONTED GOOSE.—Rare migrant. Always found associating with the Snow Geese.

193. *Chen hyperboreus*. SNOW GOOSE.—Formerly abundant spring and fall migrant; now rare. These Geese are easily tamed, and I have successfully used them as decoys by depriving them of their power of flight and keeping them with a picket-rope or loose in the yard. They are very sensitive to cold, and their feet often freeze in winter unless they are kept in warm quarters.

194. *Chen cærulescens*. BLUE-WINGED GOOSE.—Rare. Occasionally one is shot out of a flock of Snow Geese.

195. *Bernicla canadensis*. CANADA GOOSE.—Common migrant. Like the Snow Geese, it is becoming less common every year. In spring it arrives a week ahead of var. *hutchinsi*, and ten or twelve days earlier than the Snow Goose. The same order of migration is also noticed sometimes in the fall. It breeds here occasionally. The young have been hatched under hens and become very tame. I have several times been shown nests in trees, claimed by settlers to be the nests of Geese, but the 'Geese' have invariably been found to be Cormorants (*Phalacrocorax dilophus*). Of the few nests of the Canada Goose found, the majority have been far away from any water out on the prairies; but one nest was built among some

large boulders two feet from the water's edge, on Lake Minnetonka, Minn. May not many if not all of the nests seen in trees by other observers have belonged to the Shag?

196. *Bernicla brenta*. BRANT.—Only four secured; probably accidental.
197. *Anas boschas*. MALLARD.—Abundant in summer; breeds.
198. *Dafila acuta*. PINTAIL.—Common migrant; a few remain to breed.
199. *Chaulelasmus streperus*. GADWALL.—Common migrant.
200. *Mareca americana*. BALDPATE.—Common migrant.
201. *Nettion carolinensis*. GREEN-WINGED TEAL.—Abundant during the migrations. In the spring of 1879 I found several nests on the headwaters of the Big Sioux River. Never found it breeding here, nor have I seen the bird in summer.
202. *Querquedula discors*. BLUE-WINGED TEAL.—Common summer resident; breeds.
203. *Spatula clypeata*. SHOVELLER.—Common in summer; breeds.
204. *Aix sponsa*. WOOD DUCK.—Common summer resident. Nests most often in willow clumps surrounded by water.
205. *Fulix affinis*. LITTLE BLACKHEAD.—Abundant during the migrations.
206. *Fulix collaris*. RING-BILLED DUCK.—Accidental. Shot one in May, 1883, out of a flock of Redheads.
207. *Æthya americana*. REDHEAD.—Abundant migrant. A few remain to breed here.
208. *Æthya vallisneria*. CANVAS-BACK.—Of late years has become common during migrations.
209. *Clangula albeola*. BUTTERBALL.—An abundant migrant, arriving very early in the spring.
210. *Harelda glacialis*. LONG-TAILED DUCK.—Accidental; one male, shot in the fall of 1878.
211. *Erismatura rubida*. RUDDY DUCK.—A rare summer resident; breeds.
212. *Mergus merganser americanus*. AMERICAN SHELDRAKE.—Common migrant.
213. *Lophodytes cucullatus*. HOODED SHELDRAKE.—Summer resident; breeds.
214. *Pelecanus erythrorhynchus*. WHITE PELICAN.—Common during migrations.
215. *Phalacrocorax dilophus*. DOUBLE-CRESTED CORMORANT.—Formerly abundant; now only seen during the migrations. Its disappearance has been caused by the cutting down of the small elm and cottonwood groves along the smaller rivers, where, in common with the Crows, it had its breeding resorts. These two birds were often found nesting in the same tree.
216. *Larus argentatus smithsonianus*. HERRING GULL.—Very rare during the migrations.
217. *Larus delawarensis*. RING-BILLED GULL.—A not uncommon migrant.

218. *Larus franklini*. FRANKLIN'S GULL.—Abundant during migration, remaining here for nearly three weeks, feeding in the newly plowed fields.

219. *Sterna forsteri*. FORSTER'S TERN.—Common migrant; may yet be found breeding here.

220. *Sterna antillarum*. LEAST TERN. —Summer resident; breeds.

221. *Hydrochelidon surinamensis*. BLACK TERN.—Common summer resident; breeds.

222. *Colymbus torquatus*. LOON.—Very rare; only seen a few times in the fall.

223. *Dytes auritus*. HORNED GREBE.—Rare in spring and fall.

224. *Dytes nigricollis californicus*. EARED GREBE.—A not very common summer resident; breeds.

225. *Podilymbus podiceps*. THICK-BILLED GREBE.—Common in summer; breeds.

[ADDENDUM.—*Passerina cyanea*. INDIGO BUNTING.—Mr. Agersborg writes me that this species is a not common summer resident; breeds.—W. W. C.]

RECENT LITERATURE.

Nests and Eggs of the Birds of Ohio.—Part XX of this magnificent work, dated April, 1885, contains plates lviii-lx. The first is a beautiful one of the nest of the Wood Thrush, the others give forty-one figures of the eggs of various species, without the nests. A notice accompanying states that three more parts, or twenty-three in all, will complete the work, which it is expected will be finished by next January, the remaining plates being nearly all done. The whole volume will then contain 69 plates, figuring about the same number of nests, the eggs of 127 species, with some 400 pages of letter-press. We have often, in tracing the course of this publication, spoken* of its great merit, and can recommend it without reserve. It forms the proper continuation of 'Audubon,' and is the only work America has produced of that character, excepting Mr. D. G. Elliot's.—E. C.

Willard on Birds of Brown and Outagamie Counties, Wisconsin. †—This paper "gives a systematic series of facts from which the generalizations of Messrs. Baird and Allen may be again applied." The 210 species enumerated are arranged in six classes, "based upon their migratory habits

* Bull. N. O. C., V, p. 39, VII, pp. 45, 112, VIII, pp. 112, 166.

† Migration and Distribution of North American Birds in Brown and Outagamie Counties. By S. W. Willard. De Pere, Wis., 1883, 8 vo., pp. 20. (From Trans. Wisconsin Acad. of Sciences, Arts, and Letters.)

while in these counties." Class I (11 species) consists of 'residents'; Class II (135 species), of true migrants; Class III (13 species), of birds that "are migratory, but whose movements through these counties seem greatly influenced by changes of temperature"; Class IV (20 species), of species which "are migratory, but whose movements . . . are influenced to a great extent by immediate changes of temperature"; Class V (13 species), which arrive from the North in fall, or appear irregularly during the colder months; Class VI (18 species), of rare or presumably irregular occurrence. The birds in Class II, known to breed (100 in number), are indicated as breeding, and the manner of occurrence of those of Class VI is indicated by proper annotations. Otherwise the lists are simply nominal. A table gives the dates of arrival in spring in 1882 and 1883 of nearly one hundred species for both Brown and Outagamie Counties. There are also notes on the food of 24 species, mostly from Prof. F. H. King's well-known work on 'The Economic Relations of Wisconsin Birds,' followed by two pages of remarks on the movements and geographical limitations of certain species. The paper gives evidence of careful observation, and is a valuable contribution to our knowledge of the manner of occurrence and movements of the birds of the area in question.—J. A. A.

Lawrence on New Species of American Birds.*—The three species here described are (1) *Contopus albicollis*, (2) *Chætura yucatanica*, and (3) *Engyptila gaumeri*. All were recently collected by Mr. George F. Gaumer in Yucatan.—J. A. A.

Ridgway on New Species and Subspecies of American Birds, and on the Nomenclature of other Species.—Numerous papers on birds have been published by Mr. Ridgway in the 'Proceedings of the U. S. National Museum' (Vols. VI, VII and VIII, 1883-1885), which we have not hitherto noticed, and to which we now call attention.

The first in order of appearance is a paper based on a fine collection of Japanese birds, † made by Mr. P. L. Jouey, in which Mr. Ridgway calls attention to the close resemblance of *Anthus japonicus* to *A. ludovicianus* (auct., = *A. pennsylvanicus* Lath.). They are so much alike, he says, "that their distinctness might almost be questioned." The four winter specimens of *A. japonicus*, constituting his series, differ constantly from *A. ludovicianus* only in the paler color of the feet. ‡ Other species re-

* Descriptions of supposed New Species of Birds of the Families Tyrannidæ, Cypselidæ and Columbidae. By George N. Lawrence. Ann. New York Acad. Sci., III, No. 5, Jan. 5, 1885, pp. 156-158.

† Notes on some Japanese Birds related to North American species. By Robert Ridgway, Proc. U. S. Nat. Mus., VI, pp. 368-371. (Published December 29, 1883.)

‡ It may be stated in this connection that Mr. Sharpe (Cat. Birds Brit. Mus., X, 1885, pp. 592-599) makes both *A. ludovicianus* (= *pennsylvanicus*) and *A. japonicus* subspecies of *A. spipoletta* (= *spinoletta* auct.).

ferred to are *Regulus japonicus*, *Anorthura fumigata*, *Certhia familiaris*, *Ampelis phænicopterum*, *Ægiothus linaria*, etc.

A paper on Costa Rican birds* describes as new *Empidonax viridescens*, *Pittasoma michleri zeledoni*, and *Acanthidiodops bairdi* (Zeledon MS.), and contains redescrptions or remarks on other little-known species, as *Carpodectes antoniae* (Zeledon, MS.), *Vireo carmioli* Bd., *Phænicothraupis carmioli* Lawr., *Lanio melanopygius* Ridg., and *Empidonax atriceps* Salv., etc. Mr. Ridgway, in Mr. Nutting's paper on Nicaraguan birds, also describes a number of new species, as duly noted below in our notice of Mr. Nutting's paper.

A species of Hummingbird given as *Selasphorus flammula* in the catalogue of birds obtained by Mr. Nutting on the Volcan de Irazú, Costa Rica, is now identified as *S. torridus* Salvin.†

Among birds collected by Mr. C. L. McKay, at Bristol Bay, Alaska, Mr. Ridgway finds a fine adult male of the European Velvet Scoter (*Melanetta fusca*),‡ and gives the characters by which it may be distinguished from its American representative, *M. velvetina*.

A new Snow Bunting (*Plectrophenax hyperboreus* Ridg.)§ is described from Alaska, based on seven specimens, collected at Nushagak and St. Michael's, by Messrs. C. L. McKay and E. W. Nelson. It is easily distinguished from *P. nivalis* by having much less black on the wings, etc.

In a paper on some birds collected by Messrs. J. E. Benedict and W. Nye, at the Islands of St. Thomas, Trinidad, and Old Providence, and at Curaçoa, Venezuela, and Sabanilla, New Grenada,|| the following are described as new. 1. *Mimus gilvus rostratus*, from Curaçoa; 2. *Dendroica rufopileata*, Curaçoa; 3. *Icterus curasoënsis*, Curaçoa; 4. "*Zenaida ruficauda*, Bonap. ? or sp. nov. *Zenaida vinaceo-rufa* Ridgw. ?," Curaçoa; 5. *Certhiola tricolor*, Island of Old Providence, Caribbean Sea, 250 miles north of Aspinwall; 6. *Vireosylvia grandior*, Old Providence; 7. *Vireo approximans*, Old Providence; 8. *Elainia cinerescens*, Old Providence.

A new Field Sparrow (*Spizella wortheni*),¶ allied to *S. pusilla* and *S. atrigularis*, is described from Silver City, New Mexico.

A "resident local species or race" of Coot, differing from *Fulica americana* in the form of its bill, and in the color and form of the frontal shield, is

* On Some Costa Rican Birds, with descriptions of several supposed New Species. *Ibid.*, pp. 410-415. (Published April 11, 1884.)

† Note on *Selasphorus torridus* Salvin. *Ibid.*, Vol. VII, p. 14. (Published June 3, 1884.)

‡ *Melanetta fusca* (Linn.) in Alaska. *Ibid.*, p. 68. (Published June 11, 1884.)

§ Description of a New Snow Bunting from Alaska. *Ibid.*, pp. 68-70. (Published June 11, 1884.)

|| On a Collection of Birds made by Messrs. J. E. Benedict and W. Nye, of the United States Fish Commission Steamer "Albatross." *Ibid.*, pp. 171-180. (Published July 29, 1884.)

¶ Description of a New Species of Field Sparrow from New Mexico. *Ibid.*, p. 259. (Published Aug. 22, 1884.)

described under the name *Fulica caribæa*,* from the Islands of Guadeloupe and Saint John's, Lesser Antilles

A new race of the Red-shouldered Hawk, from Florida,† is named *Buteo lineatus alleni*. It is smaller and paler than *B. lineatus*, with no rufous on the upper parts, except on the lesser wing-coverts.

A most welcome paper treats of the Sparrows of the coast of California‡ usually hitherto called *Passerculus anthinus* (*P. anthinus* auct., not of Bonaparte), but which Mr. Ridgway finds includes "two quite different birds." Bonaparte's *P. anthinus*, based on a specimen from Kodiak, Alaska, is referred as a pure synonym to *P. alaudinus* Bon., leaving the California birds unnamed. One of these is the very dark colored form confined to the salt marshes about San Francisco, which is here named *Passerculus sandwichensis bryanti*. The other, inhabiting similar localities from Santa Barbara southward, and still darker and more heavily spotted, is called *Passerculus beldingi*.

Mr. Ridgway having had an opportunity of comparing his *Æstreclata fisheri* with a specimen of *Æ. defilippiana*§ (found labelled in Jules Verreaux's handwriting in the American Museum of Natural History in New York), finds the two species "very distinct." and gives a detailed comparison of them.

He also calls attention to geographical variations in *Icterus cucullatus*,|| Yucatan specimens being more intensely colored than those from the southern and eastern parts of Mexico, while examples from Arizona, Southern and Lower California and Western Mexico are decidedly paler in coloration than those from other parts of Mexico. The name *cucullatus* having been based on specimens from the table-lands of Southwestern Mexico, Mr. Ridgway names the paler northern form *Icterus cucullatus nelsoni*, and proposes for the Yucatan bird, in case "it should be deemed desirable or necessary" to distinguish it, the name *Icterus cucullatus igneus*.

The same author describes a new species of *Contopus*¶ under the name *Contopus pileatus*, based on a specimen in the American Museum of Natural History, New York City, from an unknown locality.

He has also found that *Anser leucoparcus* of Brandt** "is an exact synonym of *Anser hutchinsi* Swain. & Rich.," and that the *leucopareia* of re-

* Description of a New Species of Coot from the West Indies. *Ibid.*, p. 358. (Published Sept. 17, 1884.)

† Description of a New Race of the Red-shouldered Hawk, from Florida. *Ibid.*, pp. 514, 515. (Published Jan. 19, 1885.)

‡ On two hitherto unnamed Sparrows from the Coast of California. *Ibid.*, pp. 516-518. (Published Jan. 19, 1885.)

§ On *Æstreclata fisheri* and *Æ. defilippiana*. By Robert Ridgway. Proc. U. S. Nat. Mus., VIII, pp. 17, 18. Published April 20, 1885.)

|| *Icterus cucullatus*, Swainson, and its Geographical Variations. *Ibid.*, pp. 18, 19.

¶ Description of a new species of *Contopus* from Tropical America. *Ibid.*, p. 21.

** Note on the *Anser leucoparcus* of Brandt. *Ibid.*, pp. 21, 22.

cent authors requires a new name. Owing to the small size of this form, he has named it "*Breuta minima*, sp. nov. Little Cackling Goose" (= *Bernicla canadensis*, d. *leucoparvia*, B. B. & R., Water Birds N. Amer., I, 1884, pp. 456, 429).

A new Warbler (*Granatellus sallæi boucardi* subsp. nov.)* is described from Yucatan, and also two new birds from Costa Rica,† namely *Cyanocorax cucullatus*, sp. nov., and *Vireolanus pulchellus verticalis*, subsp. nov.

Three Honey Creepers supposed to be new, namely, *Certhiola finschi*, sp. nov., *C. sundevalli*, "sp. nov. (?)," and *C. sancti-thomæ*, sp. nov., are described, and a 'Synopsis' is given of the species of the genus *Certhiola*,‡ of which 19 are recognized, and of which are given the principle references and synonyms.

Cathartes urubitinga Pelzeln is identified with *C. burrovianus* Cassin, by comparison of typical specimens of the former with Cassin's type of *C. burrovianus*.§ Also *Onychotes gruberi* Ridg. is found to be the *Pandion solitarius* of Cassin,|| which now becomes *O. solitarius* (Cass.). Its habitat proves to be the Sandwich Islands, thus removing the species from the list of North American birds. Mr. Ridgway gives measurements of the five specimens known to him to be extant, including Cassin's type. There is still another example in the Museum of Comparative Zoölogy, which, having been submitted to Mr. Ridgway since the publication of his paper, he pronounces to be almost precisely like Cassin's type—an adult in the light phase of plumage.—J. A. A.

Nutting on Nicaraguan Birds. The collection forming the basis of the present paper¶ was made by Mr. Nutting at four localities, so chosen as to form a chain of stations extending across the greater part of Nicaragua, from east to west. The first of these is San Juan del Sur, on the Pacific coast, where 70 species were obtained, of which 48 are recorded "for the first time from Nicaragua." The second is Sucuyá, 22 miles northwest of San Juan del Sur. Here 88 species were collected. The third is the Island of Ometépe, in Lake Nicaragua, where 50 species were obtained. The fourth is Los Sábalos, on the Rio San Juan del Norte, about 30 miles from Lake Nicaragua. This locality furnished 78 species, including five new. Most of the species were obtained at more than one of these localities—some at all—while about half seem not to have been previously reported

* Description of a New Warbler from Yucatan. *Ibid.*, p. 23.

† Description of two New Birds from Costa Rica. *Ibid.*, pp. 23, 24.

‡ Description of three supposed new Honey Creepers from the Lesser Antilles, with a Synopsis of the Species of the Genus *Certhiola*. *Ibid.*, pp. 25-30.

§ On *Cathartes burrovianus*, Cassin, and *C. urubitinga*, Pelzeln. *Ibid.*, pp. 34-36.

|| On *Onychotes gruberi*. *Ibid.*, pp. 36-38.

¶ On a Collection of Birds from Nicaragua. By Charles C. Nutting. Edited by R. Ridgway. Proc. U. S. Nat. Mus., VI, pp. 372-410. (Published Dec. 29-April 11, 1884.)

from Nicaragua, although in many cases their presence there was to be inferred from their known general range. Brief field notes are given by the author, while critical remarks are here and there added by the editor, who is also responsible for the identifications and nomenclature adopted. Mr. Ridgway's critical remarks include descriptions of four species supposed to be new, as follows: *Oryzoborus nuttingi*, *Contopus depressirostris*, *Cymbilanius lineatus fasciatus*, and *Porzana leucogastra*, all from Los Sábalos. *Geothlypis bairdi*, also from the same locality, is described as new by Mr. Nutting.—J. A. A.

Stejneger on the Genus *Cepphus*.*—This paper consists of four parts: 'I. *Cepphus motzfeldi* (Benicken)' pp. 210-216; 'II. On the White-winged Species of the Genus *Cepphus*' (pp. 216-225); 'III. Has *Cepphus carbo* ever been obtained within the faunal limits of North America?' (pp. 225-227); 'IV. Synopsis of the Species of the Genus *Cepphus*' (pp. 227-229). The species recognized are 1. *C. maudtii* (Licht.) Newt.; 2. *C. grylle* (Linn.) Flem.; 3. *C. columba* Pall.; 4. *C. carbo* Pall.; 5. *C. motzfeldi* (Benick.) Stejn. The status of the last is not considered as satisfactorily settled, but it is thought to be a black-winged Guillemot of the North Atlantic which has been mostly overlooked or regarded as a melanotic phase of the Common Guillemot. The distinguishing characters of *C. maudtii*, as compared with *C. grylle*, are dwelt upon at length, together with their geographical distribution. The alleged occurrence of *C. carbo* in North America is discredited. A pretty full citation of the synonymy and bibliographical references of the species concludes the paper.—J. A. A.

Ridgway on New Species of Birds from Cozumel Island, Yucatan.—In January, 1885, the U. S. Fish Commission Steamer 'Albatross' touched at Cozumel Island, and the week spent there was turned to good account in behalf of ornithology, the opportunity afforded being improved by Mr. J. E. Benedict, Dr. T. H. Bean, and Mr. Thomas Lee in forming a large collection of bird skins. Among these Mr. Ridgway has recognized 15 species and subspecies new to science. He has promptly published preliminary descriptions of them,† and promises a fuller account later. At about the same time a collection of Cozumel birds, numbering 27 species, was received by Mr. Salvin, who has given an account of them in the April number of 'The Ibis' (pp. 187-194, pl. v). It has therefore happened that some of Mr. Ridgway's species were redescribed and renamed by Mr. Salvin before Mr. Ridgway's paper reached him. Mr. Ridgway's species, with the corresponding identifications of Mr. Salvin, are as follows: (1) *Harporhynchus guttatus* (= *H. melanostoma* Salv. sp. n.); (2) *Trogl-*

* Remarks on the Species of the Genus *Cepphus*. By Leonhard Stejneger. Proc. U. S. Nat. Mus., VII, pp. 210-229, fig. 1-6. (Published Aug. 5, 1884.)

† Description of some New Species of Birds from Cozumel Island, Yucatan. By Robert Ridgway. Proc. Biolog. Soc. Washington, III, 1884-85. (Extras printed Feb. 26, 1885.)

todytes beani; (3) *Dendroica petechia rufivertex*; (4) *Vireosylva cinerea* (= *Vireo magister* Salv.); (5) *Vireo harrisi*; (6) *Cyclorhis insularis*; (7) *Spindalis benedicti* (= *S. exsul* Salv. sp. n., l. c., pl. v); (8) *Euthia olivacea intermedia*; (9) *Centurus leei* (= *C. dubius* Salv.); (10) *Attila cozumela* (= *Attila*, sp. ? Salv.); (11) *Lamprolaima thalassinus*; (12) *Chlorostilbon forficatus* (= *C. caniveti* Salv.); (13) *Empidonax gracilis*; (14) *Myiarchus platyrhynchus*; (15) *Cardinalis saturatus*.—J. A. A.

Cory's Birds of Haiti and San Domingo.—Part I of Mr. Cory's 'Birds of Haiti and San Domingo,' published in March, 1884, was noticed in 'The Auk' for July last (Vol. I, p. 285), since which time three additional parts have been issued, completing the work.* The general character of the work is indicated in the notice already cited, where it is stated that it "promises to be a very important contribution to our knowledge of the birds of a hitherto very imperfectly known region." This promise is fully realized, and we heartily congratulate the author on the prompt completion of his very creditable undertaking. Full length figures are given of 17 species, and the heads are figured of 23 other species. A plate is also given of the nest and eggs of *Mimocichla ardesiaca*, and also a map of the Island. About 110 species are treated, of which 32 are peculiar to San Domingo. In the introduction (p. 16) attention is called to the change of the generic name *Ligea*, as originally published, to *Microligea* (see Auk, I, p. 290). The author also calls attention, in the same connection, to the fact that some of the San Domingo forms of species which have a wide extralimital range differ from their representatives obtained elsewhere, as is especially seen in the genera *Speotyto*, *Corvus*, *Ortyx*, etc., but he abstains from naming them as new, preferring "to err in being rather too conservative than otherwise."—J. A. A.

Minor Ornithological Publications.—'Forest and Stream,' Vols. XXII and XXIII, Jan. 31, 1884-Jan. 15, 1885, contains, besides reprints, the following (Nos. 846-963):—

846. *The Ramble of a Naturalist.* By Judge John G. Henderson. *Forest and Stream*, Vol. XXII, Jan. 31, pp. 6, 7.—Chiefly ornithological notes of more or less interest.

847. *An Albino [Green-winged] Teal.* By W. N. B[yers]. *Ibid.*, p. 7.

848. *California Quail in Confinement.* By Nemo (of Texas). *Ibid.*, p. 7.

849. *A fine Rough-leg.* By W. A. Stearns. *Ibid.*, p. 7.—A black example of *Archibuteo lagopus sancti-johannis*, taken at Northampton, Mass.

* The Birds of Haiti and San Domingo. By Charles B. Cory. . . . Estes and Lauriat, Boston, U. S. A., 1885. 4to, pp. 1-198, pl. 23.—Pt. 1, pp. 17-56, pl. 6, March, 1884; Pt. 2, pp. 57-112, pl. 6, July, 1884; Pt. 3, pp. 113-160, pl. 6, Dec., 1884; Pt. 4, pp. 1-6, 160-198, pl. 5, March, 1885.

850. *The Least Bittern*. By T. B. A. *Ibid.*, Feb. 7, p. 25. — Its abundance in New Jersey.

851. *Picoides arcticus in New England*. By Louis A. Zerega. *Ibid.*, p. 25.

852. *Birds and Electric Lights*. By H. B. Chubb. *Ibid.*, p. 26. — List of species picked up at the foot of electric light masts in Cincinnati, O.

853. *The Egret [in New Jersey]*. By T. B. A. *Ibid.*, Feb. 14, p. 44.

854. *The Corn Crake [Crex pratensis] in New York*. By Austin F. Park. *Ibid.*, p. 44. — Taken opposite Troy, Nov. 6, 1883.

855. *Bird Migration*. By W. W. Cooke. *Ibid.*, p. 46. — A call for correspondents in the Mississippi Valley District.

856. *Screech Owls in a Chimney*. By J. L. D[avidson]. *Ibid.*, p. 46.

857. *The English Sparrow*. By Dr. J. B. Holder. *Ibid.*, Feb. 21, p. 66. — Circular of the A. O. U. Committee on the status of this bird in America.

858. *Protect the Small Birds*. By Merlin. *Ibid.*, Feb. 28, p. 83. — Against the 'mania' "for possession of immense series of birds' eggs and skins."

859. *Winter Bird Notes*. *Ibid.*, p. 83. — Short notes on various species from nine contributors.

860. *Some Arizona Quails*. By Adios. *Ibid.*, March 6, p. 103.

861. [*Winter*] *Bird Notes*. *Ibid.*, p. 103. — Short notes from seven contributors.

862. *Evening Grosbeak in Iowa*. By Violet S. Williams. *Ibid.*, p. 104. — A small flock observed at Coralville, Feb. 8 and following days, 1884.

863. *Ortyx Virginianus in Arizona*. *Ibid.*, p. 104. — Short extract from Tucson 'Weekly Citizen.'

864. *Ortyx Virginianus not in Arizona*. By Robert Ridgway. *Ibid.*, March 13, p. 124. — Relates to the preceding (No. 863).

865. [*Winter*] *Bird Notes*. *Ibid.*, p. 124. — Three short notes from different contributors, one recording a Woodcock at Glenville, Conn., on Feb. 22, 1884.

866. [*Winter*] *Bird Notes*. *Ibid.*, March 20, p. 144. — One and a half columns, from various contributors, but chiefly from J. L. D[avidson] of Lockport, N. Y.

867. *Crows*. By Violet S. Williams. *Ibid.*, p. 144. — Novel mode of capture.

868. *Early Breeding of the Horned Lark*. By Bar Lock. *Ibid.*, p. 145. — At Virgil, N. Y. — a young bird taken March 13.

869. *Bird Notes*. *Ibid.*, March 27, p. 165. — March arrivals reported by three observers.

870. *Preservation of Song Birds*. *Ibid.*, April 3, p. 183. — Two articles — the longer one by 'Sialia,' in defence of collecting for scientific purposes.

871. *Stearns's Natural History of Labrador*. By C. Hart Merriam, M. D. *Ibid.*, p. 184. — A criticism of Mr. Stearns's 'Notes on the Natural

History of Labrador' in Proc. U. S. Nat. Mus., 1883, pp. 111-137 (See also Auk, I, p. 284.)

872. *An Interesting Relic*. By P. Bryson Wood, M. D. *Ibid.*, p. 184.—An arrow-head (figured) from the breast of a Swan.

873. *Bird Notes*. *Ibid.*, p. 185.—Short notes of early arrivals from nine contributors.

874. *Bird Notes*. *Ibid.*, April 10, p. 203.—Short notes from nine contributors.

875. *Protecting Song Birds*. By J. C. Cahoon. *Ibid.*, p. 203.—In defence of collecting for scientific purposes. Under the same heading is a protest by 'H. W. C.' against indiscriminate egg-collecting by boys, 'as a business,' but in favor of collecting for 'scientific purposes.'

876. *Shrikes Catch Mice when Thrown in the Air*. By J. L. D[avidson]. *Ibid.*, p. 203.

877. *Stearns's Natural History of Labrador*. By W. A. Stearns. *Ibid.*, April 17, pp. 223, 224.—A reply to Dr. Merriam's criticisms (see above, No. 871).

878. *Southern Limit of Quail and Grouse*. By Forked Deer. *Ibid.*, p. 224.

879. *A Quail New to the United States Fauna*. By Geo. Bird Grinnell. *Ibid.*, April 24, p. 243.—*Ortyx graysoni*, "common in Southern Arizona." (See above, Nos. 860, 863, 864, which relate to this species.)

880. *Southern limit of Quail and Grouse*. By Robert Ridgway. *Ibid.*, p. 243.—Relates to No. 878, in which reference is made to the supposed occurrence of *Ortyx virginiana* and *Bonasa umbella* in Costa Rica.

881. *Congratulations and Speculations*. By B. Horsford. *Ibid.*, pp. 244, 245.—In part ornithological.

882. *Application of Trinomial Nomenclature to Zoology*. By Dr. Elliott Coues. *Ibid.*, May 1, p. 264.—A paper on this subject "Spoken before the National Academy of Sciences at the stated session held in Washington, April 15-18, 1884, and stenographically reported . . ."

883. *Bird Arrivals at Cleveland, Ohio*. By Sri [= S. R. Ingersoll]. *Ibid.*, p. 265.—Observations extending from Feb. 19 to April 23, 1881.

884. *Uplaud Plover in Minnesota*. By W. L. Tiffany. *Ibid.*, May 8, pp. 284-285.—Detailed and interesting account of its habits.

885. *The Arrow-Head in the Swan*. By E. W. Nelson. *Ibid.*, p. 285.—The arrow-head (see above, No. 872) identified with those in use by Indians on the Upper Yukon.

886. *The Catbird*. (*Mimus Carolinensis*.) By Wilmot. *Ibid.*, May 15, p. 302.—On its habits.

887. Crossbills in New Jersey. By C. B. Riker. *Ibid.*, p. 302.

888. *Decrease of Song Birds*. *Ibid.*, p. 303.—Two notes, relating respectively to Boston and Philadelphia.

889. *Corn Crake* (*Crex pratensis*). By J. Matthew Jones. *Ibid.*, p. 303.—Relates to a specimen taken in 1859 in Newfoundland, and another in the Bermudas in 1847.

890. *Chimney Swallows*. By A. B. F. *Ibid.*, p. 303.

891. *The Couesian Period.* By R. W. Shufeldt, Capt. Med. Corps U. S. A., etc. *Ibid.*, May 22, p. 323. (Continued in following issues.)—A reprint of the 'Historical Review' in Dr. Coues's 'Key,' Second Edition, prefaced by a letter by Dr. Shufeldt, proposing an additional 'Period,' to be called the 'Couesian Period,' in recognition of Dr. Coues's work on North American ornithology.
892. *The Brown Thrush.* (*Harporhynchus Rufus.*) By Wilmot. *Ibid.*, pp. 323, 324.—On its habits.
893. *Bird Migration.* By J. L. Davidson. *Ibid.*, p. 324.—Record for Lockport, N. Y., from April 6 to 30, 1884.
894. *The Baltimore Oriole.* (*Icterus Galbula.*) By Wilmot. *Ibid.*, May 29, pp. 342, 343.—On its habits.
895. *The Willet* [*Symphemia semipalmata*] *Breeding in Delaware Bay.* By Chas. E. Bellows, Ph.G. *Ibid.*, June 5, p. 364.
896. *The Couesian Period?* By Amicus Socrates, amicus Plato, magis amica veritas. *Ibid.*, June 19, p. 384.—The recognition of a 'Couesian Period' deemed premature.
897. *Bird Notes.* *Ibid.*, p. 384.—Three articles, giving reports of arrivals for May, 1884; viz., (1) Onondaga, N. Y., by G. Albert Knapp; (2) Spencerport, N. Y., by L. F. Spencer; (3) Lockport, N. Y., by J. L. D[avidson].
898. *A Bit of a Sermon.* By Onondaga. *Ibid.*, June 19, p. 402.—Breeding of Woodcock in New York in July, etc.
899. *North American Birds.* Editorial. *Ibid.*, p. 403.—Review of the first volume of the 'Water Birds of North America' by Baird, Brewer, and Ridgway.
900. *Seasons and Birds of the Prairie.* By H. S. Williams, M. D. *Ibid.*, pp. 403, 404.—An interesting account of the characteristic birds of the prairies.
901. *The Couesian Period.* By R. W. Shufeldt. *Ibid.*, p. 404.—Brief reply to 'Amicus Socrates,' etc. (See above, No. 896.)
902. "*The Couesian Period?*" By Amicus Socrates, amicus Plato, magis amica veritas. *Ibid.*, June 26, p. 423.—Rejoinder to the last-cited paper (No. 901).
903. *Birds and the Electric Light.* *Ibid.*, p. 424.—Extract from the Winona (Minn.) 'Republican' of May 23, 1884, giving account of the destruction of large numbers of birds, killed by striking against electric lights during two nights, May 20 and 21, at Winona, Minn.
904. *Utility of the Crow.* By C. E. B. *Ibid.*, p. 424.
905. *Owl and Steel Trap.* By A. H. G. *Ibid.*, p. 424.—*Bubo virginianus* with a steel trap attached to its claws.
906. *Painted Finch on Long Island.* By A. L. Townsend. *Ibid.*, p. 424.
907. *The Use of Field Glasses* [*in Ornithological Studies*]. By Bittersweet. *Ibid.*, July 3, p. 443.
908. *Under Water.* By W. D. Z. *Ibid.*, p. 444.—*Tringoides macularius* swimming under water.

909. *Rose-breasted Grosbeaks Abundant* [at Taunton, Mass.]. By J. C. Cahoon. *Ibid.*, p. 444.
910. *Orioles in Massachusetts*. By C. I. Goodale. *Ibid.*, p. 444.—Not decreasing in numbers, etc.
911. *Birds of the Gulf of St. Lawrence*. Editorial. *Ibid.*, July 10, p. 465.—Review of Mr. William Brewster's 'Notes on Birds Observed during a Summer Cruise in the Gulf of St. Lawrence.' (See also Auk, I, p. 379.)
912. *Destruction of Seafowl*. Editorial. *Ibid.*, July 10, p. 461.—Extracts relating to the subject from Mr. Brewster's paper (see last title), and comment thereon.
913. *Notes on [Massachusetts] Shore Birds*. By Raymond Lee Newcomb. *Ibid.*, July 17, pp. 483, 484.—Valuable notes on the Grallæ.
914. *How Young Birds Are fed*. By O. Widmann. *Ibid.*, p. 484.—Minute observations on the feeding of young Purple Martins (*Progne subis*) by their parents.
915. *The Arizona Quail*. By Adios. *Ibid.*, p. 484.—An offer to send living Arizona Quail to parties in the East desiring to introduce them there.
916. *The Oak Woods Sparrow* (*Pucæa æstivalis illinoensis*). By G. H. Ragsdale. *Ibid.*, p. 484.—As observed near Gainesville, Texas.
917. *A Visit to a Heronry*. By Curtis. *Ibid.*, July 24, p. 506.—Locality, Massachusetts; species, '*Nyctiardea gardeni*.'
918. *Domesticating Quail*. By J. B. B. *Ibid.*, p. 506.—Experiments with *Ortyx virginiana*.
919. *Strange Antics of an Owl*. By C. Hart Merriam, M. D. *Ibid.*, p. 507.
920. *The Humming Bird* (*Trochilus Colubris*). By Wilmot. *Ibid.*, Vol. XXIII, July 31, p. 3.—Its nesting habits.
921. *The Sacrifice of Song Birds* [for Millinery Purposes]. Editorial. *Ibid.*, Aug. 7, p. 21.
922. *The Destruction of Small Birds*. Editorial. *Ibid.*, p. 24.—Statistics relating to the appalling magnitude of the millinery trade in bird-skins.
923. *Fruit-eating Birds*. By Byrne. *Ibid.*, p. 24.—Arraignment of the Robin and Catbird.
924. *Grouse of the Pacific Slope*. By Mesatchie. *Ibid.*, p. 24.—Species of, and their distribution.
925. *Rare Birds on Long Island*. By Geo. Bird Grinnell. *Ibid.*, p. 24.—*Porzana jamaicensis*, *Rhynchops nigra*, *Herodias alba egretta*, and *Garzetta candidissima*.
926. *Our Birds in their Haunts*. Editorial. *Ibid.*, Aug. 14, pp. 44, 45.—Review of the work.
927. *The Catbird*. By Wilmot. *Ibid.*, p. 45.—Its defence, against 'Byrne.' (See above, No. 923)
928. *The Greene Smith Ornithological Collection*. Editorial. *Ibid.*, p. 45.

930. *The Crow*. By R. S. Tarr. *Ibid.*, Aug. 21, p. 63. — As observed at Gloucester, Mass.
931. *California [Mountain] Quail in Nebraska*. *Ibid.*, p. 63. — Extract from the Sacramento 'Capital.' Notice of their successful introduction.
932. *Fruit-eating Birds*. By Picket. *Ibid.*, Aug. 28, p. 83. — Statistical table showing contents of stomachs of various species.
933. " *Our Birds in their Haunts*." By J. H. Langille. *Ibid.*, pp. 83, 84. — The author's reply to his critic. (See above, No. 926.)
934. *The Robin as a Game Bird*. By R. T. *Ibid.*, Sept. 4, p. 105.
935. *Fruit-eating Birds*. *Ibid.*, p. 105. — Two articles — (1) by 'Wilmot' against 'Picket,' and (2) by Wakeman Holberton in defence of the Catbird.
936. *Small Bird Destruction*. By Special. *Ibid.*, Sept. 11, p. 123. — 10,000 Tern skins, taken in Massachusetts, sent during the past year to Liverpool for millinery purposes! Comment also on the destruction of Woodpeckers and other small birds, which fall victims to the 'gunning craze.'
937. *A Humming Bird Combat*. By Chas. C. Truesdell, Jr. *Ibid.*, Sept. 18, p. 143.
938. *The Birds Again*. By Picket. *Ibid.*, pp. 143, 144. — Includes an article by T. H. Hoskins, M. D., from the New York 'Examiner,' against fruit-eating birds, and also covers a note by 'Mergus' in reply to 'Wilmot.'
939. *Cardinal Redbird on Long Island*. By Robert B. Lawrence. *Ibid.*, p. 144. — A male, taken Sept. 7, 1884.
940. *Robins and Strawberries*. By Nessmuk. *Ibid.*, Sept. 25, p. 164. — Verdict heavily against the Robin.
941. *Domesticating Quail*. By J. B. B. *Ibid.*, p. 164. — Successful attempts detailed.
942. *The Catbird*. By Wilmot. *Ibid.*, p. 165. — In its defence. Incidentally *Passer domesticus* is arraigned as 'simply immense' on grapes, exceeding in its destruction of this fruit 'anything that wears feathers.'
943. *Where the [Purple] Martins Roost*. By O. Widmann. *Ibid.*, Oct. 2, p. 183. — Many thousands, late in August, roost in the willows below St. Louis, Mo. The article forms a very interesting chapter in this bird's history, hitherto unwritten.
944. *Quail [Breeding] in Confinement*. *Ibid.*, p. 184. — Extract from Hagerstown, Md., 'News,' detailing further successful attempts at rearing Quail in captivity.
945. *American Ornithologists' Union. Report of Proceedings [of Second Congress]*. *Ibid.*, Oct 5 and 16, pp. 204, 205, 223, 224.
946. *Note on the Ruffed Grouse*. By Manly Hardy. *Ibid.*, p. 208. — A specimen with twenty tail-feathers.
947. " *Key to North American Birds*." Editorial. *Ibid.*, Oct. 23, p. 288. — Review of the work.
948. *Arizona Quail in Confinement*. By J. B. B. *Ibid.*, Oct. 30, p.

264. — Two pairs of *Lophortyx gambeli* received by the writer at Toledo, Ohio.

929. *Nesting of the Yellow-bellied Woodpecker in Northern New York*. By S. I. Ingersoll. *Ibid.*, p. 45.

949. *Swainson's Warbler Rediscovered (Helmintherus Swainsoni)*. By Elliott Coues. *Ibid.*, Nov. 6, pp. 285, 286. — Account of its habits, based on notes supplied by Arthur T. Wayne, as observed near Charleston, S. C.

950. *Domesticating Wildfowl*. By Fred Mather. *Ibid.*, Nov. 6 and Dec. 4, pp. 286, 366. — Wood Duck, Teal, Widgeon, Pintail, etc.

951. *Black Brant [in Washington Territory]*. By Alki. *Ibid.*, Nov. 13, p. 304.

952. *Bird [Nuthatch] in a Mouse Trap*. By A. H. G. *Ibid.*, Nov. 27, p. 344.

953. *Notes on the Capture of Sea Birds*. By Capt. J. W. Collins. *Ibid.*, Dec. 4 and 11, pp. 364-366, 383-385. — Reprinted from Ann. Rep. Comm. Fish and Fisheries, 1882. (For notice of the original paper see Auk, I, p. 380.)

954. *Acclimation of Foreign Birds [in the United States]*. By J. S. Prout. *Ibid.*, p. 364. — In view of the unsuccessful attempts with the European Quail, Skylark, etc., it is suggested that such birds should be turned out in the South (Florida, Louisiana, Mexico) instead of the North.

955. *Bird Notes*. *Ibid.*, Dec. 11, p. 385. Brief notes from three contributors, the most important item being the record of a Barn Owl captured at Logan, O.

956. *The Migratory Quail*. By G. M. S. *Ibid.*, p. 385. — Birds turned out near Springfield, Mass., 'two years ago,' have reared young and are still there, and there 'to stay.'

957. *Sharp-Tailed and Sea-side Finches*. By Everett Smith. *Ibid.*, Dec. 18, p. 405. — The Sharp-tailed stated to be found as far north as the Tantremar marshes, near the head of the Bay of Fundy. The Seaside is added to the fauna of Maine on the basis of its recent capture at Shark Island.

958. *Quail in Confinement*. By Tenny & Woodward. *Ibid.*, Dec. 25, p. 426. — A brood of five and another of seventeen "hatched last season are still living and in fine condition."

959. *Bird Migration in the Mississippi Valley. Winter Birds of Southern Illinois*. By W. W. Oooke [= Cooke]. *Ibid.*, Jan. 1, 8, 1885, pp. 444, 445, 463, 464. — A formal list of the species, with brief commentary.

960. *Perhaps Nest and Eggs of Regulus Satrapa*. By W. T. Emmet. *Ibid.*, Jan. 1, 1885, p. 445. — Found near Lennoxville, Can., in spring of 1879, and doubtless correctly assigned.

961. *North American Birds. Water Birds, Vol. II*. Editorial. *Ibid.*, Jan. 8, p. 463. — Notice of the work.

962. *The Birds of Michigan*. By Dr. Morris Gibbs. *Ibid.*, Jan. 15, pp. 483, 484. (Continued in following Nos.)

963. *A Mule Bird*. By W. E. D. Scott. *Ibid.*, Jan. 15, p. 484.—A cross between *Colaptes mexicanus* and *C. chrysoides*. (Originally published in the 'Arizona Daily Star,' Tucson, Dec. 16, 1884.)—J. A. A.

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GENERAL NOTES.

Abnormal Coloration in a Caged Robin.—In an account of an abnormally colored Robin given in 'The Auk' for January, 1884, p. 90, mention was made of the softness of the bones. Such of these as were not necessary to the proper make-up of the skin were submitted to a careful chemical analysis under the direction of Prof. W. O. Atwater, of Wesleyan University, who found them to contain only about 25 per cent of mineral matter, or about one-third the amount usually found in the bones of normal, healthy birds.—W. B. BARROWS, *Middletown, Conn.*

Another Black Robin.—Some time ago I heard of a second 'Black Robin,' and tried to find out the facts with regard to it, but failed to get anything definite until to-day, when, by mere chance, I met the owner of the abnormal bird and obtained from him the following facts about it. The bird was taken from the nest here in Middletown while in the ordinary first plumage, and for "two or three years" was like any other caged Robin. The owner, Mr. H. S. Leonard, seemed principally struck with the tremendous appetite of the bird, which he assured me ate "as much as a goose" every day. Gradually the plumage became somewhat variegated with black and white, the black predominating above, though Mr. Leonard thinks the bird became ultimately almost white.

There was no return to the normal plumage after the abnormal dress was once assumed; but the bird, which proved to be a female, always seemed in perfect health and laid several sets of eggs while in captivity, of course hatching none. She, however, adopted any young bird, of whatever species, put into her cage, and in every case reared the young birds successfully. She died when about five years old, through the carelessness of the person left to feed her. Unfortunately her skin was not preserved. The food was varied as much as possible, consisting largely of insects, worms, fruit, etc., in summer, with a large proportion of meat, bread, etc., in winter.—W. B. BARROWS, *Middletown, Conn.*

Return of Robins to the same Nesting-places.—Mr. Charles S. Mason, of Farmington, Conn., tells me that for the last three years a Robin (*Merula migratoria*), with the back and wings mottled with white, has bred on or near Miss Porter's lawn in that village, and that a young bird was seen last fall partially white. At the time of writing (May 20, 1885) the birds had not appeared this season.

Mr. Charles A. Hewins, of West Roxbury, Mass., writes that "some years ago a Robin built her nest five consecutive years in a woodbine that was trained up and over a piazza. We knew her by a white mark on one side of her head."—JNO. H. SAGE, *Portland, Conn.*

Abundance of *Parus atricapillus* near Washington.—This bird has been very abundant here during March and April, nineteen specimens having been taken, while many others were seen. Owing probably to the severe winter they were driven south, returning about the middle of March. The first specimens were taken on March 15, and others were taken every week until April 19, when six were shot and many others seen. The weather during April was fine and warm, and the birds were singing and appeared quite at home. But few *P. carolinensis* were seen until the last week in April, showing that they too had been driven much further south.—WILLIAM PALMER, *Smithsonian Institution, Washington, D. C.*

Occurrence of *Helminthophila leucobronchialis* in Virginia.—I have to announce the capture of this Warbler by myself on May 15, near Fort Meyer, Arlington, Alexandria Co., Va. It was moving quickly in the underbrush in a low wet wood, and at the moment when shot was hanging back downwards, in the manner of *H. chrysoptera*. I heard no note, as I shot it as soon as possible, thinking it was a Golden-winged Warbler, which is very rare here. This is, I believe, the fourteenth specimen that has been taken, but the first south of New York. The specimen, which is a male, agrees closely with the description of the type as given in No. 1, Vol. 1, of the 'Bulletin of the Nuttall Ornithological Club,' except that it has more olive mixed with the yellow on the crown. The specimen is now in the National Museum Collection, No. 104,684, and is the first one that it has received.—WILLIAM PALMER, *Smithsonian Institution, Washington, D. C.*

Another Example of *Helminthophila leucobronchialis* from Connecticut.—Mr. Harry W. Flint has kindly presented me with a specimen of this Warbler which he killed at New Haven, Conn., May 19, 1885. It is a male, and shows a slight suffusion of yellow under each eye and on the chin, as well as a light bar of the same color across the breast; rest of underparts white. The wing bars are very much restricted, and the white is tinged with yellow, and there is a spot of the same color on the back.—JNO. H. SAGE, *Portland, Conn.*

Nesting of the Worm-eating Warbler (*Helminthoherus vermicivorus*) in Southern Connecticut.—One of our most trustworthy collectors, Mr. Harry W. Flint, formerly of Deep River, but now of New Haven, Conn., took a nest of this rare species at New Haven, June 7, 1885, containing five eggs. He writes that "the nest was on the ground, and composed almost wholly of leaves, and lined with red rootlets; it was not roofed over, but the leaves of the *Kalmia*, near the roots of which it was placed, almost hid it from sight. Indeed, it was so clearly hidden that when I took my eyes off it to follow the bird, it required fully a minute to find the nest again, although I had not moved." It was on a hill-side, in a very secluded and dark spot in deep woods.

The nesting of this species at New Haven was noticed by Mr. George Woolsey in 'Bulletin N. O. C.,' Vol. V, p. 116.—JNO. H. SAGE, *Portland, Conn.*

Probable Breeding of the Wheatear (*Saxicola ænanthe*) on the North Shore of the Gulf of St. Lawrence.—I have before me three specimens of *Saxicola ænanthe*, all of which were shot at Godbout, on the north shore of the St. Lawrence, near the point where the river widens into the Gulf, by Mr. Napoleon A. Comeau. Two others were seen, making five individuals noted within thirteen months. Following is the complete record: May 18, 1884, one shot. Sept. 19, 1884, male shot. May 24, 1885, one seen. June 9, 1885, female shot and mate seen.

Mr. Comeau writes me that in the female shot June 9, "the eggs were pretty well developed." He adds, "I think there can be no question now about the bird breeding on this coast."

It is safe to infer that the five individuals seen were but a small portion of those actually present along the coast; hence the species can no longer be regarded as "an accidental straggler from Europe." Moreover, the finding of two birds (presumably a pair) at Godbout so late as the 9th of June, taken in connection with the statement that the female contained ova which "were pretty well developed," point strongly to the conclusion that they would have nested at no very great distance. And this conclusion is strengthened by the fact that the Wheatear is known to breed in June at Disco, Greenland,* fifteen hundred miles north of Godbout.—C. HART MERRIAM, *Locust Grove, N. Y.*

Nest and Eggs of the Philadelphia Vireo. The nest and eggs of the Philadelphia Vireo (*Vireo philadelphicus*) have hitherto been unknown, so far as I can find. But on the 9th of June, 1884, while camped near

* Fabricius says of it: "Nidificat mense Junio inter lapides majores, gramine arido cum muscis et plumis raris internixtis," etc. (*Fauna Grœnlandica*, 1780, p. 123); and nearly a century later (July 19, 1875), Sir George S. Nares found "several parties of young Wheatears . . . flying about the rocks near the shore" at Prœuen, nearly two hundred miles north of Disco (*Narrative of a Voyage to the Polar Sea*, Vol. I, 1878, p. 29).

Duck Mountain, I found a nest of this species. It was hung from a forked twig about eight feet from the ground, in a willow which was the reverse of dense, as it grew in the shade of a poplar grove. The nest was pensile, as usual with the genus, formed of fine grass and birch bark. The eggs were four in number, and presented no obvious difference from those of the Red-eyed Vireo, but unfortunately they were destroyed by an accident before they were measured.

Before shooting her I watched the bird for a week. She exhibited a combination of shyness and fearlessness; but this is rather characteristic of the Vireos. She would continue on the nest while I watched her from just below, and when scared off would quietly hop on to a twig and then disappear in the foliage without uttering any complaint. Lying on the ground just below the nest I found another nest of precisely similar construction. This I hung on a low twig, intending to take it to camp on my return; but coming back it was again found on the ground; and though I hung it several times in the willow, taking care to fasten it as securely as the occupied nest, it was always pulled down. There is no doubt that the Vireo was the agent, but the motive for the act I can scarcely understand.

The bird on being shot answered perfectly to Coues's description, except that on the breast it was of a much brighter yellow than I was led to expect.—ERNEST E. T. SETON, *Toronto, Canada.*

A White-winged Junco in Maryland.—On February 1 of this year, I shot near Ilchester, Howard Co., Md., a male *Junco hyemalis* with very distinct white wing-bars; quite as well-marked as in typical *J. aikenii*. Although Juncos with traces of white on the wing-coverts are not very uncommon, this particular specimen is believed to be unique as regards the large amount of white. Several 'experts' who have examined it concur in pronouncing it singular in this respect. Otherwise it agrees with ordinary *hyemalis*. It is now in the U. S. National Museum (No. 102,219), where all 'good things' in the bird line should be.—C. W. BECKHAM, *Washington, D. C.*

Junco annectens—A Correction.—Owing to an unfortunate delay in the transmission of proof sheets, mention of the occurrence of *Junco annectens* was omitted from my article, "Winter Notes from New Mexico," in the present number of 'The Auk.' I took three individuals on December 6 and 22. They were all in company with *J. caniceps* and *J. oregonus*, and doubtless others passed unnoticed among the many flocks of Juncos constantly met with.—CHARLES F. BATCHELDER, *Cambridge, Mass.*

Capture of *Ammodramus caudacutus nelsoni* in the Lower Hudson Valley, New York.—For a short time in the autumn, included in the time between the 25th of September and the 10th of October, Sharp-tailed Finches are comparatively common over certain portions of the low

meadows which border the Croton River near its mouth. Some dozen or more specimens have been secured in the last four or five years, and without exception all of them were of the smaller inland variety. They are easily distinguished from the typical maritime species, by their smaller size, shorter bill, and darker plumage. They are evidently migrants, as none of them have been observed in this vicinity in summer.—A. K. FISHER, M. D., *Sing Sing, N. Y.*

Swamp Sparrows and Yellow-rumps—A Question of Evidence.—It seems well to caution collectors against the inference that a bird winters in a given locality because it happens to be found there at some time during the winter. The writers of two interesting notes, printed on page 216 of the present volume of 'The Auk,' make this hasty generalization. It is hardly possible that Swamp Sparrows passed the winter in Massachusetts, in a season so rigorous as was that of 1884-85 after the middle of January; Mr. Chadbourne certainly does not produce sufficient evidence for the conclusion that they did so. It is even less likely that Yellow-rumped Warblers tarried in Maine throughout the same season; no person who kept a record of the weather during that remarkable winter will, I think, draw such an inference from Mr. Goodale's note.—NATHAN CLIFFORD BROWN, *Portland, Me.*

The Song of *Cardinalis virginianus*.—Mr. Bicknell's note on the song of the Cardinal Grosbeak reminds me that it sings at a much *earlier* date in Kansas. It is a permanent resident, abundant at all seasons. Its song may be heard from February 1 to August. Should the days be bright and warm, its song begins even in January. If, during February, the weather should become extremely cold, its song ceases for a time. Like the Mockingbird (*Mimus polyglottus*), it sings at night. I have heard its song in the 'small hours' of the night, during February, March, and April.—D. E. LANTZ, *Manhattan, Kans.*

The Black-throated Bunting, Yellow-breasted Chat, and Connecticut Warbler in Ontario.—On June 1, 1884, Mr. Wm. L. Bailey, collecting with Mr. A. P. Saunders and the writer at Point Pelee, found several Black-throated Buntings in a meadow about two miles from the end of the Point. Knowing of no previous record in Canada, we were all much interested; and subsequently, in extending our search, we found one or more pairs in almost every field. All our efforts to discover a nest seemed doomed to fail; and even when we spent much time and care in watching the birds, and marking down the place where the supposed nest was, we could never succeed. The males spent much time in singing their monotonous ditty from tree-tops and fence-posts, and even during the heat of the day our presence was sufficient to start them going. This appeared to act as a partial alarm to the female, and if we approached, the male would fly over her and give an alarm-note, precisely after the manner of the Bobolink under similar circumstances.

On June 6, in passing through one of the 'Bunting fields' on the return trip, the writer flushed a female from a fresh set of five eggs of the usual size and color. The nest, which is now before me, was placed *on*, not *in* the ground, among the stems of a tuft of weeds, and is composed of leaves externally, and lined with fine, dry grass. Its measurements are as follows: outside diameter, 100 mm.; inside diameter, 63 mm.; height outside, 63 mm.; depth inside, 45 mm. These birds were observed in every suitable locality on the Point, and on the return drive they were heard constantly till we had gone three miles into the mainland, when no more were noticed.

On June 6, when about a mile farther up the Point, the writer heard a strange note, and at every search for the author found an Orchard Oriole, and, not being very familiar with that bird, attributed the note to it. Shortly afterward Mr. Bailey arrived at the same place, and called out, "Did you hear the Chat?" Instantly every one was on the *qui vive*, and after some time a glimpse of the bird was obtained, but not the bird itself. A hunt for it on the two following days was finally rewarded by the capture of a fine female Yellow-breasted Chat, with ovaries as large as a sa pea. Further search resulted in nothing more than this, the first capture in Canada; and though we looked carefully, we did not even find the beginning of a nest. Reference has already been made in 'The Auk' to the remains of a specimen of this species that Mr. Thos. McIlwraith picked up at Hamilton, Ont. No doubt they are regular summer visitors at Pelee Island, Point Pelee, and some places along the shore of Lake Erie.

On September 15, 1883, there flew into a store in this city a Connecticut Warbler, which was, as far as I then knew, the first Canadian specimen. In December of the same year, a consultation with Mr. McIlwraith disclosed the fact that he had some specimens of the same species, which had never been satisfactorily separated from the Mourning Warbler. These have been in his possession for years. Again in May, 1884, attracted by a new note, after spending some time in a swampy thicket, I succeeded in capturing another of this species near London; and since knowing their note have found them tolerably common, but quite shy here as swamp birds, and quite common at Point Pelee, for a few days in June, as ground feeders in dry places, where, on the above trip, several were procured.—W. E. SAUNDERS, *London, Ont.*

A Belated Bird.—The Chewink (*Pipilo erythrophthalmus*) returns to this region in limited numbers every spring. It is not usual to see very many of them, a pair at most together, and oftener one alone. They depart as regularly every autumn, and we see no more of them until some pleasant day in spring, when the weather has become quite warm. But very curiously to me, one of these birds did not depart with its associates in the fall, and is still here (Dec. 21, 1884). During the past ten days the mercury has ranged from 10° to 31° *below zero*, and yet my Chewink stays about the barnyard, as bright and lively as though we were in the midst of warm, bud-swelling spring days! On the coldest morning, I found him

in a little close shed, from which he escaped through a broken window-pane. He alighted on a limb of a tree only three or four feet from the window, and I had a good look at him. He seemed to be shivering with cold, but still active. He is quite tame, and very freely goes about among the cattle and hogs searching for food. If we could only get hold of him we would give him better quarters within doors, for it seems scarcely possible that he can long survive such temperature. He evidently 'got left' when the autumn migration took place, and his 'inherited experience' was too limited to prompt him to attempt the journey alone.

P.S.—Jan. 2, 1885. The Chewink is still here. This afternoon I caught him in an out-building. We looked him over and let him go. He is in good condition—sound and plump—despite our -40° temperature! He is solitary and alone, no birds of any species being about.—CHARLES ALDRICH, *Webster City, Iowa.*

Cowbird Wintering in Western New York.—A few weeks ago my attention was called to a strange bird which was feeding on the street with *Passer domesticus*. On getting a good view I saw it was *Molothrus ater*. The egg from which it was hatched was probably laid and hatched in a Sparrow's nest, and the bird, reared by the Sparrows, failed to mingle with the rest of its species. I have seen it a number of times since, and a young man told me last week that he saw it nearly every day. I am quite anxious to know if it will survive through the winter with its foster parents. Being itself a vagabond, it is a fit companion for *Passer domesticus*.—J. L. DAMON, *Lockport, N. Y.*

Nest and Eggs of *Calypte costæ*.—In a paper read before the January meeting of the Ridgway Ornithological Club, descriptive of the Californian Trochilidæ, reference was made to the finding of a nest and eggs of *Calypte costæ*. Considering the rarity of the nests and eggs of Costa's Hummer, perhaps a description of them may not fail of interest to the readers of 'The Auk.'

Three nests of this bird were found by the writer at Arrow-head Hot Springs, San Bernardino County, Cal., May 15, 1883; but unfortunately but one set of eggs was secured. One set was accidentally shaken from the nest; the other nest was out of reach.

Finding no account of the breeding habits of the bird in question in such books as are at my disposal, I wrote to Mr. H. W. Henshaw for information, who regretted that he could not enlighten me, not having met with the bird in any of his wanderings; but he was of the opinion that nothing had been recorded respecting the nest and eggs of this species. He, however, kindly forwarded my letter to his friend Mr. L. Belding, of Stockton, Cal., with request to send what information he could bearing on the subject. Mr. Belding writes concerning *Calypte costæ* as follows:—

"I have met it at various places, — Guaymas, on the east side of the Gulf of California, at La Paz, Cape St. Lucas, Cerros Islands, and other localities on the west side of the Gulf, but never recorded much concerning

it, as its manners were quite similar to those of other Hummingbirds of my acquaintance." He also says, "You will find two nests described by Mr. Ridgway (Proc. U. S. Nat. Mus., Vol. V, p. 542). These nests, like all I have seen, were in shrubs or small trees, the highest only about six feet from the ground, in a palo-verde, or gum tree. Each of the nests described held two eggs; but I lost or broke one from each nest."

So it would seem from this that Mr. Belding met with mishaps as well as myself.

Arrow-head Hot Springs are distant about five miles from the town of San Bernardino, lying a mile or so up the side of the San Bernardino Mountains. In the neighborhood of the Springs are several small cañons, running back into the mountains, the sides of which are clothed with such trees as alder, sycamore, and mountain laurel. Among these the Black-chinned Hummer (*Trochilus alexandri*), as well as the Costa, were breeding quite abundantly, and building their nests in close proximity to, or overhanging, a beautiful mountain stream, which wound its way down between and over the mighty boulders. The locality was extremely picturesque. These Hummers constituted about all of the bird life of the cañon.

Speaking of one set of eggs of *C. costæ* being accidentally shaken out of the nest recalls to mind an incident which I also find in my field notebook, viz:—

"We had been noting how persistent the females were in occupying their nests, even after they had been frightened away from them several times. In one case I held my hand about a foot from one while she was on the nest, without any fear being evinced on her part, until an attempt was made to catch her; this manœuver was repeated a number of times, when she would always return to the nest and sit there as unconcernedly as possible. Finally my companion struck at her with his hat and hit her, at the same time striking the bough that the nest was on, precipitating her and the eggs into the stream below." A most tragic end, indeed, to such a peaceful existence!

Incubation was very far advanced in this set, as was proven by one of the eggs dropping upon a flat stone near the water's edge, on which a well-formed chick was deposited, which would have hatched in a day or two.

The nest containing the two eggs saved, which is now before me, measures 1.60 inches in diameter externally; 1 inch in internal diameter; and .60 of an inch deep on the inside. In make-up it is altogether different from any Hummer's nest that I ever saw, being destitute of all cottony and downy substances usually employed by Hummingbirds in constructing their dwellings.

In this case the main body of the nest has the appearance of a mass of spider webs, small bits of dried leaves, and leaf-bud scales, interwoven in a compact mass. By examination, I also find that the birds have utilized the remains of an old nest in forming the foundation for this one, which was built partly in the fork of one of the lower branches of an alder tree, and situated between five and six feet from the ground. A few feathers line its interior.

The eggs were in a somewhat advanced stage of incubation, and some difficulty was experienced in blowing them. They are a trifle smaller than the eggs of *T. alexandri*, and considerably smaller than those of *T. colubris*. Their color strikes me as being not so pure a white as the eggs of the latter. As the male bird was not observed in the vicinity of the nest, I may add that the female was shot and afterwards identified by Mr. Ridgway, which fact should be sufficient guarantee of the correct identification of the specimens.—B. T. GAULT, *Chicago, Ill.*

Curious Food for the Kingfisher (*Ceryle alcyon*).—A few years ago I examined the contents of the stomachs of two young Kingfishers (*Ceryle alcyon*), and found, to my surprise, instead of the usual remains of fish, fragments of various beetles (Coleoptera) belonging to the families Carabidæ, Dytiscidæ, and Scarabæidæ, the Carabidæ and Scarabæidæ being exclusively inhabitants of the land. Among the Scarabæidæ an almost perfect specimen of *Aphodius fumetarius* was recognized.

Mr. A. P. Chadbourne, of Cambridge, Mass., who shot both the birds in question, has furnished me with the following information. He says: "The Kingfishers were shot at Kennebunksport, Me., on July 14, 1881. They were both young birds, and were shot *in* the nest with a collecting pistol. I observed one of the adults on the ground in a ploughed field near the river side, but did not shoot it. The young were fully feathered and able to fly."

I am ignorant as to whether the food of the young of this species has been studied by any one else or not, but is it not possible that they may be fed regularly by their parents upon insects?—R. HAYWARD, *Cambridge, Mass.*

Occurrence of the Sharp-shinned Hawk in New Hampshire in Winter.—Mr. Wm. Little, of Manchester, N. H., writes me that a specimen of *Accipiter fuscus* was killed there Jan. 24, 1885, by Geo. H. Walker, and mounted by Hiram P. Young. This is, I believe, the first recorded instance of its capture so far north in winter.—JNO. H. SAGE, *Portland, Conn.*

[It may be of interest to add that a female Sharp-shinned Hawk was taken in Cambridge, Mass., Dec. 15, 1884, by Mr. Joseph L. Goodale, who has the specimen in his collection.—J. A. ALLEN.]

Early and Accidental Occurrence of *Catharista atrata* and *Tantalus loculator* in Kansas.—Dr. Louis Watson, of Ellis, Kansas, wrote me April 14, 1885, of the capture on the 27th of March, of a Black Vulture, a species not before noticed there. Also that "A Wood Ibis barely escaped capture March 26. It had been about the Creek (Big Creek) on my premises for several days; but after receiving a charge of No. 6 shot at short range rose over the bank with a drooping leg, and has not been seen since. It is almost *incredible* that it should be here, or anywhere else so far north, so early."—N. S. GOSS, *Topeka, Kansas.*

The Glossy Ibis and Avocet at San Diego, Cal.—On January 1, while on my way to the Santa Margarita Valley duck-shooting, I noticed a small

flock of Avocets from the cars. They were amongst other Waders in a slough adjoining the ocean. Again, whilst lying behind cover in the valley awaiting Ducks, I noted a solitary individual, but could not get a shot. The same day a companion with me killed two from a flock of about twenty Ibises. A few days previous a market hunter in the town brought me one, and later two individuals of the same bird. He told me that with the exception of one killed in the same vicinity (Mission Valley) last year, they were the first he had met with or heard of in several years' hunting. The Avocet he had never seen, although I know of an authentic capture of seven on the Bay shores a few years since. Both birds are of sufficient rarity here to warrant notice of their unusual presence this year, and the size of the flock of Ibises seen in the Santa Margarita is especially unusual, as previous records have only been of, at most, six or seven individuals.—GODFREY HOLTERHOFF, JR., *San Diego, Cal.*

The Eggs of the Knot (*Tringa canutus*) found at last!—No fact is more generally recognized among ornithologists than the different degrees of distinction, so to speak, attaching to the discovery of the eggs of different birds. The nests of some species have been found early, or by accident; others before their absence from collections has excited much notice; while others still have long been the object of special and diligent search, and the failure to find them has been commented upon by many distinguished writers. Of this latter category no more marked example can be found than the Knot (*Tringa canutus* L.). Seebohm, in his entertaining 'Siberia in Europe,' tells us that when he and Harvie-Brown started for the Petchora, the birds "to the discovery of whose eggs special interest seemed to attach, were the Grey Plover, the Little Stint, the Sanderling, the Curlew Sandpiper, the Knot, and Bewick's Swan."* And in a foot note he adds: "The Knot (*Tringa canutus*, Linn.) was the only one of these six species of birds which we did not meet with in the valley of the Petchora. It probably breeds on the shores of the Polar basin in both hemispheres, but its eggs are absolutely unknown."

Major Henry W. Feilden, naturalist to the Nares Arctic Expedition of 1875-76, says: "I was not so fortunate as to obtain the eggs of the Knot during our stay in the Polar regions, though it breeds in some numbers along the shores of Smith Sound and the north coast of Grinnell Land. . . . During the month of July my companions and I often endeavored to discover the nest of this bird; but none of us were successful. However, on July 30, 1876, the day before we broke out of our winter-quarters, where we had been frozen in eleven months, three of our seamen, walking by the border of a small lake, not far from the ship, came upon an old bird accompanied by three nestlings, which they brought to me."† These young I have seen in the British Museum at South Kensington,

* Siberia in Europe. By Henry Seebohm, London, 1880, p. 2.

† Narrative of a voyage to the Polar Sea. By Capt. Sir G. S. Nares, London, Vol. II, 1878, pp. 211-212.

where, in company with a pair of the old birds, they constitute one of the most attractive of the many 'natural groups' which adorn Mr. Sharpe's department.

Lieut. A. W. Greely, U. S. A., Commander of the late Expedition to Lady Franklin Sound, succeeded in obtaining the long-sought-for egg of this species; and has had the extreme kindness to ask me to publish the first account of it.

Lieut. Greely writes me: "The specimen of bird and egg were obtained in the vicinity of Fort Conger, latitude $81^{\circ} 44'$ N. The egg was 1.10 inch [28 mm.] in the longer axis, and 1 inch [25.40 mm.] in the shorter. Color, light pea green, closely spotted with brown in small specks about the size of a pin-head."—C. HART MERRIAM, *Locust Grove, N. Y.*

Southern Range of *Rissa tridactyla kotzbuei*.—In the last number of 'The Auk' (Vol. II, p. 222), Mr. N. S. Goss mentions the capture of *Rissa tridactyla kotzbuei* in Washington Territory, and thinks it to be its most southern record. We have, however, received it from Mr. Charles A. Allen, taken at Nicasio, Cal.—SOUTHWICK & JENCKS, *Providence, R. I.*

The Relationship of *Podiceps occidentalis* and *P. clarkii*.—About four years ago Mr. Henshaw* discussed the relationship of *Podiceps occidentalis* and *P. clarkii*, as shown by a series of eleven skins collected by me in San Francisco Bay, Cal. Owing to lack of specimens from different localities, and from the breeding grounds of these forms, I am unable to give a definite opinion respecting the conclusion arrived at by Mr. Henshaw, but will leave the now generally accepted belief of the specific identity of the two forms until they can be studied from fresh specimens on the breeding grounds. From my own investigations I decidedly incline to the opinion that the differences which, prior to Mr. Henshaw's investigations, were supposed to characterize different species or varieties, are in reality only sexual.

Of the twenty skins of this bird which I have prepared fifteen are females, and can easily be distinguished from the males, the female differing from the male in size and in the general appearance of the bill. In fact, I find no difficulty in distinguishing the sexes in the fresh bird before skinning. The color and curvature of the bill as seen in skins are of little aid, as the bill so warps in drying that a bill slightly recurved in life may become very much recurved in the dried skin. The color of the bill, also, soon changes after death, especially if the bird be suspended by the legs for a time before skinning. Through the courtesy of the authorities of the National Museum I was kindly afforded an opportunity to examine twenty-five specimens of these Grebes in the collection of the Museum, and with one exception I correctly determined the sex at sight by the

* On *Podiceps occidentalis* and *P. clarkii*. By H. W. Henshaw. Bull. Nutt. Orn. Club, VI, pp. 214-216.

appearance of the bill alone. I have found that birds of 24.50 inches in length or less are females, and those 25.50 inches or more in length are males. No. 199, a female, which in Mr. Henshaw's article is given as 26.25 inches in length, is an apparent exception. The longest bill I have measured was 3.20 (chord of culmen), and the shortest 2.13, the average being 2.50. The lores vary in tint from white to the color of the head, in both sexes; and I have seen January specimens with white lores, and June birds with dark lores, and the reverse.—WALTER E. BRYANT, *Oakland, Cal.*

The Western Grebe in Manitoba.—In Coues's 'Key' I find the Western Grebe (*Podiceps occidentalis*) described as a bird of the Pacific Slope. It will then be not a little surprising to readers of 'The Auk' when announcement is made that this bird is common in Northern Manitoba. After I had made the discovery for myself I was a little disappointed to read the following in Professor Macoun's 'Report': "This bird [the Western Grebe] seems to be altogether unknown in the interior, and yet it has bred in thousands at Water Hen River. From time immemorial up to the present it has only been known from the Pacific Coast."

I examined specimens taken at Long Lake, Winnipeg, where it is common, and others from Shoal Lake, further north, where it is abundant. Thus it will be seen that its numbers increase as we go north towards the Saskatchewan Valley, for Water Hen River is much farther north still.

The following completes my list of Manitoba Grebes:—

Podiceps griseigena holbælli. RED-NECKED GREBE.—Scarce.

Podiceps cornutus. HORNED GREBE.—Very common.

Podilymbus podiceps. DAB-CHICK.—COMMON.—ERNEST E. T. SETON, *Toronto, Canada.*

Capture of Escaped Cage-birds.—Mr. Forrest Ball, of San Bernardino, Cal., writes that on Jan. 12, 1884, he took at that place "a Cockatoo Paroquet (*Nymphicus nova-hollandiæ*). It was resting on a tall cottonwood tree, basking in the sunshine, and was apparently perfectly at home in its strange surroundings. As it is an Australian species, it was no doubt an escaped cage-bird, but from its perfect condition it had, I surmise, been out of captivity a considerable time. The specimen is now in my collection."

Mr. Joseph L. Goodale also writes me that on Nov. 2, 1884, he shot, in the Belmont (Mass.) orchards, a Java Sparrow, "which was lively and in good condition." The capture of exotic, even tropical, species of birds, more or less common as cage-birds, in various parts of the United States, has been from time to time recorded, while other instances that have never been published have come to my knowledge. Generally the birds thus taken, even when captured in the colder parts of the year, are reported as found in good condition, and as showing rarely any trace of previous confinement. The fact that their natural habitat is generally very remote—not unfrequently south of the equator—and that they are species often met with in confinement, seems sufficient evidence that they are in reality 'escapes,' and therefore not to be counted as stragglers to our fauna. Yet it is of interest to know that such species are so well

able to maintain an apparently comfortable existence, unaided by man, under, to them, such strange environment. — J. A. ALLEN, *American Museum of Natural History, Central Park, New York City.*

Introduced Game Birds in Oregon and Idaho.—Several years since our consul to Japan sent over quite a number of Japanese Pheasants—exact species to me unknown. The birds were liberated below Portland, Oregon, on Sanvie's Island, and are known to have bred. While on duty at Vancouver Barracks I met a gentleman who informed me that he had seen, not long before (the summer of 1883), an old bird with several young near where the Pheasants were first liberated. In the autumn of 1883 a female was killed just below Vancouver. I saw this one, and the skin is now in the possession of Mr. John Jaggyat. The bird killed was one of a pair seen flying across the Columbia from the Oregon side to Washington Territory. The river at this point is nearly a mile wide, and the point of crossing was at least fifteen miles above the place of *planting*. By this it appears that the 'plant' has been established. The bird is a strong flyer and bids fair to be a valuable acquisition. Oregon and Washington Territory have passed laws protecting these birds.

The Bob White (*Ortyx virginiana*) has been successfully introduced to the Boise Valley, Idaho. Three years since I found a covey on the west side of the Snake River, fifty miles below Boise City, where they were first liberated. I never saw coveys so large or numerous as I found them about Boise. Cover and food, as well as climate, are all favorable.—TIMOTHY E. WILCOX, *Assist. Surg., U. S. A.*

Fourth Addendum to List of Birds Ascertained to Occur within ten miles from Point de Monts, Province of Quebec, Canada; based chiefly upon the notes of Napoleon A. Comeau.—(For original List and previous Addenda see Bull. Nutt. Ornith. Club, Vol. VII, No. 4, Oct. 1882, pp. 233-242; Vol. VIII, No. 4, Oct. 1883, p. 244; and The Auk, Vol. I, No. 3, July 1884, p. 295; Vol. II, No. 1, Jan. 1885, p. 113.)

Mr. Comeau has recently sent me skins of the five following species:

174. *Dendræca castanea*.—♂ shot at Godbout the last week in May, 1885.
175. *Dendræca palmarum hypochrysea*.—♂ shot at Godbout, May 21, 1885.
176. *Cotile riparia*.—Shot at Godbout, June 8, 1885.
177. *Poœcetes gramineus*.—Shot at Godbout, April 24, 1885. Others were seen the same day and the next, and on May 10.
178. *Falco islandus*.—* A very handsome ♀ shot at Point de Monts, Jan. 7, 1885. Another was seen at Godbout, March 23, 1885.
179. *Bartramia longicauda*.—♂ shot at Godbout, May 7, 1885.
180. *Lobipes hyperboreus*.—Shot at Godbout, May 27, 1885.—C. HART MERRIAM, *Locust Grove, New York.*

* For authority for the name *Falco islandus* Brünn., see Stejneger in 'The Auk,' Vol. II, No. 2, April 1885, pp. 184-187.

CORRESPONDENCE.

[Correspondents are requested to write briefly and to the point. No attention will be paid to anonymous communications.]

The Popular Names of Birds.

TO THE EDITORS OF THE AUK:—

Sirs: The 'powers that be,' I understand, are preparing a 'Check List,' and revising the scientific and *popular* names of our birds.

There is no doubt that scientific names are entirely in the hands of scientists, but it seems to be overlooked that popular names are just as completely in the hands of the people. Scientists may advise, but not dictate on this point. A short analysis of the principle of common names may place the matter in a new light.

A bird's name, to be popular, must be distinctive, and in accordance with the genius of our language. Examples of such are Thrush, Rail, Heron, Hawk, Crane, Night-Jar, and many others. These are truly popular names, evolved originally out of a description, handed down and condensed and changed until they have assumed their present terse, abrupt, and, to a foreign ear, uncouth forms, but, nevertheless, forms in accordance with the pervading spirit of the Saxon tongue; or, in other words, they are *really* popular.

On the other hand, look at the so-called popular, but really translated, scientific or spurious English names given to our birds, taking as examples the following: Baird's Bunting, Leconte's Sparrow, Wilson's Green Black-capped Flycatching Warbler, Bartram's Sandpiper, Sprague's Lark, Wilson's Thrush, Black Ptilogonys, Semipalmated Tattler, Fasciated Tit, Florida Gallinule, etc.

Surely, the gentlemen whose names are applied to these birds have not so slight a hold on fame as to require such aids as these to attain it, if indeed aids they be, which I question; for such nomenclature *cannot* stand the test of time.

If you show to an 'out-wester' the two birds mentioned above as Baird's Bunting and Leconte's Sparrow, and tell him that these are their names, he will probably correct you, and say one is a 'Scrub Sparrow,' the other a 'Yellow Sparrow.' Convince him that he is wrong; and in a month he will have forgotten all but the names he formerly gave them; they are so thoroughly appropriate and natural that they cannot be forgotten. The next name in the list above given is clumsy enough to strangle itself with its own tail. A lad on the Plains once brought me a *Neocorys spragui*, and asked its name. I replied that it was Sprague's Lark. Soon afterward he came again; he could not remember that name; so I told him it was a 'Skylark,' and he never forgot that. On the Big Plain that seed was sown, and not all the scientists in America can make, or ever could have made, the settlers there call that bird anything but 'Skylark.' And I consider that lad precisely represented the English-speaking race; he rejected the false name, and readily remembered the

true one, and was aided by that which was apt and natural. No better illustration could be given of the fact, that phraseology may be the life or death of a cause, according as it is happy or unfortunate.

A similar instance is the case of 'Bartram's Sandpiper.' Ever since Wilson's time this name has been continually thrust into the face of the public, only to be as continually rejected; 'Upland Plover' it continues to be in the east, and 'Quail' on the Assiniboine, in spite of Bartram and Wilson, and will continue so until some name, answering all conditions, is brought forward; for here, as elsewhere, the law of the survival of the fittest rigidly prevails. As an example of the fit ousting the false, note how, in spite of scientists, 'Veery' is supplanting 'Wilson's Thrush' throughout the length and breadth of the land.

The spurious English names scarcely need comment, they so evidently contain in themselves the elements of their own destruction. Imagine a western farmer being told that a certain songster was a 'Ptilogonys.' In spite of the books, the other three examples cannot hold ground against 'Willet,' 'Ground Wren,' and 'Waterhen,' respectively.

The purpose of a Check List that includes English names is, I take it, not to attempt the impossible feat of dictating to our woodmen what names they shall give their feathered friends, but rather to preserve and publish such names as are evolved in the natural way,—names which are the outcome of circumstances. Only in case of egregious error is a common name to be superseded; and in doing this it must be remembered that no name can be popular unless true to the principles of the English tongue. It must be short, distinctive, and, if possible, descriptive. Of this class are Veery, Junco, and Vireo. These are the only successful artificial names that I can at present recollect. Among natural English names for American birds are Bobolink, Chewink, Kingbird, and many others. Such as these not only more than hold their own, but are as great aids to the spread of knowledge as the Ptilogonys kind are hindrances; while such as Wilson's Thrush can only be accepted as provisional, until the better knowledge of the bird and its surroundings shall result in the evolution of an English name founded on true principles.

ERNEST E. T. SETON,
of Manitoba.

Glen Cottage, Howard Street,
Toronto, March 21, 1885.

NOTES AND NEWS.

THE determination of the place and date of the next meeting of the American Ornithologists' Union having been referred by the Union to the Council, the Council has decided upon New York as the place, and the third Tuesday in November (Nov. 17) as the date, of the meeting for 1885.

At a meeting of the Council of the A. O. U., held in Washington, April 21, the Committee on the Revision of the Nomenclature and Classification of North American Birds presented its final report, which was accepted, and ordered printed with as little delay as possible, under the supervision of the Committee. The Report, as previously stated in the pages of 'The Auk' (I, pp. 371, 372), consists of a code of nomenclatural rules, adopted by the Committee for its guidance in its work, and a new Check List of North American Birds. It may now be announced that the first part of the report, the 'Code,' is already in type, and the printing of the Check List will proceed as rapidly as practicable, and the publication of the whole Report may be expected during the coming autumn.

As announced in the April number of 'The Auk' (II, p. 223), an appropriation of \$5000 was granted by the last Congress, through the Department of Agriculture, in aid of the work of the Committee on Migration. This fund, which becomes available on July 1, is to be expended through the officers of the Department of Agriculture, in behalf of 'Economic Ornithology,' which will not only embrace the migration and distribution of our birds, but also their food habits in relation to agriculture. In recognition of the action taken by the A. O. U. in securing the appropriation, the Department of Agriculture invited the Council of the A. O. U. to select a superintendent to carry on the contemplated work, already so earnestly begun under the auspices of the Union. The Council, at its meeting held April 21, in Washington, unanimously appointed Dr. C. Hart Merriam, Chairman of the Committee on Migration, as its representative. Dr. Merriam will enter upon the duties of the position July 1, having his official headquarters in the Department of Agriculture at Washington. As his first assistant he has been fortunate in securing the services of Dr. A. K. Fisher of Sing Sing, Superintendent of the 'Atlantic District,' in the work of the Migration Committee.

Mr. William Brewster returned recently from the mountain region of Western North Carolina, where he spent portions of May and June in ornithological exploration. Although failing to discover any 'lost species' (such as Bachman's Warbler and the like), he was enabled to obtain a great deal of information about the summer bird-life of this interesting and hitherto ornithologically unexplored region. A detailed report of Mr. Brewster's interesting discoveries may be expected in a future number of 'The Auk.'

Mr. H. B. Bailey's well-known oölogical collection—one of the largest and finest private collections in the United States—has recently been purchased by the American Museum of Natural History, in New York City, to which it has already been transferred. This collection includes the nests and eggs of many foreign birds, particularly European,

as well as those of nearly all of the known North American species, many of which are represented by extensive series. Mr. Bailey is still engaged upon its rearrangement, by whom it is to be put in order and duly labelled.

Mr. George B. Sennett, having recently become a resident of New York City, has placed his large ornithological collection on deposit in the American Museum of Natural History in Central Park. As is well known, Mr. Sennett's collection is especially rich in Texas birds and their nests and eggs, which it is his intention to enlarge and render complete by further explorations in that State. It already contains large series, both of the skins and nests and eggs of many of the rarer species, and thus forms a valuable addition to the available material for research in ornithology contained in the American Museum.

Mr. William Brewster has been appointed 'Assistant in Ornithology' at the Museum of Comparative Zoölogy in Cambridge, taking the place formerly held there by Mr. Allen. The Museum is to be congratuated on having secured so capable and trustworthy a curator as Mr. Brewster is well known to be.

At a meeting of the Ridgway Ornithological Club of Chicago, held May 14, the following officers were elected for the ensuing year: President, B. T. Gault; Vice-President and Treasurer, G. F. Morcom; Secretary, H. K. Coale; Curator, H. L. Fulton; Librarian, J. G. Parker. The papers read at recent meetings of the Club include 'Notes on Arizona Birds,' by Mr. Coale, and 'The Woodpeckers of Michigan, with remarks on their Anatomy,' by Dr. Gibbs.

Mr. Cory, having completed his work on the 'Birds of Haiti and San Domingo,' is now gathering material for a general work on the Birds of the West Indies, "including the Bahama Islands, and the Greater and Lesser Antilles, excepting the Islands of Tobago and Trinidad." As preliminary thereto he has already published a list of the species, giving their West Indian range.

Dr. L. Stejneger's Report on his ornithological work in Kamtschatka is rapidly passing through the press at the Government Printing Office, and its publication may be expected at an early day. It forms 'Bulletin 29' of the U. S. National Museum, and is entitled 'Results of Ornithological Explorations in Kamtschatka and in the Commander Islands.' It will make a volume of 300-350 pages, and be illustrated with 8 plates (7 of them colored), and numerous cuts in the text. About 150 species will be treated in detail, besides which a list will be given of all the species known to have been taken in Kamtschatka.

MR. JOHN MURDOCH'S Report on his ornithological work at Point Barrow is already in type, and its early publication may be expected. It forms a part of the general Report of the Point Barrow Expedition, and is illustrated with two colored plates of Ross's Gull (*Rodostethia rosea*).

WE are informed that Mr. Thomas McIlwraith, of Hamilton, Ontario, is preparing a work on the birds of that Province, to be published early in the fall. It will give not only a list of the species thus far recorded from Ontario, with notes on their distribution and habits, but also include descriptions of the species, thus forming a convenient hand-book of the birds of Ontario.

THE present year continues prolific in new serials devoted to natural history, most of which include notes and papers relating to ornithology. Many of these serials are to be classed as juvenile and amateur, having very little scientific importance, yet, as they claim to have a wide circulation, doubtless do much good in awakening and extending interest in natural history subjects. The crudities and ignorance displayed by some of them, however, scarcely make them very safe guides to the young student, or give the publications a very creditable standing. In several cases they are to be looked upon rather as the advertising adjuncts of dealers in natural history material than as *bona fide* natural history journals. Among the purely ornithological claimants upon our attention is 'Our Birds,' an 8-page monthly, published at Holyoke, Mass., by Frank H. Metcalf, and edited by Richard S. Brooks. The first number is dated May, 1885. 'The Western Oölogist,' published by Frank M. Sherin, at Milwaukee, Wis., is another ornithological aspirant to fame, a 4-page 'specimen number' of which bears date, May, 1885. It is to be issued monthly, and enlarged to eight pages per number. It is to be hoped that in future a little more care will be bestowed upon the spelling of scientific names, and that a higher grade of ornithological knowledge will be displayed in these publications than is evinced by one of the papers under notice, which describes a Pelican as "a wading bird standing six feet high in his bare feet." 'The Museum,' a 16-page monthly, of which the first number also bears date May, 1885, is an illustrated journal, published at Philadelphia, "in the interests of Young Naturalists and Collectors of all Classes." Its list of contributors includes well-known writers in various departments of natural history; it is edited with care, neatly printed, and altogether presents an attractive appearance. Among the new serials should also be mentioned the 'Bulletin of the Brookville Society of Natural History,' published by the Society, the first number of which has recently appeared, containing a paper in part ornithological by Mr. A. W. Butler.

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ON THE BREEDING HABITS OF SOME ARIZONA
BIRDS.

BY W. E. D. SCOTT.

FOURTH PAPER. *Virco vicinior*.

THE investigation of the bird fauna of the cañon described in detail in the first paper of this series proved so interesting that I was rarely tempted outside of a very limited region during that part of the year 1884 preceding October 1, and a number of species that did not attract my attention at all during that period proved not only to be abundant on the mesas and foot-hills of the region immediately adjoining, but were of the greatest interest on account of their heretofore supposed rarity. Chief among these birds stands the Arizona or Gray Vireo (*Virco vicinior*), of which, so far as I can learn, only about a dozen individuals have been procured since its discovery and description by Dr. Coues in 1866. This species, on the San Pedro River foot-hills of Las Sierras de Santa Catalina, at an altitude ranging from 2800 to 4000 feet (which is here the point of meeting of the mesquite timber and the evergreen oaks), is, excepting the Least Vireo (*Virco pusillus*), the commonest form of Vireo, being fairly abundant, as the following notes will show.

The two altitudes mentioned seem to be about the limits of the species while breeding, and most of the birds secured were

obtained between 3000 and 3500 feet altitude. Once, during the season of 1884, on June 26, I met with the Arizona Vireo. This one had probably strayed rather outside of the usual range, and was at a considerably higher altitude — well within the oak belt — than any since obtained. The locality where the species is most abundant is where the mesquites terminate and the oaks begin; there being of course a sort of gradual transition and no well or clearly defined line, the two forms of trees being mingled about equally. I have found that the smooth flat mesas, and the broad open bottoms of the wider cañons are quite as much frequented by them as the rough and broken hillsides, and it is difficult to ride about anywhere between the altitudes above mentioned, without hearing the very characteristic song of the species. In the trees and bushes they rarely go higher than fifteen feet from the ground, and though I have several times seen them *on* the ground, yet the limbs about ten feet from it seem to be the most frequented. The birds are exceedingly active, and, though not very shy, are difficult to procure, for as soon as one tree or bush has been well and very rapidly hunted over for food, a rather long flight, not by any means to the nearest tree or bush, is made; and by the time the collector is in range again the song is very likely to be heard at considerable distance.

This song is clear and liquid in character, and is kept up so continually as to betray the presence of the male bird, which I believe monopolizes it, even a quarter of a mile away, under favorable circumstances. It is composed of single whistling notes, generally delivered rather slowly, and seemingly with hesitation, and in an abstracted way, as if the performer were thinking the while of other affairs; and yet frequently this sort of abstraction seems cast aside, and the same series of notes are given with a precision and brilliancy that calls to mind a fine performance of a Scarlet Tanager, or even of a Robin.

The first arrival in my neighborhood this year (1885) was on April 1, when I took a male in full song. This was in a pretty rolling grass country, where the trees are rather scattered, and at an altitude of 3500 feet. The next day another male was secured, and I think the arrival must have become general by the 10th to 12th, though, as I was called away about this time, I cannot be positive. On my return I went to the pine woods of this vicinity, and so my note book says nothing about Gray Vireos for more

than a month; for, on my return from the pines, about May 1, I was fully occupied with looking after some of the rarer Hummingbirds.

My notes take up the story of this species again on May 19, when I surprised myself by taking three males, and began to realize that another rarity among my bird neighbors was possibly common. Of this I became sure in a few days, as I took four more males on the 20th, and seven males again on the 26th of May, though it was not until the 31st of the month that I secured a female of the species, although my series then included twenty-four male birds. Among the seven individuals procured on the 26th of May were two young males that had just left the nest and were under the care of the male parent bird. So the first breeding must begin very soon after the arrival of the species.

On this day, too, I found a nest, to be presently described, which was just finished. I saw both parents, the female sitting on the nest, and the male singing in the bushes close at hand. The female was very tame, and in order to see the interior of the nest I was obliged to touch her with my fingers before she would leave her home. Several times afterwards, in watching the progress of laying, I was obliged to repeat this action, and once had to lift the bird out of the nest. On May 26, when I discovered the nest, then apparently finished, it contained no eggs, although the female was sitting very close, as I have described. Daily visits to the spot showed the same circumstances obtaining until May 30, when the first egg was laid; and then an egg was laid daily until June 2, when the laying was completed, four eggs being in this case the full set. Thus the female, after the nest was apparently complete, was constantly sitting on the nest, it being all the time empty, for four days. The habit of sitting on a finished nest for a considerable time before *any* eggs are laid also obtains among certain other species of this region, and seems, from my experience, very characteristic of the Arizona Jay (*Aphelocoma sordida arizonæ*); but of this I shall have more to say in detail in another place.

On the 2d of June I took this nest, then containing four eggs, as well as both the parent birds (Nos. 2714 ♀, and 2711 ♂), the female being taken from the nest in my hand. And also on the same day, at a point about a mile distant, I obtained a second nest containing young, three in number, about ready to leave the

nest. On June 4 I found a pair of these birds just starting to build; but this was the second brooding, as the female of the pair, which I took before I discovered the nest, clearly showed. And also on this day I found the first *fully fledged* young shifting for themselves. June 6 was the date on which I found a second nest containing three eggs, slightly incubated, the female of this nest being catalogued as No. 2757. On the same day I also found a completed nest on which the female was sitting, as before described, but which contained *no* eggs as yet, and it being at rather a remote point I did not visit it again.

My notes as to time of nesting are concluded on June 11, when I found a pair just beginning a nest, and another pair with a nest about half finished, both nests being situated in mesquites about seven feet from the ground, in smooth, flat country, at an altitude of about 3500 feet.

From the nests obtained, which are before me as I write, and from notes as to their location, etc., I append the following details.

Nest of June 2. Built in a kind of thorn bush, almost at the extremity of one of the upper and overhanging branches, six feet from the ground. It is composed externally of the dry outside skin or bark of a coarse kind of grass, rather loosely woven. But immediately beneath this loose, external layer is a wall of the same material, very closely and strongly woven. The lining of the nest, which is very distinct from the walls, extends throughout the interior. It is much thicker on the bottom of the structure, but extends up to the rim, where, however, it is thin. It is composed of fine dry grasses, arranged on the sides of the nest in concentric layers, much as the horse-hairs are placed in the nest of *Spizella domestica*. On the bottom this arrangement does not obtain, but the grasses cross one another seemingly at random, forming a soft mat. The walls are uniformly about one-fourth of an inch in thickness, and the shape of the entire structure is that of a half sphere. The external diameter at the rim is two and three-fourths inches, and the diameter at the same point inside is two and one-quarter inches. The depth outside is two inches, and inside one inch and three-quarters. The nest is attached at the rim for almost the entire circumference very much like a Red-eyed Vireo's nest, but here the resemblance ceases, for it is not fastened to the many

small twigs, on which it rests, that pass diagonally downward, so that it is not even a semi-pensile structure. The thorns of the bush, which are from an inch and a half to two inches long and very sharp, protect the nest in every direction, for the whole is entirely surrounded by twigs and small branches. Its contents are four eggs, rather rounded in general shape, though one end is somewhat sharper than the other. The ground-color is rosy when fresh, becoming a dead white when blown, rather sparsely spotted with irregularly shaped dark umber brown dots, chiefly at the larger end. One of the eggs is unfortunately too badly broken to measure, but is not apparently very different from the other three, which measure, respectively, $.77 \times .59$, $.78 \times .58$, and $.75 \times .57$ inches. This nest was obtained on the side of a hill near the bottom of a rather broad cañon, at an altitude of 3500 feet. The structure is, as a whole, very symmetrical, but is widely different from that of other Vireos which breed in the neighborhood.

The nest of June 2, which contained three young, was built in a mesquite, growing on a little mesa in flat country, the altitude being about 3500 feet. It was not quite six feet from the ground, and is composed externally much like the last, with the addition of some thin broad shreds of mesquite bark to the material already described. It is not at all symmetrical, however, and presents a rather careless appearance as a whole. It is built near the centre of the tree, in a upright V, formed by two upright limbs, the larger being an inch and the smaller five-eighths of an inch in diameter. But the rim is attached for almost half an inch of its circumference to a small twig, which, reaching out from another branch at considerable distance, crosses the two upright limbs forming the V at right angles. The attachment to this small twig, it will be noticed, is very slight, and on the other side of the nest the rim is attached for an inch to a twig which makes out from the larger of the two upright limbs. The bottom of the nest outside does not quite rest in the angle of the V, but the sides rest firmly against the limbs forming it, and the result is a Vireo's nest resting in a crotch, and in no degree pensile. The largest external diameter is three and the smallest two and a half inches; the walls are exceedingly thin except at the rim and bottom, and loosely constructed. The largest interior diameter is two and five-eighths and the smallest two and one-

eighth inches. The exterior depth is two inches and a quarter and the interior depth one inch and three quarters.

The nest of June 6, which will complete the present series, was found in a locality similar to the nest first described, at an altitude of 3000 feet. It was built in a 'catclaw'—a kind of small mesquite—four feet from the ground. The situation was at the extremity of a branch in a horizontal V-shaped fork, to which two-thirds of the rim is fastened, the other third being free. But considerable support was afforded, directly underneath the nest, by a small twig, which is fastened into the structure. The materials do not vary from those of the first nest of June 2 already described, either inside or out, except that a few downy feathers are added to the lining. The whole is a symmetrical half-sphere in shape. External diameter, two and three-fourths inches; interior diameter, two and one-fourth inches. Exterior depth, two inches; interior depth, one inch and three-quarters. It contained three slightly incubated eggs, which do not vary in color from those already described, except that the spots are of a slightly redder brown, and they are more concentrated at the larger end. The eggs are rather smaller and even more rounded in general shape than the other set spoken of, being but little more pointed at one end than at the other. They measure $.72 \times .53$, $.70 \times .55$, and $.68 \times .53$ inches, respectively.

My series of this species at present numbers fifty-four specimens—forty-two males and twelve females—all taken, with the one exception noted above, between April 1 and June 11 of the present year. They present very little variation in size or color, and the young in first plumage do not differ materially from the adult birds.

LIST OF BIRDS OBSERVED IN SUMMER AND
FALL ON THE UPPER PECOS RIVER,
NEW MEXICO.

BY H. W. HENSHAW.

THE observations embodied in the following list were made during the interval between July 18 and October 28, 1883, by

Mr. E. W. Nelson and the writer, in the mountains about forty miles east of Santa Fé, New Mexico. As faunal lists of the birds of New Mexico are yet by no means as numerous as is desirable, and as the summer avifauna of the region embraced in our observations is almost or quite unknown, I have thought it worth while to present them to the consideration of the readers of 'The Auk.'

For the time above indicated, and for an area of country of say five square miles, it is believed our examination was extremely thorough, and it is doubtful if a single species breeding within that area escaped notice. Although equal attention was paid to the fall migrants, it is not impossible that by rapid movements a few species which chanced to occur in small numbers may have passed by unheeded.

At first sight the list will appear to be remarkable for what it does not contain rather than for what it does, and there are few traces in it of the richness usually associated with Arizona and New Mexican bird lists. That the cause of its meagreness in species, and the absence of southern forms may be clearly understood, it is necessary that the nature of the country be thoroughly comprehended.

The Pecos River winds the greater part of its long and tortuous course through the state of Texas, emptying into the Rio Grande. Rising, as it does, in the mountains of New Mexico, it might be thought that its course would furnish a readily travelled highway from the Rio Grande Valley for Texan and possibly for Mexican species. Possibly in the lower part of its course it may afford such a highway, but the list will show that no intrusion of Texas birds towards its sources takes place, and — so far as the mountain part of its course is concerned — the reason is readily apparent; for, in following its windings, no sooner do we reach the mountains than we find a new climate and an entirely new character of country, and one of forbidding aspect to lowland-loving species. For the greater part of its course, especially in Texas, it flows a sluggish stream confined between low banks, the vegetation of which is limited to low willows and scrub, with here and there groves of cottonwoods. As it nears the mountains the scene changes, as if by magic. First come foot-hills, thickly clothed with piñons and cedars — typical home of the Piñon and Woodhouse Jays. Ere many miles the stream begins to cañon, and thence on the pines and spruces begin to put in an appear-

ance, until, fifteen miles above the foot-hills, it cuts its way through a deep course, with extremely picturesque walls of rock, and with every element of the wild mountain scenery which accompanies its cañons to its sources. The water, when undisturbed by the frequent summer rains, is clear and cold, and, like most similar mountain streams, harbors great numbers of fine trout. Even in midsummer the temperature of the region is cool and refreshing, the natural effect of low latitude being counteracted by the altitude, and even more by frequent prolonged rains and thunder showers, which latter are often accompanied by hail. These showers are of almost daily occurrence (or were in 1883) from about the middle of July till the first of October.

The focus of our operations was at the junction of a small tributary — Willow Creek — with the main stream, some twenty miles from Glorietta, on the Atchison, Topeka, and Santa Fé Railroad. Glorietta may be taken as representing the foot-hill region, with which the present paper has nothing to do.

The character of the vegetation that clothes the mountain ridges is essentially sub-alpine. The elevation at the mouth of Willow Creek is about 7800 feet, but the ascent from this point is extremely rapid, whether the main stream be followed or any of the side cañons, which form beds for the numerous rivulets that make their way on all sides from the heights above.

The highest mountain in the vicinity is Mt. Baldy, which is distant some twenty miles from the mouth of Willow Creek, and 12,661 feet above sea level. This peak we were not able to visit, though it is not probable that any very marked change takes place in the character of the avifauna in so short a distance.

At the height of our camp (7800 feet) a luxuriant growth of pines covers the hills, giving way, a thousand feet higher, though not wholly, to the spruces. On many of the gentle slopes, the pines are thinly dispersed, and are so scattered, or gathered in picturesque groups, as to convey the idea of artificially arranged parks — a suggestion still further heightened by the sward of green grass, enlivened with patches of bright flowers. The summits of many of the smaller heights are almost entirely bare of trees and shrubbery, and are covered with a luxuriant growth of grasses, affording the finest sort of pasturage. The sides of many of the ridges and cañons are heavily clothed with brush, mainly of scrub oak. At a height of about 7500 feet, scattered aspens be-

gin to put in an appearance, and soon assert a place for themselves in the shape of large groves. Wherever fire has devastated the pine tracts the fire-cleared space is immediately occupied by aspens, which spring up in the shape of extremely dense thickets — so dense that in them the vision is limited to the space of a very few feet. These are the favorite haunts of deer and bear. Everywhere the streams are densely fringed with brush of various sorts, chiefly, however, willows and alders, and it is these thickets that form the chief resort for the smaller birds. Flowers of many kinds and of various hues are visible on all sides, and no sooner is one species through flowering than another takes its place. In short, the flora is of the character usually pertaining to mountain areas of low latitude where a deep and fertile soil, added to a copious rainfall, combine to produce an abundant vegetation.

Our observations began sufficiently early (July 18) to make sure of all the summer residents, and they were continued until the close, or near the close, of the fall migration, the first indications of which were noticed about August 1.

I was particularly interested in ascertaining the exact time of the beginning of the fall migration, but it is a matter of no little difficulty to determine, in the case of a given locality, just when the first movement southward begins; nor is it less difficult in the case of a given species of bird. Among the smaller birds, the first act in the final drama of migration is the assemblage of individuals into flocks, either of one or of many species. But this gathering begins as soon as the young are fairly on the wing, and, in the instance of many species, before the young are strong enough to travel. It is quite certain that the small birds generally do not undertake the fall journey until the old ones have somewhat recuperated from the effects of family cares, and until the young have gained their full strength. But, so far as observation of these flocks goes, there is little to be learned, since it is practically impossible to determine whether the flocks under observation from day to day consist of the same individuals, or are fresh arrivals from farther north. For instance, on our arrival, July 18, many of the Nuthatches and Audubon's Warblers had already gathered into flocks of old and young, and while in flocks the young passed from the nestling into fall plumage, and the adults donned their fall dress. There was thus an interval of probably three weeks before any of them migrated, if indeed the Nut-

hatches migrated at all. The observer is conscious of a general movement among the small birds, but it is difficult to tell whether it is actual migration or not until certain evidence presents itself in the arrival of species previously unnoticed. So, at least, it was in the present case; and the first supposed migrating visitor was seen August 8 — a single Wilson's Flycatcher (*Myiodyctes pusillus*). Previous to this, however, there had been a movement on the part of the Hummingbirds, which was disclosed by the sudden departure of the males of *Selasphorus platycercus*, which took place about August 1, and constituted the first positive evidence of the fall migration.

After August 8 the tokens of a general movement on the part of the birds became perfectly evident; and soon flocks of birds from farther north put in an appearance. At this time the birds, instead of being scattered through the woods, according to the exigencies of nesting, were gathered into large flocks, composed of the most heterogeneous elements. Bluebirds, Nuthatches, Titmice, Warblers, Creepers, Snowbirds, and Woodpeckers, all trooped through the forest together, and where one moment reigned perfect silence, the next was enlivened by a chorus of chirps and call-notes, the signals by which the motley throng is held together in an ever moving but united band. As the fall advanced, these flocks were of less frequent occurrence and contained a smaller number of species, as well as of individuals, until towards the end of October, when they were composed mainly of Snowbirds, Nuthatches, and such species as intended to winter not far away.

The list pretends to be nothing but a record of our own observations, and whatever value it may possess will be derived mainly from the fact that it contains no species but those actually seen, and leaves those which were not seen to be added by the labors of future investigators.

1. *Hylocichla ustulata swainsoni*. SWAINSON'S THRUSH. Fairly numerous in fall. First appeared September 13.

2. *Hylocichla unalascæ*. DWARF THRUSH. — Rare; in fall only. A single specimen secured October 12.

2 a. *Hylocichla unalascæ auduboni*. ROCKY MOUNTAIN HERMIT THRUSH. — Numerous as a summer resident. The young were out of the nest July 18.

3. *Merula migratoria propinqua*. WESTERN ROBIN. — Was not detected breeding, although it probably summers here. Common in fall.

4. *Cinclus mexicanus*. AMERICAN WATER OUZEL. — Numerous all along the upper Pecos. By July 18, the time of our arrival, young birds

were able to care for themselves, though not yet fully divested of the nestling plumage. Abandoned nests were seen on ledges of rock overhanging the stream, and one pair had built on a stringer beneath a bridge.

5. *Sialia mexicana*. CALIFORNIA BLUEBIRD. — A numerous summer resident. Apparently the *S. arctica* does not breed here.

6. *Myiadestes townsendi*. TOWNSEND'S SOLITAIRE. — Numerous. Families of young birds in the curious mottled plumage, resembling young Thrushes, were being led through the pines by the old birds during the last half of July. The season of song had entirely passed.

7. *Regulus calendula*. RUBY-CROWNED KINGLET. — Young birds in nestling plumage were taken August 17 to September 11. This was the first intimation received that the species was present. It doubtless nested among the spruces, well up on the ridges. Abundant in fall.

8. *Parus montanus*. MOUNTAIN CHICKADEE. — Numerous summer resident; mainly confined to the evergreens.

9. *Parus atricapillus septentrionalis*. LONG-TAILED CHICKADEE. — Also numerous. Much more frequently seen among deciduous trees than the preceding. Both were conspicuous in fall among the gatherings of small birds.

10. *Sitta carolinensis aculeata*. SLENDER-BILLED NUTHATCH. — Abundant summer resident among the pines.

11. *Sitta pygmaea*. PIGMY NUTHATCH. — Extremely abundant. As soon as the young are out, the different families come together, and birds of various hatchings may be shot from the same flock. I was unaware how much time this species spends on the ground. In a large flock there are always more or less of its members searching on the ground for insects.

12. *Helminthophaga celata*. ORANGE-CROWNED WARBLER. — Fairly numerous in the breeding season, but more so during the fall migration. It seems a little curious that the *H. virginia*, which breeds abundantly in middle Colorado, was not detected here at all. It may possibly summer in the foothills, and it doubtless occurs among them in the migrations.

13. *Dendroeca aestiva*. YELLOW WARBLER. — The presence of this species was detected — that was all. Farther down the river it was doubtless more common.

14. *Dendroeca graciae*. GRACE'S WARBLER. — This species was one I confidently expected to find as a summer resident. Nevertheless, it was not discovered until after the fall flight had commenced, and the assumption is that all the specimens taken, perhaps half a dozen, came from farther north.

15. *Dendroeca auduboni*. AUDUBON'S WARBLER. — This Warbler breeds abundantly through the pine woods. Young birds were out of the nest July 18, and we saw them gradually assume the fall plumage, as well as the old change to their winter dress.

16. *Dendroeca townsendi*. TOWNSEND'S WARBLER. — This is well known as a Pacific coast species, and one not ascertained to breed anywhere in the Rocky Mountain Region. It made its appearance from the

north in considerable numbers about August 25. By September 20 it began to be uncommon. The last individual was seen September 28. It was always found associated with flocks of various other birds, and chiefly frequented the pines. The disproportionate number of young birds over old ones was very noticeable, not more than half a dozen of the latter being seen.

It would be interesting to know from just what source these Rocky Mountain migrants are derived, and why if, as seems probable, they come from the Sierras, they select this route instead of taking a due southern course. The species is unknown in the Rocky Mountains in spring, except along the southern border.

17. *Geothlypis macgillivrayi*. MACGILLIVRAY'S WARBLER. — This is another species which, as a summer resident, was to be expected. Not one was seen, however, until the bird appeared from the north, which it did the last days of August. In early September it became fairly common in the thickets along the streams.

18. *Myiodioctes pusillus*. WILSON'S BLACKCAP. — So far as we could ascertain, this bird did not breed in the locality. The first one was seen August 8. It soon became extremely numerous; nowhere, in fact, have I ever seen it so abundant. It was found in every flock of migrants, and also in companies of half a dozen or more among the alders and willows of the streams.

19. *Vireo gilvus swainsoni*. SWAINSON'S VIREO. — Fairly numerous as a summer resident, though by no means so common as it is farther north. This locality may be, in fact, near the extremity of its southern limit in summer.

20. *Vireo solitarius plumbeus*. PLUMBEUS VIREO. — Rather common in summer, but not nearly so numerous as the bird is at this season in Colorado and other points to the northward. Almost exclusively restricted to the pines.

21. *Vireo solitarius cassini*. CASSIN'S VIREO. — This is another Pacific coast form, many individuals of which, for some unexplained reason, choose to reach their southern winter quarters by way of the Rocky Mountains rather than to follow the Sierras, where alone it is known to breed. It also is not known to occur in the Rocky Mountains in spring, except in the extreme southern portion of the range. It was first seen September 2 and soon became fairly numerous. It was found in the pines moving about with the Warblers and other migrating birds, but it also frequented the aspens and oak brush. It was a noticeable fact that while this bird was quite silent, the Plumbeous Vireo, which was now moulting its worn summer plumage, prior to moving south, was frequently in song, being, in fact, the only species that was so.

22. *Lanius ludovicianus excubitoroides*. WHITE-RUMPED SHRIKE. — A single bird was shot among some dead timber well up on a mountain ridge. The bird seemed to be quite out of place among its surroundings, and was, I presume, nothing but a straggler from the lower regions eastward.

23. *Tachycineta thalassina*. VIOLET-GREEN SWALLOW. — This, the only Swallow spending the summer in this locality, or in fact occurring at all, was extremely numerous all through the pine woods, where it finds every convenience for nesting in the multitude of perforated stubs. After the young were on the wing, the birds left the pine woods and resorted to the tops of the ridges and the open valleys where, high in mid-air, they were seen busily hunting for insects. September 8 they were still to be noticed, though the majority had departed some time before. A few days later and the last had disappeared.

24. *Pyranga ludoviciana*. LOUISIANA Tanager. — Not common; a few breed. Apparently the bulk of the species spend the summer farther north, as in Colorado, and northwards it is numerous.

25. *Carpodacus cassinii*. CASSIN'S PURPLE FINCH. — Not common; but few apparently pass the summer here, and we saw but few in the fall.

26. *Loxia curvirostra americana*. RED CROSSBILL. — I saw but one Crossbill, October 20. As I failed to secure it, its identity cannot be fully established. It was, however, presumably not the var. *mexicana*, but the Common Crossbill, which in 1873 I found to breed in the mountains near Fort Garland, in Southern Colorado.

27. *Chrysomitris pinus*. PINE FINCH. — Abundant in early fall, and doubtless breeding, though not detected by us in summer.

28. *Centropus ornatus*. CHESTNUT-COLLARED LONGSPUR. — A single specimen was shot by Mr. Nelson, September 12. This individual was probably the one seen by me a few days previously. The occurrence of this plain-inhabiting species, in a narrow valley in the midst of the pine woods, was of course accidental.

29. *Centronyx bairdi*. BAIRD'S SPARROW. — Two specimens of this Sparrow were secured. Both were in extremely worn plumage, and in this respect were similar to the many specimens secured by me in Arizona in 1873. I then interpreted this condition to indicate that they had passed the summer not far away, believing that they could not have migrated any distance in such dress. The two specimens secured here throw little additional light on the matter, since they may have straggled up the Pecos from their breeding grounds in the open grassy plains below, or they may have dropped in as migrants from the far north, from Montana or Dakota. The latter supposition is perhaps the more probable. It is well-known that the species migrates to the north along the foothills of Colorado in spring, and there is no recorded evidence that it breeds either in Colorado or elsewhere south of the Union Pacific Railroad. Still I am not aware that any of our Sparrows migrate south in the excessively worn condition that attends nesting. They usually spend some time in recuperating, and the moult is usually well along before they migrate. Collectors in the region, south of the known summer habitat of this Sparrow, will do well to keep a sharp lookout for it.

(To be concluded.)

INTERESTING RECORDS FROM TORONTO, CANADA.

BY ERNEST E. T. SETON.

As a result of the examination of numerous small collections in the city of Toronto I am able to make the following more or less extra-limital records. In every case I have examined the bird myself, and though in most instances debarred by sealed cases from taking measurements, etc., I am satisfied that the identifications are correct. Several occurrences of doubtful authenticity are omitted. Some of those given are specially interesting from their showing the tendency of many species to push farther and farther to the north. The nomenclature is that of Coues's 'Key,' first edition.

I take this opportunity of thanking the gentlemen named below for their courtesy in placing their specimens at my service.

BLUE-GRAY GNATCATCHER. *Polioptila cœrulea*.—A male in full song was taken by myself at Toronto, May 9, 1885.

EVENING GROSBEAK. *Hesperiphona vespertina*.—The Rev. John Doel, of Toronto, showed me a fine female specimen of this rare bird, taken at Toronto on Christmas day, 1854. Mr. Doel observed a flock of five or six feeding on the berries of the mountain ash, on Yonge Street. Two of these he secured, but one was too much mangled to be kept.

About Christmas, 1870, he observed another small flock but failed to secure any.

LAPLAND LONGSPUR. *Plectrophanes lapponicus*.—Individuals of this species have occurred in company with *P. nivalis* almost every winter as far back as the records here extend.

YELLOW-HEADED BLACKBIRD. *Xanthocephalus icterocephalus*.—This species has been taken a number of times, in company with the Red-winged Blackbird, by Mr. Wm. Loane, who describes it as the Californian Blackbird. The specimen I examined was taken by that gentleman; it is now in the possession of Mr. Jacobs of Centre Street, Toronto.

COMMON CROW. *Corvus americanus*.—Three albinos of this species were observed in the country east of Toronto, about three years ago. One of these was secured and is now in the

possession of Mr. C. A. Hirschfelder. It is pure white. No data.

CANADA JAY. *Perisoreus canadensis*.—In the winter of 1836 and the spring of 1837, according to Mr. Doel, this bird appeared about Toronto in great numbers. It was previously unknown in the district, and has not since been observed.

YELLOW-BILLED CUCKOO. *Coccyzus americanus*.—I have examined several specimens taken in the vicinity of Toronto. It appears to be a rare but regular summer resident.

RED-BELLIED WOODPECKER. *Centurus carolinensis*.—A female was taken at Toronto, May 19, 1885.

Colaptes auratus (hybrid with *C. mexicanus*).—This remarkable specimen was shot by Mr. Burton, just outside the City of Toronto, in September, 1883. The following is its description.

Sex? Length, 34 cm.; wing, 16.5; tail, 11.5; bill, 3.5; tarsus, 3; middle toe and claw, 3. Color: Above as in the male *auratus*, but darker and more pronounced. The purplish-gray of the throat is very rich and has a glaucous gloss. Pectoral crescent and black maxillary mark very large. Spots on the breast large and unusually numerous. Breast and sides tinged with yellow. First four primaries with shafts and under side red; the next two shade into yellow in the terminal third. The last two secondaries are as in *mexicanus*. The rest of the quills as in *auratus*. The under coverts are pink. The tail-feathers are as in *mexicanus*, but towards the middle are more and more tinged with yellow. Otherwise this specimen resembles a large male *auratus* in very high plumage.

I have nothing but descriptions and my memory for making comparisons with *mexicanus*, and suspect that the red on the quills is not quite so deep as in the typical bird. Yet this need not invalidate the description of the specimen, which is evidently a fine hybrid, and chiefly remarkable for having been taken at Toronto. This specimen is in the possession of Mr. Cross, taxidermist.

? **SNOWY PLOVER. *Ægialitis cantiana*.**—A specimen of this bird was shot here by Mr. J. Forman, May, 1880, and is now in the rooms of the Toronto Gun Club. It was at the time in company with some Piping Plovers (*Æ. meloda*). This specimen (sex?) answers in general, to the description in Coues's 'Key' and fully in regard to the bill; it differs in being much lighter in plumage. It is as follows: Pure white, with crown and back slightly tinged with gray, and showing dusky touches; the black

bar on the crown is strongly marked. No bar on the breast, but there is a dark patch just before each wing-band, fading away towards the back; a dusky patch on each ear; primaries dusky; the three central pairs of tail-feathers are touched with dusky near the tip. I had no opportunity to make measurements, but in the same case were *meloda* and *semipalmata*, and comparison with these makes me almost certain that it is *cantiana*. The bill is noticeably long, black, and slender. I never met the bird before, and have no material to aid me in settling the point.

AMERICAN SNIPE. Gallinago wilsoni.—A *white* specimen of this well-known bird was shot in Toronto marsh on the 3d of May, 1884, by Mr. H. Townson, in whose possession the bird now is. It was killed in company with two normal individuals of the same species. It is pure white, with the ordinary markings indicated in pale, creamy buff, the only dark shades being a few dusky touches on the scapulars, flanks, and subterminal tail-band. The legs and bill are yellowish flesh-color.

RUFF. Philomachus pugnax.—A specimen of this rare straggler was shot on Toronto Island in the spring of 1882. It is now in the possession of Mr. Young of Toronto. The bird was mounted in a sealed case, so that accurate measurements could not be made, but the general proportions and the large ruff were unmistakable. This specimen appears to agree with the maximum dimensions given in Coues's 'Key.' The ruff is not fully developed, and the face is still feathered. The color is as follows: Head, nape, hind-neck, and upper part of ruff gray with black pencillings; wing-coverts and scapulars black with light edges; chin, belly, crissum, and tail-coverts white; quills dusky; tail-feathers gray with black bars; throat, breast, and most of ruff glossy, greenish black.

GREAT WHITE EGRET. Ardea egretta.—A magnificent specimen of this beautiful Heron was shot at Lake Nipissing in 1883. It is now in the museum of Mr. C. A. Hirschfelder.

HYBRID MALLARD AND DUSKY DUCK (?).—In the rooms of the Gun Club there is also a supposed hybrid between these two species. Certainly it answers the description of no Duck ever found in this region, while it combines, in a remarkable degree, the characters of the two mentioned. It is known to the sportsmen here as a 'Brewer.' It was shot in this locality. No data.

BARROW'S GOLDENEYE. Bucephala islandica.—A fine male specimen of this Duck was killed here by Mr. Charles Pickering

on the 18th of April, 1885. This I examined in the flesh. It is the only one ever taken in this locality.

BUFFLEHEAD DUCK. *Bucephala albeola*.—An albino of this species was killed about thirty miles east of here, and is now to be seen in the possession of Mr. Jos. Taylor of Toronto.

HARLEQUIN DUCK. *Histrionicus torquatus*.—A female of this species is now in the rooms of the Toronto Gun Club. It was killed here in the fall of 1881, by Mr. Wm. Loane, who claims also to have taken a pair in the spring of 1861.

GLAUCUS GULL. *Larus glaucus*.—A fine specimen of this Gull was killed in Toronto Bay in the spring of 1884, by Mr. George Guest of this city.

ANALECTA ORNITHOLOGICA.

Sixth Series.

BY LEONHARD STEJNEGER.

XXIX. *Jacana* CONTRA *Parra*.

Linnaeus, basing his diagnosis upon Edward's pl. 48, in the 10th edition (1758), p. 152, described a *Fulica spinosa* as "F. fronte carunculata, corpore variegato, humeris spinosis, digitis simplicibus, ungue postico longissimo. Habitat in America australi." Description and plate apply with equal pertinency to the young Brazilian *Jacana*, commonly called *Parra jacana* Linn. The latter name, as we shall see presently, dates from 1766, and *spinosa* will, therefore, have to stand, as already indicated by Ridgway (*Water Birds*, I, p. 175).

As will be remarked, Linnaeus included the *Jacana* in 1758 in the genus *Fulica*. Brisson, with his usual excellent judgment of generic distinctions, made in 1760 a separate genus for this bird, describing the different plumages as different species, however. This genus, which he called *Jacana*, he characterized by the extremely lengthened claws, thereby excluding all the *Charadriidæ* with frontal lobes and wing-spurs, referring them to his

genus *Vanellus*, thus proving that he understood their true relationship.

Thus was first established the genus which has since nearly unanimously but wrongly been called *Parra*. Its proper name is *Jacana*, and its only type is *Jacana spinosa*.

Parra was not invented before 1776, when Linnæus — fully aware of Brisson's older appellation, for he quotes the latter — introduced as a genus a most heterogeneous assemblage, the chief characters of which were "Frons carunculata; carunculis lobatis; Alulæ spinosæ," ignoring not only Brisson's appellation but also his natural arrangement. *Parra*, therefore, includes not only the Jaçana, which Linnæus described twice, as *Parra jacana*, and as *Parra variabilis* (the latter being only a new name for *Fulica spinosa*), but also two of Brisson's *Vanelli*, which now are usually referred to *Chettusia* or *Lobivanellus*, and finally the bird which is so well known as *Chauna chavaria*.

Starting our nomenclature from 1758, it is clear that *Parra* for the Brazilian Jaçana is entirely out of question. Consequently the name of the family also should be changed, and will stand as Jacanidæ.

But even if we take 1766 for our starting-point, the result will be the same, viz., that *Parra* is untenable for the Jaçanas. *Parra*, as originally established, contained five nominal species, *P. dominica* and *senegalla*, which are Old World Charadriidæ, *P. jacana* and *variabilis*, which are the Brazilian Jaçana, and *P. chavaria*. Now, in 1774, Brisson's faithful follower, Jacob Schäffer, in his 'Elementa Ornithologica,' re-established the genus *Jacana*. He placed it next to *Vanellus* and gives the comparative characters as follows:

"Rostrum rectum; apice crassius, breve. VNGVICVLI brevis simi. Vanellus."

"Rostrum rectum; apice crassius, longiusculum. VNGVICVLI longissimi. Jacana."

referring at the same time to pl. vii, figs. i and ii, where is given colored representations of head and foot of Jaçana, probably copied from Edwards, pl. 48, and very recognizable. Not before 1811 was *Chauna* established by Illiger, leaving *Parra* for the two 'Vanelli' of Brisson.

1758-men may therefore tabulate the synonymy thus:

Jacana BRISS.

< 1758. — *Fulica* LINN., Syst. Nat. 10 ed., I, p. 152.

= 1760. — *Jacana* BRISS., Ornith., V, p. 121.

< 1766. — *Parra* LINN., Syst. Nat., 12 ed., I, p. 259.

1766-men will have to register the synonyms as follows :

Jacana SCHFFÄER.

< 1766. — *Parra* LINN., Syst. Nat., 12 ed., I, p. 259.

= 1774. — *Jacana* SCHÄFFER, Elem. Orn., fol. B, 2, pl. vii, figs. i, ii.

The name *Parra* should, therefore, be restricted to the genus having for type *P. dominica* or *P. seuegalla*, consequently the genus *Lobivanellus* Strickland, 1841, or more strictly to the group designated by Gray in his Hand-list (III, p. 11) as “*d* — ?.” Here I may further remark that *Lobivanellus* Strickl. really belongs to this latter group, being consequently a strict synonym of *Parra*, while Gray’s group *c* should stand as *Sarcogrammus* Reichb., thus :

Sarcogrammus REICHB.

> 1852. — *Sarcogrammus* REICHENBACH, Syst. Av., p. xviii (*Sarcogramma* in Jerdon, B. Ind. III, p. 648).

> 1864. — “*Vanello-chetusia* BRANDT” Jerdon, B. India, III, p. 646 (nec BRANDT).

> 1871. — *Lobivanellus* GRAY, Handl. III, p. 11 (nec Strickl. as restricted).

Parra LINN.

> 1766. — *Parra* LINN., Syst. Nat., 12 ed., I, p. 259.

> 1841. — *Lobivanellus* STRICKLAND, P. Z. S., 1841, p. 33 (as restricted by Reichenbach, 1852).

In regard to the synonym “*Vanello-chetusia* Jerdon, nec Brandt,” I may remark that I agree completely with Bonaparte in referring *S. inornatus* (and *cincreus*) to the same genus as *S. indicus* (= *goëusis*), as I can detect no structural difference of any consequence.

Gray has noted the facts concerning *Jacana* and *Parra* as specified above, calling the Jaçanas: “*Parra* Lath. 1790, nec Linn. 1766”! But he made a strange mistake in placing “*Parra* L., 1766.” as a synonym of *Sarcogrammus* Reichb.

XXX. *Colymbus nigricollis*, NOT A NORTH AMERICAN BIRD.

Colymbus nigricollis (Brehm) proper — that is to say, the Palearctic form — has crept into the lists of North American birds by a mistake, caused by the uncertainty as to which form authors meant by the name "*Podiceps auritus*."

"*Podiceps auritus*" was first introduced into the North American fauna by Audubon — Orn. Biogr. V, 1839, (p. 108, pl. 404); Syn., 1839, (p. 358); B. Am., VII, 1844, p. 322, pl. 482 — who described and figured specimens lent him by his "noble and kind friend the Right Honorable the Earl of DERBY, who received them from North America, where, as I am assured, it is not uncommon, although it has not been my good fortune to meet with it." This is the black-necked or 'eared' species; but, judging from the plate and the description ("the wings greyish-brown with a broad patch of white, the secondary quills being of that color"), in all probability the American race, *P. californicus* Heerm., as already indicated by Dr. Coues, who puts the references to Audubon in the synonymy of the latter form (B. Northwest, p. 733).

Mr. Lawrence, in Baird's 'Birds of North America' (1858, pp. 896, 897), enumerates both *californicus* and *auritus* as American, the latter solely on Audubon's authority, and copying his description. Hence the two names appear again in the Smithsonian 'Catalogue,' first octavo edition, 1859, as Nos. 707 and 708. It should be remarked, however, that at that time the relation of the 'California Grebe' to the black-necked or 'eared' species was not suspected, as only winter specimens were known. It was therefore compared with *P. cornutus*, the 'horned' Grebe, and not with the 'eared' one.

More recently *C. nigricollis* has been regarded as North American on account of the supposed occurrence of this form in Greenland. Professor Newton has been quoted as the authority, reference being made to his 'Notes on Birds which have been found in Greenland' (Arctic Manual, 1875, p. 110). Here is what he says:

"(51.) *Podiceps auritus*. Horned Grebe.

"A few immature specimens have been obtained in the southern part of Greenland."

This statement, however, is based solely upon Professor Reinhardt's 'List of the Birds hitherto observed in Greenland' (Ibis, 1861, p. 15), where it is formulated thus:

"87.* *Podiceps cornutus* (Gmel.).

"Only a few young birds, obtained in the southern part of Greenland."

It is evident from the above that it is the more northern species, "*C. auritus*, the Horned Grebe," that has been occasionally obtained in Greenland, and not the black-necked southern species. The mistake evidently arose from the belief that Newton's '*auritus*' was the same as the '*auritus*' of nearly all American authors up to Ridgway's '*Nomenclature*' (1880), and still of Dr. Coues's publications ('*Check-list*,' 1882, and '*Key*,' 1884).

Colymbus nigricollis (*auritus* Auct. nec Linn., nec Newton, nec Ridgw.) is a bird of rather southern distribution. In Europe it breeds only in the central parts, being a straggler to the Scandinavian peninsula and Finland; it is common in Central and Southern Russia, and eastward through the southern parts of temperate Asia as far east as Japan. Its alleged occurrence in Greenland, therefore, aroused my suspicion, and the investigation resulted as above in the expulsion of the typical *C. nigricollis* from the list of North American birds.

XXXI. "*Simorhynchus* MERREM, 1819."

I quote the following from my '*Ornithological Explorations in Kamtschatka and the Commander Islands*,' p. 38:

"Merrem is said to have established the genus *Simorhynchus* (nec KEYS. and BLAS., 1840, qui *Terekia* BP.) upon *A. cristatella* PALL. As early as 1868 Dr. Coues asked, 'Where is this genus named?' but nobody seems to have been able to give an answer. Nor do I know whether Merrem included more species than *cristatella* in his apocryphal genus. Anybody having the opportunity of investigating the matter would gain the lasting thanks of ornithologists by publishing the results — preferably a full extract of Merrem's paper as far as it relates to the present question — in any of the standard ornithological periodicals."

* "Those observed as yet in very few instances only, and the accidental stragglers, are marked with an asterisk" (*t. c.* p. 4).

Now that I am in the position to elucidate the matter myself, I ought, perhaps, modestly to give up my claims to "the lasting thanks of ornithologists," but in view of the fact that I have mostly earned anything but thanks for my 'discoveries' in old names, I can hardly afford to part with my right to score this last one to my credit.

In the article *Alca* of Ersch and Gruber's Encyclopædia* Merrem urges the necessity of subdividing Linnæus's genus *Alca*, proposing the following genera: 1, *Alca*; 2, *Mormon*; 3, *Simorhynchus*; 4, *Arctica*.

In response to my own request above I shall give a full extract of the article (pp. 405, 406) so far as it relates to the name in question:

"3. Starike. *Simorhynchus*. Die Stariken, denen wir im Teutschen ihren Russischen Namen lieszen, gesellte Pallas, durch den allein wir die erste genauere Kenntniz haben den Alken bei, obgleich er [page 406] selbst die Unähnlichkeit anerkannte, und sie sich auch von den beiden vorhergehenden Gattungen auffallend unterscheiden. Ihr Schnabel steigt nämlich vorn aufwärts, so dasz seine Spitze höher liegt, wie der Mundwinkel, er ist jederzeit glatt und ohne Wachshaut. Ihre Mundöffnung ist klein. Ihre Nasenlöcher liegen von der Stirn entfernt, von einer Erhöhung der Kant eingefaszt, welche gewissermaszen Nasenlöcherflügel bildet. Ihre Flügel bestehen aus 10 Schwungfedern der ersten und 16 der zweiten Ordnung. Die zweite ist die längste. Ihre Füsze sind wie bei den vorigen und ihr kurzer Schwanz besteht aus 14 Ruderfedern. Man findet sie allein im Meere zwischen Asien und Amerika, und sie legen ein einziges Ei auf die kahlen Felsen."

Merrem includes two species in the genus thus defined, viz., on page 406, *Simorhynchus cristatus*, based upon Pallas's *Alca cristatella*, and on page 407, *Simorhynchus Psittacula*, based upon the same author's *Alca psittacula*.

It will be a relief to quote, in the future, "*Simorhynchus* MERREM in Ersch & Gruber's Encycl., 1 sect., II, 1819, p. 405 (type *Alca cristatella* PALL.)" instead of "*Symorhynchus* 'MERREM 1819' fide G. R. GRAY, type, *Alca cristatella* PALL., fide GRAY."

* Allgemeine Encyclopädie | der | Wissenschaften und Künste | in alphabetischer Folge | von | genannten Schriftstellern bearbeitet | und herausgegeben von | J. S. Ersch und J. G. Gruber | Professoren zu Halle. | Zweiter Theil | mit Kupfern und Charten | — | Alga-Aldus | — | Leipzig, in Verlage von Johann Friedrich Gleditsch 1819.

XXXII. *Dendroica vigorsii* (AUD.).

The rule "once a synonym, always a synonym" necessitates the rejection of the specific name '*pinus*' for the Pine Warbler, as will be seen from the following account.

Linnæus (S. N. 12 ed. I, p. 187), in 1766, described correctly the Blue-winged Yellow Warbler as *Certhia pinus* basing it upon Edwards's plate 277, upper figure. Misled by the latter author he quotes as a synonym Catesby's plate 61, which is a poor representation of the Pine Warbler. Latham, in 1790, referred the bird described by Linnæus to the genus *Sylvia* calling it *Sylvia pinus*, a name which was adopted by Vieillot, 1807, in his Birds of North America.

Wilson, in 1811 (Am. Orn. III (p. 25)), demonstrated that the birds figured by Edwards and by Catesby are different species. Well aware of the term *Sylvia pinus*, he did not intend it as a new name, but he simply restricted it to Catesby's bird. In this he was wrong, as we have seen above. He should have left the name *Sylvia pinus* with the Blue-winged Yellow Warbler and given a new name to the Pine Creeper, but, instead, he bestowed the new name upon the former, calling it *Sylvia solitaria*. It should also be noted that the two birds were both included by him and subsequent writers in the genus *Sylvia*.

It is evident that *Sylvia pinus* Wilson 1811, nec Latham 1790, cannot stand under any circumstance. Another name being necessary we will have to take the one bestowed by Audubon, in 1832, viz., *Sylvia vigorsii*. The species should in the future be known as

***Dendroica vigorsii* (AUD.).**

SMITHSONIAN INSTITUTION.

Washington D. C., August, 1885.

DESCRIPTION OF A NEW CARDINAL GROSBEEK
FROM ARIZONA.

BY ROBERT RIDGWAY.

THE Cardinal Grosbeak from Arizona, hitherto supposed to be identical with *C. igneus* from Cape St. Lucas, proves, on comparison of numerous specimens, to be easily distinguishable.

I therefore propose for it the name *Cardinalis cardinalis superbus*, with the following characters:—

***Cardinalis cardinalis superbus*, subsp. nov.**

SUBSP. CHAR. — Similar to *C. cardinalis igneus*, but decidedly larger, and the female more richly colored.

Adult ♂ in breeding season (No. 98,942; U. S. Nat. Mus., Fuller's Ranch, Arizona, May 30, 1884; E. W. Nelson): Head, neck, and entire lower parts, including lining of wing, pure, rich, scarlet-vermilion, becoming gradually but slightly paler posteriorly. Nape, back, scapulars, rump, upper tail-coverts, wing, and tail, much duller, more brownish, red, the dorsal region tinged or mixed with light grayish brown: terminal portion of primaries clear grayish brown. Chin, upper part of throat, anterior part of malar region, lores, and narrow line from latter to base of culmen, black. Bill deep orange-red (bright vermilion in life): legs and feet horn-brown. Wing, 4.15; tail, 5.00; culmen, .85; bill from nostril, .60; depth at base, .70; tarsus, 1.10; middle toe, .72.

Adult ♂ in winter (No. 61,541, U. S. Nat. Mus., Colorado River, Arizona, Nov. 30, 1871; F. Bischoff): Similar to summer plumage, but all the feathers of the nape, back, scapulars, rump, and the upper tail-coverts conspicuously bordered terminally with brownish gray, and those of the lower parts similarly, but much more narrowly and indistinctly, bordered with brownish white. Wing, 4.15; tail, 5.10; culmen, .90; bill from nostril, .60; depth at base, .70; tarsus, 1.08; middle toe, .75.

Adult ♀ (No 98,944, Tucson, Arizona, Jan. 30, 1884): Head (except capistrum and crest), sides of neck, and lower parts in general, deep tawny buff, the top and sides of the head, and middle of jugulum, much tinged with dull vermilion; crest dull vermilion, the feathers tipped with light brown, or deep grayish buff. Capistrum dull gray, becoming nearly white on chin and upper throat. Lining of wing, including inner edges of remiges, pure light vermilion; tibiæ, crissum, and lower tail-coverts strongly tinged with vermilion. Nape, back, scapulars, rump, and upper tail-coverts uniform grayish brocoli-brown, lighter and more buffy on the nape, all the feathers tinged with dull red beneath the surface. Wings and tail dull brownish red, the greater coverts and tertials broadly edged with the color of the back, the tips of primaries light grayish brown, and rectrices narrowly edged with the same. Bill, orange-red (bright vermilion in life); legs and feet horn-brown. Wing, 3.80; tail, 4.70; culmen, .80; bill from nostril, .52, depth at base, .65; tarsus, 1.00; middle toe, .65.

Another adult female (No. 98,945, Lowell, Arizona, April 2, 1884, E. W. Nelson), has still more red than that described above, the entire top and sides of the head being strongly tinged with this color, as are also the lower throat, jugulum, breast, belly, and lower tail-coverts. The ochraceous-buff of the lower parts is paler, the feathers being somewhat worn and faded.

An adult female in Mr. Henshaw's collection (No. 911, Coll. H. W. H., Gila Co., Arizona, Nov. 18, 1881), differs from either of the National Mu-

seum examples in having but a trace of red on the side of the head, and much less of the same on the jugulum.

The adult males of the two forms which I have been able to examine measure as follows:—

Museum and No.	Collector.	Sex and age	Locality.	Date.	Wing.	Tail.	Culm'n.	Bill from nostril.	Tarsus.	Middle toe	Depth of bill at base.
17087, U. S.	Xantus.	♂ ad.	Lower Cal. (Cape St. Lucas).		3.65	4.40	.85	.55	1.02	.65	.67
12993, "	"	♂ "	"	"	3.70	4.50	.82	.50	1.02	.65	.65
20510, "	"	♂ "	"	"	3.70	3.50	.80	.51	1.00	.65	.65
20514, "	"	♂ "	"	"	3.75	4.40	.82	.52	1.02	.65	.62
20538, "	"	♂ "	"	"	3.70	4.50	.75	.55	1.02	.68	.68
86317, "	Belding.	♂ "	(La. Paz).	Dec. 21.	3.80	4.00	.80	.55	1.02	.68	.68
87551, "	"	♂ "	"	"	3.75	4.50	.78	.50	1.05	.65	.68
87552, "	"	♂ "	(San Jose).	April 11.	3.65	4.30	.75	.45	1.00	.62	.65
87553, "	"	♂ "	"	" 12	3.05	4.50	.78	.52	1.00	.65	.67
87555, "	"	♂ "	"	" 23	3.70	4.40	.82	.55	1.05	.65	.65
908, H. W. H.	"	♂ "	"	" 13	3.00	4.40	.75	.48	0.95	.68	.65
			Average,		3.70	4.45	.79	.51	1.01	.64	.66

C. superbus.

Museum and No.	Collector.	Sex and age	Locality.	Date.	Wing.	Tail.	Culm'n.	Bill from nostril.	Tarsus.	Middle toe.	Depth of bill at base.
49756, U. S.	Palmer.	♂ ad.	Arizona (Camp Grant).	Feb. 20.	4.00	5.00	.85	.55	1.10	.72	.70
49757, "	"	♂ "	"	" 10.	4.00	4.90	.85	.55	1.10	.72	.68
61541, "	Bischoff.	♂ "	(Colorado River).	Nov. 30.	4.15	5.10	.90	.60	1.08	.75	.70
68942, "	Nelson.	♂ "	(Fuller's).	May 30.	4.15	5.00	.85	.60	1.10	.72	.70
68943, "	"	♂ "	(Lowell).	April 2.	4.00	4.66*	.85	.55	1.12	.72	.68
99097, "	"	♂ "	(Crittenden).	July 15.	4.10	5.10	.87	.55	1.10	.70	.65
910, H. W. H.	"	♂ "	(Gila Co.).	Nov. 18.	4.05	5.10	.85	.57	1.07	.75	.65
			Average,		4.11	4.97	.86	.57	1.09	.73	.67

* Plumage very much worn.

ADDITIONAL NOTES ON THE NEST AND
EGGS OF SWAINSON'S WARBLER
(*HELINAIA SWAINSONI*).

BY WILLIAM BREWSTER.

SHORTLY after the publication of my first article on this subject* Mr. Wayne sent me two more nests of Swainson's Warbler, taken respectively June 27 and June 30, 1885. The first was built in a cane over a pool of stagnant water, at a height of about five feet; the second, also in a cane, was at a height of at least eight feet, and over clear, running water. The females of both nests were shot, thus rendering identification absolute.

The second nest was "found when the birds had just begun work, and I watched them repeatedly at their labors. They would fly up from the ground and, hovering like a Hawk or Kingfisher, fix the leaves in place with their bills. The female laid her first egg June 26, and one on each of the following two days. I took the nest on the fifth day, when dissection of the female showed that the set was complete."

The nest taken June 27 contained two eggs, chipped and on the point of hatching. Unfortunately both were broken in blowing, but Mr. Wayne describes them as "dead white without spots." He sends me the shells of one, which are quite immaculate.

The set of three eggs just mentioned is also before me. The specimens are in perfect condition and measure, respectively, $.75 \times .58$, $.77 \times .58$, and $.74 \times .58$. They are all oval, with the smaller end decidedly blunt and rounded, and in general shape closely resemble the smaller egg of the set described in 'Forest and Stream.' Their ground-color is also similar — dull white, with a faint but appreciable bluish tinge. One is perfectly plain; another, like the larger egg of the first set, has two or three minute specks which may be genuine shell markings; while the third is unmistakably spotted and blotched with pale lilac. Over most of the surface these markings are fine, faint, and sparsely distributed, but about the larger end they become coarser, thicker, and deeper-colored, forming a well-defined ring

* Forest and Stream, Vol. XXIV, No. 24, July 9, 1885, p. 468.

or wreath. All three eggs have a slight polish, and the shells look hard and thick for those of a Warbler's eggs.

The nests are similar in general position and construction to the specimen described by me in 'Forest and Stream,' but both differ in certain important details. The one containing the set of three eggs is composed almost entirely of bleached, straw-colored cane leaves, with an interior lining of pine needles and a few thread-like strands of black moss, apparently *Tillandsia*. This nest is much the smallest of the four, measuring externally 3.50 in diameter by 3.00 in depth; internally 1.50 in diameter by 1.50 in depth; the greatest thickness of the rim or outer wall being 1.00. Unlike the specimen first described, it is firmly supported on all sides by the fascicled branches among which it rests. Its shape is nearly globular, and although the exterior is rather loosely formed, the structure, as a whole, is neat and compact.

The nest taken June 27 is very much larger, in fact quite the largest specimen that I have seen, measuring externally 5.00 in diameter by 6.00 in depth; internally 1.50 in diameter by 1.25 in depth; with the rim in places 1.75 thick. It is shaped like an inverted cone, the apex extending down nearly to the point of junction of the numerous fascicled stems which surround and support its sides. In total bulk it fully equals the average nest of our Crow Blackbird, while it is not nearly as finished a specimen of bird architecture. Indeed it would be difficult to imagine anything ruder than its outer walls,—composed of mud-soaked leaves of the sweet gum, water oak, holly, and cane, thrown together into a loose mass, bristling with rough stems, and wholly devoid of symmetry or regularity of outline. The interior, however, lined with pine needles, moss fibre, black rootlets, and a little horse-hair, is not less smooth and rounded than in the other specimens.

The acquisition of these additional nests is important as tending to show that the position and construction of the first two nests, and the character of the eggs which one of them contained, were not exceptional. The total results of Mr. Wayne's labors may be summed as follows: Four nests, taken respectively June 5, 6, 27, and 30, contained, respectively, one young bird a few days old, one young bird and two addled eggs, two eggs on the point of hatching, and three perfectly fresh eggs. All four nests were essentially similar, being bulky and loosely-formed, composed

mainly of dry leaves, lined with fine roots, moss fibres, pine needles, and horse-hair, and placed in canes over water at heights varying from four to eight feet. Of the seven eggs taken, four were immaculate, two perhaps slightly spotted, and one unmistakably spotted and blotched with lilac.

The inferences suggested by these facts are: (1) That Swainson's Warbler nests usually, if not invariably, in canes over water; (2) that it lays from one to three eggs; (3) that its eggs may be either plain, slightly speckled, or rather thickly and distinctly marked.

Another season's work on the part of Mr. Wayne will doubtless throw more light on all these points. Meanwhile ornithologists may well rest satisfied with the knowledge thus far obtained.

EARLY SPRING NOTES FROM THE MOUNTAINS OF SOUTHERN ARIZONA.

BY W. E. D. SCOTT.

THE present article, based on observations made and material collected in the pine region and neighborhood of Las Sierras de Santa Catalina, Pima County, Arizona, is in reality a continuation of an article which appeared in 'The Auk' for April, 1885 (pp. 172-174). The locality visited is the one there described. The duration of my stay was from April 19 to 24, inclusive.

The winter snow had almost melted from the ground and was only to be seen in patches in the deeper part of the woods and on the sides of hills and ravines, where the sun shone but little. It was still cold, and ice formed at night on water standing in pails, and on the edges of the mountain brooks where the current was not too swift. Except on the morning of the 21st of April, and throughout the entire day on the 24th of the month, the wind blew incessantly and most of the time with great force. On the 20th, about daylight, a cold storm of rain and hail set in, and later this changed into snow, which soon covered the ground to the depth of nearly an inch. The storm, however, broke about noon,

and the sun coming out the wintry effect was speedily dispelled. The other days were cloudless.

The collection of birds made during my stay embraces a hundred and fifty-one skins, the catalogue numbers of the same running from Nos. 2174 to 2324, inclusive; this I mention, as it will be necessary to refer to certain birds obtained.* Birds on the whole were much more abundant than during the former visit, but certain species that were met with in November, 1884, I did not detect during the present trip; and the more noticeable among these are *Carpodacus cassini*, *Hesperiphona vespertina*, and *Sphyrapicus thyroideus*. Others, then comparatively common, were now apparently rare, as I only saw one Olive-headed Warbler (*Peucedramus olivaceus*). The species obtained are the following:

Turdus unalascae auduboni.—On April 22, on the very summit of the mountains, I observed a pair of Thrushes, apparently mated, and took the female (No. 2234), which, on dissection, proved to be about to lay, the egg-yolks being some of them nearly half developed. This was the only pair of Thrushes observed.†

Sialia mexicana.—A few pairs were noticed at a high altitude in the pine region; and being already apparently mated, they doubtless breed early in May.

Polioptila cærulea.—A pair, taken on April 20, about fifteen hundred feet below the summit, where the pines almost cease, and where the evergreen and scrub oak are the principal trees. Here this species was common.

Lophophanes wollweberi.—Not uncommon in the oak belt, just reaching to the lower pine limit. It is in places abundant in the oak region, and in this range of mountains the first set of eggs is laid by the 20th of April.

Sitta carolinensis aculeata.—Rather common, but by no means so abundant as in the winter. A female (No. 2265), taken April 22, had laid a full complement of eggs and had evidently begun sitting.

* [These specimens have been kindly forwarded to me for examination by Mr Scott, with the request that I should add such remarks respecting them as seemed called for.—J. A. ALLEN.]

† [This specimen is unusually light colored even for var. *auduboni*, it being the most 'bleached out' specimen I have seen.—J. A. A.]

Sitta pygmaea. — Common, but not associated in large flocks as in the winter. They were generally paired, and I rarely saw more than two pairs together. From the dissection of the females taken, and from the fact that throughout the day I frequently saw the birds going in and out of holes in the dry pine stubs, I conclude that in some cases the nesting sites had been selected, and that eggs would have been laid, in some cases, by May 1.

Certhia familiaris mexicana. — A single pair observed, and the male taken (No. 2270), on April 23. They were creeping about on a leafless ash tree, where the pines were rather scattering, and near the point where these trees terminate, well down on the northern slope of the mountains. I heard no song.*

Catherpes mexicanus conspersus.† — One pair was taken just at the lower limit of the pine region. They had a nest in the vicinity, but my search for it was unavailing. The female had laid all the eggs of this, the first clutch, and possibly had even then young, as the skin of the belly showed that incubation had been going on for some time. Though much has been said of the wonderfully beautiful song of this species I can not but allude to it. For more than a year, two months in winter excepted, this clear, delicious series of whistling notes has been

* [Mr. Ridgway, in his 'Critical Remarks on the Tree-Creepers (*Certhia*) of Europe and North America' (Proc. U. S. Nat. Mus., V, 1882, pp. 111-116), says (p. 116) that *Certhia mexicana* differs "conspicuously from all the others in the total absence of light tips to the primary coverts." In this character Mr. Scott's specimen agrees perfectly, there being no trace of white on the primary coverts. The lower parts are also grayish, and the other features of coloration and size agree with the characters given by Mr. Ridgway as distinctive of *mexicana* (wing, 2.60; tail, 2.65), whose habitat he gives as "Guatemala and Southern Mexico." Mr. Brewster has since, however, very positively identified Arizona specimens with var. *mexicana* (Bull. N. O. C., VII, p. 81 April, 1882).

In his remarks on this species Mr. Ridgway observes that *mexicana* "is by no means smaller" than the northern races of *Certhia*, "thus affording another of the very numerous 'exceptions' to the supposed law of smaller size to the southward of resident species." He adds in a footnote that he has, "in perhaps a majority of cases [he had recently tested] been unable to verify this supposed law of latitudinal variation in size. He then gives the measurements of "the three specimens" of *mexicana* which he had "been able to examine," the sex of which, however, is not indicated. The average falls considerably below the average for *males* of the northern races *rufa* and *montana*, as given on preceding pages of the same paper. Might it not be fairly asked whether the generalization here reached has sufficient basis, in view of the small number of specimens, and these unknown as to sex? — J. A. A.]

† [A series of five specimens of this species in Mr. Scott's collection differ much from average Colorado and California specimens, in the head and neck contrasting more strongly with the back, the ground-color being darker and at the same time more profusely spotted, giving a grayer general effect. — J. A. A.]

constantly ringing in the air all about the cañon where my home is, and frequently the musician comes on a long piazza in front of my house and, not at all afraid, perches on the rail and creeps on every rafter, stopping constantly to pour out such a flood of music that, familiar as it has become to me, I am always astonished at its wonderful power and liquid sweetness. During that portion of the year when we live with doors and windows open (and this is for fully nine months), the little brown friend with silvery throat is often in the rooms of the house, hopping about and searching every "nook and cranny" for insect life, and betimes singing as merrily as when on the faces of the perpendicular rocks in the cañons, which are ever the favorite hunting grounds he delights in. The female sings quite as much as the male. Of the nest in detail I shall have more to say at another time.

I heard a single bird singing one morning at a high altitude among the pines, which was the only note made of its occurrence well within this region.

Troglodytes aedon marianæ, subsp. nov.

Much lighter colored and grayer throughout than either *T. aëdon* or the so-called var. *parkmani*, particularly on the anterior half of the upper surface, which is in strong contrast with the rest of the dorsal surface. A striking feature is the hoary appearance of the dorsal aspect of the head, neck, and anterior part of the back, caused by conspicuous gray edgings to the feathers. The same hoariness also characterizes the wing-coverts. The subterminal black bars on the feathers of the back are also unusually distinct and heavy. In other respects similar to *T. aëdon* and its varieties *parkmani* and *aztecus*. Types, No. 2284 (♂, April 23) and 2307 (♀, April 24), Coll. W. E. D. Scott. Named for my wife, Marian J. Scott.*

* [Eleven specimens of this interesting form, collected April 19-24, are very uniform in character, and are strikingly different from the usual form of House Wren found throughout the West, which, as is well known, is scarcely, or often not at all distinguishable from the Eastern bird, or *aëdon* proper. While much paler throughout than any western House Wrens I have before seen they are strikingly distinguished by the decided hoariness of the anterior half of the dorsal surface. In size and proportions careful measurements fail to show any differences from ordinary *aëdon*. The wing varies in length from 48 to 52 mm., and the tail from 42 to 49 mm. The tarsus varies from 16 to 19 mm., averaging 17 mm., the culmen from 11 to 13 mm., averaging 12 mm. The first primary varies in length from 16 to 23 mm., or from less to more than half the length of the second. This shows how little reliance is to be placed upon this character, which has been taken as a basis for separation of the eastern from the western House Wrens, even by so late a writer as Mr. Sharpe (Cat. Bds. Brit. Mus. VI

Very common in the pines, and a few were noticed in the oaks just without the pine limit. They were in all cases apparently mated and the males were in full song. From the dissection of females taken I should infer that they would lay eggs early in May. Each pair had chosen, even when I noticed them, a particular locality, generally about some fallen tree, or near some tangle of dead pine boughs, where they maintained their supremacy, driving away any chance Warbler or Snowbird that dared to intrude upon their particular domain. A series of eleven birds collected are referable to this variety.

Helminthophila virginiaë. The only notes of the occurrence of this bird are based on two taken during my stay — No. 2276, ♂, April 23 and No. 2293, ♀, April 24. Both were secured near the summit of the mountain.

Helminthophila celata lutescens. Not observed until April 24, when two males and a female were taken. No others were noticed.

Peucedramus olivaceus. A single male, noted on April 22, was the only one observed.

Dendroëca nigrescens. Rather uncommon in the pines, but more plentiful in the oaks on the lower borders of the pine region. A female, taken in company with a male, apparently her mate, is in no way appreciably different from the male in coloring, though the latter is in as fully adult plumage as any I have ever seen. The birds would breed here, I should think, early in May.

Dendroëca auduboni. Rare. Only two taken in the pines, both males, and no others seen. In this connection I may mention that at the point where I live, altitude about 4000 feet, and distant from the region I am treating of not more than ten miles, this species is referred to as follows in my note-book. "General arrival, March 30, 1885. Many males in full plumage, others moulting." And on my return from the pine region, the birds were very abundant all about my house and in the surrounding country.

Dendroëca graciaë. Rather rare. I secured seven individuals during my stay. (No. 2174, ♂, April 19; No. 2228, ♂,

1881, p. 251). A good series of either *aëdon* or *parkmani* will show an equal range of variation, as an examination has proved.

It may be added that Mr. Scott also sends one specimen (No. 1075, ♂, Oct. 8, 1884) that agrees strictly with the usual style of Western House Wren. — J. A. A.]

April, 22; No. 2229, ♂, April 22; No. 2274, ♂, April 23; No. 2275, ♂, April 23; and No. 2290, ♀, April 24). No. 2290, ♀, proved on dissection to have the eggs so far developed that I judge she would have laid at latest in two weeks.

This species seems to live well within the pine region, and to affect the pines and hemlocks alone. Its movements are slow, and much remind me of those of *Dendroica pinus*. I heard no song, though the peculiar Warbler *cheep* was very pronounced.

Cardellina rubrifrons. Though not observed during the first day, I obtained a male of this species in the oaks, far down on the northern side of the mountains and almost out of the pine region, on April 20. During the last two days of my stay I found the species very common, in small companies of from four to six individuals. They were very shy, and affected the thick pine trees, though now and then descending into the oaks among the pines. The males have a very clear whistling song, which is rather prolonged, and which betrays their presence, as they move about rather nervously in thick pines and hemlocks, where they would otherwise hardly attract attention. That the main part of the representatives were males, and that the arrival of females was not yet general, seems clear from the series before me, which consists of eleven of the former and one of the latter. The female (No. 2295, April 24) is in no way different in appearance from the highest colored males that I have, and there is very little individual variation apparent in the birds before me. I noticed nothing of the Redstart, or Flycatching Warbler, in their motions, but they reminded me of Titnices in their general movements. As far as observed they did not associate with other species of Warblers and small birds, except with *Setophaga picta*, as noted below.

Setophaga picta. Common in the higher regions of the oak belt and throughout the pine region. Mated and in some cases already nesting or about to lay. A series of ten were secured and many more seen. Found more plentifully near water. I can see no difference between the highest state of plumage in the sexes, but often the male, when carefully compared with the average female, presents an appreciably brighter coloring, which is not to be noticed, however, at the usual distance at which one sees them when alive. They are not nearly as shy as *Cardellina rubrifrons*, with which bird I noticed them in company twice.

Pyrranga ludoviciana. An adult male (No. 2313) was taken at a high altitude on April 24, and another male and a female, seen the same day in a similar locality, completes my record. I think these were the first spring arrivals of the species.

Tachycineta thalassina. Not uncommon in small flocks at the very highest altitude and in the heaviest pine timber. They frequently alighted on the upper limbs of dead trees, and doubtless breed here in the deserted Woodpecker holes.

Vireo gilvus swainsoni. A single male in full song was taken just within the pine limit on April 21, and another was heard in the same locality on April 25.

Vireo huttoni stephensi. Took one in the scrub oaks just within the lower pine limit on April 21 (No. 2212, ♂), and a second on April 22 (No. 2233, ♂), in an oak at almost the upper limit of the evergreen oaks where the principal part of the forest is pine and about a thousand feet higher in altitude than the former representative. These were the only ones observed.

Melospiza lincolni. One taken at the lower pine limit (No. 2227, ♂, April 21), was the only one observed.

Peucæa ruficeps boucardi. Abundant just below the pine region, and not uncommon well within the pines, as far up at least as the limit of the evergreen oaks.

Junco cinereus [palliatu]s. Common, particularly at the higher altitudes in the depths of the pine forests. Generally mated. A number of the females taken had laid part of the eggs of the first clutch, and all the females dissected would have laid in a short time. The male has an exceedingly pleasant song, not unlike that of *Pipilo maculatus megalonyx*, which bird he also emulates, perching on some prominent dead twig or limb, often at a very considerable height, whence his notes are heard perhaps most frequently just after sunrise. This was the only species of *Junco* observed. There are, among the series of thirty-five birds of this species secured during my stay, eight that show so marked a variation in regard to the extent of the reddish coloring and its intensity, both of the interscapular region and of the wings that I shall briefly notice them. The others* not specially mentioned are very typical individuals.

* [These have been examined by Mr. Ridgway and found to represent his new subspecies *palliatu]s*, described (since the receipt of this paper from Mr. Scott) on a later page of this number of 'The Auk.' Those here described in detail by Mr. Scott are var. *dorsalis*, variously intergrading with *palliatu]s*.—J. A. A.]

No 2189, ♂, April 19. General tint of the reddish coloring very dull and almost restricted to the interscapular region. The amount of reddish on the greater secondary coverts is much less than in average specimens. Only the faintest traces of this color on the secondaries. Irides bright lemon yellow. Upper mandible, black. Lower mandible blackish at base and tips, and obscure yellowish between these points.

No. 2287, ♂, April 23. The red of the interscapular region is very bright, but on the secondaries scarcely perceptible, and distinct only on two of the greater secondary coverts on each wing. Irides and bill normal.

No. 2196, ♂, April 19. Very similar to the last, except that the general tint of the red is very dull. Irides bright orange yellow. Bill normal.

No. 2247, ♀, April 22. The red is restricted to the interscapular region, there being no traces of this coloring any where on the wings. Otherwise typical *cinereus* with bright lemon yellow irides, upper mandible black and lower mandible clear yellow.

No. 2188, ♀, April 19. The red of the interscapular region dull in general tone. The only traces of red on the wings is to be faintly seen on two of the greater secondary coverts on each wing. Irides bright orange yellow. Bill normal.

No. 2190, ♀, April 19. General tint of red of the interscapular region very bright. The faintest traces of the same color on some of the greater secondary coverts. Irides lemon yellow. Bill normal.

No. 2289, ♂, April 23. The red, which is brighter in tint, absolutely confined to the interscapular region, there being no trace of this color anywhere on the wings. Irides lemon yellow. Upper mandible black; lower mandible dull yellow throughout, obscured by a blackish tinge.

No. 2285, ♀, April 23. Reddish of interscapular region rather dull. No red on the wings anywhere. A few reddish feathers, of the same shade as those of the interscapular region, mixed with the slate-colored feathers of the crown. Irides bright lemon yellow. Bill normal.

In *Funco cinereus caniceps*, taken in the spring near my house, I have not unfrequently seen the crown very perceptibly mixed with feathers of the peculiar reddish of the interscapular region.

Pipilo maculatus megalonyx. Common, even at the highest altitude, and becoming abundant in the mixed scrub oak and scattered pines. The males were in full song and the birds apparently mated.

Icterus parisorum. Several times during my stay I heard and saw this species in the oaks on the lower border of the pine region, and they were abundant about one mile away in the oaks where the yuccas are plenty.

Cyanocitta stelleri macrolopha. Rather common and generally mated throughout the pine region.

Aphelocoma sordida arizonæ. Abundant up to the lower edge of the pines, in the evergreen oak region. Breeding generally.

Contopus pertinax. Common in the pines, and also found a little below in the adjoining oaks. All of the specimens procured were males, and I do not think the females had arrived. While the actions of the bird in a great measure resemble those of *Contopus borealis*, in general appearance it is much more like *Contopus virens*, and the song, which I heard continually during my stay, is even more musical in tone than that of its last-named smaller ally. I secured nine males during my stay and saw many others. This was the only Flycatcher observed in the pine region, though not more than three miles away, and at an altitude probably two thousand feet lower, several others (*Tyrannus vociferans* *T. verticalis*, and *Myiarchus cinerascens*) were very common.

Phalænoptilus nuttalli. Rather common throughout the pine region, and abundant in the evergreen oak belt. I heard the first birds of this year singing near my house on the evening of February 27, and in a few days the birds were very common.

Selasphorus rufus. Though I observed four or five Hummingbirds, all of which I should refer to this species, well within the pines, the only one in reality identified—a male in full plumage—was at the lower pine limit on April 24.

Picus villosus harrisi. Not common. Only a few noted and a single male taken. Generally seen in pairs.

Melanerpes formicivorus bairdi. Rather common, and apparently mated or mating.

Asyndesmus torquatus. But two observed in the pines, though the birds were noticed commonly in the oak region during the ascent and on the return.

Colaptes mexicanus. Rather uncommon in pairs. Males in full song.

Buteo borealis calurus. The only Hawk observed, and not common. Abundant at lower altitudes in the mesquite region, where it begins to breed early in March.

Cathartes aura. One taken at a high altitude, in the pines. The only one seen.

DESCRIPTIONS OF NEW SPECIES OF BIRDS OF
THE FAMILY COLUMBIDÆ.

BY GEORGE N. LAWRENCE.

1. *Zenaida rubripes*.

Female. The front is of a light brown tinged with vinaceous; the upper plumage is olivaceous-brown, with a dull reddish tinge, which is most observable on the back; the hind part and sides of the neck are grayish, the latter glossed with golden changing to light violet; the two central tail-feathers are olive brown; the outer web of the first lateral feather is pale rufous; the bases of the four outer ones are brownish-cinereous, with their ends largely pale rufous, the two colors separated by a black bar; the other tail-feathers are dark cinereous with a subterminal black bar, on the under side the color of the basal portion of the tail feathers is blackish cinereous; the primaries are dark umber-brown, the secondaries brownish-black, both narrowly edged with white; the tertials are the color of the back, and are marked with four conspicuous oval spots of black; the under wing-coverts are light bluish-ash, the flanks dark ashy-blue; behind the eye is a small spot of black, and another below the ears, sides of the head and the chin pale vinaceous, the latter lighter in color; the under plumage is of a reddish cinnamon color, rather dull on the throat and breast, but somewhat brighter on the abdomen and under tail-coverts; bill black; tarsi and toes carmine red.

The color of the feet in the dried specimen is quite bright; in the living bird it is doubtless much more so. The tail has fourteen rectrices.

Length, fresh, 9.50 inches; wing, 5.25; tail, 3.38; bill, .62; tarsus, .75

Habitat. The Island of Grenada, West Indies. Type in the National Museum, Washington.

REMARKS. — As it somewhat resembles the description of *T. vinaceo-rufa* Ridg., I sent it to Mr. Ridgway requesting him to make a comparison with the type of that species; he writes that it differs from it “in shorter tail, with the feathers much broader and more rounded at the end; decidedly smaller bill, much less purplish crissum, and in having the tail-feathers much more gray, with the terminal portion of the lateral ones much paler and of a more uniform rufous.”

Mr. J. G. Wells of Grenada in his manuscript list of the birds of that island, gives the name ‘Trinidad Dove’ to one of the species. For a year or more I have been urging him to procure a specimen that it might be identified. He wrote that his engagements would not admit of his going after it, as it was found

only in a distant part of the island. A few days since I was much pleased to receive a letter from him, together with a specimen of the desired Dove.

He wrote as follows: "It is with great pleasure I now forward to you by book post, a skin of the Dove known locally as the Trinidad Ground Dove. This bird was shot on the eastern side of the island and sent to me by a brother of mine, who knew I was anxious to procure a specimen of it; it is not a common bird. I have shot three or four of them on a small island off the south coast called 'Glover's Island,' where I believe they resort during the nesting period, and I have also shot one in Carriacou, but have never until this instance seen one taken on the island proper; the present specimen is a ♀, and I would have been very glad to get a ♂ also, as (writing from memory) I believe the ♂ to have a gray head; however, I shall use every endeavor to procure one."

2. *Zenaida bogotensis.*

Front and sides of the head vinaceous; under the ear a spot of black; vertex and occiput dull plumbeous; plumage above brownish-olive, reddish on the back; sides of the neck golden-violet; the two middle tail-feathers are dark olive-brown, the next pair are brownish-ash, the others are grayish-ash for two-thirds their length, ending with pale rufous, brightest on the three outer feathers; all have a subterminal band of black separating the two colors; the outer web of the first lateral feather is clear light rufous; the tail-feathers underneath have their bases blackish; the tail consists of fourteen rectrices; the lesser wing-coverts are reddish-brown, lighter in color than the back; the greater wing-coverts are grayish-brown, the primary and secondary quills are blackish-brown, narrowly edged with white, and have their shafts of a dark brownish-red; the tertiaries are reddish-brown, marked with three large oval spots of black; under wing-coverts and axillars plumbeous-white; chin whitish, upper part of throat pale vinaceous, lower part of throat and upper part of breast of a dull chocolate cinnamon color; the breast below this is pale cinnamon, the abdomen of the same color but brighter, and the under tail-coverts of a still deeper and brighter cinnamon; the flanks are ashy-blue; the bill is black; the feet, in the dried specimen, are yellowish.

Length, uncertain (the skin being made up very short); wing, 6.13; tail, 4.10; bill, .70; tarsus, .87.

Habitat. Bogota, New Grenada. Type in my collection.

REMARKS. — I have had this specimen for several years, supposing it to be *L. ruficauda* Bonap., but while investigating the West India species, I find it to be distinct. In this opinion

Mr. Ridway concurs, and says "it differs from *T. vinaceo-rufa* in much deeper general coloration, the very different color of the crissum (rufous instead of purplish vinaceous), and much larger size, especially the bill."

T. ruficauda seems to be a rare species, as there is no specimen in the National Museum or in that of the American Museum of Natural History, New York. It is described as being quite dark above ("brunneo-ardesiaca"), with the hind neck plumbeous; below and on the neck rosy wine color; a spot under the eye and a line behind the eye, violet-black, bordered with white; sides of the neck golden-violet; wing-coverts "ardesiacis"; quills blackish, tail short, outer tail-feathers "fusco-ardesiacis," with a black spot across the middle, the end broadly rufous.

NEW YORK, September 15, 1885.

HELMINTHOPHILA LEUCOBRONCHIALIS.

BY ROBERT RIDGWAY.

WITHOUT having any new evidence to present concerning this perplexing bird in the way of additional specimens, I would like to offer for consideration a hypothesis which it seems to me affords a more plausible explanation of certain aspects of the case than that which suggests hybridism between simply *H. chrysoptera* and *H. pinus* as sufficient to account for the variable 'aberrant' series which has been referred to *H. leucobronchialis*, together with those which represent the so-called *H. lawrencei*.

It has been stated that *H. leucobronchialis* and *H. lawrencei* possess no important original characters. This is certainly true of the latter, which is very obviously a hybrid of the above-named species; but it is not true of the former, which in its pure white throat, in very striking contradistinction to the deep gray or black throat of one and bright yellow throat of the other alleged parent, certainly does possess one very important original character, which it is impossible to conceive can be derived from the crossing of the two species in question.

A supposed strong point which has been urged against the validity of *H. leucobronchialis* as a distinct species, is the circumstance that typical specimens constitute a small proportion of all those obtained, and the suspicious circumstance that each individual of the aberrant majority inclined, in one respect or another, toward *H. pinus*. Only seven of the twenty-two examples which have been recorded (including those of '*H. lawrencei*,' which must be considered in this connection), or not quite one-third, are true *H. leucobronchialis*; but when, instead of taking two elements into consideration (i. e., *H. pinus* and *H. chrysoptera*) we add a third (*H. leucobronchialis* itself), the proportion becomes far less significant.

In no other way than by assuming that *H. leucobronchialis* is a distinct species, which itself hybridizes with its allies, can we account for the origin of the puzzling series of specimens which have so prejudiced the claims of the bird under consideration to specific rank; and I feel convinced that Mr. Brewster expressed the exact truth when he stated (*cf.* Nuttall Bulletin, III, p. 99) that "the validity of this distinctly characterized species must now be regarded as established," and I feel equally satisfied that the hypothesis of hybridism which he subsequently advanced fails to settle the case as affecting *H. leucobronchialis* itself, however well it may answer for the 'aberrant' specimens which have been wrongly referred to it.

Regarding the very close resemblance between certain specimens of *H. leucobronchialis*, Mr. Brewster observes: "Indeed, it would be difficult to select three individuals of any species which vary so little *inter se*." I have myself seen only the type and the Virginia specimen in the National Museum collection; but I can affirm that the two are as nearly counterparts of one another, so far as details of plumage are concerned, as any two specimens, of any species, that have ever come under my observation.

The following classification of all the specimens* hitherto recorded of both *H. leucobronchialis* (in its widest sense) and '*H. lawrencei*,' expresses my views as to their nature and origin. The arrangement is of course purely hypothetical, but at the same time admits of a much more satisfactory solution of the problem which Mr. Brewster has so carefully discussed than

* A few may possibly have been overlooked.

the theory which supposes *the entire series* to be hybrids of *H. chrysoptera* and *H. pinus* alone, or of their progeny *inter se*.

I. TYPICAL SPECIMENS OF *H. leucobronchialis*.

CHARACTERS. — Throat and cheeks pure white; postocular black or dusky streak very narrow, not involving the auriculars; breast white, or but very faintly tinged with yellow; wing-patch, or bands, yellow.

(1) The type, an adult ♂ from Newtonville, Mass., May 18, 1870. (*Cf.* Brewster, Bull. Nutt. Orn. Club, I, p. 1, pl. i.)

(2) An adult ♂ shot by Christopher D. Wood, near Clifton, Delaware Co., Penn., May 12, 1877. (*Cf.* Trotter, Bull. Nutt. Orn. Club, II, pp. 79, 80.)

(3) An adult ♂ in the collection of the Philadelphia Academy of Natural Sciences, supposed to have been shot by J. G. Bell at Rockland, N. Y., in the spring of 1832. (*Cf.* Trotter, Bull. Nutt. Orn. Club, III, p. 44; IV, p. 59.)

(4) An adult ♂ shot at Wauregan, Conn., May 25, 1875, by Charles M. Carpenter. (*Cf.* Brewster, Bull. Nutt. Orn. Club, III, p. 99.)

(5) An adult ♂ obtained at Suffield, Conn., July 3, 1875, by E. I. Shores. (*Cf.* Brewster, Bull. Nutt. Orn. Club, III, p. 199.)

(6) An adult ♂ in collection of Williams College, Williamstown, Mass., obtained at Hudson, Mass., in May or June, 1858, by Samuel Jillson. (*Cf.* Purdie, Bull. Nutt. Orn. Club, IV, p. 184.)

(7) An adult ♂ shot near Arlington, Va., May 15, 1885, by William Palmer, and by him presented to the National Museum (museum register No. 104,684). (*Cf.* Palmer, Auk, II, p. 304.)

II. PRESUMED HYBRIDS OF *H. leucobronchialis* AND *H. pinus*, OR OF THE FORMER WITH THE CROSS BETWEEN *H. pinus* AND *H. chrysoptera* (= '*H. lawrencei* HERRICK').

CHARACTERS — Throat white, sometimes faintly tinged with yellow; breast yellow; gray of upper parts tinged with olive-green.

a. *Wing-band, or patch, yellow.*

(1) An adult ♂ taken at Portland, Conn., by William W. Coe, May 22, 1875. Has "a broad band or blotch" of yellow on the breast, while "the whole dorsal plumage, from the crown, is faintly washed with the same tint." (*Cf.* Purdie, Bull. Nutt. Orn. Club, IV, p. 184.)

(2) An adult ♂ taken at Saybrook, Conn., May 30, 1879, by J. N. Clark. Has "a patch of bright yellow across the breast from the bend of the wings." (*Cf.* Purdie, l. c.)

(3) A young bird (sex unknown) taken by Dr. E. A. Mearns at Highland Falls, N. Y., July 7, 1879 (Coll. W. Brewster, No. 4,668). Specimen number 4 under *H. lawrencei* (No. 4,667, Coll. W. Brewster), said to

be the parent of this specimen. (*Cf.* Brewster, Bull. Nutt. Orn. Club, VI, p. 221.)

(4) An adult(?), sex not stated, obtained at Sing Sing, N. Y., August 3, 1881, by Dr. A. K. Fisher. Resembles specimen No. 8 (No. 605, Coll. A. K. Fisher), but has the wing-bands "yellow, not white." (*Cf.* Fisher, Bull. Nutt. Orn. Club, VI, p. 245.)

(5) An adult ♂ (?) obtained in Ottawa Co., Mich., May 25, 1879, by W. A. Gunn. Whole breast bright gamboge yellow, with a sharply defined, truncated anterior outline, but posteriorly extending farthest along the median line, to the upper part of the abdomen; cheeks and chin tinged with light yellow; upper part washed with olive-green. Type of "*H. gunni* Gibbs." (*Cf.* Gibbs, 'Daily Democrat,' a newspaper of Grand Rapids, Mich., June 1, 1879. — Purdie, Bull. Nutt. Orn. Club, IV, p. 185. — Ridgw. *ib.*, p. 233.)

(6) An adult ♂ taken at Sing Sing, N. Y., August 3, 1881, by Dr. A. K. Fisher (collector's No. 1235). Has "a broad patch of pale yellow on the breast." (*Cf.* Brewster, Bull. Nutt. Orn. Club, VI p. 219.)

(7) An adult ♀ taken at Sing Sing, N. Y., July 24, 1881, by Dr. A. K. Fisher (collector's No. 1210). Entirely pale greenish yellow beneath; the back is similar to that of *pinus* but the nape is decidedly ashy, and the wing-bands as clearly yellow as in *chrysoptera*; the dusky brown eye-stripe is restricted to the lores and post-orbital spot." (*Cf.* Brewster, Bull. Nutt. Orn. Club, VI, p. 220.)

b. Wing-bands white.

(8) An adult ♂ collected at Sing Sing, N. Y., August 24, 1879, by Dr. A. K. Fisher (collector's No. 605). "Exhibits a faint wash of lemon yellow on the throat, while a broad space across the breast is deep gamboge yellow, and the wing-bands are pure white." (*Cf.* Brewster, Bull. Nutt. Orn. Club, VI, p. 219.)

(9) An adult ♀ (?) collected at Nyack, N. J., in May, 1878, by Eugene P. Bicknell; No. 2620, Coll. W. Brewster. "Has the chin decidedly yellow; the throat, cheeks, and a small space on the abdomen white; the remainder of the lower parts gamboge yellow; the wing-bands white; the nape ashy tinged with green; the occiput, back, and wings as purely green as in *H. pinus*." (*Cf.* Brewster *l. c.*)

c. Wing-bands mixed white and yellow.

(10) An adult ♂ killed at New Haven, Conn., May 19, 1885, by Harry W. Flint. It "shows a slight suffusion of yellow under each eye and on the chin, as well as a light bar of the same color across the breast. . . . the wing-bars are very much restricted, and the white is tinged with yellow, and there is a spot of the same color on the back." (*Cf.* Sage, Auk, II, p. 304.)

III. PRESUMED HYBRIDS OF *H. leucobronchialis* WITH *H. chrysoptera*.

CHARACTERS. — Entirely white beneath (except on sides), as in *H. leucobronchialis*, but with black auriculars of *H. chrysoptera*.

(1) An adult ♀ (?) obtained at Sing Sing, N. Y., July 24, 1881, by Dr. A. K. Fisher (collector's No. 1208). *Cf.* Brewster, Bull. Nutt. Orn. Club, VI, p. 219.)

(2) An adult ♀ (?) obtained at Sing Sing, N. Y., July 24, 1881, by Dr. A. K. Fisher. (*Cf.* Fisher, Bull. Nutt. Orn. Club, VI, p. 245.)

IV. PRESUMED HYBRIDS BETWEEN *H. chrysoptera* AND *H. pinus*
(= '*H. lawrencei* HERRICK').

CHARACTERS: Black or gray throat and auriculars of *chrysoptera*; with rest of head and the lower parts yellow, as in *pinus*; upper parts olive-green as in *pinus*. Wing-bands yellow or white.

a. Wing-bands white.

(1) The type, an adult ♂, obtained at Passaic, N. J., May, 1874, by Harold Herrick. (*Cf.* Herrick, Pr. Phil. Ac. Nat. Sci. 1874, p. 220, pl. 15.)

(2) An adult ♂ from Hoboken, N. J., taken in the spring of 1876. (*Cf.* Herrick, Bull. Nutt. Orn. Club, II, p. 19.)

b. Wing-bands yellow.

(3) An adult ♀ taken at Highland Falls, N. Y., July 7, 1879, by Dr. Edgar A. Mearns (No. 4667, Coll. W. Brewster). This specimen presents nearly the characters that would be looked for in the female of *lawrencei*; the throat and cheek-markings are those of *chrysoptera* (female), while the remainder of the plumage is colored nearly as in *pinus*, the wing-bands, however, are yellow, instead of white, and the back is not purely olive-green." (*Cf.* Brewster, Bull. Nutt. Orn. Club, VI, p. 220.)

ON *JUNCO CINEREUS* (SWAINS.) AND ITS GEOGRAPHICAL RACES.

BY ROBERT RIDGWAY.

An examination of a very large series (78 specimens) of this species makes apparent some very interesting facts. It shows

that *J. cinereus* proper must be excluded from the list of North American birds, all the specimens from within the borders of the United States which have been referred to this form being very different, belonging in reality to an unnamed geographical race. It is with extreme reluctance that I venture to describe an additional form of this difficult genus, but the facts before me are so plain that I cannot well avoid doing so.

J. cinereus, as at present known, is divided into three strongly marked races, between two of which (*dorsalis* and the new form) we have evidence of intergradation in a small proportion of intermediate specimens. In the case of the new form and true *cinereus* intergradation is assumed, but is hardly less certain.

The geographical distribution of the three races is, in the main, quite distinct: *J. cinereus* belonging to the eastern mountain districts of Mexico (from the Sierra Madre of Chihuahua to the high regions of Vera Cruz), *J. cinereus dorsalis* to the mountains of New Mexico and Eastern Arizona (White Mountains and Willow Springs), while *J. cinereus palliatus*, as I propose to name the new form, belongs exclusively, so far as known, to the mountains of Central and Southern Arizona (Mt. Graham, the Santa Rita range., etc.), but probably extends southward along the more western mountain ranges of Mexico.

The three races may be distinguished as follows:—

a. Outer web of tertials and some of the wing-coverts rufous.

1. *J. cinereus*. Upper parts of head and neck, with rump, dark gray inclining to slate-color, the rump often tinged with olive; lores deep black.

2. *J. cinereus palliatus*. Upper parts of head and neck, with rump, clear ash-gray; lores grayish black.

b. Outer surface of wings entirely ash-gray.

3. *J. cinereus dorsalis*. Upper parts of head and neck, with rump clear ash-gray, and lores grayish black, as in *J. cinereus palliatus*.

The type of *J. cinereus palliatus* is No. 68817. U. S. Nat. Mus., ♂ ad., Mt. Graham, Arizona, Sept. 19, 1874; H. W. Henshaw collector.

RECENT LITERATURE.

Sharpe's Catalogue of the Birds in the British Museum—Volume X.* —Ornithologists are under obligations to Mr. Sharpe for another exceedingly welcome volume of a pre-eminently useful series. Volume X considerably exceeds in size any of its predecessors, it containing nearly 900 pages, and twelve colored plates. It treats of the following five families of nine-primaried Oscines: the Flower-peckers (*Dicæidæ*), the Swallows (*Hirundinidæ*), the Waxwings and their allies (*Ampelidæ*), the American Warblers (*Mniotiltidæ*), and the Wagtails (*Motacillidæ*). "In the present volume 448 species are described, represented by 4590 specimens." Only 52 of the species are still desiderata to the collection of the British Museum, while 88 are represented by the original types. In addition to the material in the British Museum, Mr. Sharpe has had the assistance of valuable collections kindly loaned him by various eminent ornithologists for use in the preparation of the present monographs. The British Museum "series of Neotropical birds has been rendered wonderfully complete by the addition of the collections of Dr. Sclater and Messrs. Salvin and Godman"; and acknowledgment is also made of numerous North American birds received from the United States National Museum. Mr. Sharpe's facilities for the preparation of his various monographs are enviably complete, and without doubt elsewhere unequalled.

The *Dicæidæ*, numbering 19 genera and 95 species of a strictly Old World group, occupy the first 84 pages, and are illustrated by two beautiful plates. To the *Hirundinidæ*, with 11 genera and 83 species (*plus* 18 subspecies), are allotted 125 pages, and a single plate. The great family *Mniotiltidæ*, of such special interest to American ornithological collectors, occupies nearly 250 pages, numbers 21 genera and 127 species, besides numerous subspecies. Of the species 36 fall under *Dendrocæca*, 32 under *Basileuterus*, and 15 under *Setophaga*. Of the 64 species of *Motacillidæ*, 33 are ranged under *Anthus*, and 23 under *Motacilla*.

In respect to subspecies, we regret to see that Mr. Sharpe has reverted to his former practice of designating them simply by binominal appellations, with usually no further comment on their status than is implied by the prefix 'Subsp.,' followed by a Greek letter.

We also regret to see our author so firmly opposed to "radical changes in nomenclature" as to prefer to "follow custom" in cases where he is convinced that the 'radical changes' are in accordance with strict nomenclatural rules, through fear that the "change is too great and the risk of confusion too assured" (p. 85) for him to venture in the footsteps of the rash reformers who persist in pointing out the narrow way which leads

* Catalogue of the Birds in the British Museum, Volume X. Catalogue of the Passeriformes, or Perching Birds, in the collection of the British Museum.—Fringilliformes: Part I. Containing the Families *Dicæidæ*, *Hirundinidæ*, *Ampelidæ*, *Mniotiltidæ*, and *Motacillidæ*. By R. Bowdler Sharpe. London: Printed by order of the Trustees, 1885. 8vo, pp. xiii + 682, pl. xii.

to stability and consistency in things nomenclatural. It is certainly poor philosophy, and worse principle, to go wrong because the majority of one's associates or predecessors have missed the right path. While Mr. Sharpe seems to have by no means warmly embraced the *auctorum plurimorum* principle of one of his eminent confrères, he shows a tendency to lapse in that direction. If rules of nomenclature are to be otherwise than worse than useless, they must be followed systematically and on all occasions, whether their immediate results chance to be agreeable or the reverse.

In monographs of such extended scope it is doubtless too much to expect that the monographer's rulings will be equally sound at all points, his conclusions necessarily depending upon the amount of his material in each particular case. Again, specialists having the same material before them may reach different conclusions, consequent upon what may be termed theoretical bias, which may lead to a different interpretation of the same facts; although experience shows that experts working with the same material, and particularly if working together and comparing notes as they proceed, may frequently arrive at practically the same results. It is not, therefore, on the whole surprising that Mr. Sharpe should differ now and then from other authorities in the same field, even in cases where his material is comparatively limited.

As some of Mr. Sharpe's rulings respecting American birds may be presumed to be of special interest to the the readers of 'The Auk,' they are here presented. Our Barn Swallow (*Hirundo erythrogastra*) is made a subspecies of the European Chimney Swallow (*Hirundo rustica* Linn.), the American form being found to extend across Asia to Lake Baikal, and to winter in Burmah. Our bird would therefore stand, in a trinomial system of nomenclature, as *Hirundo rustica erythrogastra*. Mr. Sharpe recognizes four subspecies of *Hirundo rustica*, besides the *H. rustica* proper. Our Cliff Swallow is *Petrochelidon pyrrhonota* (Vieill.), Mr. Sharpe following Sclater and Salvin (1873) in identifying Vieillot's *H. pyrrhonota* (1817) with Say's *H. lunifrons* (1823).

Passing to the Warblers, *Helminthophila lutescens* is considered a thoroughly good species, and surprise is expressed that the "trinomial name of *H. celata lutescens* should be given to it"; but two possible explanations are offered (p. 245). The ten specimens at Mr. Sharpe's disposal are not deemed by him sufficient to settle the alternatives raised, namely, whether *lutescens* is a thoroughly good species or whether the bird breeds in the yellow plumage of the first year. In respect to the generic name *Parula*, Mr. Sharpe observes that if the name *Parula* must be suppressed because there is a previous genus *Parulus*, then "*Pica* must be suppressed on account of its resemblance to *Picus*." *Parula* and *Parulus* are known to be the same word, with simply different terminations indicative merely of gender. *Pica* and *Picus* may have the same relation, as some authorities claim, while others maintain that the two words are etymologically different. At all events the two cases are not quite parallel, *Pica* and *Picus* having been long used in classical Latin to denote respectively

Magpie and Woodpecker before they were introduced into technical zoölogy, whatever may have been primarily — a point doubtless impossible to strictly determine — their etymological affinities.

Dendraca dominica albiflora is denied status, even as a subspecies, since in many specimens Mr. Sharpe can "trace a tiny shade of yellow in the eyebrow," even in authentic specimens received from our National Museum: yet the alleged differences pretty constantly characterize the birds of a certain geographical area. The race *hypochrysa* of *D. palmarum* is also not recognized. *Peucedramus* is admitted as a full genus (by the way, subgenera seem a round in the ladder of classification Mr. Sharpe does not appear to find use for!), while *Heliuæa*, a much more distinct form, is referred to *Helminthotherus*. The substitution of *Microligia* by Mr. Cory for his *Ligea* does not appear to be taken note of, even in the 'Atlanda,' presumably printed nearly a year after the change was published.

In *Geothlypis trichas* the male in winter is said to assume the dull garb of the female, losing the black mask, and is thus figured (pl. ix, fig. 1), although in fact the male never loses the black mask after it has once been acquired, and which it obtains at the second moult. Only young males of the first year wear the garb of the female. But Mr. Sharpe should not be too harshly dealt with for this lapse, since the same mistake has been made by several of our own leading authorities, Messrs. Maynard and Cory being apparently the only writers who have escaped this error. This singular mistake seems to have originated with Baird (Birds of N. Am., 1858, p. 241), who says the male in winter is "without the black mask." In the 'History of North American Birds,' by Baird, Brewer, and Ridgway, it is said (I, p. 297): "Male in winter, and the female, without the black mask." Coues, in 'Birds of the Colorado Valley' (p. 31), says: "The adults, in fall and winter, are similar to each other, . . . as at that season the peculiar black and ashy markings of the head are wanting." The same statement is repeated in the second edition of his 'Key.' Maynard, however, in 1874, in describing the adult male (Birds of Florida, p. 66) says: "There is no change of plumage in autumn, . . ." Mr. Cory in his 'Birds of the Bahamas' (1880, p. 72) says, in italics, in describing the winter plumage of the male, "*a broad black line passing from the sides of the neck through the eye and over the forehead.*" The older authors, as Wilson, Nuttall, and Audubon, are not explicit in their statements on this point, but *do not* say that the adult male in winter lacks the black mask, while the opposite is inferrible, at least in the case of Nuttall, who, as well as Audubon, was familiar with the species in its winter haunts. To any one who has collected the birds in winter in Florida, or elsewhere in their winter haunts, the *perpetuation* of such a gross error is almost incomprehensible, especially since the material in at least several of our museums is sufficient to render it evident, even to the 'closet' naturalist.

In the collection of the Museum of Comparative Zoölogy is a large series of adult males taken in Florida by Messrs. Maynard, and Henshaw.

and the writer of this review, at frequent intervals from early in December till into March, which differ not in the least in respect to the black face-markings from summer specimens. And similar examples are, to our knowledge, in various collections, both public and private, notably in those of Messrs. Brewster, Cory, and others, and that of Princeton College.

Four beautiful plates illustrate Mr. Sharpe's monograph of the Mniotiltidæ, in which are figured the heads of eight species of *Geothlypis*, while full-length figures are given of *G. speciosa*, *Parula pitiayumi*, *P. nigrilora*, *Teretristis fernandina*, and *T. forsi*.

The genus *Polioptila* (with 13 species) is noticed in an 'Appendix to the family Mniotiltidæ' (pp. 440-445), the group having been omitted by Mr. Seebohm from the Sylviidæ, where authors have generally placed it. Mr. Sharpe believes that their most natural position is "in the vicinity of the Muscipaline genus *Stenostira*."

In the family Motacillidæ, the Field Wagtails, usually separated as a genus *Budytes*, are placed with the Water Wagtails under the single genus *Motacilla*, there being "certain intermediate species . . . which unite these two supposed genera." Yet he considers it expedient to continue the generic separation of *Anthus spraguei* from *Anthus* proper, under the genus *Neocorys*. As already noticed (*anteà*, p. 290, footnote), our Titlark is made a subspecies of the Old World Water Pipit, *Anthus spinoletta*. (*spinoletta* Linn., and 'auct. plur.'), under which it stands as "Subsp. *a. Anthus pennsylvanicus*." A similar disposition of it was made previously by Mr. Seebohm (Hist. Brit. Bds., II, 1883, p. 248). The adoption of 'radical changes' in specific names, when called for by nomenclatural rules does not seem to inspire in our author, we are glad to see, the same degree of dread as 'radical changes' in generic names, though we fail to trace any principle of consistency in such diverse action under similar contingencies.—J. A. A.

Turner's List of the Birds of Labrador.*—While Mr. Turner's List is very valuable, and will prove very useful, it is at the same time disappointing and unsatisfactory, owing largely to the faulty plan of its construction. Mr. Turner spent nearly two years and four months (from July 15, 1882, to October 5, 1884) in Labrador; his investigations being made chiefly "in the vicinity of Fort Chimo, situated about 27 miles up the Koksoak River, flowing into Ungava Bay, which is an immense pocket toward the eastern portion of the south side of Hudson Strait," where he "remained from August 6, 1882, to September 4, 1884." His list includes about 207 species, only a few more than one-half of which appear to have come under his own observation. Quite a number of the others are

* List of the Birds of Labrador, including Ungava, East Main, Moose, and Gulf Districts of the Hudson Bay Company, together with the Island of Anticosti. By Lucien M. Turner. Proc. U. S. Nat. Mus., VIII, 1885, pp. 233-254. Published July 13, 1885.

given apparently from specimens in the National Museum, collected by Mr. C. Drexler, mainly at Moose Factory, but some 70 or more rest on the authority of previous authors, as Audubon, Richardson, Nuttall, Coues, Kumlien, Stearns, and Brewster, including seven recorded only from Anticosti, or other points south of Labrador. The area intended to be covered by the List extends from Anticosti and the Gulf of Saint Lawrence to Hudson Strait, and from the Atlantic coast westward to the 82d meridian, or a region some six hundred miles in length by about one thousand miles in breadth. It is apparently intended to be a complete list of the birds hitherto observed in Labrador, although the only statement to this effect is that implied in the title of the paper.

Our first criticism relates to what we deem a radical fault in the construction of the List, namely, the omission of the author to divide the species into two categories, the first to include only the species observed by him within his own field of investigation about Fort Chimo, the second to consist of the additional species attributed to Labrador by previous explorers. Respecting the species actually collected or observed by the writer, we must confess to a feeling of disappointment that he tells us so little about them, his remarks rarely exceeding a few lines to each, while in many cases more detailed statements would have been of the highest interest. This certainly was not due to any lack of opportunity for observation, for the magnificent collection of material brought back by him to the National Museum testifies alike to his success and great industry in collecting. For instance, it is quite tantalizing to find species like the Redpolls dismissed with less than two lines, merely stating that the species is abundant and resident at Fort Chimo, that it breeds plentifully there, and that its nests and eggs were obtained. On the other hand, his record of species observed by others is sufficiently explicit and apparently has been very carefully compiled, although all are obviously not included, as, for instance, *Larus canus* among the Gulls, and *Somateria v-nigra* among the Ducks.

Again, it is disappointing to find a writer who has had so much experience as a collector in the country under notice giving these reports and extracts without comment as to their character, in cases even where the temptation to a little intelligent criticism must have been very strong, as, for instance, where *Dendroica cærulea*, *Vireo noveboracensis*, *Pipilo erythrophthalmus*, *Tyrannus tyrannus*, *Sayornis phæbe*, *Contopus virens*, and the two Cuckoos are given on the authority of Audubon, and *Hylocichla mustelina* and *Aix sponsa* on Stearns's authority. While we would not imply any sweeping discredit upon the observations of Audubon, we can not help feeling that in writing out his biographies of birds he sometimes trusted to memory rather than to carefully recorded field-notes. While thus freely criticising the paper under notice, we do not lose sight of the fact that it is a most important and welcome contribution to our knowledge of the birds of a region Mr. Turner has been the first to explore, and at the cost, too, of a long sojourn in a most inhospitable country, necessarily entailing much hardship.—J. A. A.

Zeledon's Catalogue of the Birds of Costa Rica.* — This is simply an enumeration of the birds of Costa Rica, without notes. The catalogue numbers 692 species, about eight to nine tenths of them being indicated as represented in the National Museum by *Costa Rican specimens!* The identification of the species is therefore doubtless beyond question. This list is intended as preliminary to a work of a more extended character to contain descriptions of the genera and species, with notes on their habits and geographical distribution, which the author has in contemplation, and for which his long residence in the country, and his unrivalled experience with the birds of Costa Rica eminently fit him to prepare. — J. A. A.

Ridgway on New American Birds. — Mr. Ridgway has separated the Boat-billed Heron of Central America from that of Guiana and Brazil, under the name *Concroma zeledoni*.† Twelve examples from southern and western Mexico, Guatemala, Nicaragua, Costa Rica, and Veragua are found to differ constantly from two South American specimens (British Guiana and mouth of the Amazon) in having the upper parts much deeper pearl-gray, the neck and breast deep buff instead of white, and the crest less developed.

The same author has also described a new Hawk from Cozumel, under the name *Rupornis gracilis*.‡ It is compared with *R. ruficanda griseicauda* of Mexico, from which it differs in being decidedly smaller, with the thighs and under wing-coverts nearly immaculate instead of barred and spotted.

A re-examination of some specimens of *Peucaea* collected by Dr. J. C. Merrill, and identified by Mr. Ridgway as *Peucaea arizonæ* (Proc. U. S. Nat. Mus., I, p. 127), in the light of additional material, shows that the specimens represent *Coturniculus mexicanus* of Lawrence, described from Mexican specimens in 1867, and subsequently referred by Mr. Ridgway (Hist. N. Am. Birds, II, p. 38, footnote) to *P. botterii*. A second examination of the Texas specimens, in comparison with the Mexican examples, results in the addition of a new bird to the fauna of the United States, which Mr. Ridgway calls *Peucaea mexicana* (Lawr.).

In a paper on the Golden Warblers§ Mr. Ridgway describes a new subspecies from Western Mexico and Cape St. Lucas as *Dendroica bryanti costanceps*. *D. bryanti* is now separated specifically from *D. vieillotii*, to which it was originally referred as a subspecies, and its habitat is restricted to the "Atlantic coast, Belize to Northern Yucatan (Merida)."

* Catalogue of the Birds of Costa Rica, indicating those species of which the United States National Museum possesses specimens from that Country. By José C. Zeledon, of San José, Costa Rica. Proc. U. S. Nat. Mus., VIII, pp. 104-118. Published May 23, 1885.

† Description of a New Species of Boat-billed Heron from Central America. By Robert Ridgway. Proc. U. S. Nat. Mus., VIII, pp. 93, 94. Published May 20, 1885.

‡ Description of a New Hawk from Cozumel, *Ibid.*, pp. 94, 95.

§ A Review of the "Golden Warblers." *Ibid.*, pp. 348-350. Published Sept. 2, 1885.

the Lower California bird receiving the new name *castaneiceps*. Seven species and ten subspecies of Golden Warblers are now recognized only two of which (*D. æstiva* and *D. bryanti castaneiceps*) pertain to the fauna of North America, as defined in the new 'A. O. U. Check List,' the remainder being West Indian and Central American.—J. A. A.

Ridgway on the Type Specimen of *Buteo oxypterus* Cassin.*—A re-examination of the type specimens of *Buteo oxypterus* Cassin, preserved in the Museum of the Philadelphia Academy of Natural Sciences, has led Mr. Ridgway to refer *B. oxypterus* to *B. swainsoni* as a pure synonym, the type of *oxypterus* proving to be unquestionably a young *B. swainsoni*. "Upon the whole," says Mr. Ridgway, "I cannot see the slightest reason for recognizing '*B. oxypterus*' even as a local race of *swainsoni*. . . ." He also adds that the "specimen described in 'History of North American Birds' (III, p. 266) as the melanistic adult of '*Buteo swainsoni* var. *oxypterus* is not *B. swainsoni* at all, but *B. fuliginosus* Scf." Comparative diagnoses are given of these two species.—J. A. A.

Ridgway's List of Emended Names of North American Birds.†—The names "represent new or hitherto unpublished combinations" adopted by the A. O. U. 'Committee on Classification and Nomenclature of North American Birds.' "They are here presented in order that the first known use of such combinations may be cited among the references which the committee has decided to give under each species, viz., the first pertinent binomial or trinomial appellation, and the first use of the name as adopted in the new list now being prepared by the committee." The changes, some 77 in number, relate chiefly to the generic part of the name, and result largely from the depression of formerly current genera to the rank of subgenera, partly from the change of status of the form in question from specific to subspecific rank, or the reverse, and in small part from actual change of names, found necessary on synonymic grounds. Comparatively few are therefore of a very 'radical' character, and are mainly the following, with which are given their current equivalents.

Parus cinctus obtectus (Cab.) = *P. cinctus*.

Sylvania microcephala Ridgw. = *Myiodiactes minutus*.

Pyrranga rubra cooperi = *P. æstiva cooperi*.

Loxia curvirostra stricklandi Ridgw. = *L. c. mexicana*.

Ammodramus savannarum passerinus = *Coturniculus passerinus*.

Melospiza georgiana (Lath.) = *M. palustris*.

Corvus corax sinuatus (Wagl.) = *C. c. carnivorus*.

Aphelocoma sieberii arizonæ = *A. sordida arizonæ*.

Zenaidura macroura = *Z. carolinensis*.

* Remarks on the Type Specimen of *Buteo oxypterus*, Cassin. By Robert Ridgway, Proc. U. S. Nat. Mus., VIII, pp. 75-77. Published April 22, 1885.

† Some Emended Names of North American Birds. By Robert Ridgway, Proc. U. S. Nat. Mus., VIII, pp. 354, 355. Published Sept. 2, 1885.

Callipepla californica vallicola Ridgw. = *Lophortyx californica brunescens* Ridgw. = *L. californica* (Shaw).

Among the more striking changes of generic names are the substitution of *Sylvania* for *Myiodioides*, *Dryobates* for *Picus*, *Dendragapus* for *Canace*, and *Tympanuchus* for *Cupidonia*, in addition to some others already published in 'The Auk.'—J. A. A.

Minor Ornithological Publications.—964. *Decorative Sentiment in Birds*. By James Carter Beard. *Harper's New Monthly Magazine*, LXXI, No. 423, Aug. 1885, pp. 405-416.—A popular paper, with illustrations, on bird architecture.

965. *Circular of the Public Museum of the City of Milwaukee*. No. 1. "Some Directions for Preparing, Labelling and Packing Skins of Animals." No. 2. "List of Mammals and Birds of Wisconsin desirable for the above named Museum." 8vo. No date (1884?), pp. 8 and 12.—No. 1 contains excellent directions for the purpose in view.

966. *Observe the Birds*. By Samuel Wells Willard. *Wisconsin Journ. of Education*, XXV. No. 3, March, 1885, pp. 98-101.—Ornithology recommended as offering a good field for the cultivation of the powers of observation.

967. *Our Observers—March*. By F. H. King. *Ibid.*, pp. 111, 112.—A list of "Observations to make" respecting a few birds, beasts, insects, and plants, etc.

968. *The Migration of Birds*. By Alexander O'Driscoll Taylor. *Proc. Newport Nat. Hist. Soc.*, 1883-84, pp. 22-24.—Abstract of a paper on this subject read before the Society on Jan. 3, 1884.

969. *List of Birds shot near Newport [R. I.]*. By Col. John Hare Powel. *Ibid.*, pp. 42, 43.—A nominal list (under English names only) of 101 species.

970. *Pigeons and the Pigeon Fancy*. By Wm. G. Barton. *Bull. Essex Inst.*, XVI, 1884, pp. 59-82.—A very interesting summary of the subject, giving a brief history of the 'pigeon fancy,' and describing briefly the leading varieties of the domesticated bird. Several pages are devoted to the 'Homing Pigeon,' or 'Carrier' Pigeon, and to 'Pigeon-racing,' giving statistics of flights, etc.

971. *Intelligence in Birds*. By E. E. Fish. *Bull. Buffalo Naturalists' Field Club*, 1, No. 6,* 1884, pp. 129-138.—On change of habits in consequence of experience, with citation of various instances, and remarks on instinct, the migration of birds, and various interesting anecdotes illustrative of the general subject.

972. *The Ducks of this Locality [Ottawa, Canada]*. By W. P. Lett. *Trans. Ottawa Field-Naturalists' Club*, No. 4, pp. 52-64.—The following species are treated at length: *Anas obscura*, *A. boschas*, *Aix sponsa*, *Querquedula carolinensis*, *Q. discors*, *Dafila acuta*, *Fuligula ferina americana*, *Mergus merganser*, *M. serrator*, *M. cucullatus*, and *Clangula*

* For index to ornithological articles in Nos. 1-5 of this publication see *Auk*, 1, pp. 184, 189, 190.

glaucium. Various other species are mentioned more briefly, the paper altogether forming an important review of the Anatidæ of Ottawa.

973. *Report of the Ornithological and Oölogical Branch [of the Ottawa Field Naturalists' Club]*. By George R. White and W. L. Scott. *Ibid.*, pp. 81-87.—Thirteen species are added to the List of the Birds of Ottawa by Messrs. White and Scott published in No. 3 of the 'Transactions' of the Club (see Bull. N. O. C., VIII, pp. 55 and 115), and there are notes on a few species previously recorded, with dates of the arrival of birds in the spring of 1882. Also a list of *errata* for the 'List' previously published.

974. *Report of the Ornithological and Oölogical Branch [of the Ottawa Field-Naturalists' Club] for the season of 1883*. By John Macoun, Geo. R. White, and W. L. Scott. *Ibid.*, II, No. 1, 1884, pp. 141-147.—Besides interesting notes on several species of birds previously recorded, 17 species are added. There is also a list of arrivals for the spring of 1883.

975. *Washington Crows*. Anon. *Atlantic Monthly*, Vol. LIII, No. 318, April, 1884, pp. 580, 581.—A graphic account of their flight in the morning from their roosting-place to their feeding grounds, and their return at night.

976. [*The Sense of Taste in Birds.*] By G. F. Waters. *Proc. Boston Soc. Nat. Hist.*, XXII, 1883 (1884), pp. 433, 434.—In the common fowl and some young Hawks.

977. *On the Migration of Birds in the Spring and Autumn of 1884*. By J. A. Harvie Browne, F. R. S., F. Z. S. *Bull. U. S. Fish Comm.*, V, No. 14, Aug. 7, 1885, pp. 221-224.—On the influencing causes of the extensive migration of Gulls to the British coast in 1884-'85.

978. *Our Home Feathered Tribe*. By B. H. Warren. *West Chester, Pa., Local News* (newspaper), Sept. 3, 1885.—A briefly annotated list of the summer birds of Chester County, Pennsylvania. (See also an addendum to the list in the same newspaper of Sept. 10, 1885.)

The 'Zoologist' (London), Vols. VI-IX (1882 to Sept. 1885), contains the following (Nos. 979-1002) relating especially to North American birds.

979. *European Birds observed in North America*.—By Percy E. Freke. *Zoologist*, 3d Series, VI, Jan. 1882, p. 21.—Corrections to his article on this subject in the 'Zoologist' for Sept. 1881 (*cf.* Bull. N. O. C., VIII, p. 115) *Phylloscopus borealis* and *Parus cinctus* found breeding in Alaska, and *Mareca penelope* in the Aleutian Islands; the Iceland Falcon obtained from Labrador.

980. *Supposed Occurrence of the Hairy Woodpecker [Picus villosus] in Oxfordshire*. By Oliver V. Aplin. *Ibid.*, Feb. 1882, p. 69.—A specimen is mentioned alleged to have been killed about five years previously near Chipping Norton, but doubt exists as to whether the skin examined was not of foreign origin.

981. *Rusty Grackle and Pallas's Gray Shrike in Wales*. By Henry Seebohm. *Ibid.*, March, 1882, p. 109.—A specimen of *Scolecophagus ferrugineus* killed at Cardiff, Oct. 4, 1881, recorded, forming the first British record of the species.

982. *On the Occurrence of Sabine's Gull, for the first time, in Norfolk.* By Henry Stevenson. *Ibid.*, pp. 111-113.—Two specimens seen and one killed at Yarmouth, Oct. 21 or 22, 1881.

983. *Red-breasted Snipe in Northeast Lincolnshire.* By John Cordeaux. *Ibid.*, Oct. 1882, p. 392.—Record of a specimen of *Macrorhamphus griseus* shot on the seacoast between Cleethorpes and Tetney Haven, Aug. 15, 1882.

984. *Totanus solitarius at Scilly.* By Thomas Cornish. *Ibid.*, Nov. 1882, p. 432.—Taken Sept. 21, 1882.

985. *On Trinomial Nomenclature.* By Joel Asaph Allen. *Ibid.*, VII, Feb. 1883, pp. 97-100.

986. *Bonaparte's Gull at St. Leonards-on-Sea.* By Cecil Smith. *Ibid.*, March, 1883, p. 120. — *Larus philadelphia*, shot "early in November, 1870."

987. *Occurrences of the American Kestrel in Yorkshire.* By J. Backhouse, Jr. *Ibid.*, p. 126.—A female *Falco sparverius* shot near Helmsley, Yorkshire, in May, 1882; believed to be "the only one on record as having been taken in Europe."

988. *Uncommon Birds near York.* By C. D. Wolstenholme. *Ibid.*, p. 128. — Records "an American Bittern (*Botaurus lentiginosus*), shot at Welbury."

989. *Pectoral Sandpiper [Tringa maculata] in Dumbartonshire.* By J. E. Harting. *Ibid.*, April, 1883, p. 177. — A specimen killed Nov. 24, 1882.

990. *American Bittern in Pembrokeshire.* By Cecil Smith. *Ibid.*, Aug. 1883, p. 341.—Taken at St. David's in October, 1872, and previously recorded "with doubt at the times," in 'Land and Water,' by Mr. Greenway.

991. *The last Great Auk.* By J. E. Harting. *Ibid.*, Nov. 1883, p. 470. — A call for information respecting a specimen recorded by Mr. Ruthven Deane (*Am. Nat.* VI, 1872, p. 367), on the authority of Mr. Alfred Lechevallier, as found dead on the coast of Labrador in 1870.

992. *American Bittern in Sussex.* By W. Barrer. *Ibid.*, VIII, Feb. 1884, p. 68.—A female was taken near Amberly, Sussex, Engl., Nov. 30, 1883.

993. *The last Great Auk.* By J. E. Harting. *Ibid.*, April, 1884, pp. 141, 142.—Relates to a discrepancy in letters of Mr. A. Lechevallier about a specimen of the Great Auk alleged to have been found dead on the coast of Labrador in November, 1870, and obtained by him, record of which was made by Mr. Ruthven Deane in the 'American Naturalist' for 1872 (Vol. VI, p. 369). The validity of the record thus made on Mr. Lechevallier's authority appears to be hereby much impaired. (See above. No. 991.)

994. *Occurrence of the Swallow-tailed Kite in Europe.* By E. F. Becher. *Ibid.*, Apr. 1884, p. 145.—Taken on board a ship 'several years back,' about 200 miles from Malta.

995. *On the Application of Trinomial Nomenclature to Zoology.* By Dr. Elliot Coues. *Ibid.*, July, 1884, pp. 241-247.—Dr. Coues's address on this subject before National Academy of Sciences in Washington. April, 1884.

996. *Sabine's Gull in Dublin Bay.* By J. J. Dowling. *Ibid.*, Dec. 1884, p. 490.—A specimen in the first year's plumage was taken at Cloutarf, Nov. 5, 1884.

997. *The American Killdeer Plover in Cornwall.* By Thomas Cornish. *Ibid.*, IX, March, 1885, p. 113.—A specimen of *Ægialitis vociferus* shot at Tresco, in the Scilly Islands, Jan. 15, 1885.

998. *Reported Occurrence of the Blue-winged Teal near Redcar.* By T. H. Nelson. *Ibid.*, p. 113.—A specimen previously recorded (*Zoologist*, 1882, p. 92) by the same writer as *Querquedula discors* proves to have been a young Garganey (*Q. circia*).

999. *Notes on Birds of Manitoba.* By Robert Miller Christey. *Ibid.*, April, 1885, pp. 121-133.—Interesting field notes on about 45 species.

1000. *Notes on the Zoology of Manitoba.* By the late T. B. Wood. (Communicated by J. H. Nelson.) *Ibid.*, June and July, 1885, pp. 224-227, 241-247.—Extracts from letters to Mr. Nelson, giving various interesting notes.

1001. *Bartram's Sandpiper . . . in Cornwall.* By H. E. Dresser. *Ibid.*, p. 232.—Record of a specimen shot "as already recorded in the 'Zoologist,'" several years previously on the cliffs near Coverack.

1002. *Discovery of the Eggs of the Knot, Tringa canutus.*—By J. E. Harting. *Ibid.*, Sept. 1885, p. 344.—Referring to Dr. C. Hart Merriam's record in 'The Auk' (II. p. 312), and stating that "Sabine found the Knot breeding in abundance on Melville Island" in 1820, and that "Capt. Lyons found it breeding near Quilliam Creek, Melville Peninsula," in 1823. Reference is also made to Sir John Richardson's reporting "the Knot as breeding in Hudson's Bay, and down to the 55th Parallel," etc.

Publications Received.—Bicknell, Eugene P. A Study of the Singing of Our Birds. (Auk, 1884, 1885.)

Harvie-Brown, J. A., J. Cordeaux, R. M. Barrington, G. A. Ware, and W. Eagle Clarke. Report on the Migration of Birds in the Spring and Autumn of 1884. Sixth Report. (Vol. II. No 1.)

Merriam, C. Hart. Department of Agriculture, Division of Entomology, Circular No. 20.

Riley, C. V. Department of Agriculture, Division of Entomology. Circular No. 18.

Ridgway, Robert. Some Emended Names of North American Birds. (Proc. U. S. Nat. Mus. VIII. No. 23, Sept. 2, 1885, pp. 354-356.)

Shufeldt, R. W. On the Coloration in Life of the Naked Skin-tracts on the Head of *Geococcyx californianus*. (Ibis, 1885, pp. 286-288, pl. vi.)

Nelson, E. W. Counter-Notes on some species of Birds attributed to Point Barrow, Alaska. (Auk, II, pp. 239-241.)

Stephens, F. Notes of an Ornithological trip in Arizona and Sonora. (Auk, II, pp. 225-231.)

Zeledon, Catalogue of the Birds of Costa Rica, indicating those Species of which the United States National Museum possesses specimens from that Country. (Proc. U. S. Nat. Mus., VIII, Nos. 7, 8, pp. 104-118, May, 1885.)

Agassiz Journal (Lynn, Mass.), I, No. 3, Aug. 1885.

American Field, XXIII, Nos. 25, 26, XXIV, Nos. 1-12.

American Naturalist, Aug. Sept. Oct. 1885.

Anzeiger, Zoologischer, Nos. 197-203, 1885.

Bulletin Des Moines Acad. Sci., I, No. 1, March, 1885.

Bulletin Essex Institute. XVII, Nos. 1-3, Jan.-Mar. 1885.

Bulletin U. S. Fish Commission. V, Nos. 7-21, 1885.

Canadian Science Monthly, III, June, July, 1885.

Forest and Stream. XXIV, Nos. 21-26, XXV, Nos. 1-8, 1885.

Hoosier Naturalist (Valparaiso, Ind.), I, Nos. 1, 2, Aug. Sept. 1885.

Journal Cincinnati Soc. Nat. Hist. VIII, No. 2, July 1885.

Kansas City Review, IX, No. 1, Aug. 1885.

Monatsschrift des Deutschen Vereins zum Schutze der Vogelwelt, IX, Nos. 9-12, 1884, X, Nos. 1-5, 1885. (From H. Nehrling.)

Museum, The, I, No. 3, July, 1885.

Naturalist, The, A Journ. Nat. Hist. for the North of England, Nos. 120-122, July-Sept. 1885.

Naturalists' Companion (Brockport, N. Y.), I, Nos. 1, 2, July. Aug. 1885.

Ornithologist and Oölogist, X, Nos. 8, 9.

Proceedings Biolog. Soc. Washington, II (July 1, 1882, to July 1, 1884), 1885.

Proceedings Nat. Hist. Soc. Glasgow. V. pt. 3. 1884. I (New Series) pt. 1, 1885.

Random Notes on Natural History, II, Nos. 7-9, 1885.

Transactions Kansas Acad. Sci., IX, 1885.

Ward's Nat. Sci. Bulletin, III, Nos. 1, 2, Jan. July 1884.

Zoologist, July, Aug. Sept. 1885.

GENERAL NOTES.

Kirtland's Warbler from the Straits of Mackinac.—In a lot of birds sent me by William Marshall, Esq., keeper of the light-house on Spectacle Reef, Michigan, is a male specimen of Kirtland's Warbler (*Dendroica kirtlandi*). It killed itself by striking the light at that place on the night of May 21, 1885. Found with it, dead at the foot of the tower, were *Turdus mustelinus*, *Dendroica blackburniæ*, *D. maculosa*, *Siurus auricapillus*, *Passerculus savanna*, and *Tringa minutilla*. Spectacle Reef is in the western part of Lake Huron near the Straits of Mackinac, midway between the north and south shores.—C. HART MERRIAM. *Locust Grove, N. Y.*

Odd Nesting Habits of the Blue Yellow-backed Warbler in Missouri.—Mr. Otto Widmann has kindly sent me a nest of the Blue Yellow-backed Warbler (*Parnia americana*) which he took near St. Louis, Mo., June 8, 1885. It differs in every particular from the delicate pensile nest which the species commonly builds in the East, where hanging lichens abound on the trees. Mr. Widmann writes me: "It was situated in a hunch of dead leaves and rubbish, such as is often found hanging from those branches of trees which are reached by high water in creeks, freshets, etc. The tree from which I took the nest is a birch, and the twig a long pendulous one, the terminal three feet of which had been immersed by the last high water and had caught and retained a hulky conglomeration of straw, sticks, and dry leaves. At the time of collection (June 8) the nest was 6-8 feet above the water (of Meramec River, St. Louis Co.), and contained five young ones about ten days old."

The nest itself is a small, open, cup-shaped affair, composed chiefly of small rootlets, fine grass, and a moss, intermixed with a few tufted seeds of some plant, and sparingly lined with horse hairs. It measures, externally, 70 mm. in diameter by 70 mm. in depth; internally, 45 mm. in diameter by 40 mm. in depth.—C. HART MERRIAM, *Locust Grove, N. Y.*

Swainson's Warbler in Jamaica.—The following note is intended to supplement the information already contributed to this Journal by Mr. Brewster and others concerning the distribution of Swainson's Warbler (*Helinaia swainsoni*).

In the Proceedings of the Zoölogical Society of London for 1879, Prof. Alfred Newton of Cambridge, England, records the capture of a single specimen of this species from Jamaica. He says: "It is an extremely rare species and I doubt whether a second example has ever been seen in this country. The present was killed by my brother at Hope, in the parish of St. Andrew, February 8, 1879, and was found by him to be a male. I am indebted to the kindness of Mr. Ridgway, of the Smithsonian Institution, for the determination of this specimen of a species I never saw before" (p. 552).

The above example proved to be the first of a series of eight taken in Jamaica by Mr. Edward Newton and now in the Museum of Zoölogy at Cambridge, England. Through the kindness of Professor Newton, I was permitted, last April, to examine these specimens and transcribe the following data concerning the dates and places of capture:

- ♂ Feb. 8, 1879. Hope, St. Andrews Parish.
- ♀ Feb. 18, 1879. Port Royal Mt., St. Thomas Parish.
- ♀ April 8, 1879. Hermitage, St. Andrews Parish.
- ♀ Oct. 1, 1879. Mt. Elizabeth.
- Oct. 7, 1879. Mt. Elizabeth.
- ♂ Dec. 21, 1881. Mt. Elizabeth.
- ♀ March 16, 1882. Mt. Elizabeth.
- ♀ March 16, 1882. Mt. Elizabeth.—C. HART MERRIAM, M. D., *Locust Grove, New York.*

A Specimen of *Helminthophila leucobronchialis* in New Jersey.—A fine male was shot on May 11, 1883, at Maplewood, Essex Co., N. J., feeding in tree-tops on the blossoms of the oak tree. This, I believe is the first specimen for this State.

Not being able to satisfactorily identify the bird I sent it to Mr. E. P. Bicknell, whose remarks on the subject I give, as follows: "The specimen of *Helminthophila leucobronchialis* from Maplewood, New Jersey, is similar to an adult male taken by Dr. A. K. Fisher, at Sing Sing, N. Y., August 29, 1879, and recorded in B. N. O. C., IV, 4, 234. As I recall Dr. Fisher's specimen, the present one differs chiefly in having the yellow breast-band less pronounced, both in color and outline. The wing-bars are narrow, conspicuously separated, and, as in Dr. Fisher's example, whiter than in many individuals of *H. pinus*. The specimen shows one peculiarity which I do not remember to have observed in others, or to have seen recorded, namely, a distinct bleaching of the ashy-blue of the dorsal surface on the rump and proximal tail-coverts. Carried a few steps farther this tendency would have given us a *Helminthophila* with a white rump! This bird is the first for New Jersey. Mr. Brewster alludes to a specimen from Nyack, "New Jersey" (B. N. O. C., VI, 4, 2191). The specimen referred to, however, was from Nyack, Rockland Co., New York, the error in the record being obviously from some mishap in publishing. But Nyack, N. Y., is within a few miles of the New Jersey State line."—C. B. RICKER, *New York City*.

Capture of two more Specimens of *Helminthophila leucobronchialis* at Sing Sing, New York.—On August 11, 1883, I killed two specimens of the so-called White-throated Warbler (*Helminthophila leucobronchialis*). The under parts of both specimens are much more deeply suffused with yellow than is the case in any of my other three specimens; in fact, the yellow on one is evenly distributed over the entire under surface, but is not so deep as in *Helminthophila pinus*.—A. K. FISHER, M. D., *Sing Sing, New York*.

Evidence Concerning the Interbreeding of *Helminthophila chrysopetra* and *H. pinus*.—On July 4, 1885, while collecting specimens in a piece of woods underlaid by a scattering undergrowth, I came upon a female Golden-winged Warbler busily engaged in collecting insects. As I stood watching her she flew to a neighboring cedar tree and commenced to feed a young bird. I immediately shot and killed the latter as the female flew away. The noise of the discharge started another young bird from some bushes near by, and as it flew the female flew and alighted near it. Just as I was on the point of firing they started, and I succeeded in wounding the female only and had to follow and kill her with a second shot. On my return to the place where I first shot at her, I could not find the young one, nor did a careful search disclose it. In advancing for a nearer shot I had a good opportunity of seeing the young bird: it closely resembled its mother in appearance and had no yellow on the breast, whereas the one

killed was the exact counterpart of the young of the Blue-winged Yellow Warbler, with its yellow breast and white wing-bars.

In all probability the father of this interesting family was a specimen of *Helminthophila pinus*.—A. K. FISHER, M. D., *Sing Sing, New York*.

The Loggerhead Shrike in New Hampshire.—On the morning of the 16th of April of this year an unfamiliar bird-note — as of a Robin with a cleft tongue — attracted my attention to a clump of balsams (*Abies balsamea*) in the yard of our nearest neighbor. Here, after a few moments of hide and seek, I discovered the birds to be a pair of these Shrikes (*Lanius ludovicianus*) although at first I quite naturally supposed them to be *Lanius borealis*, with whose acquaintance I have been little favored. For the next ten days the birds were seen continually as they boldly flew about the houses gathering materials for their nest. This they built close to the trunk of one of the balsams, at a distance of about 20 feet from the ground and scarcely more than that from the upper windows of the house. On the 27th one egg was found, and, to anticipate any possible unnatural actions on the part of the birds, was taken. The female, however, soon resumed her oviparous duties so that on May 4 we secured five more eggs. But meanwhile doubts had arisen as to the species; accordingly the birds were shot and have since been identified by the editor of this Journal as *Lanius ludovicianus*.

The nest, which is large for the size of the birds, is composed outwardly of twigs rather loosely joined together by wads of worsted and twine; the inner portion, however, is quite compact, being composed of dried grasses and roots finely interwoven with feathers and soft bits of worsted. The depth of the nest is two inches; its diameter is three inches.

The eggs are of a grayish-white ground-color, entirely covered with small blotches of a sandy-brown of several shades, darkest at the large end. The eggs measure (in inches) 1.01 × .70; .94 × .74; .98 × .70; .96 × .70; .96 × .70; .98 × .66.

While under my observation the Shrikes did not evince a particularly savage or quarrelsome disposition; when the nest was building they enjoyed driving away the Robins, whose customary abode they had preempted, yet neither in the trees near at hand, nor in an apple tree about 300 yards distant which the male made his look-out, did we see any evidences of impaled victims. They frequently alighted in the grass, apparently in search of grasshoppers and crickets. Their vocal range was broad; but to our ears disclosed a painful lack of culture; save for an occasional liquid, far-away, tone, like a bit of blue sky seen through angry clouds, — their notes were very harsh and discordant. In concluding I will say that another season will doubtless add further evidence, and sufficient, for the complete establishment of the fact that *L. ludovicianus* is a regular resident in this locality. —EDWIN BRANT FROST, *Hanover, N. H.*

Breeding of *Loxia americana* in the District of Columbia. — In Vol. I of 'The Auk,' p. 292. Mr. Ridgway cites the occurrence of *Loxia americana*

in the vicinity of Washington in May, 1884, and, judging from the worn condition of the plumage of one of the specimens shot—a female—he very naturally surmises that this species, hitherto considered an extremely rare and irregular winter visitant, breeds in this section. This season I was so fortunate as to substantiate this view in a most satisfactory manner. On the 17th of May an adult male and a young bird in the striped feather, barely able to fly, were seen by me in a pine sapling, a short distance beyond the city limits. Attracted to the spot by the call of the parent, uttered for the encouragement of the young, I approached within a few feet, and thoroughly identified the birds. — HUGH M. SMITH, *National Museum, Washington, D. C.*

Non-appearance of Juncos at Montreal.—I am informed by Mr. Ernest D. Wintle that he did not see a Junco in the vicinity of Montreal during the spring migrations of the present year, a most unusual occurrence, as the birds are generally very abundant at that season, although but few of them remain there to breed. Mr. Wintle also writes to me that Mr. W. W. Dunlop and Mr. Paul Kuetzing, also of Montreal, had remarked the entire absence of this species. Mr. Wintle desires to know if anything similar has been observed by readers of 'The Auk.'—MONTAGUE CHAMBERLAIN, *St. John, N. B.*

Familiar Chipping Sparrows.—Miss Katie Hine, of Vienna, Virginia, has for several years past had Chipping Sparrows, *Spizella socialis*, visit her home each summer. The first year it was noticed that one of the pair had the claw missing from the middle toe. This bird came with its mate for three successive years and then ceased its visits. The second year there came also with them another pair, one of which, at least, was suspected to be the young of the first year. Now there are two pairs of adults so familiar that I observed them fly to her feet and clamor for crumbs of bread while we were at the dinner table. In the afternoon they frequently alighted near her and even fed from her hand. They know the window of her bedroom, and each morning they assail the panes of glass, making quite a noise to arouse her for their accustomed food.—L. M. TURNER, *Smithsonian Institution, Washington, D. C.*

Swamp Sparrows and Yellow Rumps.—As the "Wintering of the Swamp Sparrow in Eastern Massachusetts" has been made "a question of evidence," it may be well to give that evidence somewhat more in detail than was before thought necessary, and also to state the reasons for concluding that the birds did pass the winter in Cambridge.

On December 29, 1884, four Swamp Sparrows were seen by Mr. F. H. Hitchcock in a small tangle of weeds and alders on the edge of a stream which runs through the Fresh Pond marshes, but they were so shy and hard to approach that only one of them was shot; this was stuffed by Mr. C. J. Maynard of Boston, who told me that he had never before seen one from Massachusetts in winter. While taking a short walk on the after-

noon of January 31, 1885, I met Mr. Hitchcock, and together we went to the place where he saw the Sparrows on December 29, and also to the one in which they were found by Mr. Lamb in January, 1883.* Quite near the latter locality were the fresh and only partly frozen remains of a Sparrow (an undoubted *Melospiza palustris*, as I afterward made sure by comparison) which had evidently been killed by a Shrike.

From the above it would appear almost certain that the birds were present during the entire month of January, and it is very probable that they might have escaped my notice when I looked for them later. If the original flock consisted of only four there could not have been more than two left for me to find, and in the tangled underbrush, which, in one swampy place at least, extends over several acres, they might easily have eluded me.

I have always considered that any species found here in January was an undoubted winter resident, and its presence at any date during that month sufficient proof of this. Mr. William Brewster tells me that he considers the autumnal migration ended here by December 25, and January, the one winter month when all birds (except such erratic species as Crossbills, Pine Grosbeaks, etc.) are settled for a brief period. If January is not accepted as the test month it will be almost impossible to determine our rarer winter residents, for early in February some of our most hardy spring birds often begin to arrive.

It seems to me it is unsafe to say that "it is hardly possible that Swamp Sparrows passed the winter in Massachusetts in a season so rigorous as was that of 1884-'85 after the middle of January," for there are numerous instances recorded of the wintering of certain birds far north of their usual habitat at that season, even during exceptionally cold winters.† The warm and open character of the winter of 1884-'85 previous to January 18 might also have caused the birds to establish themselves in a locality which they would have been unwilling or unable to leave later.

I think it is almost equally certain that the Yellow-rumped Warblers were also wintering at Pine Point, Maine, as they do regularly at Milton, Mass. (only about ninety miles south), where I have found them every winter for a number of years.—ARTHUR P. CHADBOURNE. *Cambridge, Mass.*

Note on the capture of *Coturniculus lecontei* and *Dendroeca kirtlandi* within the city limits of St. Louis, Mo.—Leconte's Sparrow, male, was taken April 1, 1885, on dry ground in a prairie overgrown with coral-berry bushes (*Symphoricarpos*). The earliness of the date seems to be remarkable. Another specimen, in the collection of Mr. Hurter, was taken in

* Journ. Boston Zool. Soc., II (1883), p. 32.

† I find that the following southern species have been recorded from Eastern Massachusetts during the very cold winter of 1882-83:—Flock of six *Sialia sialis* (Job, Bulletin Nuttall Club, VIII, 1883, p. 149); two *Molothrus ater* (Speiman, *ibid.*, p. 121); and a *Dendroeca pinus* (Brewster, *ibid.*, p. 120). See also Auk, I, 1884, pp. 294, 295, and Bulletin Nuttall Club, IV, 1879, p. 118.

this vicinity November 10, 1878. These dates may serve to show that the species is a pretty early spring- and a late fall-migrant. In regard to its habits I can only repeat what others have said again and again, namely that it is a great hider. My attention was called to the bird by a low call not unlike the characteristic chirp of the Song Sparrow, but peculiarly sharp and shrill. Going for the bird, it darted out from one bush into another, a distance of about ten yards. I saw it alight in the middle of the bush on the ground and determined to watch the little stranger. I kept my eyes fixed on him for fully ten minutes, but he remained motionless and silent, and his patience seemed unimpaired when mine was all gone.

The capture of *Dendroica kirtlandi*, male, May 8, 1885, is worthy of special mention, as it is the first record of its occurrence west of the Mississippi River. It may also be new to learn that this Warbler is in its general ways mostly like *D. palmarum*. It flew up from the ground on the River des Pires, a few yards from the water, and alighted behind a bush a few feet from the ground. One glance at the bird was sufficient to tell me that it was a Kirtland's Warbler; such a peculiar looking bird it is. Concealing myself I watched the bird for a few minutes, and found that its habits seem to be terrestrial, that it has the *same wagging motion* of the tail as the Yellow Redpole, but that in the carriage of its body and in the manner of evading discovery by skilfully alighting behind a protecting object it resembles *Oporornis*.—OTTO WIDMANN, *St. Louis, Mo.*

On the Feeding Habits of *Phalænoptilus nuttalli*.—Just without the picket fence that encloses in part the parking of my present residence at Fort Wingate, New Mexico, then runs a wide board-walk. Beyond this is a broad, well-kept gravel road, standing between the former and an open level plot of ground of about an acre's extent. For a number of evenings past my neighbors have tried to induce me to come out and see a strange-acting bird that disported itself in this roadway, between twilight and dark. I paid little heed to this, as from its description I believed it to be the half-grown young of the *Chordeiles* of this region, which is very abundant in the neighborhood. Last night, however, the bird having been described to me as a small Owl with a white throat, by one of its observers, I took my cane-gun and made a search for it up and down the road-way. I had not far to go, when, as well as I could see by the light of a very young moon, I noticed a small, dark-brownish looking bird apparently amusing himself by making short jumps of two feet or more up in the air, then resting on the road to repeat the performance in a moment or so. Another was going through similar capers on the broad walk. They seemed to be perfectly oblivious to my presence, and, indeed, some children further along were trying to catch them with their hands. As I had never heard the note of the Poor-wills in the vicinity, it did not strike me at first that it might be this bird; moreover, its action was so odd that I hardly knew what to make of it. At any rate one soon noiselessly lit, like a great, gray moth, directly in front of me in the road, but a few feet distant. It was extremely difficult to see him, and it was more

by good luck than good shooting that the little pinch of shot from my cane-gun knocked him over, though the weapon rarely fails me in day-time. I immediately ran up to my study with my prize, where I discovered that I had killed a fine specimen of Nuttall's Poor-will. As the skeleton of this bird had long been among my desiderata, the skin and its beautiful plumage was soon stripped off, whereupon I was much surprised to find in its mouth some four or five quite sizable moths, and the upper portion of the œsophagus filled with a wad of a dozen or fifteen more. Fully half of these were yet alive, and two or three managed to fly away when freed from the bodies of their more disabled companions. This, then, is what the bird was up to: instead of flying about as a Nighthawk does, taking his insect prey in a conspicuous manner upon the wing, he captures it in the way I have described above.

To-night the moon is twenty-four hours older, and the evening proportionately brighter, but a careful search for over half an hour failed to discover a single specimen of the bird on the same ground. I am not aware that any of the other Caprimulgidæ have similar habits.—DR. R. W. SHUFELDT, *Fort Wingate, New Mexico.*

Colaptes auratus in California.—During the early part of January, 1885, I took at this place a female of a species I at first thought to be *C. hybridus* Baird, but which I soon became satisfied was *C. auratus*; and upon consulting Mr. Robert Ridgway, who examined the bird, I found my conclusion correct. The bird had been observed for nearly a fortnight frequenting a house near by, and at last it paid with its life for its persistency. Soon after I saw two others of this species, but as I had no gun with me at the time they escaped, much to my regret. I am of the opinion that this bird frequents California more than is supposed, and is overlooked through being mistaken for *C. mexicanus*, which it much resembles, and which is so common as not to be collected in great numbers; and hence the few scattered specimens of *C. auratus* which may visit us are thus overlooked. We have at this place, and in fact all through the southern part of the State, at regular intervals, and lasting generally three days, heavy wind storms, amounting at times almost to tornados. The bird was first seen just after one of these wind storms, and it may be that this had something to do with the bird's having wandered so far from its accustomed haunts, but this seems very improbable. This, the only specimen that I have ever heard of as taken on the Pacific coast south of Sitka, is now the property of the National Museum, to which it was contributed by me.—FORREST BALL, *San Bernardino, Cal.*

A. Hawk Owl (*Surnia ulula caparoch*) at Chatham, Mass.—I am informed by Mr. Augustus W. Baker, of Chatham, Mass., that a Hawk Owl was shot at Chatham during the winter of 1883-'84. The specimen was not preserved, nor can the exact date be given, but Mr. Baker's intelligent and very accurate description of the bird, which he carefully examined, renders the record otherwise satisfactory and not in the least open to doubt.—J. A. ALLEN, *American Museum of Natural History, New York City.*

Another Richardson's Owl in Massachusetts.—As *Nyctala tengmalmi richardsoni* has been so seldom taken so far south as this point (central Eastern Massachusetts), it may be well to record an additional example. I have in my collection a fine specimen obtained in this place on Jan 1, 1885. It was approached without difficulty in broad daylight by a wood-chopper and killed with a stick.

This is about the southern limit of the range of the species as at present determined. I find but three examples on record to the south of this; the early one of Dr. Wood for Connecticut in 1859, and the two obtained in 1881 and 1882 near Providence, R. I., as reported by Mr. Jencks in the 'Nuttall Bulletin' of April, 1881, and April, 1883.

The circumstances of this capture indicate the defective day-vision characteristic of the strictly nocturnal species, in accordance with Richardson's statement: "It is so much dazzled by the light of the sun that it becomes stupid and may easily be caught by hand."—F. C. BROWNE, Framingham, Mass.

The Oyster-catcher (*Hæmatopus palliatus*) in Massachusetts.—Mr. Warren Hapgood tells me that during the last week of April, 1885, he received an Oyster-catcher in the flesh from Chatham, Mass. It was shot on Monomoy Island by Alonzo Nye, the veteran gunner of Chatham. It was in fine plumage, and is now preserved in Mr. Hapgood's collection. If I remember rightly this is only the third specimen known to have been taken in Massachusetts, the other two being the pair mentioned by Dr. Brewer (Water Birds, Vol. I, p. 113), and now in the New England collection of the Boston Society.—WILLIAM BREWSTER, Cambridge, Mass.

The Baird's Sandpiper (*Actodromas bairdii*) at Locust Grove, New York.—August 18, 1885, while Dr. C. H. Merriam and the writer were driving along a country road at the above locality we discovered a solitary Baird's Sandpiper on the edge of a small, temporary pool of water formed by the recent rains. It was a female of the year in fine plumage, and was evidently a straggling migrant which had dropped down hap-hazard to feed and rest. Most of the eastern stragglers of this species, hitherto recorded have been from the Atlantic coast, but undoubtedly the bird occurs more or less commonly all the way across the interior country.—H. W. HENSHAW, Washington, D. C.

A Bird New to Massachusetts.—Among the Sandpipers collected by me years ago in Massachusetts I find a single specimen of the Western Sandpiper (*Ereunetes occidentalis*), taken on Long Island, Boston Harbor, Aug. 27, 1870. It was one of a number of 'Peeps' shot on that day, and it is by no means unlikely that the lot contained others of this species, which were overlooked under the impression that they were all the common species, *E. pusillus*. Like the Baird's Sandpiper, this species may be expected to occur in small numbers along the Atlantic coast during the migrations, especially in fall.—H. W. HENSHAW, Washington, D. C.

Ereunetes occidentalis on the Lower Potomac.—Respecting the occurrence of the Western Sandpiper in the Eastern States, the only published record is that of C. W. Beckham, of Washington, in 'The Auk,' Vol. II, p. 110. This gentleman speaks of several specimens shot at Virginia Beach, Va., September 6-7, 1884. By way of throwing a little additional light on the range of the species, it may not be wholly amiss to state that during the last week of August of the present year I found the western bird quite as common as the eastern, at Piney Point, Md., on the Potomac River. If anything the former was the more numerous, for of eighteen specimens of *Ereunetes* preserved, fourteen were identified by Mr. Ridgway as *occidentalis*, and these, too, were taken at random from a lot of about twenty-five dead birds.—HUGH M. SMITH, *National Museum, Washington, D. C.*

The Great Marbled Godwit at Portland, Maine.—Late in May, 1884, a specimen of the Great Marbled Godwit (*Limosa fedea*) was shot by a Portland sportsman on Scarborough Marsh. The weather being warm at the time the captor of the bird sent his trophy at once to a taxidermist but I was given an opportunity of examining it as soon as its preservation was secured. I make a note of this specimen because it is the only one which I know to have been taken in the vicinity of Portland during my observations there, or between the years 1870 and 1885. A generation ago, in the days of the famous Maine sportsman, 'Cale' Loring, the Marbled Godwit appears to have been at least an occasional visitor to the Scarborough Marshes. In the journal which Loring left, there is, I am told, not infrequent mention of this species, and no Portland sportsman will question the authenticity of such records. Of late years, however, the birds have evidently not looked with favor upon their old-time halting-places.—NATHAN CLIFFORD BROWN, *Portland, Maine.*

The Little Yellow Rail (*Porzana noveboracensis*) in Kansas.—Prof. L. L. Dyche, Curator of Birds and Mammals, State University, Lawrence, writes me that April 18, 1885, he captured one of these birds (a female) on low wet land, about five miles southeast of Lawrence. I have seen the specimen, which is mounted and on exhibition in the fine collection under his charge.—N. S. Goss, *Topeka, Kans.*

Harelda hyemalis in Maryland in Summer.—On the 27th of July, 1885, a Duck, which I supposed was *Aix sponsa*, was seen swimming in the Potomac River near Piney Point, Md. After a time it came to the shore, and approaching it rather cautiously I had no trouble in catching it, as it made no attempt to use its wings. It proved to be a male Long-tailed Duck, in slightly worn plumage. One wing showed signs of injury; the upper coverts were gone, leaving bare the bases of the primary quills; and there was an eminence on the humerus, indicating a fracture of that bone. Without doubt the presence of the bird in these waters at this season was due entirely to the diseased wing. The specimen has been mounted for the National Museum, in the collection of which it bears the number 105,301.—HUGH M. SMITH, *National Museum, Washington, D. C.*

An Albino Surf Duck (*Ædemia perspicillata*).—Some time since Mr. Alfred J. Leavitt, keeper of the Boon Island (Maine) light-house, sent me drawings of a 'curious Duck' which was shot at that place October 13, 1884, by Mr. H. Z. Ellis. After some correspondence Mr. Ellis has kindly sent me the specimen for examination. It proves to be an Albino Surf Duck (*Ædemia perspicillata*). Mr. Ellis writes me that it "headed a flock of Coots," and that its eyes were "jet black." The bird is not pure white. The throat, under parts, sides of head and neck, and part of the wing-coverts and tail are soiled white. The top of the head, a line down the back of the neck, and the wings are pale bleached brown. The markings are symmetrical.—C. HART MERRIAM, *Locust Grove, N. Y.*

On the Alleged Occurrence of the Pacific Eider in Labrador.—Mr. W. A. Stearns, in a paper entitled 'Notes on the Natural History of Labrador,' published in the 'Proceedings of the U. S. National Museum,' Vol. VI, 1883, says (p. 121) that the *Somateria v-nigra*, the Pacific Eider, is "abundant in large flocks in spring," and that he himself "obtained specimens that had the decided 'V-shaped black mark' on the chin." The statement has been doubted, and critics have considered it a mild expression when saying that it "seems to require confirmation." It is not my intention to defend Mr. Stearns's identification, but having found a notice which seems to point in the same direction, I think it safer to postpone a final decision in the matter. The notice to which I allude is found in Degland and Gerbe's 'Ornithologie Européenne' (Paris, 1867), II, p. 557, where, under the head of *Somateria mollissima*, Mr. Gerbe writes: "Three or four specimens received from Newfoundland had under the throat two black lines similar to those of *Somateria spectabilis*, but of a color less deep. May they not be mules between the latter and the female Eider?"

"Mr. de Sélys-Longchamps, in his second note on the hybrids of the Anatidæ,* in quoting this example, remarks that Prince Ch. Bonaparte and Mr. W. Jardine consider these specimens as a distinct species, which they name *Somateria v-nigrum*, but that there is occasion to wait for new observations before deciding."—LEONHARD STEJNEGER, *Smithsonian Institution, Washington, D. C.*

A New Petrel for North America.—On the 2d of September, 1885, there was captured on board the U. S. Fish Commission Steamer 'Albatross' (Capt. Z. L. Tanner, Commander), in latitude $40^{\circ} 34' 18''$ N., $66^{\circ} 09'$ W., a specimen of the White-faced Stormy Petrel, *Pelagodroma marina* (Lath.). Mr. James E. Benedict, resident naturalist of the 'Albatross,' writes me that it was "taken on the ship late in the evening of the 2d proximo," and that "it was in all probability attracted by the light and fell on the deck, from which it seemed unable to rise." He adds that no more of the same species were seen during the cruise, though Petrels of other kinds were numerous around the ship.

* Bull. Acad. Bruxelles, 1856, XXIII C; Naumannia, 1856, p. 397.—L. S.

The capture of this specimen makes the second record, so far as the writer is aware, for the Atlantic Ocean, the species belonging properly to the 'South Seas,' especially in the neighborhood of Australia and New Zealand. The two other Atlantic records are the Canary Islands (*vide* Webb and Berthelot), and near the mouth of the Rio de la Plata. The latter refers to the specimen upon which the species (*Procellaria marina* Lath.) was originally based, while the former is the basis of *Procellaria hypoleuca* Webb and Berth.—ROBERT RIDGWAY, *Washington, D. C.*

Probable Occurrence of *Diomedea exulans* in Florida.—Mr. B. H. Barrett, writing from Jacksonville, Fla., under date of September 14, 1885, says: "Sometime during the month of May a great Wandering Albatross was seen at the mouth of the St. John's River twenty miles below this city. Knowing it to be a very rare occurrence, I questioned several who saw the bird, and from their description I have no doubt of its authenticity." A later letter from Mr. Barrett relating to this occurrence is accompanied by a letter from Mr. Alfred Ames Howlett, one of the fortunate observers of the bird, from which I quote the following: "In reply to your request for a statement regarding an Albatross that I told you I had seen at the mouth of the St. John's River this year, I would say that I was in the pilot-house of my tug, the 'J. E. Stevens,' talking with Captain N. Broward, when I discovered a large bird hovering near the surface of the water in the channel near 'Ward's Bank,' and on coming nearer the bird arose and circled within seventy-five yards of the tug, and I *positively identified* it as an Albatross; and on the return of the tug I carried my gun with me and, although seen again I was unable to get within shot. The last seen of the bird it was winging its way seaward. . . . I am positive of the bird's identity from mounted specimens I have seen and from ornithological works I have read."—ELLIOTT COUES, *Washington, D. C.*

The Bill of the Horned Puffin (*Ceratorhina monocerata*).—While at Santa Barbara and San Diego, Cal., in November and December, I had the opportunity to examine a number of specimens of this species, probably not fewer than twenty, old and young. Considering the abundance of the bird off the California coast, and even in the harbors, its rarity in collections is somewhat surprising. These Puffins are tame enough, as a rule, to be approached and shot without difficulty, and even when they dive they do not remain under long, and may be followed by observing their course and obtained with very little trouble. Enough specimens may, however, be secured (or could in December, 1884) by a walk along the beach of San Diego Bay, or anywhere on the coast, after a storm, when considerable numbers are cast up by the waves in a state of perfect preservation—apparently drowned, for they show no signs of violence, either externally or internally.

It was interesting to observe that the curious upright horn-like appendage of the bill, which writers appear to consider more or less peculiar to the breeding season, was present in all specimens examined, in shape of

a fleshy protuberance or knob near the base of the upper mandible. Upon looking up Cassin's description of the *Cerorhinus suckleyi*, now known to be the young of the present species, and Dr Coues's account of this bird in Proc. Acad. Nat. Sci. Phila., 1868, I find that the young Horn-billed Puffin, just casting the downy plumage, is described as having this same fleshy knob on the bill. As my specimens show that the knob is present in winter, I am inclined to believe that the fleshy knob is really entirely persistent, and is the matrix or core, so to speak, of the horny excrescence, which latter is superimposed upon it only on the near approach of the mating season, and shed at its end, leaving a 'horn' behind, though quite devoid of its horny sheath. In ordinary museum specimens this tough membranous knob is not apparent, having so dried away and shrunk to the bill as to have lost its distinctive character.

It is to be hoped that California collectors will be able to furnish a series of notes on the bill of this species, showing its character at the several seasons. At present the matter cannot be said to be fully understood.—H. W. HENSHAW, *Washington, D. C.*

A Crested Auk on the Massachusetts Coast.—While on a recent collecting trip to Chatham, Mass., I was asked by Mr. A. W. Baker, an intelligent and trustworthy gunner and fisherman of that place, to give him the name of a bird killed at Chatham during the winter of 1884-'85, which he described as being very much like the Little Auk or Dovekie in form and color, though a little larger, and having a tuft of narrow, pointed feathers on the front of the head, curving upward and forward. From his minute description of the bird it was evidently one of the Little Crested Auks, apparently *Simorhynchus cristatellus*—a bird he had otherwise never seen or heard of, but which he very accurately described. That the bird was one of the Little Crested Auks there can be no doubt.

The occurrence of such a bird on the Massachusetts coast is of course entirely accidental and surprising. We have, however, the Tufted Puffin (*Lunda cirrhata*) recorded from Greenland and the coast of Maine, the Black-throated Guillemot (*Synthliborhamphus antiquus*) from Wisconsin (cf. Sennett, Auk, I, p. 98), and the Paroquet Auk (*Cyclorhynchus psittaculus*) from Sweden, showing that these Northwest Coast species of Alcidae are more or less given to wandering to points far remote from their proper habitats.—J. A. ALLEN, *American Museum of Natural History, New York City.*

The Thick-billed Grebes (*Podilymbus podiceps*) Breeding in Kansas.—B. L. Bennett and V. L. Kellogg of Emporia, Kans., both report finding, May 26, 1885, in a pond or slough near the city, quite a number of the nests of this bird containing from five to ten eggs each.—N. S. Goss, *Topeka, Kans.*

CORRESPONDENCE.

[Correspondents are requested to write briefly and to the point. No attention will be paid to anonymous communications.]

Republication in 'The Auk' of Descriptions of New North American Birds.—A Suggestion.

TO THE EDITORS OF THE AUK:—

Sirs: I would like to make a suggestion or two in relation to 'The Auk' as the organ of the A. O. U. One is that in future descriptions of new species or varieties of North American birds, unless originally published in 'The Auk,' be republished in that journal in the next succeeding number, either verbatim or with sufficient fullness to give the diagnostic points, habitat, etc., of the new forms. This may seem objectionable to the (comparatively) few ornithologists to whom the original descriptions are always promptly sent; but many first hear of the new forms by a brief statement in 'The Auk,' announcing the fact of their description, long after the original description appeared. Probably on an average less than two pages of each number would suffice for such a purpose, and I do not think they could be used in a more satisfactory way. I understand the reason for publishing certain descriptions in such a medium as, for instance, the 'Proceedings' of the Biological Society of Washington, but that does not make such place of publication any less inconvenient to many readers of 'The Auk.'

The second suggestion is that each new form, when described, *if recognized by the authority that is about to publish the standard list of North American birds*, be given a special number or designation by which it shall be known in check lists, indicating its position among its allies, and the official opinion of admitted authority as to its claims to recognition.

It seems to me that both these suggestions are practical and useful.

J. C. MERRILL, U. S. A.

Columbus Barracks.

Columbus Ohio, August, 1885.

NOTES AND NEWS.

As previously announced, the annual meeting of the American Ornithologists' Union will be held in New York City, beginning Tuesday, November 17. The place of meeting will be, as previously, at the American Museum of Natural History, 77th Street and 8th Avenue. In addition to the reports of Committees, and the usual routine business of such an occasion, it is hoped that a good list of scientific papers will be presented, and that the meeting will be fully attended.

At the September meeting of the Ridgway Ornithological Club of Chicago, Dr. Alfred Dahlberg was elected to membership, and a paper by Mr. F. L. Grundvig, entitled 'Notes on the Habits of the Birds of Outagamie County, Wis.,' was read.

THE A. O. U. Committee on the Classification and Nomenclature of North American Birds are pleased to believe that the results of their labors will soon be accessible to the public. Their report, the character of which has already been indicated (see *anted*, pp. 318), will form an octavo volume of about 300 pages, and will doubtless be on sale by December 1, and possibly at the time of the annual meeting of the Union in November. Information as to price, etc., may be found in the advertisement pages of the present number of 'The Auk.'

UNDER the title 'A Nomenclature of Colors for the use of Naturalists, and a Compendium of Useful Knowledge for Ornithologists,' Mr. Robert Ridgway has prepared a work, shortly to be published by Little, Brown & Co., of Boston, that cannot fail to be of great convenience and usefulness to naturalists in general, and ornithologists in particular. The work will make an octavo volume of about 150 pages, illustrated by ten colored plates, and several others of outline figures, uncolored. It consists, as the title indicates, of two parts; the first, 'Nomenclature of Colors,' embracing a general dissertation on the principles of color, a chapter of useful hints on the technique of the subject, and an extensive vocabulary of colors, as designated in most of the current European languages. The second part, or 'Ornithologists' Compendium,' includes a glossary of terms used in descriptive ornithology, a comparative scale of standard systems of linear measurement, as the English and the decimal, and tables showing the equivalent of the English inch and its subdivisions in centimeters. The plates, besides representing, with their names, nearly two hundred more or less distinct tints, give the outlines of the principal forms of color-making, outline figures of egg-contours, and details of the external anatomy of birds, with reference to the terms used in descriptive ornithology. The work is the result of years of labor on the part of the author, whose fitness for the task, both as an artist and an ornithologist, is too well known to require comment. The need of a work of just this unique and useful character has long been felt by all working naturalists, and its appearance will doubtless be welcomed as a valuable boon.

THE Smithsonian Institution has recently accepted for publication from Dr. R. W. Shufeldt, U. S. A., a collection of memoirs on the osteology of birds. They will make an octavo volume of some 400 pages, illustrated with 18 lithographic plates and nearly 200 cuts in the text, forming by far the most extensive publication on this subject this country has yet produced. Collectively these memoirs will be entitled 'Contributions to the Anatomy of North American Vertebrates.' The first is on the osteology of *Circus*, and is intended as an introduction to the osteology of the North

American Falconidæ. The second, entitled 'Osteological studies of the Subfamily Ardeinæ,' presents a full account of the skeleton in *Ardea*, with references to other genera of Herons. The third, and by far the most important, is devoted to the 'Osteology of the North American Alcidiæ,' and includes comparisons with several of the higher groups. Dr. Shufeldt having had in his hands the entire collection of the skeletons of the Arctic birds gathered by the Alaskan expeditions, his extensive material will doubtless enable him to throw much light upon the affinities of the groups treated, so far as their osteology may serve to indicate them, since his results, we understand, are to be given in great detail, in the form of carefully prepared analytical tables.

DR. William Wood, the well-known Connecticut ornithologist, died suddenly at his residence in East Windsor Hill, Conn., on Sunday, August 9, at the age of 63 years. He was born at Somers, Conn., and was the son of the Rev. Luke Wood of that town. In 1861 he published in the 'Hartford [Conn.] Times' a series of twenty-one original papers on the 'Ravenous Birds of Connecticut,' and since that date articles from his pen on the same and a few other species have appeared, from time to time, in the 'American Naturalist,' 'Familiar Science and Fancier's Journal,' 'Ornithologist and Oölogist,' and in the 'Hartford Times.' His collection of birds and eggs is quite extensive, being especially rich in examples representing the different phases of plumage of the Hawks. We understand that an effort is being made to have the entire collection, including his mammals and numerous Indian curiosities, removed to Hartford, Conn., for permanent preservation.

DR. H. A. Atkins, a well-known ornithologist of Michigan, died at his home in Locke, Ingham Co., Mich., on the 19th of May, at the age of 63 years. Dr. Atkins was a frequent contributor for many years to the 'Ornithologist and Oölogist,' and occasional notes from his pen were published in the 'Bulletin' of the Nuttall Ornithological Club, the 'American Naturalist,' and elsewhere.

SEVERAL new natural history serials have appeared within the last three months which give more or less attention to ornithology, among which are the following: 'The Hoosier Naturalist,' published monthly at Valparaiso, Ind., of which the first number is dated August, 1885; 'The Naturalists' Companion,' a monthly published at Brockport, N. Y., the first number of which is dated July, 1885; and 'The Agassiz Journal,' a monthly published at Lynn, Mass., of which three or four numbers have already appeared. With this journal has been merged 'The Young Oölogist,' formerly published at Albion, N. Y., and also the 'Naturalists' Advertiser and American Osprey.' 'The Museum,' formerly published at Philadelphia, has been merged with the 'American Antiquarian,' published at Clinton, Wisc.

DURING the present year the British Museum has received three especially noteworthy accessions to its collection of birds. "The first is the celebrated collection of American Passeres, formed by P. L. Sclater, Esq., F. R. S., in the course of the last thirty years. It contains most of the material on which the majority of the publications of this ornithologist were based, and is, perhaps, the first collection of its kind that was made, at least in this country, with a clear understanding of the great importance of well-ascertained localities." The second is the celebrated Salvin-Godman collection. "Formed with the same care as the Sclater collection, it surpasses this latter as regards the number of specimens, illustrating more fully the geographical range and diversity of plumage of each species. Besides the specimens obtained by the donors themselves during their travels in Central America, or by collectors who worked for them, it contains a very complete series of South American birds." The third is the immense Hume collection of Asiatic birds, which has lately been transferred from Simla under the personal superintendence of Mr. Sharpe himself. This, doubtless the largest private collection of birds ever formed, filled eighty-two large cases when packed for transportation, and numbers about 63,000 skins, besides 300 nests, and 18,600 eggs. About 2000 species are included, so that in the average each species is represented by a series of about thirty skins. Of the considerable number of duplicates that will be eliminated, a complete set has to be transmitted, by the wish of the donor, to the Museum of Comparative Zoölogy at Harvard College.

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The American Ornithologists' Union

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