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JANUARY, 1878.

No. I.

NOTE ON *PASSERCULUS BAIRDI* AND *P. PRINCEPS*.

BY DR. ELLIOTT COUES, U. S. A.

THE Nuttall Ornithological Club gratefully acknowledges the liberality of Messrs. T. Sinclair and Son, the well-known lithographers, of Philadelphia, through which the opening number of the third volume of the Bulletin is illustrated with a fine colored plate of Baird's Bunting. The figure was drawn under my direction by Mr. Edwin L. Sheppard of Philadelphia, and represents the adult male as I have often observed it singing during the breeding season. The plate was engraved and printed in colors by the Messrs. Sinclair, in the interests of science, and the whole edition was generously presented by them to the Club.

No full-length colored figure of this species has hitherto been published since Audubon's original, which was taken from a specimen in worn plumage, as the type now preserved in the Smithsonian attests, and is far less characteristic than the Sinclair plate. The colored head in Baird, Brewer, and Ridgway, as well as the wood-cuts on page 531 of their work below cited, were all from that same specimen. In fact, no second specimen was known until 1872, when Mr. C. E. Aiken took, in El Paso County, Colorado, a young bird, which was soon after described as a new species, *Centronyx ochrocephalus*. The following year he obtained another; and during the summer of that year great numbers were taken in Dakota by Mr. J. A. Allen and myself, and also in Arizona by Mr. H. W. Henshaw. Since that time the species has been well known and illustrated by an abundance of specimens.

There is no occasion here to enter into its history, as all that is known is already published in the works below cited, — the more complete notices being those in the “Birds of the Northwest” and the “History of North American Birds,” especially in the Appendix of Vol. III. of the latter.

At one time it was thought that Baird's Bunting had been found in Massachusetts. The error was not rectified until several notices to such effect, including Mr. Maynard's full account, and his plate of the supposed Massachusetts “*Centronyx*,” had appeared. Mr. Maynard made the correction in 1872, when the New England bird was named *Passerculus princeps*.

The complete synonymy of the two species, and their nearly entire bibliography, are as follows:—

Passerculus bairdi.

Emberiza bairdii, AUD., B. Amer. 8vo. ed. vii, 1843, 359, pl. 500 (orig. description. Fort Union, Dak.). — BAIRD, Stansbury's Rep. Great Salt Lake, 1852, 330 (mere quotation).

Coturniculus bairdi, BR., Consp. Av. i, 1850, 481 (mere quotation).

Centronyx bairdii, BD., B. N. A. 1858, 441 (type of the genus. Species redescribed from the type specimen). (Not of any authors referring to the supposed appearance of the bird in New England.) — COUES, Key, 1872, 135 (compiled description). — AIKEN, Am. Nat. vii, 1873, 236 (comparison with the new *C. ochrocephalus* from Colorado). — RIDGW., Bull. Essex Inst. v, 1873, 182 and 190 (Colorado; critical reference to Aiken's specimens, which had been named *C. ochrocephalus*). — COUES, Am. Nat. vii, 1873, 695 (rediscovery in abundance in Dakota; history and criticism). — HENSHAW, Am. Nat. viii, 1874, 241 (Arizona). — ALLEN, Pr. Bost. Soc. xvii, 1874, 57 (Dakota; nest and eggs). — COUES, B. N. W. 1874, 125 (synonymy, redescription, general history and habits). — HENSHAW, Rep. Ornith. Spees. 1874, 110 (New Mexico and Arizona, abundant). — HENSHAW, Rep. Expl. W. 100 merid. Vol. v, Zoology, “1875” = 1876, 253 (same). — BD., BREW., and RIDGW., Hist. N. A. B. i, 1874, 531, figs. pl. 25, f. 3; iii, 1874, 510 (general account, wood-cuts, and colored plate of head). — HENSHAW, List B. Arizona, 1875, 158.

Emberiza (Centronyx) bairdii, GRAY, Hand-list, ii, 1870, 116, No. 7733.

Ammodromus bairdi, GIEBEL, Nomencl. Av. i, 187-, 328.

Passerculus bairdii, COUES, Am. Nat. vii, 1873, 697.

Passerculus bairdi, McCADLEY, Bull. U. S. Geol. Surv. iii, No. 3, 1877, 663 (Cañoncito Texas; nesting).

Centronyx ochrocephalus, “AIKEN” [Ridgway], Am. Nat. vii, 1873, 237 (El Paso, Colorado, autumnal specimens described as new species. — See Scott, *ibid.* 564; Coues, *ibid.* 696; Ridgw. Bull. Essex Inst. v, 1873, 190).

Passerculus princeps.

Centronyx bairdii, ALLEN, Am. Nat. iii, 1869, 513 (original notice of supposed occurrence of *P. bairdi* in Massachusetts, the actual reference being to *P. princeps*). — MAYN., Am. Nat. iii, 1869, 554 (next notice of the same). — ALLEN, Am. Nat. iii, 1869, 631 (third notice of the same). — MAYN., Nat. Guide, 1870, 113, frontisp. (fourth notice of the same). — BREWST., Am. Nat. vi, 1872, 307 (fifth notice of the same, and of additional specimens).

Passerculus princeps, MAYN., Am. Nat. vi, 1872, 637 (explanation of the error, and the supposed "*C. bairdii*" from Ipswich, Mass. named *P. princeps*). — COUES, Key, 1872, App. 352. — COUES, Am. Nat. vii, 1873, 696. — ED., BREW., and RIDGW., Hist. N. A. B. i, 1874, 540, pl. 25, f. 2. — BREWER, Pr. Bost. Soc. xvii, 1875, 441. — BREWST., Bull. Nuttall Club, i, 1876, 52 (New Brunswick). — MERRIAM, Bull. Nuttall Club, i, 1876, 52 (Connecticut). — BROWN, Bull. Nuttall Club, ii, 1877, 27 (New Hampshire). — BAILEY, Bull. Nuttall Club, ii, 1877, 78 (Coney Island, N. Y.). — MINOT, Birds New Engl. 1877, 195 (general account). — MAYNARD, Nat. Guide, 2d Ed. 1877 (colored plate ; text rewritten).

ON THE SPECIES OF THE GENUS *PASSERELLA*.

BY H. W. HENSHAW.

THE genus *Passerella* was instituted by Swainson in 1837 to receive the only species known at that time to him, the *Fringilla iliaca* of Merrem and of the early authors generally. The Aonalashka Bunting, doubtfully the *P. townsendi* of recent authors, was named by Gmelin, in 1788, constituting his *Fringilla unalaskensis*. In the uncertainty respecting Gmelin's bird, his description applying equally well to the *Melospiza insignis*, the *townsendi* of Audubon, named in 1838, has been accepted by most ornithologists. The genus, with its two species, thus remained till 1858, when Professor Baird described the *P. schistacea* from the interior, and at the same time noticed a closely allied form from California with larger bill, for which he proposed the name *megarhyncha*. These four "species," as they have sometimes been called, or forms, make up a very interesting as well as puzzling group, as shown by the doubtful manner in which they have been treated by various writers,

more than one having strongly hinted at the probable specific identity of the four, while the methods in which they have been combined have been nearly as various as the number of authors who have had occasion to notice them.

While the very close relationship existing between the two more recently discovered forms (*schistacea* and *megarhyncha*) has usually been recognized, from the occurrence of intermediate or doubtful specimens, the tendency has been strong to keep separate the two earlier described birds, mainly because no specimens with clearly intermediate characteristics have been recognized. Having had the very unusual opportunity of studying in the field the four forms in question, as well as of examining a very large series of specimens in the Smithsonian collection, many of which were collected by myself in connection with the United States Geographical Surveys west of the 100th Meridian, the conclusion seems to me to be unavoidable that the four forms are but modifications of a single species, brought about through the agency of the laws of Geographical Variation.

Considering first in their relations to each other the *P. schistacea* and *P. megarhyncha*, the first from the northern interior region, the latter from the Southern Sierras, we find that, though very distinct from each other when extreme samples of either form are selected, they yet in the full series before me grade directly together, both in color and general size. Taking examples of *megarhyncha* from the southern Coast Range of California, which may be considered as the true home of the variety, that is, where its peculiarities attain their greatest development, we find them in their enormously developed bills and excessively lengthened tails, as well as darkened colors, to present such a totally different aspect that to liken them to *schistacea* seems almost absurd. Changing, however, our point of observation to the eastern slope of the Sierras, about Lake Tahoe, which is a region approaching somewhat closely the home of *schistacea*, we find that the *Passerellas*, though readily referable to *megarhyncha*, present very appreciable differences from those from the region just noted, and furthermore, that the variation is directly towards the *schistacea* type. The bills in specimens from the eastern slope are invariably and very decidedly smaller than in examples from Fort Tejon and that vicinity, though still much thickened when compared with specimens from the interior (*schistacea*). The color of the under

mandible in typical *megarhyncha* is of a quite characteristic bluish-white, but in these specimens it is of a decidedly yellowish cast,* very much as seen in *schistacea*. A similar tendency in them to approach the light ashy coloration of *schistacea* is also to be noted. By means of these and other specimens we have no difficulty in forming a very complete chain from the one extreme to the other, and hence we consider the two are to be distinguished only variationally, whatever may be their relations to the others.

Of *megarhyncha* it is to be said that the individual variation is very great, being much more marked than in any of the three others. Though in its extreme condition it is certainly one of the most, perhaps the most, noteworthy of the four birds, its characters are so very inconstant that unless taken from the same locality it is not easy to find two specimens that exactly agree, the variation being especially well marked as to size. In a series even from the same neighborhood the variation is apt to be very considerable, more so, I think, than is the case with any other bird I am acquainted with. As this variety is probably a resident, at least in much of the region inhabited by it, it is not easy to understand this tendency in individuals to vary to so great an extent. On the other hand, its claim to similar recognition as the others is seen in the fact that its habitat is distinctly marked from that of its congeners, and that within its own area no specimens occur which are not sufficiently characteristic to be readily referable to it. As to the relative size of wing and tail in the two forms, the individual variation is never sufficient to alter the proportion, the tail being always in excess of wing.

Leaving now, for the moment, the two forms (*schistacea* and *megarhyncha*) just considered, and taking up the two remaining members of the group (*iliaca* and *townsendi*), we note, first, that their habitats are, in the extreme northwest, in close relation, — *iliaca* being one of the several eastern birds that in the far north span the continent, and reach the Pacific Ocean in Alaska. *Townsendi* is a Pacific-slope form, being found in its typical condition from the Columbia River region north to Sitka, Kodiak, etc. Whether the habitats of the two actually join is not at present

* Mr. Ridgway informs me that specimens collected by him in this vicinity in spring show no trace of yellow, but have the typically bluish-white under mandible.

known with certainty. It seems probable that they do, and certain specimens, now to be noted, suggest in their intermediate characters such a union of the respective regions. These are comprised in a series of sixteen specimens collected in California by myself during the fall of 1875. While these are all referable to *townsendi*, not one is typically like that bird, as its characters are illustrated by many examples in the Smithsonian from Sitka, Kodiak, and the contiguous regions. The variation inclines from a quite near approach to the dark olive-brown of *townsendi*, with its unstreaked dorsum, to a shade approaching suspiciously close to the ferruginous color of *iliaca*; these latter individuals show appreciable though obsolete streakings on the back, and may be fairly compared with the latter bird. In this connection a single specimen in the Smithsonian Collection from California is very interesting, since it was named "*iliaca*" by Mr. Ridgway, and thought to be a straggler of this species. On the strength of this specimen, Dr. Coues, in his "Birds of the Northwest," gives *iliaca* as "accidental in California." In the light of the series now at hand the specimen in question assumes a new significance, and is seen to exhibit but a somewhat nearer approach to *iliaca* than the extreme of the above suite; with them it is to be considered as indicating the intermediate condition of color between the two, and hence of their intergradation.

If the same test be applied to *schistacea* and *townsendi* it results, without going into unnecessary details, in the same way. Their complete inosculation as to color may readily be proven. A series of measurements to illustrate the relation in size of the four forms gives the average of the parts as follows. Space forbids our giving full tables of measurements, as would have been desirable.

- P. iliaca*. Average of ten specimens from Eastern United States, Alaska, etc. : wing, 3.40 ; tail, 3.07 ; bill, .32 ; tarsus, .93.
- P. townsendi*. Average of twenty-three specimens : wing, 3.20 ; tail, 3.15 ; bill, .49 ; tarsus, .94.
- P. schistacea*. Average of nine specimens : wing, 3.13 ; tail, 3.37 ; bill, .44 ; tarsus, .91.
- P. megarhyncha*. Average of eight specimens : wing, 3.21 ; tail, 3.58 ; bill, .51 ; tarsus, .93.

As will be seen from the above given average measurements, *iliaca* and *townsendi* agree in having the wing longer than (in some

specimens of *townsendi* equalling) the tail; while in *schistacea* and *townsendi* the tail is very considerably in excess of the wing. The importance which I was at first disposed to attach to these different proportions was somewhat modified upon ascertaining that in respect to proportion of these parts *townsendi*, with its wing nearly equal to tail, evidently marked the first step towards *schistacea*, in which the tail becomes the longer, a tendency carried still further in *megarhyncha*.

One curious and to me unexpected fact brought out by these measurements is that, not only does the tail become longer in the three western varieties, — a variation well shown in other species whose habitat extends from the eastern into the western province, — but also the wing is found to be *actually shorter*; so that the different proportions which ensue result from two causes: first, actual increase in the length of tail; second, actual decrease in the length of wing. I am not aware that this fact has been noted in the case of any other western bird, though I find a similar but slight tendency in this direction in the *Pipilo* var. *megalonyx*, the western form of the *P. erythrophthalmus*. A careful examination of other species may reveal a similar tendency.

By the above arrangement the four forms will require to stand as follows: —

***Passerella iliaca* (Merr).** *Habitat*, Eastern Province of North America. Breeds from British America northward; across to mouth of Yukon. In migrations to eastern edge of great plains; occasional in spring in Colorado (Maxwell) *vide* Ridgway.

***Passerella iliaca townsendi* (Aud.).** *Habitat*, Pacific Province. Breeds in Northern Sierras; Southern California in winter; confined to western slope of Sierras.

***Passerella iliaca schistacea*, Bd.** *Habitat*, Middle Province, restricted by western edge of plains and eastern slope of Sierras; a rare straggler in Kansas and California in fall.

***Passerella iliaca megarhyncha*, Bd.** *Habitat*, southern Sierras, eastern as well as western slope. Probably resident wherever found.

NOTES ON THE BREEDING HABITS OF *CARPODACUS PURPUREUS* VAR. *CALIFORNICUS*, WITH A DESCRIPTION OF ITS NEST AND EGGS.

BY WILLIAM A. COOPER.

My attention was called to an article in the April number of "The Nuttall Bulletin" relative to the nest and eggs of the California Purple Finch. As my experience does not corroborate the description there given, but differs widely from it, I send the following account of several nests and sets of eggs, fearing the article in question may mislead many whose knowledge may be restricted to published information. About ten nests of this bird have come under my observation during the last ten years. Of each of these the framework was loosely constructed, a portion of each nest being formed of pieces of *Scrophularia nodosa*, some of these being entirely of this plant. I have never found a nest in a fork, and they are usually placed at a considerable distance from the ground. Favorite situations are the tops of tall willows, alders, trees covered with climbing ivy, and horizontal branches of redwoods. The var. *californicus* is as abundant around Santa Cruz as is the *C. frontalis*; but while the latter breeds in the gardens throughout the city, the former retires to the wooded river-bottoms, or the hills back of the town. Being unacquainted with the particulars concerning the capture of the male parent bird, or with its captor (Mr. C. A. Allen), I am unwilling to take the ground that the nest and eggs referred to are not genuine; but the chances of a mistaken parentage appear quite probable.

Four nests and sets of eggs of var. *californicus* give the following characters:—

1. May 30, 1875, I found a nest containing five eggs; incubation a few days advanced. The nest measured 6 inches in diameter outside, 2.50 inside, depth 2.50 outside, 1.38 inside; the framework was of fine dried tops of *Scrophularia*, loosely put together; the inner consisted of fine denuded vegetable fibres, soft woolly substances, compactly made, lined with a few hairs. The nest was placed on a horizontal branch of an alder-tree, forty feet high, built on the top of a limb and barely fastened to it. One egg was broken; the remaining four measure .80 × .58, .80 × .55, .80 × .55,

.77 × .54. They are of a bluish-green color, marked with spots of brown and dull purple, chiefly around the larger end.

2. The same day I found another nest, containing four eggs, which had been incubated about the same length of time as the former. This was placed on one of the topmost branches of an alder-tree fifty feet high. Framework of fine stems, among them *Scrophularia*; also a few pine roots; inner portions of fine fibres, lined with wool and hair. The ground-color of eggs is similar to that of set No. 1; the markings, however, are quite different, being of a dull brownish-purple, minute and confluent, forming a ring around the end of two eggs, and a large spot on the end of the remaining two, one of the latter being also spotted over the entire surface, less abundantly than on the end; they measure .83 × .57, .81 × .56, .80 × .54.

3. May 3, 1876, I found a nest with four fresh eggs. It was placed twenty feet from the ground, in a thick bunch of willow sprouts, near a small creek. The female bird was on the nest, and would not leave till I almost touched her. The eggs are of a light emerald-green color, spotted similarly to those of set No. 1, the markings forming a more decided ring around the end; the form is more pointed, and the ground-color is deeper than in sets one and two. Measurements, .75 × .55, .73 × .56, .72 × .56, .71 × .57. The framework of the nest consists entirely of *Scrophularia*; the inner nest of roots and bark, lined with fine bark and hair.

4. May, 1875, George H. Ready found a nest containing four fresh eggs. The nest, similar to those above described, was placed on a horizontal branch of an apple-tree in Mission Orchard. These eggs are of an emerald-green color, and are more pointed than any of the other specimens; the markings are finer than those of sets one and three, and darker, some being almost black; a perfect ring is formed around the end of each, and the whole surface of one is spotted. They measure, .80 × .59, .77 × .58, .77 × .56, .76 × .57.

I have on several occasions seen these Finches in trees wherein were nests of *C. frontalis*. The most faded egg I have is much more deeply colored than any egg I have ever seen of *Cyanospiza cyanea*. The markings are always plentiful, forming a ring around the end of many specimens. The only egg I have of *Carpodacus purpureus* is hardly distinguishable from those of var. *californicus*.

I may here add that *Carpodacus purpureus* var. *californicus* is

the most destructive bird we have, visiting our orchards and destroying young buds, blossoms, and fruit. I have swept up a basketful of cherry-blossoms from under one tree in a single day, the heart of the blossoms being the food sought.

Santa Cruz, California.

NOTE. — In reference to Mr. Cooper's allusion in the foregoing article to my paper on the nest and eggs of the California Purple Finch, I will add that the bird sent with the nest is positively *Carpodacus purpureus* var. *californicus*, and in view of the improbability of Mr. Allen's having shot a bird not the parent of the eggs I am led to believe that these eggs are abnormal specimens, possibly representing what may be termed an albinistic tendency, like occasional white eggs of our common Bluebird. — W. BREWSTER.

DESCRIPTION OF A NEW WREN FROM THE TRES MARIAS ISLANDS.

BY ROBERT RIDGWAY.

IN casually examining the series of Wrens in the National Museum collection, I happened to notice certain differences between specimens of so-called *Thryothorus felix* from the Tres Marias Islands, off the western coast of Mexico, and examples typical of the species collected on the adjoining mainland, in the vicinity of Mazatlan. These specimens were all obtained subsequent to the publication of Professor Baird's "Review of American Birds" (1864–1866); and since Mr. Lawrence makes no mention of the difference alluded to, in either of his recent papers on the ornithology of Western Mexico, I presume that gentleman had no opportunity of making a direct comparison of the series from the two localities.

The new form is clearly a derivative from the mainland species, but is so far differentiated as to require a distinctive name. I therefore propose to name it *Thryothorus lawrencii*, in honor of the distinguished ornithologist referred to above. Its characters are as follows:—

***Thryothorus felix*, *β. lawrencii*, RIDGWAY, MSS.**

CHAR. — Above light grayish-brown, without appreciable bars anywhere, except on the tail; pileum decidedly more reddish, and inclining to light cinnamon-brown. Tail similar in color to the back, but

crossed by numerous (seven or eight, the number rather indefinite, however) bars of black; these bars becoming broken towards the ends, and gradually obsolete at the bases of the feathers; the ground-color occasionally paler along the posterior edge of the blackish bar. Whole side of the head and entire lower parts white, the sides faintly tinged with buff. A distinct dusky stripe along upper edge of auriculars, below the very conspicuous and continuous white superciliary stripe. Bill and feet plumbeous-dusky. Wing, 2.30 - 2.45; tail, 2.30 - 2.45; bill, from nostril, .45 - .48; culmen, .75 - .78; tarsus, .80; middle toe, .50.

Habitat. Tres Marias Islands, off the western coast of Mexico.

Types. 37,329, ♂ (Jan. 1865), 50,817, and 50,818 (U. S. Nat. Mus. Catal.), Tres Marias; Col. A. J. Grayson.

The principal characteristics of this form and the typical one may be contrasted as follows:—

α. felix. Throat bordered along each side by a wide and conspicuous stripe of black; whole sides of neck and also auriculars distinctly streaked with black; entire lower parts, except throat, buff, deepest along sides. Wing, 2.10 - 2.35; tail, 2.25 - 2.35; bill, from nostril, .39 - .42; tarsus, .80 - .90; middle toe, .50 - 52.* *Hab.*, mainland of Western Mexico, from Mazatlan to Oaxaca.

β. lawrencii. Black markings of cheeks, etc., usually entirely absent, very rarely barely indicated; lower parts, except sides, pure white. Wing, 2.30 - 2.45; tail, 2.30 - 2.45; bill, from nostril, .45 - .48; tarsus, .80; middle toe, .50.† *Hab.*, Tres Marias Islands, Western Mexico.

ADDITIONAL REMARKS ON SELASPHORUS ALLENI.

BY H. W. HENSHAW.

In his remarks on *Selasphorus alleni*, in the October number of the Bulletin, Mr. D. G. Elliot attempts to prove that in selecting this, the Green-backed,‡ or, as he calls it, the Californian form, for naming, I committed an error, this, according to him, being the bird described by Gmelin as the *Trochilus rufus*, and hence, as he claims, it was

* Five specimens measured, all from Mazatlan.

† Three specimens measured.

‡ In this article, by the Green-backed Hummer will be understood the recently recognized form from California; the Rufous-backed bird being the old and better known form from Mexico and the West Coast generally. The coloring of the adult males renders these names sufficiently appropriate.

the other, or Rufous-backed, form which required christening. A careful perusal of Mr. Elliot's paper fails to convince me of my supposed mistake, and I think a short review of the matter with a few critical remarks on his paper, may be made to show that my critic is the one who has been misled into the erroneous identification of Gmelin's bird.

From lack of space, I refrain from quoting Gmelin's and Swainson's descriptions, nor will this be necessary. It may be stated, however, that the accounts of these authors, as well as Latham's, upon which Gmelin's was based, apply in every particular to the Rufous-backed bird, the assumption that it was this form these writers intended to describe not being controverted by a word in either. Mr. Elliot's opinion that it was the other or Green-backed form involved in their accounts is based chiefly on the fact of an omission, no mention being made of the notched rectrices which are present in the Rufous-backed form, and also because the description of the outer tail-feathers is more applicable to the latter. That Gmelin and Swainson should have overlooked the notch in the rectrices next the middle pair will not appear so very singular in the light of the fact that it has since been repeatedly overlooked by authors with equal and perhaps better claims to accuracy than can be conceded to either of the above. Both Audubon and Baird, who describe the outer tail-feathers of their *S. rufus* in terms similar to the earlier writers, making no mention of notched rectrices, and both of whom, as my critic implies, must necessarily, therefore, have had the Green-backed bird under consideration, actually did have perfectly typical examples of the Rufous-backed bird. Audubon's type, at present in the Smithsonian, was before me when my article was written, as were also Professor Baird's specimens. They are all, with one exception, fine examples of the Rufous form. This exception is the adult male, No. 6059, mentioned by Professor Baird on page 134, Vol. IX, P. R. R. Reports, as having the back covered with metallic green. This specimen, as I ascertain by inspection, is the true Green-backed form, our *S. alleni*. Professor Baird appeared to regard this peculiar coloration as presenting merely a notable exception to the rule, and passes it by without further comment. His description was based on typical specimens of the Rufous form. The more recent authorities then, notwithstanding Mr. Elliot's opinion to the contrary, having overlooked the fact of a notch in the rectrix, it is not too much to suppose a similar result at the hands

of the earlier and, as a rule, far less particular compilers. The *particularly narrow* outer rectrices mentioned in all the accounts, upon which so much stress is laid by Mr. Elliot, by no means necessarily refers to the Green-backed form, though, as a matter of fact, the outer tail-feathers are much narrower in this species than in the other. The term is evidently one of contrast, the comparison being suggested by the extreme narrowness of the outer feathers as compared with the *inner*, which are really very broad. In fact, there was nothing else to invite this particularity here. There being but one species known to all these authors, there was hence no need of comparative diagnosis other than that suggested by the parts themselves.

Gould, in his Monograph of the *Trochilidae*, after describing what was unquestionably the true Rufous-backed bird of Gmelin, the male with its "back cinnamon brown," adds: "The above is the usual coloring, but I have occasionally seen fully adult males with the rich gorget in which the coloring of the back was totally different, being of a *golden green*,* and presenting so great a contrast as almost to induce a belief that they were of a different species." This latter allusion, as in the case of Professor Baird's, is without doubt to the Green-backed form, its peculiarities of color being evidently the only difference noted by him. His figures, it is true, do not show the notched rectrix belonging to the Rufous form, whence Mr. Elliot concludes that they must represent the other bird. But in color, as also, it is to be particularly noted, in the shape and size of the outer rectrices, they correspond exactly with the Rufous-back and differ irreconcilably from the Green-back. In short, they would not serve to identify the latter bird at all, but are good figures of the former in all respects except in the omission of the notch in the tail-feathers, in which particular they merely repeat the oversight of the other authors.

The Smithsonian possesses several specimens of the Rufous-backed form with its notched tail-feathers received directly from Mr. Gould. That his collection contained this form is therefore certain, if indeed further confirmatory proof were necessary. The peculiarity of the notched tail-feathers was simply overlooked.

But to return to the earlier writers; the selection of Gmelin's name is of itself suggestive that the bird he had in hand could

* Italics my own.

not have been the one with the bright green back. "*Trochilus rufus subtus exalbidus*" points at once to the Rufous-backed form. The other bird with the small amount of rufous below would scarcely have suggested this name. Referring to Swainson's account, which was, as Mr. Elliot remarks, in all probability based upon one of Gmelin's original specimens, possibly his type, we find his description beginning thus, "General tint of the upper plumage rufous or cinnamon, which covers the head, ears, neck, back, rump, upper tail-coverts, and margins of the tail-feathers. . . ." This applies perfectly to the Rufous-backed form, but in no wise meets the necessities of the other bird. For while color is not the most desirable test, and may often prove unreliable, yet in the case of the males of these two birds the variation in color, while considerable, as pointed out in my former article, is never sufficient to obliterate their specific distinctness. They may be invariably told by the color of the back alone.

Mr. Elliot appears to have overlooked much of Swainson's article. For in his remarks that author states, after indicating that he has before him one of Gmelin's original specimens as correctly quoted by Mr. Elliot, "We are likewise able to vouch for its geographic range to the southward as far as the table-land of Mexico, near Real del Monte; specimens from that part having been obligingly sent us for examination. . . ." Thus Swainson vouches for the identity of Gmelin's original specimen, perhaps type, with the Mexican form, which is, as Mr. Elliot says, the Rufous-backed bird. Could stronger proof be asked?

Mr. Elliot's discrimination in the color of the ruffs of the two species I have not been able to verify. The differences he appears to have found in his specimens I am sure, after having examined numerous individuals, are not constant, and hence are of no use as diagnostic features. Mr. Elliot says, "I do not think that the females have any metallic feathers on the throat." In this he is mistaken. Adult females *invariably* have a metallic patch on the median line of the throat. The young males are very differently marked, and have the metallic feathers, which become brownish towards the chin, distributed quite evenly over the throat, the space occupied by them often indicating the extent of the ruff of the following year. The young females alone have the throat almost immaculate, or faintly flecked with brown.

RANGE. We have no proof at the present time showing that the

Green-backed form, *S. alleni*, extends north of California. Some pretty strong evidence to the contrary, of a negative character, may be advanced. The Smithsonian collection contains quite a number of specimens of the Rufous bird from Oregon, Washington Territory, Vancouver Island, and Sitka, a region faunally quite the same as Nootka Sound, which is on the southwestern shore of Vancouver Island. The presumptive evidence is quite strong that if the Green-backed form were really present it would have appeared in the numerous collections from this region received by the Smithsonian. From the above proof it seems clear that Gmelin's bird was the Rufous-backed form, which of course retains his name *rufus*, thus leaving to the Green-backed form the name *Selasphorus alleni* given by me in the July number of this Bulletin (Vol. II, No. 2).

DESCRIPTIONS OF THE FIRST PLUMAGE IN VARIOUS SPECIES OF NORTH AMERICAN BIRDS.

BY WILLIAM BREWSTER.

I.

THE first plumage assumed by nearly all young *Altrices* (birds which are reared in the nest) at or about the time of leaving the nest, though representing a universal, and, in the majority of cases, well-defined stage, has been almost entirely ignored by Ornithological writers, or, if referred to at all, in such comprehensive and indefinite terms as to afford information of little distinctive value. Thus under the general term "young," we find described sometimes the *real nestling*, but more frequently the *young in autumnal dress*.

My attention was called to this fact some years since by the extreme difficulty, and too often impossibility, of identifying by "the books" nestlings of even the commoner species. I have since given special care to the acquisition of series of specimens representing *all* the stages through which birds pass in arriving at maturity, and it is proposed in the course of the present paper to treat, as fully as may seem necessary, some hitherto undescribed plumages of North American birds, and also in certain instances to clear up the confu-

sion that has previously resulted either from misapprehension, or from a too free use of certain distinctive terms.

While it is to be regretted that the specimens at hand do not furnish full series of even all the commoner species, it is nevertheless hoped that, by calling attention to this hitherto neglected field, an impetus will be given to future investigation that may result in a more complete knowledge of the subject than can here be presented. Before proceeding to a detailed consideration of specimens it may prove of interest to state briefly a few generalizations regarding the comparative development of the young in different families of birds.

Among North American *Altrices* the young of most species are born with thin patches of delicate, soft down, restricted mainly to the feather-tracts. Beneath this fluffy down the feathers are already forming; these soon appear, bearing at their summits the little tufts of down that formed the down-patches. Meanwhile the remiges and rectrices have started, and, growing with marvellous rapidity, the bird is soon able to take wing. The contour-feathers have now also nearly reached their full growth, and differ in both structure and color from the later stages of plumage, these feathers being softer and of a more open texture than those that succeed them. This is the stage of plumage technically characterized throughout the following paper as the *first plumage*. Though evanescent, it is usually worn for several weeks after the bird has left the nest. It is then *moulted*, and the regular autumnal plumage succeeds.

The remiges and rectrices are, however, nearly always *retained until the next regular moult*, exceptions to this rule being afforded by the families *Tetraonidae* and *Picidae* and the genus *Philohela*, and probably by a few other groups, in which the remiges and rectrices are moulted with the rest of the first plumage.

The early tegumentary development of most *Præcoces* (birds whose young run about at birth) is quite different: they are densely clothed with down until of large size, when, coincident with the sprouting and growth of the remiges and rectrices, the feathers of the full autumnal plumage appear. In short, the first plumage of Altricial birds seems to be omitted or perhaps replaced in the *Præcoces* by their more complete and longer worn, downy plumage. A few conspicuous exceptions occur among both groups. Thus, many *Raptores* differ from the *Altrices* in being densely clothed with

down from birth until of large size, when the autumnal plumage is immediately assumed; while among *Præoces* the young of the *Tetraonidæ*, of *Philohela minor*, and of some of the *Rallidæ* (well illustrated by a good suite of *Rallus virginianus*), pass in succession through two well-defined primal stages, — the downy one characterizing their own group and the first plumage of *Altrices*. In the *Anatidæ*, and probably some other *Natatores*, the remiges and rectrices are not developed until the young bird is almost fully grown and the autumnal clothing-plumage nearly perfect. A few families, as the *Ardeidæ*, have not been fully investigated, and may furnish additional interesting exceptions.

In concluding these prefatory remarks, I wish to gratefully acknowledge an act of generosity on the part of Mr. Robert Ridgway. He had some time since made investigations respecting the early stages of plumage of birds, and had even sent descriptions of the first plumage of some North American Warblers for publication in the "Bulletin," when, learning of my prior researches and somewhat more extensive material, he very kindly withdrew his paper and placed the whole result of his work in my hands, thus enabling me to add a number of species not represented in my collection. The descriptions of these are presented in Mr. Ridgway's own words, and indicated by quotation marks and his initials. I desire also to express my thanks to my friend Mr. J. A. Allen for valuable suggestions and information.

1. *Turdus mustelinus*.

First plumage: female. Generally similar to adult, but with the feathers of crown streaked centrally with buff; "rusty-yellow triangular spots at the ends of the wing-coverts and a decided brownish-yellow wash on the breast." From a specimen in my collection, shot by Mr. W. D. Scott at Coalburgh, West Virginia, July 25, 1872. This bird is perhaps a little past the first stage of plumage, most of the feathers of the upper parts being those of the autumnal dress.

2. *Turdus pallasi*.

First plumage: female. Remiges and rectrices as in adult, but darker and duller; rump and tail-coverts bright rusty-yellow; rest of upper parts, including wing-coverts, dark reddish-brown, each feather with a central tear-shaped spot of golden-yellow: entire under parts rich buff, fading to soiled white on abdomen and anal region; each feather on jugulum and breast broadly tipped with dull black, so broadly, indeed, that this color covers nearly four fifths of the parts where it occurs; rest of under parts, with exception of abdomen and crissum, which with the

central region of the throat are immaculate, crossed transversely with lines of dull black. From a specimen in my collection shot at Upton, Me., June 20, 1873. This bird was very young,—scarcely able to fly, in fact,—yet the color of the rectrices is sufficiently characteristic to separate it at once from the corresponding stage of *T. swainsoni*, which it otherwise closely resembles. Another specimen of apparently nearly the same age, taken at Rye Beach, N. H., July 25, 1872, differs in having a decided reddish or rusty wash over the entire plumage, and by the spots on the breast being brownish instead of black.

3. *Turdus swainsoni*.

First plumage: male. Above much darker than adult, each feather, excepting on rump and tail-coverts, with a tear-shaped spot of rich buff: beneath like adult, but rather more darkly and thickly spotted on the breast, and with narrow terminal bands of dull black on the feathers of the lower breast and sides. From a specimen in my collection shot at Upton, Me., August 4, 1874.

4. *Turdus fuscescens*.

First plumage: female. Above bright reddish-buff, deepest on back and rump: feathers of pileum, nape, back, and wing-coverts margined with dark brown, confining the lighter color to somewhat indefinitely defined central drop-shaped spots. Lores and line from lower mandible along sides of throat, dark sooty-brown: throat, sides, and abdomen pale brownish-yellow with indistinct transverse bands of brown; breast deep buff, each feather edged broadly with dull sooty-brown; anal region dirty white. In my collection, taken in Cambridge, Mass., July 23, 1874.

5. *Mimus carolinensis*.

First plumage: male. Pileum dull sooty-brown, many shades lighter than in adult. Wings and tail as in adult; interscapular region brownish-ashy, shading into pale cinnamon-brown on the rump. Entire under parts barred obscurely with dull brown on a very light ashy ground; crissum pale, dead cinnamon. In my collection from Cambridge, Mass., August 9, 1875.

6. *Harporhynchus rufus*.

First plumage. Generally similar to adult, but with the spots on the under parts much thicker, more diffuse, and dull black instead of reddish-brown. The pileum is slightly obscured by a blackish wash; the rump rich golden-brown, and the spotting on the wing-coverts fawn-color. From specimens in my collection obtained at Cambridge, July 13, 1874.

Fall specimens differ from full-plumaged spring birds in having the upper parts of a darker, richer red, with a much stronger rufous wash on the under parts.

7. **Sialia sialis.**

First plumage: female. Above dull smoky-brown, unmarked on head and rump, the latter slightly paler; but marked over the interscapular region and wing-coverts by tear-shaped spots of white and pale fawn-color, these spots occupying the central portions of the feathers. Secondaries and tertiaries edged, and tipped with reddish-brown; first primary and lateral pair of rectrices with the outer webs pure white; inner primaries as in adult, but with the blue of a much lighter shade; posterior margin of eye with a crescentic spot of soiled white. Under parts, with the exception of the abdominal region, which is nearly immaculate, pale ashy-white, each feather broadly margined with dull cinnamon-brown. From a specimen in my collection, shot at Cambridge, Mass., June 8, 1874.

8. **Regulus satrapa.**

First plumage: female. Pileum (including forehead) dark smoky-brown; line over the eye entirely cut off at its anterior corner by the junction of the dusky lores with the brown of the forehead; tertiaries broadly tipped with white; breast strongly washed with pale fawn-color; otherwise like adult. From a specimen in my collection taken at Upton, Me., August 25, 1874. A young male taken August 25, 1873, is in every way similar. A good series of specimens of various ages shot during August and the early part of September illustrate well the transitional stages. First the brown of the pileum darkens into two black stripes, while the line over the eye broadens to meet its external margin. Next, two lines of yellow feathers appear inside and parallel with the black ones, while the orange of the central space (of the male) is produced last.

9. **Polioptila cærulea.**

First plumage: male (?). Rectrices as in the adult; remiges paler, with a much broader and whiter edging on the tertials; rest of upper parts pale mouse-color with a strong wash of light cinnamon. Entire under parts grayish-white or pale lead-color. In my collection, from Kanawha Co., West Va., June, 1872.

10. **Lophophanes bicolor.**

First plumage: male. Above dull ashy, *frontal band scarcely darker*; sides deep salmon-color. Otherwise like adult. From specimens in my collection obtained by Mr. W. D. Scott at Coalburgh, West Va., July 20, 1872.

11. **Parus atricapillus.**

First plumage: male. Back very dark slate without any tinge of brownish. Beneath salmon-color, faintest on breast, most pronounced on sides and anal region. The black on throat and pileum scarcely less clear than in adult. From specimen in my collection shot at Concord, Mass., June 17, 1871.

From about the time of pairing in spring till early autumn this Titmouse wears a plumage which has been almost, if not entirely, ignored by writers. The back is clear ashy without any brownish or olivaceous washing except in a few specimens on the rump. The under parts are white, with barely a trace of faintest salmon on the sides of the body; while the white margining on the remiges is much narrowed and on many of the feathers replaced by ashy. It may be objected that this generally paler condition is due to the wearing of the feathers consequent upon the continual passing of the birds in and out of their nesting cavities, but not all of the specimens before me *are in worn* plumage; one pair, taken May 12, 1876, being in remarkably perfect dress. At all events, whatever the cause, this peculiar stage is so universally characteristic of all specimens (at least, New England ones) taken at this season, that it certainly merits a fuller recognition than it has up to this time received. Five specimens examined, all collected in Massachusetts in May or June.

12. *Parus hudsonicus*.

First plumage: female. Above olivaceous-drab, becoming much darker and more dusky on crown. Sides and anal region *very pale* brownish-rusty. Otherwise like adult. From a specimen in my collection taken at Upton, Me., August 25, 1873. This bird is, strictly speaking, in a transitional stage, having already acquired many feathers of its fall dress. It differs sufficiently, however, from the perfected condition of the autumnal plumage to merit description under the above heading.

13. *Parus rufescens*.

First plumage: male. Pileum, nape, and throat dark sooty-brown; back dull chestnut, tinged with olive; sides ashy, washed in places with brownish-chestnut. Otherwise, like adult. From a specimen in my collection obtained at Nicasio, Cal., by Mr. C. A. Allen, May 21, 1875.

14. *Sitta canadensis*.

First plumage: female. Above ashy with just a shade of blue; pileum dark ashy; chin and throat dirty white; rest of under parts *like spring adults*, but with a fainter and more general suffusion of rusty. From specimen in my collection taken at Upton, Me., July 31, 1874. In "History of Birds of North America" (Vol. I, p. 118) Mr. Ridgway, in giving the specific characters of this species, says: "The male has the chin white; rest of under parts, brownish-rusty." Of the female, "beneath paler, more of a muddy white." Now, if I understand rightly by this that the *breeding plumage of the adult* is indicated, I am confident that the description, so far as it relates to the male, is incorrect. From the examination of a large series of specimens, collected in every stage of plumage and at nearly all seasons, I am led to believe that Mr. Ridgway's description is applicable only to the male *in full autumnal dress*, — a mistake most easily committed when it is considered

that this plumage is worn through the winter months, or nearly up to the commencement of the breeding season, as is shown by specimens shot on the migration through Massachusetts in April. It will be seen by a comparison of the following descriptions that the brightest plumage is reached in *autumnal specimens*, a case parallel with that of *Parus atricapillus*. Hence I have judged it best to redescribe the spring or breeding plumage, using Mr. Ridgway's words so far as they are definitely applicable. The autumnal plumage is presented, I believe, for the first time.

Breeding plumage: Adult male. "Above ashy-blue: top of head black: a white line above and a black one through the eye." Entire under parts *dirty white*, tinged *very slightly* with pale rusty on breast, sides, abdomen, and crissum. From specimen in my collection shot at Upton, Me., May 31, 1871.

Adult female. With black of head scarcely duller than in the male: beneath similar, *perhaps a trifle less rusty*. From specimen in my collection obtained on Muskeget Island, Mass., June 30, 1870. It is very possible that this bird represents a development of plumage only exceptionally attained by the female; I have seen no other specimen of that sex with the color of the crown so nearly approaching that of the male.

Autumnal plumage of young: male. Upper parts as in breeding adults, the ash-blue a little clearer and brighter. Chin white; rest of under parts brownish-rusty, paler on throat and intensifying into light chestnut on sides. A narrow line down centre of abdomen pure white (this last feature, though characteristic of most specimens, is wanting in a few). From a specimen in my collection shot at Upton, Me., September 7, 1874.

Female. Pileum dark ashy mixed with black. Otherwise similar to male and scarcely lighter beneath. From specimen in my collection shot at Upton, Me., September 12, 1874.

The *adult* in autumn is paler beneath than the young.

15. *Thryothorus ludovicianus*.

First plumage: male. Top of head dark rusty, each feather edged and tipped broadly with dull black, the former color nearly eliminated by the latter on the crown and forehead. Under parts nearly as in adult, but more cinnamoneous; a few narrow, wavy, and somewhat badly defined transverse lines of black across the breast and abdomen. From a specimen in my collection shot at Petroleum, West Va., May 1, 1874.

16. *Troglodytes aëdon*.

First plumage: female. Upper parts more reddish than in adult: throat, jugulum, and breast pale fulvous-white, each feather on breast tipped with pale drab, giving that part of the plumage a delicately scutellate appearance. Abdomen whitish; sides, anal region, and crissum dull rusty-brown, becoming almost chestnut on the crissum. No trace of bars on feathers of the body either above or beneath. From specimen in my collection shot at Cambridge, Mass., July 9, 1873.

17. *Troglodytes parvulus* var. *hyemalis*.

First plumage: male. Remiges, rectrices, etc., as in adult; rest of upper parts dark reddish-brown, becoming more dusky anteriorly: no trace of bars except on wings and tail. Beneath dull smoky-brown, with a strong ferruginous suffusion on sides, anal region, and crissum; every feather of under parts with a bar of dark brown. From a specimen in my collection taken at Upton, Me., August 4, 1874.

18. *Telmatodytes palustris*.

First plumage: female. Entire pileum, nape, and interscapular region dull black; no white streaking or spots; otherwise like adult. From specimen in my collection taken at Cambridge, August 10, 1873.

19. *Cistothorus stellaris*.

Autumnal plumage: young male. Above similar to adult, but darker, especially on nape and pileum. Throat and abdomen light buff; breast, sides, anal region, and crissum rusty-brown, paler and with white tip-pings to the feathers anteriorly. From a specimen in my collection shot at Cambridge, Mass., September 19, 1870.

20. *Mniotilta varia*.

First plumage. Similar in general appearance to the adult female, but markings, especially the two stripes of the pileum and the streaks beneath, much less sharply defined; the streaks of the breast indistinct grayish-dusky, suffused with pale fulvous, those of the back more strongly tinged with rusty. The two stripes on the pileum dull grayish-dusky, instead of deep black. From a specimen in my collection obtained near Washington, July, 1876." — R. R.

21. *Parula americana*.

First plumage: male. Remiges, rectrices, etc., as in the adult. Pileum, nape, rump, and upper tail-coverts dull gray, tinged with olive anteriorly and with blue posteriorly, the back with more or less of an indistinct patch of olive-green; throat and eyelids grayish-white, abdomen, anal region, and crissum pure white: jugulum and sides of breast pale ash-gray. From two specimens obtained at Mt. Carmel, Ill., July 17, 1871, Nos. 1457 and 1563, my collection. Both of these show a large patch of bright gamboge-yellow on the breast, these feathers denoting the commencement of the adult plumage. One of them also has the chin and an indistinct supraloral line tinged with yellow." — R. R.

22. *Protonotaria citrea*.

First plumage. Remiges, rectrices, primary coverts, and alulae as in the adult. Entire abdomen, anal region, and crissum white; head, neck, back, and jugulum pale greenish-olive, the throat and jugulum paler and

more olive, the upper parts brighter and more greenish; rump and upper tail-coverts plumbous-gray. From a specimen killed at Mt. Carmel, Ill., July 22, 1875; in my collection. In this specimen a large patch on each side the breast is bright gamboge-yellow (as is also a row of 'pin-feathers' along the middle of the throat), indicating the adult plumage."—R. R.

23. *Helmitherus vermivorus*.

"*First plumage*. Remiges, rectrices, primary coverts, and alulæ as in the adult. Rest of the plumage, including the whole back, lesser, middle, and greater wing-coverts, buff, deeper below, more brownish on the back and base of the wing-coverts. Pileum with two badly defined stripes of grayish-brown, and a narrow streak of the same behind the eye. From a specimen in Mr. Henshaw's collection obtained near Washington in July, 1876."—R. R.

AN INADEQUATE "THEORY OF BIRDS' NESTS."

BY J. A. ALLEN.

WHY the thousands of species of birds build each a peculiar nest, differing more or less in situation and architecture from those of all other species, is a question which has as yet received no satisfactory answer. As a rule, the nest, including its location, the materials and manner of its construction, is as distinctive of the species as the number, size, form, and color of the eggs, or, in some instances, as any fact in its history, not excepting even the details of structure and coloration of the bird itself. Why this is so we can perhaps explain when we can satisfactorily account for the diversity of song that is scarcely less a specific characteristic. Yet the structure and position of the nest, even among birds of the same species, is more or less varied by circumstances, sometimes even to a striking degree. In some cases the influence of peculiar surroundings is most obvious, as when, for instance, a species that habitually nests in trees, like the Carolina Dove, is found in treeless regions to place its nest on the ground, or when a Woodpecker, under similar circumstances, excavates for its nesting-site a cavity in a clay-bank. Not unfrequently birds exhibit in their choice of nesting-sites something quite akin to intelligent foresight, as is manifestly the case when such species as the Brown Thrush and

the Canada Goose, that commonly nest on the ground, place their nests in bushes or trees in localities subject to sudden inundation. Many species, profiting by dearly bought experience, will abandon, in consequence of persistent persecution, long-occupied breeding-grounds for those more remote from danger. A remarkable instance of change in breeding habits from this cause is afforded by the Herring Gull, which, to escape its human foes, has been known to depart so widely from its usual habit of nesting on the open seashore as to place its nest in trees in more or less inland swamps. That birds have the power to grapple intelligently with unexpected emergencies has been repeatedly shown, a most striking instance being afforded by the Baltimore Oriole, which has been observed to repair a half-demolished nest by weaving one end of a string into the weaker side and fastening the other end taut to a branch above. The fact that various species of Swallows, the Wren, Chimney Swift, and some other of our native birds which originally nested in deserted Woodpeckers' holes or hollow trees, abandon such nesting-sites for the better ones accidentally or intentionally provided by man, shows that they are by no means the slaves of "blind instinct," but are able to take advantage of favoring circumstances.

The materials used by birds in forming their nests, it has been assumed, are those nearest at hand or most easy to obtain, or such as their peculiar habits chance to render them most familiar with, and that the mode of nidification depends upon their constructive ability, — upon the "tools" with which nature has provided them. This is undoubtedly to a great degree true, for it would be hard to conceive of the construction of an elaborate nest by any members of the Whippoorwill or Night-Hawk family, whose bills are excessively weak and small, and whose feet are unfitted for walking or perching, being barely able to support them on a flat surface. Hence we are not surprised that they place their eggs on the ground without the provision of a nest. Many other groups of birds are almost equally incapable of building nests. But among species equally furnished with the means for elaborate nest-making, there is the greatest diversity in the results of their architectural labors. Even when the materials employed by different species chance to be the same, the structures resulting from their use bear the impress of different architects. Nests of the same species also vary greatly at different localities in consequence of the materials

most readily available for their construction being not everywhere the same; they also vary in accordance with the climatic conditions of the locality, the same species building a quite different nest, as respects warmth and stability, in the colder portions of its habitat from that which it constructs in the warmer portions.

But while these deviations under diverse circumstances readily explain variation in the situation and character of the nests of the same species, they fail to explain why closely allied species, living together under precisely the same conditions of environment, and sometimes so closely resembling each other in size, color, and all external characters as to require the eye of an expert to detect their specific diversity, should build totally unlike nests, and display almost the widest possible differences in respect to their situation. To cite, in illustration, a single example from the many that might be given, we may instance our common Pewees and Flycatchers. In this small group we find a wide range of diversity in breeding habits among species most intimately related in structure and general habits. The Least Pewee builds a small, compact, felted nest of fine soft materials, and its nearest allies, the Acadian and Traill's, build far ruder and much more bulky structures of coarse grasses, strips of bark, and other similar materials. Another near relative of these species, the Wood Pewee, selects for its nesting-site a lichen-covered dead branch, on which to saddle its small, highly artistic, cup-shaped nest, covered externally with lichens glued to the surface in such a manner as to render the structure almost indistinguishable from a natural protuberance of the branch itself. The Bridge Pewee, another allied species, builds a large bulky nest, formed outwardly of a heavy layer of mud, copiously lined with dry grass and feathers, and shelters it in the chinks of walls, under shelving rocks, in sheds, outbuildings, and under bridges. The Great-crested Flycatcher chooses hollow trees or deserted Woodpeckers' holes in which to form its nest and deposit its eggs, while its allies, the Kingbirds (genus *Tyrannus*), build large open nests, which they make no attempt to conceal.

Notwithstanding all this diversity of situation and structure among closely allied species, birds' nests have been divided into two classes, according to "whether the contents (eggs, young, or sitting bird) are hidden or exposed to view," and the broad generalization based thereon that the character of the nest is intimately related to the color of the female parent-bird. This, in fact, is Mr.

Wallace's "Theory of Birds' Nests." * This "theory" has for its basis the assumed "law which connects the colors of female birds with the mode of nidification." Mr. Wallace states it to be a rule, open to "but few exceptions," "that when both sexes are of strikingly gay and conspicuous colors, the nest is . . . such as to conceal the sitting bird ; while, whenever there is a striking contrast of colors, the male being gay and conspicuous and the female dull and obscure, the nest is open and the sitting bird exposed to view." He cites as examples of the first class, or those in which the female is conspicuously colored and the nest concealed or covered, "six important families of *Fissirostres*, four of *Scansores*, the *Psittaci*, and several genera and three entire families of *Passeres*, comprising about twelve hundred species, or about one seventh of all known birds." This statement, however, proves on examination to be quite too sweeping, since a large proportion of the species here named either do not have a concealed nest, or are of sombre and obscure tints. There are also other entire families and various additional genera, in which the males are brilliantly and the females obscurely colored, which build a domed nest. I now propose, so far as the limits of a short article will allow, to test this theory by a rapid survey of the birds of North America, — an area certainly large enough to afford a fair basis of judgment. For this purpose I shall consider the modes of nidification under four heads, namely, (1) nidification in holes in trees ; (2) in burrows ; (3) domed, pensile, or otherwise more or less "covered" nests ; and (4) nests wholly open.

1. Among North American birds those that habitually nest in holes in trees embrace several species of the smaller Owls, one or two kinds of small Hawks, all the various species of Woodpeckers, all the numerous species of Titmice of the genera *Lophophanes* and *Parus*, the several species of Nuthatches, the Brown Creeper, some of the Wrens, the Bluebirds (three species of *Sialia*), several species of Swallows, Martins, and Swifts, the Great-crested Flycatcher, the Carolina Paroquet, and three or four species of Ducks. In very few of these can the colors be considered as "strikingly gay and conspicuous," and when this is the case, as in the Bluebirds, a few of

* Originally published in the *Intellectual Observer* of July, 1867, and republished with additions in 1870 in a collection of essays entitled "Contributions to the Theory of Natural Selection," and alluded to in more recent articles by the same author, including his recent paper on "The Colors of Animals and Plants."

the Woodpeckers, some of the Swallows, the Wood-Duck, the Hooded Merganser and the Buffle-head, the females are much paler and duller colored than the males. In many other instances the colors are in the highest degree adapted for concealment under every circumstance, and especially in a sitting female bird, as, for instance, in the Brown Creeper, the Wrens, some of the Titmice, the Swifts, and various others.¹

2. The burrowing species embrace the Prairie Owl, the Kingfishers, two species of Sand Martin or Bank Swallow, the Petrels, various species of Auks and Puffins, and some of the Guillemots. The Kingfishers possibly excepted, almost none of these have bright or conspicuous colors, while in several the colors could scarcely be better adapted for concealment. Especially is this the case with the Owl and Sand Martins, with their dull neutral tints.

3. Among the comparatively few species that build a covered or domed nest are the ground-building Golden-crowned Wagtail or "Oven-Bird," the Dipper or Water-Ousel, the Meadow Lark, the common Quail, and several Warblers. The first two of these have tints peculiarly adapted for concealment, and the colors of the dorsal area in the others are likewise "protective." Among the species building covered nests in reeds, bushes, or low trees, are Marsh Wrens, some of the other Wrens, the smaller Tits (genera *Psaltriparus*, *Auriparus*, etc.), several of the Warblers (family *Sylvicolide*), the Magpie, and perhaps a very few others. Of these the Wrens and Tits are all obscurely or protectively colored, and have no "surprisingly gay and conspicuous" tints. Some of the Warblers are more brightly colored, and a few have rather conspicuous markings; but these features are almost wholly confined to the male, the females being of comparatively dull and obscure tints. The Magpie has showy colors and a very long tail, and the bulky nest, wholly concealing the sitting bird, may be useful in hiding these otherwise betraying features. The species which build hanging, purse-shaped, or subpensile nests are the Orioles and Vireos. In the case of the former the nest is most illy adapted for protection from the most dangerous foes of the species, the predatory Crows, Jays, and Cuckoos, being often a conspicuous object, with, so far as the United States species are concerned, no compensating feature of security. Here again, while the males are in some instances arrayed in "strikingly gay and conspicuous colors," the females do not to any great extent share their bright hues, the sexual differences in

color among our native birds being rarely greater than in these species. The subpensile nests of some of the Vireos are to be perhaps more properly referred to the type of open nests. In either case we find only slight sexual difference in color, with the olivaceous hue of the back well fitted for concealing the female bird. But this is in part offset by the usually light color and somewhat exposed situation of the nest.

4. The great bulk of the species fall of course into the fourth category, or those with the nest open. These embrace (with two exceptions, the Woodpeckers and the Kingfishers) birds of every family represented in our fauna, and are about equally divided between ground-builders and those which nest in bushes or trees. As a rule (as, in fact, throughout the class of birds) in those arrayed in conspicuous tints the females are obscurely colored, in comparison with the males. Yet to this rule there are exceptions, as notably among the Jays, some of which do have "surprisingly gay and conspicuous colors," and among which both sexes are equally brilliant. The shining black color of the Crows, the Raven, and some of the Blackbirds are equally or (in the latter) almost equally shared by both sexes, while the color is by no means well adapted to concealment. In many species the males, even when brightly colored, share with the females the duties of incubation. This is the case with the Rose-breasted Grosbeak, in which the male is most conspicuously colored, and who not only shares the labor of incubation, but has the most injudicious habit of indulging in loud song while sitting on the nest. In many of our ground-nesting Sparrows the sexes, in respect to coloration, are wholly indistinguishable; their obscure colors, arranged generally in streaks and spots, are certainly in the highest degree protective; their nests, although not domed, or even "covered," in the strict sense of the term, are generally most effectually concealed under tufts of herbage, and are hence far better shielded from observation than the pensile, domed, or bulky, covered nests that are regarded by our author as so highly conducive to security through the concealment of the eggs and young or the sitting female.

Among the groups instanced by Mr. Wallace as building open nests are "the extensive families of the Warblers (*Sylviidae*), Thrushes (*Turdidae*), Flycatchers (*Muscicapidae*), and Shrikes (*Laniidae*)." While in a considerable proportion of the species of these groups the males are "beautifully marked with gay and con-

spicuous tints," "in every case the females are less gay, and are most frequently of the very plainest and least conspicuous hues. Now," he continues, "throughout *the whole of these families the nest is open*,"* and I am not aware of a single instance in which any one of these birds builds a *domed nest*, or places it in a *hole of a tree*, or *under ground*, or in any place where it is effectually concealed." As regards the North American representatives of these groups, there are frequent exceptions to this rule, as I have already shown, and that Mr. Wallace did not know of exceptions only shows that his examination of the subject must have been very superficial. As further evidence of the imperfection and inexactness of Mr. Wallace's knowledge of the subject concerning which he theorizes so boldly and speaks so emphatically, may be cited his remark about the *Icteridæ*, or "Hangnests." "The red or yellow and black plumage of most of these birds," he says, "is very conspicuous, and is exactly alike in both sexes. They are celebrated for their fine purse-shaped pensile nests." As regards the facts of the case, there is no family of Passerine birds where the sexes, *as a rule*, are more widely different, the difference affecting not merely color, but also size, the females being not only much duller colored than the males, but much smaller. The instances in which both sexes are equally brilliant are the exceptions.

To summarize the foregoing remarks, it has been shown, so far as the birds of North America are concerned (and the same could easily be shown for other equally extensive regions), that the species which breed in holes in trees, in burrows in the ground, or in domed, pensile, or covered nests, are as often dull, obscurely colored species as bright-colored; that when the species are conspicuously colored, it is generally only the male that is attired in strikingly gay tints, the females having comparatively dull colors; and that often species in which both sexes are clothed in bright and equally conspicuous tints build an open nest; while the "theory" demands just the opposite of these conditions. In other words, that birds nest in holes, in open or in covered nests, without regard to whether the female is brightly or obscurely colored. Furthermore, that pensile and bulky covered nests are far more open to discovery than ordinary open nests, so that the advantage of having the contents concealed, be it eggs, young, or the female parent, is more

* The italicized portions are as in the original.

than counterbalanced by the readiness with which the nest itself is discovered.

Not to do Mr. Wallace or his theory injustice, it may be added that he has instanced a considerable number of large families of birds, found outside of North America, in which the species nest in hollow trees, and in which both sexes do have "surprisingly gay and conspicuous colors." Among these are the Trogons, the Barbets, the Puff-birds, the Toucans, and the great group of Parrots and Paroquets. But Mr. Wallace has himself given an apparently far better reason for this method of nidification in some of these groups than that involved in his above-given theory, namely, that they have not the necessary "tools" for the construction of an elaborate nest. Most of them are weak-footed and sedentary, while in other cases the form of the bill renders the construction of a nest almost impossible. Another large group, the species of which nest in holes in trees, are the Woodpeckers. Here an obvious and far more rational explanation is apparent than that afforded by the theory of concealment, for here the scores of dull-plumaged, sombre-colored species nest in holes just as do those that are conspicuously attired. In this group the species do not seek cavities already at hand, as is the case in some of the groups just cited, but form them themselves, and use them not only for purposes of nidification, but often more or less habitually as places of shelter. Nothing seems more natural than that they should avail themselves in this way of the advantages afforded them by their powerful chisel-shaped beaks, which they are constantly using as an abrading or "digging" organ in their search for food. The same explanation holds equally good for the plainly colored Tits that nidificate in holes that they themselves have the power of forming.

The Auks, Puffins, and some of the Guillemots are among the species I have cited as breeding in burrows. As they are species (occasionally conspicuous markings about the bill or head excepted) of neutral or obscure tints, — particularly as respects the exposed dorsal area of the sitting female, — their resorting to burrows is hardly necessary for concealment, since these species have no "strikingly gay" attire of plumage that would render the sitting bird in any case conspicuous. Such resorts, however, prove to be to them a great source of security, and give them an immense advantage over other species of the same family that breed at the same localities with them, but in a wholly exposed manner. The

chief enemy of these birds is man, by whom they are robbed of their eggs in a most brutal and wholesale way. The species that breed in deep crevices in the rocks almost wholly escape the rapacity of their human foes, the eggs being almost invariably, it is said, placed beyond reach, while those (some of the Guillemots) that deposit their eggs on the surface are robbed almost to extermination. The dull, thoroughly protective colors of the Burrowing Owls, of which there are several species, render them often difficult objects to discover even when wholly exposed, yet they nidificate in deserted marmot holes, and there find security against the attacks of predatory skunks and foxes, to which they would be exposed if nesting on the ground, — usually the only other alternative in the localities they inhabit. In fact, instances might be multiplied in which the breeding of birds in holes in trees, or in the earth, or in otherwise concealed nests, might be explained more rationally than by the theory of concealment of a brightly colored female parent, — the basis of Mr. Wallace's ingenious "Theory of Birds' Nests," — namely, security from enemies through other means than simply concealment.

Mr. Wallace, in commenting on "What the Facts Teach us" in relation to this theory, argues that the differences in color between the sexes in birds that build an open nest may have been brought about by the bright-colored females being weeded out or eliminated in consequence of being more exposed to the attacks of enemies, since any modification of color which rendered them more conspicuous would lead to their destruction and that of their offspring, while the attainment of inconspicuous tints would tend to their preservation. Hence this theory is intimately connected with, or in part based upon, Mr. Darwin's theory of "sexual selection," which Mr. Wallace at this time accepted, but which he has recently had the better judgment to discard as an inadequate explanation of sexual differences in color among animals.

The most surprising thing about Mr. Wallace's "Theory of Birds' Nests"* is its inadequacy, and its irrelevancy to the facts it was proposed to explain, and in this respect it is scarcely excelled by any of the crude inventions into which the more ardent supporters of the

* I wish to here state explicitly that I refer in these remarks wholly to Mr. Wallace's "Theory of Birds' Nests," and not to his most admirable essay on "The Philosophy of Birds' Nests," which is replete with sound sense, and to nearly every syllable of which I most heartily subscribe.

theory of evolution by means of what has been termed "natural selection" and "sexual selection" have been betrayed.

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 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. It is perhaps rather comparable with the pattern of coloration that so often, to a greater or less degree, marks nearly all the species of a whole natural family, and often prevails throughout large genera, for which the conditions of environment offer no explanation, since it as often occurs in cosmopolitan groups as in those of local distribution, and which, in the present state of our knowledge, seems wholly inexplicable.

BREEDING OF THE DUCK HAWK IN TREES.

BY N. S. GOSS.

As the *Falco communis* var. *anatum* is supposed to nest almost exclusively on high rocky cliffs, and rarely if ever in other situations, I think it will be of interest for me to say that I found in February, 1875, a pair nesting about three miles southeast of Neosho Falls, Kansas, in the timber on the banks of the Neosho

River. The nest was in a large sycamore, about fifty feet from the ground, in a trough-like cavity formed by the breaking off of a hollow limb near the body of the tree. I watched the pair closely, with the view of securing both the birds and their eggs. March 27 I became satisfied that the birds were sitting, and I shot the female, but was unable to get near enough to shoot the male. The next morning I hired a young man to climb the tree, who found three fresh eggs, laid on the fine soft rotten wood in a hollow worked out of the same to fit the body. There was no other material or lining, except a few feathers and down mixed with the decayed wood.

The ground-color of the eggs is grayish-ochre, spotted and blotched with dark reddish-brown, the blotches running together towards the large end, where they are a shade darker. Length, respectively, 2.20, 2.30, and 2.40; diameter of each, 1.70 inches.

March 17, 1876, I found a pair nesting on the opposite side of the river from the above-described nest, in a cottonwood, at least sixty feet from the ground, the birds entering a knot-hole in the tree, apparently not over five or six inches in diameter. The tree was very straight, and without limbs to the nest, and consequently out of reach. The birds were very noisy, but shy. I wounded both the birds, but failed to get them.

February 2, 1877, I noticed a pair flying into the same tree. April 9, I shot them both. I now have the three birds in my collection. The measurements, as taken from the birds when shot, are as follows:—

	Sex.	Length.	Stretch of Wing.	Wing.	Tail.	Tarsus.	Bill.
March 27, 1875....	♀	20.00	46.00	15.00	7.60	1.85	.95
April 9, 1877.....	♀	19.75	45.50	14.75	7.50	1.85	.95
April 9, 1877.....	♂	18.00	41.00	13.50	6.50	1.80	.90
Cere, .31.							

For a description of the species see "North American Birds," by Baird, Brewer, and Ridgway (Vol. III. p. 128). I will add: Iris, brown; bill, horn-blue, with the base pale green; cere and eyelids, greenish-yellow; legs and feet, lemon-yellow; claws, black.

April 30, 1877, I found a pair about four miles farther up the river, breeding in a hollow broken limb of a giant sycamore. From the actions of the birds, I think they had young. I feel confident they will nest there next season, and, if so, shall try very hard to procure the eggs.

The birds are very noisy while mating, but silent during incubation. The males, so far as noticed, sit upon the eggs in the fore part

of the day, the females during the latter part of the day, each, while off duty, occasionally feeding the other, but putting in a good share of the time as sentinels, perched upon a favorite dead limb near the nest, ready to give the alarm in case of approaching danger. At such times they scold rapidly, and manifest great anxiety and fear, circling overhead, occasionally alighting, and taking good care to keep out of reach. The fear of man is not without cause, for our hunters never lose an opportunity to shoot at them, knowing how destructive they are to the water-fowls found in the sloughs along the river-bottoms.

Ncosho Falls, Kansas.

Recent Literature.

BIRDS OF THE VICINITY OF CINCINNATI. — Mr. F. W. Langdon's Catalogue of the Birds of the Vicinity of Cincinnati,* embraces two hundred and seventy-nine species, about one third of which are marked as known to breed in the vicinity. The author gives notes respecting the times of migration, relative abundance, etc., of each species, and distinguishes those recorded in the list simply from their known range including the locality from those known to have been actually taken. They number about forty species, mainly Sandpipers, Plovers, and Terns, and embrace only such as are certainly likely to occur. The list is evidently prepared with care, and gives a convenient and undoubtedly trustworthy summary of the Avian Fauna of the locality of which it treats. — J. A. A.

BIRDS OF CENTRAL NEW YORK. — Through the kindness of the author we have received a catalogue of the birds of Cayuga, Seneca, and Wayne Counties, New York,† published in the "Auburn Daily Advertiser" (newspaper), of Auburn, New York. The list contains one hundred and

* A Catalogue of the Birds of the Vicinity of Cincinnati, with Notes. By Frank W. Langdon. 8vo. pp. 18. Salem, Mass.: The Naturalists' Agency. 1877.

† A Partial Catalogue of the Birds of Central New York, from observations taken in the Counties of Cayuga, Seneca, and Wayne by Mr. H. G. Fowler, of Auburn, N. Y., and from the Cabinet of Skins of New York Birds collected by Mr. J. B. Gilbert, of Penn Yan, Yates County. Divided and arranged in accordance with the "Check List of North American Birds," by Elliott Coues, M. D., U. S. A., and dedicated to the Cayuga Historical Society. By Frank B. Rathbun. Auburn Daily Advertiser (newspaper) of August 14, 1877.

ninety-one species, with brief notes on their relative abundance, times of migration, etc. The list bears evidence of trustworthiness, and we would gladly see it reproduced in a more permanent and accessible form. It appears to be a reprint of Mr. H. G. Fowler's list in "Forest and Stream" (Vols. VI and VII, 1876), with the addition of quite a number of species, and additional observations on others. In this list we find *Anthus ludovicianus* recorded as breeding ("a few remain and breed") in New York, the authority being Mr. J. B. Gilbert, of Penn Yan, Yates County, New York. We know not as yet on what evidence the record of so improbable an occurrence is made, but would suggest that it certainly needs strong backing, the locality being climatically and topographically so wholly unlike that usually chosen by this exceedingly boreal species as its breeding station. In a later issue of the same paper (September 6, 1877), Mr. Rathbun adds further remarks on *Dendroica cerulea*, and Dr. T. J. Wilson on sixteen species, including a few species not given by Mr. Rathbun. — J. A. A.

BROWN ON THE DISTRIBUTION OF BIRDS IN NORTH-EUROPEAN RUSSIA — During the last year (1877) Mr. J. A. Harvie Brown has contributed a series of important papers upon the distribution of birds in "North Russia,"* in which all information at present accessible is epitomized in a series of tables through the use of arbitrary signs or "symbols." The first paper relates to the region of the Lower Petchora, explored by himself and Mr. Seebohm, and is supplementary to a joint paper by these gentlemen published in the "Ibis" for 1876 (January, April, July, and October). Parts II and III treat of the general range of the birds in European Russia, north of the parallels of 58° to 60°, in which are presented in tabulated form the records relating to this extensive region. The area considered embraces (contrary to what the above-given titles might imply) only that portion of the Russian Empire west of the Ural Mountains, and north of about the latitude of St. Petersburg. This is divided latitudinally, near the parallel of 64° 30', into two regions, a northern and a southern, and these are again each divided longitudinally into three regions. By means of a system of symbols the range of each of the two hundred and eighty-one positively identified or *authentic* species is given in tables, in such a way as to indicate the abundance or scarcity of the species in each of the several districts. This system of presentation is perhaps as satisfactory as any that can be devised short of graphic repre-

* On the Distribution of Birds in North Russia. Part I. On the Distribution of Birds of the Lower Petchora, in Northeast Russia. Part II. Longitudinal Distribution of Species North of 64° 30' N. lat., or the Northern Division. Part III. On the Longitudinal Distribution of the Birds of the Southern Division (between 64½° N. and 58° - 60° N.). By J. A. Harvie Brown. Annals and Magazine of Natural History, April, July, and September, 1877.

sentation by maps, and is well worthy of careful consideration on the part of those interested in the detailed study of the geographical distribution of animals. In addition to the tables a descriptive list of authorities is given, to which references are made by numbers in the tables, as also a long list of "Notes and Criticisms of Doubtful Records," to which are also references in the tables. We have thus here presented the bibliography of the subject, a summary of the facts, and a critical discussion of doubtful records, based on a thorough elaboration of all accessible means of information. It is good work in a most important direction; the method is novel and ingenious, and the results may be grasped at a single glance. It is to be hoped that Mr. Brown will soon extend his labors to other regions, and that there will be presently numerous followers in the same line of research. The number of circumpolar species (nearly fifty) embraced in these lists render these papers of special interest to students who commonly confine their attention to the birds of the North American Region. — J. A. A.

§ SUMMER BIRDS OF THE ADIRONDACKS. — Messrs. Roosevelt and Minot have published a very acceptable list of the summer birds of the Adirondacks,* embracing ninety-seven species, with short notes respecting their abundance, — the first list known to us of the summer birds of this ornithologically little-explored region. — J. A. A.

BIRDS OF SOUTHERN ILLINOIS. — Ornithologists are indebted to Mr. E. W. Nelson for a second important paper on the "Birds of Illinois." † Although less elaborate and comprehensive than his former "Birds of Northeastern Illinois" (noticed in this Bulletin, Vol. II, p. 68), it contains much information respecting the distribution, habits, and relative abundance of the summer birds of the southern portion of the same State. It is based on observations made chiefly in July and August, and gives partial lists of the birds of several localities in Richland and Union Counties, embracing altogether notices of one hundred and thirty-three species. Mr. Nelson left some months since for a protracted sojourn in Alaska, where, it is hoped, he will find leisure for much ornithological work in connection with his duties as United States Signal Officer at St. Michael's. His intelligent labors in Illinois lead us to expect that no opportunity of further increasing our knowledge of the ornithology of a region so little known as Alaska will be neglected. — J. A. A.

GENTRY'S "LIFE-HISTORIES OF THE BIRDS OF EASTERN PENNSYLVANIA." — Mr. Gentry has recently brought out the second volume of his

* The Summer Birds of the Adirondacks in Franklin County, N. Y. By Theodore Roosevelt, Jr., and H. D. Minot. 8vo. pp. 4. 1877.

† Notes upon Birds observed in Southern Illinois, between July 17 and September 4, 1875. By E. W. Nelson. Bulletin of the Essex Institute, Vol. IX, pp. 32-65, June, 1877.

"Life-Histories," * carrying the subject from the Crows (*Corvidæ*) to the Waders, these and the Swimming Birds being reserved for treatment in a third volume. This volume differs little in general character from the first. It abounds in original observations, combined with much that is gleaned from other authors. The nature of the food of the different species has received at Mr. Gentry's hands very careful attention, his pages fairly bristling with the technical names of the various species of insects and plants, the fragments of which he has detected in examining the contents of their stomachs. The freer use of vernacular names, in the case of the more common and well-known species, would doubtless have added interest to his extensive "bills of fare" for the non-scientific reader. The occasional adoption of such familiar terms as red-legged locust or "grasshopper," black cricket, sulphur butterfly, cankerworm, pine weevil, etc., in place of the ever-recurring *Caloptenus femur-rubrum*, *Acheta nigra*, *Cotias philodice*, *Anisopteryx vernata* and *A. pomataria*, *Hylobius pales*, etc., or chestnut, oak, alder, birch, woodbine-honeysuckle, and strawberry, to take mild examples, instead of *Castanea*, *Quercus*, *Alnus*, *Betula*, *Lonicera periclymenum*, *Fragaria virginiana*, etc., would certainly have savored less of pedantry, and been far more intelligible to ordinary readers. Mr. Gentry is evidently a friend and admirer of the feathered tribes, and often describes their habits most minutely, especially in relation to their nidification. Despite some faults of execution, the work before us contributes much of value respecting the habits of our birds, and records many interesting points in their history not given by previous writers. — J. A. A.

General Notes.

THREE ADDITIONS TO THE AVIFAUNA OF NORTH AMERICA. — Mr. Lucien M. Turner, United States Signal Officer, stationed for the past three years at St. Michael's, Norton Sound, Alaska, collected during his residence at that post a considerable series of birds, among which are the following species not previously recorded from this continent :—

1. **Parus cinctus**, Bodd. (= *sibiricus*, Gmel. et auct.). — A species very closely resembling *P. hudsonicus*, but differing in having the whole side of the neck pure white instead of ashy, conspicuous white edging to remiges and rectrices, and other minor features. Found in company with *P. hudsonicus*, and not rare, though less common than the latter. Several specimens obtained at St. Michael's, March 15, 1875.

2. **Syrnium lapponicum**, Retz. — A specimen obtained at the Yukon delta, April 15, 1876. This form resembles *S. cinereum*, which was also obtained in the same locality, but is very much paler colored.

* Life-Histories of the Birds of Eastern Pennsylvania. By Thomas G. Gentry. Vol. II, 8vo, pp. 336. The Naturalist's Agency, Salem, Mass. 1877.

3. *Surnia ulula*, Linn. — St. Michael's, October, 1876, said to be very rare. This bird also differs from its American representative, *S. funerea*, Linn. = (*S. ulula* var. *hudsonia*, B. B. & R., Hist. N. Am. Birds, III, p. 75) in the great predominance of white on the plumage.

Owing to the arduous nature of his duties as Signal Observer, which necessitated his presence at or near the post the whole time, Mr. Turner was not able to pay as much attention to the natural history of the region as could be desired, and had to depend in a great measure upon the natives for the specimens which he secured. The results of his endeavors, however, are, considering the circumstances, very satisfactory. He found *Sterna aleutica*, of which but a single specimen had been collected, very numerous, and obtained a good series of both skins and eggs. *Budytes flava* was also exceedingly abundant, and its nest and eggs secured, besides many skins of both adult and young birds. — ROBERT RIDGWAY, *Washington, D. C.*

THE ROCK PTARMIGAN (*Lagopus rupestris*) IN THE ALEUTIAN ISLANDS. — In the Proceedings of the California Academy of Sciences, February 8, 1873, in a paper entitled "Notes on the Avifauna of the Aleutian Islands, from Unalashka eastward," Mr. W. H. Dall states that *Lagopus albus* is a "resident from the Shumagins to Unalashka," and adds: "I made inquiries in regard to *L. rupestris*, but could get no information, and do not think the species is found in the islands." In a second paper on the Avifauna of the Aleutian Islands west of Unalashka, in the Proceedings of the same society, March 14, 1874, he states that *L. albus* is "more or less abundant in all the Aleutian Islands," and that, "from careful examination of many specimens, most of which were killed for the table, I feel sure that this is the only species of Grouse found on the islands, and I believe there is no authenticated instance of the occurrence of *L. rupestris* west of the 156th meridian."

From my own observations I am led to believe that Mr. Dall has mistaken *L. rupestris* for *L. albus*, since I found the former to be very numerous at Unalashka during portions of May and June, 1877, and I also found them common on the Akoutan Islands east of Unalashka, and by inquiry among the residents of the islands, both native and foreign, I could only learn of the occurrence of this species. I was informed, however, that another species of Ptarmigan is found on the peninsula of Alaska.

Since arriving at St. Michael's, I learn from Mr. Turner, who has been collecting at this place for the last three years, that *L. rupestris* is common in the vicinity of St. Michael's, being as numerous as *L. albus* on the hills of the neighboring mainland. He also informs me that on a single mountain on Stewart Island, about twenty-five miles from the mainland, this species is quite numerous. In all of the above-named places the bird breeds and is resident throughout the year. — E. W. NELSON, *St. Michael's, Alaska.*

COTURNICULUS HENSLOWI IN NEW HAMPSHIRE. — As the northern range of Henslow's Sparrow has not previously been recorded beyond the Massachusetts line, the following notes, which have been kindly placed at my disposal by Mr. Chas. F. Goodhue of Webster, N. H., will be of interest. He writes: "I detected my first specimen on April 17, 1874, in Webster, N. H., and shot another on April 26, 1875, in Boscawen, N. H. On August 16, 1877, I found several pairs in a large meadow in Salisbury, N. H. They were all apparently breeding, and I was so fortunate as to discover a nest containing four young large enough to fly. The nest, which was a bulky structure composed externally of coarse grass and lined with finer of the same, was placed in a bunch of grass where the water was about two inches in depth. These birds were not at all shy, but remained singing on some low bushes until I approached them within a few yards."

I have a specimen which Mr. Goodhue shot on Salisbury meadows, and kindly presented me. — RUTHVEN DEANE, *Cambridge, Mass.*

BREEDING HABITS OF GEOCOCCYX CALIFORNIANUS. — In 1872, while in Southern Arizona, I found some twenty nests of *Geococcyx californianus*, the first nest on April 8, the last on September 10. During the month of April, in which I found several nests, not one contained more than three eggs, although I allowed incubation to begin before taking the eggs, as I expected the birds to lay more. Nearly every nest I found after the middle of May contained four or five eggs, and I account for the greater number laid later in the season by the fact that insect food during the dry season, which includes April and May, is comparatively scarce. The birds being aware of this content themselves with rearing a small brood the first time, and a larger one at the second laying, when the young are hatched about the beginning of the rainy season, which sets in in June. At this time all kinds of insects and reptiles become exceedingly abundant, and the birds have less trouble in providing for a family of five than earlier in the season for one of three. Only occasionally have I found eggs in different stages of incubation, and I do not believe that there was over a week's difference in the time of laying of the eggs in any nests I found.

The food of this species consists chiefly of insects, particularly grasshoppers, but embraces occasionally a lizard or a field mouse. I do not believe they kill and eat rattlesnakes, as has been sometimes reported. — CHARLES BENDIRE, *Camp Harney, Oregon.*

OCCURRENCE OF A SECOND SPECIMEN OF SWAINSON'S BUZZARD (*Buteo swainsoni*) IN MASSACHUSETTS. — The claim of the above-named species to be regarded as a bird of New England has hitherto rested solely upon a specimen in melanistic plumage (formerly specifically separated as *B. insignatus*, Cassin) shot a few years since at Salem, Mass., and now in the museum of the Peabody Academy.

It is with much pleasure that I can now announce the capture of a second individual at Wayland, Mass., on or about September 12,

1876. Through the kindness of Mr. Arthur Smith of Brookline, to whom it was originally sent in the flesh, this bird has recently come into my possession. It is a young male in nearly perfect autumnal dress, and, though not typically melanistic, it still inclines strongly towards that condition. — WILLIAM BREWSTER, *Cambridge, Mass.*

BREEDING OF THE HOODED MERGANSER (*Mergus cucullatus*) IN FLORIDA. — In view of the fact that we have no published record of the breeding of this species in the Southern States, I was much surprised to find that it *does* breed in Florida, at least *occasionally*, and I *think* regularly.

While descending the St. John's River by steamer on March 28, 1877, I saw, near Blue Spring, a female Hooded Merganser, accompanied by a large brood of young, which were perhaps a week old. As the boat rounded a sharp bend of the river the little family, taken by surprise, was nearly run over, but after the first moment of paralyzed inaction, the mother flew heavily and reluctantly off, while the ducklings scattered in all directions, and escaped by diving. As I was standing in the steamer's bows at the time, there was no possibility of mistaking the identity of the species, for when first seen the whole brood was within ten yards of me, so near, in fact, that I could distinctly see the color of the parent's irides.

On the Wekiva River, about a week previously, I saw many Mergansers of this species, and although it did not then occur to me that they might be breeding, I now recall many circumstances that induce me to consider this not improbable. While at Pilatka, Fla., Mr. J. H. Fry showed me a number of specimens in full breeding plumage, stating that in his opinion the birds nested in the vicinity of that place. On the Wekiva the Wood Duck (*Aix sponsa*) was the only other species of *Anatidæ* observed. March 19 and 20, I saw several broods of young a few days old, accompanying their mothers. As the eggs of this duck are rarely or never laid in New England before May, and oftener, I think, especially in the more Northern States, not until June, this latter fact may be not devoid of interest. — WILLIAM BREWSTER, *Cambridge, Mass.*

BREEDING OF THE SHORE LARK IN WESTERN NEW YORK. — The Shore Lark (*Eremophila alpestris*) is common during October, November, the latter part of February, and March, and occasionally a specimen is seen in April, but on May 29, 1876, I observed a bird of this species, with a worm in its bill, fly into a meadow, and on June 11 I found an old bird accompanied by three young ones, in a highway adjoining. The young were just able to fly. A flock, mostly composed of young birds, was seen on some ploughed land, September 1, 1876. I do not know of a previous instance of this bird's nesting in this State. — JOHN M. HOWEY, *Canandaigua, N. Y.*

THE NORTHERN PHALAROPE IN NORTH CAROLINA. — Dr. George H. Moran sends me a specimen of *Lobipes hyperboreus* which was lately shot on the Catawba River, near Morgantown, N. C. The capture is interesting

from the southerly and inland character of the locality. The specimen is in incomplete breeding dress. — ELLIOTT COUES, *Washington, D. C.*

RELAYING OF HAWKS IN THE SAME NEST WHEN ROBBED. — In an old partly decayed chestnut-tree, at a locality in Southeastern Pennsylvania, was found, in the spring of 1872, the nest of a Sparrow-Hawk (*Tinnunculus sparverius*). From this tree, at intervals of about ten days, were taken three sets of five eggs each, making fifteen in all. The first and second sets were taken from the same hole. In the spring of 1873, from the same hole from which sets one and two of the previous year were removed, were taken, April 24, five eggs; on May 6, from the same hole, four more eggs; on May 23, from the same hole, two eggs, and two others were left. On May 29, when the nest was again visited, another egg had been deposited, making, for this season, also, a total of fifteen eggs, deposited by the same pair of Hawks. The last eggs laid vary greatly from those laid earlier. Two of them are much smaller, measuring 1.41×1.19 and 1.31×1.10 , while the average size of the earlier laid eggs is about 1.44×1.20 . The greatest difference, however, is in color, two of the last laid eggs (the smallest) being slightly marked, one being almost white.

In the spring of 1874, from a nest of a Cooper's Hawk (*Accipiter cooperi*) four eggs were taken on April 24; May 5, two more eggs were taken from the same nest; and May 11, two others. Later in the season (about August 1), on visiting the same locality, two young Hawks of this species were seen, but I do not know that they were reared in this old nest. — C. J. PENNOCK.

THE WILLOW GROUSE IN NEW YORK. — Mr. Romeyn B. Hough, Cornell University, Ithaca, N. Y., writes: "Not finding the Willow Grouse (*Lagopus albus*) hitherto credited to the State of New York, I take the liberty of, informing you that there is one in my collection which was taken in Watson, Lewis County, on May 22, 1876. It was killed by the person who brought it to me, who said that it was the only one he saw, and that it was not very shy. It was a male, changing plumage, — mostly white, but with brown head and neck. This is the first instance that has come to my certain knowledge, though I have heard of some lumbermen catching in winter what they called a 'White Partridge,' and which was probably a Ptarmigan, though possibly an albino Spruce or Ruffed Grouse." — ELLIOTT COUES, *Washington, D. C.*

PIPILO ERYTHROPHthalmus WITH SPOTTED SCAPULARS. — Mr. P. L. Jouy, of Washington, D. C., submits to my inspection an interesting specimen of the Eastern Towhee, shot May 4, 1875, in the District of Columbia, and requests me to make a note of its peculiarities for publication in the Bulletin. The outer scapulars are distinctly and strongly marked, near the end of the outer webs, with streaks of pure white; there is much concealed white in the black of the throat; and in other respects, as the

extent of white on the primaries and lateral tail-feathers, the specimen resembles *P. "arcticus."* Nothing is wanting, in fact, to make it a typical "*arcticus*" but the spots on the wing-coverts. Another specimen, shot by the same gentleman in the same locality, also shows a trace of white on the scapulars. Examples intermediate between *erythrophthalmus* and "*arcticus*" have long since been noted by Baird, myself, and others, but all such hitherto known, so far as I am aware, have been from localities where the respective *habitats* of the two forms adjoin. The present case offers additional and very strong evidence against the specific distinction claimed for *P. "arcticus."* — ELLIOTT COUES, *Washington, D. C.*

[A considerable proportion of the specimens of *P. erythrophthalmus* taken by me in 1871, in the vicinity of Leavenworth, Kan. (mainly in East Leavenworth, Mo.), showed white spots on the scapulars and more white on the wings than eastern examples, thus exhibiting a decided tendency toward the characters of *P. "arcticus,"* the eastern limit of the range of which, in its typical aspect, is the eastern base of the Rocky Mountains in Colorado, some six hundred miles west of Leavenworth. — J. A. ALLEN.]

VIREO VICINIOR IN CALIFORNIA. — I have found this Vireo to be not uncommon in the vicinity of Campo, San Diego Co., Cal., fifty miles east of San Diego Bay. It ranges through the mountains from the lower limit of the pines down to about an altitude of three thousand feet. It is found in thick low brush, very seldom going into or near trees. I have never met with more than three together, having generally met with them singly. They are shy and active, keep near the ground, and usually search a bush thoroughly before leaving it, although not always going to the top. On leaving the bush they commonly fly several yards before alighting in another. They sing pretty steadily, the song consisting of a couple of syllables repeated with different inflections, something like *chu-wee, chu-wee chu-we'e*, generally pausing a little after three or four notes. Sometimes the order is reversed. This seems to be the song of the male, as the only female that I am positive of having heard, sung more like *V. pusillus*. Sometimes when alarmed they will scold like a Wren. When near to them, as they are singing, a sort of whistling sound can be heard between the notes. I have never seen them catching insects in the air, as some other Vireos do, but have observed them scratching on the ground like a Pipilo.

The colors are not so bleached as in specimens I have seen in New Mexico, nor do the birds frequent the trees so much as those. I had hoped to get a nest, as it is unknown, but have failed so far. They first appeared about March 24, and as their numbers seen have varied but little since the beginning of April till the present time (middle of June), they probably do not go much farther north, which may account for their not having been found in California before. — F. STEPHENS, *Campo, Cal.*

NEST AND EGGS OF ZONOTRICHIA CORONATA. — The nest and eggs of this species have hitherto escaped the notice of collectors, and are, so far

as I am aware, unknown to the public. I have in my possession a nest which with its eggs — then four in number — was taken by Mr. Ludovic Kumlien in Shasta County, California, the female having been shot from the nest. The eggs measure from .80 to .82 of an inch in length, and from .64 to .67 in breadth. They are of a rounded oval shape, and are but slightly more obtuse at one end than at the other. Their ground-color is a light green, and is generally plainly visible, as the markings of reddish and of golden-brown, with which the whole surface is pretty uniformly flecked in small and well-distributed blotches, are nowhere numerous or confluent. The eggs closely resemble very lightly marked specimens of *Zonotrichia albicollis*, but are slightly smaller and more nearly spheroidal in shape.

The nest has an outer diameter of five inches and a height of three. The cavity is two and a half inches deep, with a diameter, at the rim, of the same. Its outer portions and base are made of thin strips of bark, skeleton leaves, and coarse stalks and stems of plants, reeds, and *Equisitaceæ*. It is very strongly and thoroughly lined with fine wiry rootlets of plants. It was found, June 14, 1877, on the banks of the McCloud. — T. M. BREWER, *Boston, Mass.*

NOTE ON *DENDRŒCA DOMINICA*. — In an article upon *Dendrœca dominica*, in the October number of the "Bulletin" I took occasion to express serious doubts as to the correct identification of certain alleged nests of that Warbler collected by Mr. N. C. Giles at Wilmington, N. C., and upon which most of the recent descriptions of the nidification of the species were based. My attention has since been called by Dr. Brewer to his supplementary note in the Appendix of the "History of North American Birds" (Vol. III, p. 505), where further mention is made of Mr. Giles's specimens, and he also informs me by letter that some of the specimens recently sent to the Smithsonian Institution by Mr. Giles have been accompanied by skins of the parent birds, thus setting at rest all doubts which he had previously entertained. I take this opportunity to express my regret at having cast any doubts upon Mr. Giles's identification. — W. BREWSTER.

EASTWARD RANGE OF *CHONDESTES GRAMMACA*. — On the morning of the 27th of August I saw in the grounds of the Smithsonian Institution a pair of the above-named Sparrows, the only ones I ever saw in the District of Columbia or vicinity. They were adults, and when first seen flew up before me, expanding their white-tipped tails as they flew, and alighted in the gravelly roadway about two rods in advance; then ran along the ground, Lark-like, as is the characteristic habit of the species, now and then giving chase to a grasshopper, which they usually captured on the wing. Although originally a western bird, this species seems to be steadily extending its range to the eastward over those portions of the country most denuded of timber. According to Dr. Wheaton (see Coues's "Birds of

the Northwest," p. 234), it made its advent into Ohio about the year 1860, since which time it has gradually increased in numbers, until it is now a common summer resident (see Ohio Agricultural Report for 1874, p. 566). In the semi-prairie districts of Indiana, Illinois, and adjacent States, it has become generally dispersed, being now common in the cleared portions surrounded by heavy forests, and where a few years ago was dense and continuous woodland. It has already been captured in Florida (the National Museum possessing a specimen from that State), and should be carefully looked for in other sections of the Eastern States. — ROBERT RIDGWAY, *Washington, D. C.*

THE LARK-FINCH (*Chondestes grammaca*) AGAIN IN MASSACHUSETTS. — On November 25, 1877, I had the pleasure of seeing in the flesh a female bird of this species, taken the previous day near the residence of Mr. C. J. Maynard, Newtonville, who notified me of the fact, and has since kindly presented me with the skin. The bird was brought to him by a boy very soon after it was shot, who stated it was in company with another of the same kind. Mr. Maynard went immediately in search, but only Tree Sparrows and a flock of Snow Buntings were to be seen. The Lark Finch is a rare bird east of the Ohio River, and there is but one previous record for this State or New England, namely, a specimen found in Gloucester about 1845 (Proc. Ess. Inst., Vol. I, 1856, p. 224). — H. A. PURDIE, *Newton, Mass.*

A THIRD SPECIMEN OF HELMINTHOPHAGA LEUCOBONCHIALIS. — Last winter, while working among the Warblers (*Sylviolidæ*), in the collection of the Philadelphia Academy of Natural Sciences, I discovered among them a specimen of the White-throated Warbler (*Helminthophaga leucobonchialis*, Brewster), which, according to some writing on the bottom of its stand, had been in the dark for nearly fifteen years. The writing was this: "J. C., 20 October, 1862," and also what I made out to be, "Not from Bell," which was much blurred. The "J. C.," which means John Cassin (for it is his handwriting), shows that he once possessed or had something to do with the specimen, but how it ever escaped his notice and found its way into the collection of the Academy without being discovered I cannot see. The other is, I suppose, the date of its capture; and it is curious that it should have been taken so long before the one which for several years was the only known representative of the species. No label was attached to it designating the locality where it was procured, its sex or species; but by careful comparison with Mr. Brewster's description, as well as with Mr. Wood's specimen, I can safely say that it is a genuine specimen of *H. leucobonchialis*, and still further proves the validity of the species. As the first two were males, and as this specimen closely resembles them, I judge it to be a male also. A paper which I wrote on this specimen was read before the Academy, at a recent meeting, and will be published in their Proceedings.

I may further add that I have searched the Reports and record of donations to the Academy from 1862 to 1875, without finding any reference to this specimen. — SPENCER TROTTER, *Philadelphia, Pa.*

THE BLACK-THROATED BUNTING (*Euspiza americana*) NESTING IN MASSACHUSETTS. — Mr. Frank E. Bean of Medford has called my attention to a nest and four eggs of this bird found by him in the above town on the 9th of June, 1877, at which date the eggs were fresh. The nest, seemingly large for the species, was supported about a foot from the ground by the stem of a bush and the blades of the grass-clump in which it was placed. Both nest and eggs are quite typical. Towards the last of June he found, in another locality, a second nest containing four young. This was in a field bordering the highway; the song of the male bird perched on the fence-rails hard by first attracted his attention, and both birds were soon seen feeding the nestlings. Mr. Bean thinks that more than these two pairs may have raised young in his vicinity, as he has heard other birds in this and previous years. But few instances of the nesting of the Black-throated Bunting in Massachusetts are known, and it is to be hoped that this bird of "neat plumage" and "trim form," so common in the Middle and Western States, where it is known as the "Little Field Lark," "Dick-sissel" and "Judas-Bird," will gradually become a permanent resident of our fields and bushy pastures. — H. A. PURDIE, *Newton, Mass.*

THE BLUE-GRAY GNATCATCHER (*Poliophtila cœrulea*) IN MASSACHUSETTS. — Through the kindness of Mr. Arthur Smith of Brookline I am enabled to add this species to our list of Massachusetts Birds. On the 18th of November, 1877, he noticed a bird flying about in a small orchard at Chatham (Cape Cod), but was unable to identify it, and failed to procure the specimen. A few days later his friend, Mr. Stephen Decatur, shot a female *P. cœrulea* in the same locality, which was undoubtedly the same specimen, as Mr. Smith has preserved it and recognizes it as the species seen by himself.

A few specimens have been taken in Rhode Island, though it is but recently that the Gnatcatcher has been recorded as a bird of New England. — RUTHVEN DEANE, *Cambridge, Mass.*

THE CAPTURE OF SEVERAL RARE BIRDS NEAR WEST POINT, NEW YORK. — 1. *Corvus ossifragus*, Wilson. On the 7th of May, 1877, as I was walking up from the river, my attention was attracted to the very singular utterance of a Crow that sat on an oak-tree in front of Mr. Pell's house. Its note was a hollow, guttural croak, quite unlike the cawing of the common species (*Corvus americanus*). I regarded the bird curiously for several moments, but as I had never before heard the note of the Fish Crow, I passed on, attributing this singular vocal demonstration to some uncommonly strong emotion, — perhaps it was a parent bird whose nest I had spoiled, not far from that place, several days previous. Accepting

this conclusion as satisfactory, I should soon have forgotten the circumstance, had not the bird itself acted in such a manner as to dispel the illusion. It flew before me, and alighted upon a tree far over on the other side of the highway, where it croaked most dismally. When I had reached the highway before climbing over the stone-wall, I noticed that the Crow had again taken flight, and as it was flying somewhat in my direction, I knelt behind the wall, hoping thus to obtain a shot. When I ventured to look out, I saw the bird soaring in circles not far away. Soon it approached me, but soaring very high in the air. When it got directly overhead, I fired; it fell to the ground, close beside me, reeling and struggling violently all the distance. When I reached it I was both surprised and delighted to find a fine female example of the Fish Crow. This is, I believe, the most northerly record of the capture of this species in the State, though they have been taken on Long Island, where my friend, Mr. Theodore Roosevelt, informed me he took a single specimen.

2. *Helminthophaga celata*, (Say) Baird. On May 13, 1875, I shot a beautiful male of this rare species, as it was skipping among the apple-blossoms, close to my house, in company with a little band of Warblers which may have belonged to the same species.

3. *Dendrocæa cærulea*, (Wilson) Baird. I secured a fine male of this beautiful species, near my residence, May 17, 1875.

4. *Vireo philadelphicus*, Cassin. I have a single male specimen of this scarce species in my collection, taken near here. It was shot by my friend, Mr. William K. Lente, at Cold Spring, as it hopped about in a tree-top, September 24, 1875. This example exhibits the intensity of yellow color on the under parts which characterizes the *autumnal plumage*.

5. *Stelgidopteryx serripennis*, (Audubon) Baird. I have found this Swallow on but one occasion, in May, 1872, when a single pair nested in this neighborhood, in a bank close to a stable, beside a pond. I watched this pair while they constructed their nest, during which time they were often seen to alight close together, on a board-fence from which they descended after the rough materials of which the nest was composed, — hay and feathers. Late in May I captured the female sitting upon four fresh eggs. I had no difficulty in doing this, for the hole was quite large, and not very deep, so that, by baring my arm, I could easily introduce it to the back of the hole. These eggs are pure white, and one of them measures .80 × .53 of an inch.

6. *Ampelis garrulus*, Gmel. Dr. Frederic Lente, of Cold Spring, showed me a beautiful Waxwing of this species which was shot near his residence, several winters before.

His son, Wm. K. Lente, informed me that he shot at several Bohemian Waxwings that sat in an evergreen tree close to their house. This occurred several years after the first specimen was taken. — EDGAR A. MEARNS, *Highland Falls, New York*.

THE FISH CROW (*Corvus ossifragus*, Wils.), ON LONG ISLAND. — On the 17th July, 1873, I shot a fine female of this species near Rockaway, L. I. The bird was flying around, but kept apart from a flock of common Crows in the vicinity. The bird is not mentioned in Giraud's "Birds of Long Island," although Samuels, in "Birds of New England," says, "I understand that it has been taken on Long Island." — C. H. EAGLE.

[These two recent captures of the Fish Crow by Messrs. Eagle and Roosevelt (see above p. 46) confirm the statement made long since by De Kay, that "they are occasionally seen on the shores of Long Island, but are generally confounded with the Common Crow" (New York Zool., Pt. II, 1844, p. 135), which seems to have hitherto been the basis of all references to its occurrence in that locality, and, in connection with Linsley's record of its occurrence at Stratford, Conn. (Am. Journ. Sci. and Arts, Vol. XLIV, 1843, p. 260), of its *presumed* occurrence in Southern New England. Although recently observed by Mr. Brewster in Cambridge, Mass. (see this Bulletin, Vol. I, p. 19), there appears to be as yet no unquestioned record of its capture in New England, where it doubtless occasionally occurs. — J. A. ALLEN.]

CORRECTION. — On page 137 of my late "Review of the Birds of Connecticut," mention is made of the capture of half a dozen specimens of *Podiceps cristatus* in Connecticut. My attention having been called, through the kindness of Dr. Brewer, to the improbability of its occurrence at all within our limits, I immediately made inquiry of my friend, John H. Sage, Esq., of Portland, Conn., concerning the identity of the specimens in question. He writes me that a thorough re-examination of the birds proves them all to be more or less immature examples of *P. griseigena*, var. *holbolli*. — C. HART MERRIAM.

MELANISM OF TURDUS MIGRATORIUS. — Another* case of this affection, much less frequent (except in *Falconidæ*) than leucism, comes to my knowledge through the attention of Mr. G. A. Boardman, who desires me to make a note of it for the "Bulletin." The young Robin, "as black as a Grackle," is still living in Mr. Boardman's possession. About two months ago this ornithologist heard of a nest of black Robins being taken at St. John's, and wrote to the owner or collector about it. The person, however, lost his life in the great fire which occurred there, and Mr. Boardman, not liking to trouble the family by writing under such circumstances, went to St. John's and inquired about the black Robins. The story proved true, and one of the birds was purchased. "When I first got the bird," writes Mr. Boardman, "he was in pretty good plumage, but his feathers are now half out, and I am hoping that he will not disappoint me by coming out red. Most of the feathers on his head and neck are new, I think, and jet black. His tail is now gone, but that was pure black too.

* See this Bulletin, Vol. I, No. 1, April, 1876, p. 24.

I see no signs of the normal plumage." Mr. Boardman writes me later, under date of September 23, that he has been much interested in watching the moult of the black Robin, and says, "He acts as if he were going to be an albino. His new tail is about half grown out, and is nearly white, with a black stripe down each feather. His breast, head, neck, and back are jet black, but very much out of feather. He would now make a funny specimen, — part albinic, part melanistic." The parents of these young were not peculiar in color. — ELLIOTT COUES, *Washington, D. C.*

[NOTE (December 15, 1877). Since this paragraph was penned, the bird has been killed, stuffed, and sent to the Smithsonian, where I have seen it. It is black, with white wings and tail. — E. C.]

THE SEASIDE FINCH (*Ammodramus maritimus*) IN EASTERN MASSACHUSETTS. — As the existence of this species in Massachusetts has been challenged, and none are known to have occurred for a number of years, it would seem not amiss to mention that a single specimen of this species was shot by Mr. George O. Welch at Nahant in August last. It was in company with a number of *A. caudacutus*, but was the only one of its kind. It was in the not common plumage described by Audubon as a distinct species under the name of *Ammodramus macgillivrayi*, was sent to Professor Baird, who found it closely corresponding to Audubon's type, which he possesses. It was a young male, and appeared to have come from the north. In "History of North American Birds" (Vol. I, p. 560) it is given as not occurring north of Long Island Sound.

In this connection it may not be uninteresting to add that Mr. Welch found *Ammodramus caudacutus* quite abundant on the shores of St. Andrew's Bay, the estuary of St. Croix River, and lying between the eastern boundary of Maine and New Brunswick. This, if I am not mistaken, is the first time that it has been taken in Maine so far to the east, and not at all, except that Mr. N. C. Brown (this Bulletin, Vol. II, p. 27) obtained a single specimen in Scarborough. Mr. Brewster (*ibid.*, p. 28), on the authority of Mr. William Stone, mentions it as abundant at Tignish, Prince Edward Island. — T. M. BREWER, *Boston, Mass.*

THE LARK-BUNTING (*Calamospiza bicolor*) IN MASSACHUSETTS. — The first instance known to me of the capture of this species east of the Mississippi River occurred on December 5, 1877, when a specimen was shot by Mr. N. A. Vickary at Lynn, Mass., — a male in autumnal plumage. Its usual eastern limit is well known to be the plains of middle Kansas, where it ranges eastward to about, or possibly a little beyond, Fort Harker. The specimen has been kindly shown me by Mr. Vickary, to whom I am indebted for a knowledge of its capture. — J. A. ALLEN, *Cambridge, Mass.*

BULLETIN

OF THE

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No. 2.

CHANGES IN OUR NORTH AMERICAN FAUNA.

BY T. M. BREWER.

I PROPOSE four changes in our list of North American Birds as now accepted: three additions and one subtraction; the addition of *Totanus ochropus*, *Ægialitis hiaticula*, and *Larus canus*, and the rejection from the list of *Podiceps cristatus*.

Totanus ochropus, Linn. GREEN SANDPIPER. This species, the *Tringa ochropus* of Linnæus, Gmelin, etc., the *Totanus ochropus* of Temminck, the *Helodromas* of Kaup, the White-tailed Tatler of Nuttall, and the Green Sandpiper of Dresser, and other more recent authors, is entitled to a restoration to its place in the list of North American birds, on the indisputable authority of T. Edmund Harting, Esq., of London. This gentleman, in March, 1873, informed Professor Baird, by letter, that he had then recently received from Mr. H. Whitely, a perfectly trustworthy dealer of Woolwich, a small parcel of North American skins that had just been sent to him from Halifax, Nova Scotia. Among these was an example of this species. Upon inquiry Mr. Harting was assured by Mr. Whitely that the skin actually came to him from Halifax, and that it had been there prepared from a bird in the flesh. Mr. Harting regarded it as "the first *authentic* instance of the occurrence of the *Totanus ochropus* in North America." Nevertheless this species had previously been included by Mr. Nuttall (*Water Birds*, p. 157) as one of the birds of North America, based upon an unverified claim that two specimens had been taken at Hudson's Bay, a statement also accepted by Richardson in the "*Fauna Boreali-Americana*"

(II, p. 392). These claims not being accepted as authentic, the supposed examples being attributed to our *Rhyacophilus solitarius*, the Green Tatler was not included by Mr. Cassin in the ninth volume of the Pacific Railroad Reports. The very close resemblance of these two species, *T. ochropus* and *T. solitarius*, both in regard to their physical structure and their general habits, — a resemblance so close that, although Kaup refers the two species to different genera, a suspicion of their being only varieties of one species has suggested itself to at least one of my “variety” loving friends, — seems to warrant us in looking for nearly identical habits in their mode of nesting. The recently ascertained fact that the *T. ochropus* nests in trees, making use of the deserted nests of Hawks, Crows, Jays, and other birds, makes it apparently worth the while of our own collectors to ascertain if our *solitarius* has not the same habits, and perhaps explains why it is that we have so long suffered the egg of this species to remain undiscovered. I have never yet seen a single well-authenticated example of its egg. All purporting to be eggs of this species were referable either to *Egialitis vocifera* or to *Tringoides macularius*, generally the latter. It may be, therefore, that we have not looked for the eggs of the solitary Tatler in the right place, and that “Excelsior” should be the motto of those who would succeed in their researches for authentic specimens. So far the eggs credited to the *T. solitarius* bear a very suspicious resemblance to one of the two species mentioned. Naturally an egg of the solitary Tatler should more resemble in size, shape, and markings an egg of *T. ochropus*, which is oblong in shape, 1.50 in length, and somewhat similar to eggs of *Gambetta flavipes*. The egg of the *Tringoides macularius*, which in many cabinets does duty for that of *T. solitarius*, is of a rounded oval, and only about 1.10 inches long.

Larus canus, Linn. EUROPEAN SEA-MEW. This species is included by Nuttall as a North American bird (Water Birds, p. 299). It is so given also by Bonaparte (Syn. 1828, No. 296), and by Richardson (Faun. Bor. Am. II, p. 420), but the last two are regarded by Mr. Lawrence as synonyms for *Larus delawarensis*, Ord. There appears to be, at least up to the present time, no authentic record of the European *Larus canus* in North America, unless we accept *Larus brachyrhynchus* as a variety of the European bird, and not as having specific distinctness.

In June, 1876, my attention was called by Howard Saunders

Esq., of London, to a specimen which he had fully identified as the true European *Larus canus*. Its label indicated that it had been taken on the coast of Labrador in 1860 by Dr. Elliott Coues, — given by that gentleman to the Smithsonian collection, — and that it had been labelled by him some seventeen years ago as *Larus delawarensis*. It passed into the possession of Mr. John Krider of Philadelphia, by him was sold with other skins to a dealer in London, where, fortunately for the preservation of the record, it was found, identified, and secured by Mr. Saunders, who had at once recognized it as indisputably the European Sea-Mew. As Mr. Saunders has announced his intention of restoring the specimen where, in his judgment, it properly belongs, to the Smithsonian collection, if any doubt is felt as to its identity, there will be full opportunity for testing it. It is regarded by Mr. Saunders as the only authentic instance, on record, of the procuring the true *L. canus* in North America.

Ægialitis hiaticula. RINGED PLOVER. The capture of one of this species, a female, by H. W. Feilden, of the British Arctic Expedition of 1875–76, under circumstances that leave no doubt it was nesting in the neighborhood, places it once more, and this time beyond dispute, among the birds of North America.* The individual in question was taken August 4, 1875, on the beach bordering the valley of the Twin glacier, in Buchanan Strait, latitude 78° 48' N. Its more or less common presence in Greenland has been known for some time, as also its being migratory, in high northern latitudes, and there breeding; occurring there, according to Hewitson, from March to October, and, according to Linnæus, reaching even the Lapland Alps. Scoresby, in his Journal, mentions having met with this species on the eastern coast of Greenland, and more recently other arctic explorers have observed them on the western coast of the same island, at Prince Regent's Inlet and at Hecla Cove. Professor Newton is authority for its breeding generally throughout Greenland, and for its being also found on Sabine and Clavering Islands. It is stated to be abundant on the shores of Possession Bay as well as Regent's Inlet. It was taken by Professor Torell on the Seven Islands, in latitude 80° 45' N., which was, before the recent British expedition, the highest known range of any shore bird. Since then *Streptopelia*

* Wilson includes "*Charadrius hiaticula*" among American birds, but his example was, without question, the *semipalmatus* in its spring plumage.

interpres has been observed as late as September 5 in latitude $82^{\circ} 30' N.$, *Calidris arenaria*, with nest and eggs, in latitude $82^{\circ} 33' N.$, *Phalaropus fulicarius* in latitude $82^{\circ} 27'$, and *Tringa canutus* in latitude $82^{\circ} 33' N.$

Podiceps cristatus, Latham. CRESTED GREBE. This has been counted as a North American bird by Bonaparte (Syn. p. 417), by Richardson (Faun. Bor. Am. II, p. 410), by Nuttall (Water Birds, p. 250), by Audubon (Orn. Biog. III, 595, pl. 292), and others. It is retained by Mr. Lawrence in the ninth volume of Pacific Railroad Reports, and is even given by Dr. Coues in his "Birds of the Northwest," without any expression of doubt as to its existence in North America; indeed, he ventures the remark that he sees no difference between American and European specimens. Nevertheless it is now universally conceded that not a specimen is in existence of American origin, and that there is no authentic record of the capture of a single specimen in America. Every specimen that has been referred to this species, where in existence, proved to be either immature examples of *P. griseigena*, or to be foreign examples, and by no one is this now more cheerfully conceded than by Dr. Coues himself.

It is very obvious now, in reading Mr. Audubon's notes by the light of our present knowledge of the habits of the American form of the Red-necked Grebe, that all he wrote in reference to the supposed American *P. cristatus* relates exclusively to the former species, of which he makes but a brief mention, and with which he appeared to regard himself as unfamiliar, although it is so common about Eastport and the provinces where he spent the spring of 1833.

REMARKS ON SOME OF THE BIRDS OF LEWIS COUNTY, NORTHERN NEW YORK.

BY C. HART MERRIAM.

WITH REMARKS BY A. J. DAVAN.

THE county of Lewis, though small, is interesting ornithologically, from the fact that the Canadian and Alleghanian faunæ meet within its boundaries, and that the densely wooded portion lying east of the Black River Valley constitutes the western border of

that extensive district well known to sportsmen as "John Brown's Tract," which is embraced in the "Great Adirondack Wilderness," of the northeastern portion of the State. This eastern district is characterized by a sandy soil, which supports an immense forest, chiefly of coniferous trees. In the northwestern part of the county is another large tract, called "Tug Hill," lying between Lake Ontario and the Adirondack Wilderness, which is characterized by the same class of forest-trees and the same general physical features. The eastern, or Adirondack, region is truly Canadian in its fauna; the western partially so; while the valley of the Black River and the middle portion of the county lying west of it is strictly Alleghanian.

In the eastern (Adirondack) district are found breeding *Turdus pallasi*, *T. swainsoni*, *Sitta canadensis*, *Anorthura troglodytes* var. *hyemalis*, *Dendroica cerulescens*, *D. coronata*, *D. Blackburniae*, *D. maculosa*, *Geothlypis philadelphia*, *Myiodioces canadensis*, *Loxia leucoptera*, *L. curvirostra* var. *americana*, *Zonotrichia albicollis*, *Junco hyemalis*, *Corvus corax*, *Perisoreus canadensis*, *Contopus borealis*, *Hylotomus pileatus*, *Picoides arcticus*, *P. americanus*, *Sphyrapicus varius*, *Tetrao canadensis*, *Ardea herodias*, *Colymbus torquatus*, and many other less characteristic species.

At my request, Mr. A. Jenings Dayan, one of our most careful, enthusiastic, and conscientious collectors, sends me the following notes concerning a few species found in the middle (Alleghanian) district of the county. When not otherwise stated, his observations pertain to the town of Lyon's Falls, in the Black River Valley.

"Eremophila alpestris. HORNED LARK.—A tolerably common spring migrant; a few breed. Dr. C. P. Kirley of Lowville [middle district] has kindly given me this note on its breeding: 'I first observed *Eremophila alpestris* July 16, 1876, when I shot one two-thirds grown, and saw the parents. In the same locality, June 24, 1876, I noticed a pair of old birds, and on searching for their nest, I found it not more than eighteen inches from the main road. It contained three unfledged young. Since then I have both seen and taken it during the breeding season.'

"Helminthophaga peregrina. TENNESSEE WARBLER.—I have taken two of this species (May 19 and 23, 1877), the only record of its occurrence in this locality.

"Collurio ludovicianus [var. *excubitoroides*, see below]. LOGGERHEAD SHRIKE.—I shot a fine adult male September 24, 1877. Through the kindness of Mr. A. M. Church, I have examined a nest and five eggs of this bird, taken here May 11, 1877. He secured the female as she left the nest.

"**Surnia ulula** var. **hudsonica**. HAWK OWL. — Dr. Kirley has two specimens, male and female, taken near Lowville, October 24 and November 16, 1877.

"**Lobipes hyperboreus**. NORTHERN PHALAROPE. — I shot a young male on Black River, September 6, 1877. One other was taken about the same date, near Boonville.

"**Œdemia americana**. AMERICAN BLACK SCOTER. — Saw a flock of four on Black River, September 27, 1877, and secured them all. The gizzards of all these birds were absolutely empty, with the exception of a fragment of a shell in one."

Much of interest attaches itself to the breeding of two of these species (*Eremophila alpestris* and *Collurio ludovicianus* var. *excubitoroides*) in this the northeastern portion of the State. Regarding the first of these, Dr. Coues, in his inexhaustible "Birds of the Northwest" (p. 39), says: "East of the region above specified [from Iowa and Minnesota westward] the Horned Lark is not known to breed in the United States; and the only record of its occurrence in summer which I have seen, that given by Mr. Maynard, as above [Massachusetts in July], most probably indicates a highly exceptional instance." Since the publication of the above (1874) it has been ascertained that the bird in question breeds, sparingly, in the western and central portions of the State. In the last number of this Bulletin (p. 40) Mr. John M. Howey calls attention to the fact of its breeding in the vicinity of Canandaigua, in Western New York, but states that he does not "know of a previous instance of this bird's nesting in this State," thus overlooking Mr. Rathbun's record in his "Complete List of the Birds of Cayuga, Seneca, and Wayne Counties," which appeared in the "Auburn Daily Advertiser" of August 14, 1877. Mr. Rathbun states that it is "resident and tolerably common in winter," and that "a few breed," in Central New York. Mr. Dayan's note (on the authority of Dr. C. P. Kirley) is particularly interesting, as it extends the known breeding range of the species, *within* the United States, eastward to the western border of the Adirondack Wilderness, beyond which it must pass to the northward (through St. Lawrence County) into Canada, and thence to Labrador. Whether it has for many years bred within the limits of the State of New York, or has recently extended its breeding range, as seems to be the case with the Lark Finch (*Chondestes grammacus*) and some other species, remains to be decided; I incline to the latter view. It breeds about Hamilton, Can-

ada West (McIlwraith), and abundantly along the Labrador Coast (Audubon and Coues).

Concerning the "Loggerhead Shrike," the case, though in some respects parallel with the above, is much more difficult of explanation, and has given rise to much confusion, owing to the complication arising from the close relationship existing between the Southern and Western forms. Coues, in his "Key," states that "extreme examples of *ludovicianus* and *excubitoroides* look very different, but they are observed to melt into each other when many specimens are compared, so that no specific character can be assigned," and if the doctor had substituted the term *varietal* for *specific*, he would have hit equally near the truth. The fact is, there is so little difference between Eastern examples of *excubitoroides* and the Southern bird that they have often been confounded, and it is practically almost impossible to distinguish them. My own opinion is that the locality whence the specimen came furnishes the most valuable clew to its identity. In a specimen (♂, juv.) taken by Mr. Dayan at Lyon's Falls, Lewis County, New York, September 4, 1877, the light ash of the upper parts contrasts strongly with the "dark plumbeous-ash" of typical Southern examples of *ludovicianus* in the cabinet of Mr. George N. Lawrence, to whose kindness I am indebted for the comparison, and for many other favors. In other respects the bird more closely approaches the Southern form. The Western bird breeds abundantly in Ohio (Wheaton), and was first observed in Canada West (near Hamilton) by McIlwraith about the year 1860, since which date it has bred regularly in that locality. Allen, in 1869, published in the "American Naturalist" (p. 579) the first record of its breeding in New York State ("near Buffalo"), and Rathbun (in the list above referred to) gives it as breeding at Auburn, in the central portion of the State. Fred. J. Davis, Esq., informs me that he has taken several of its nests in the vicinity of Utica, and the fact of its breeding in Lewis County (Dayan, above) completes its eastern range to the Adirondacks. Beyond this barrier it is not, to my knowledge, found, excepting as a rare straggler; and most of the New England specimens have commonly been regarded as accidental visitors from the South. Mr. Purdie, however, in this Bulletin (Vol. II, No. 1, p. 21, 1877), records the capture of a "typical" specimen of var. *excubitoroides* at Cranston, R. I., September 2, 1873, by Fred. T. Jencks. This is, so far as I am aware, the only recognized in-

stance of the capture of the Western form in New England. As a pretty conclusive proof that our New York bird has been derived from the Western (*excabitoroides*) "type," we have the fact of the continuity of its range eastward from the Mississippi to the Adirondacks (through Ohio to Buffalo, Auburn, Utica, and Lewis County, New York); while, on the other hand, its entire absence from those portions of the State where the Carolinian Fauna is most marked (notably along the Hudson River, where such characteristic birds as *Icteria virens*, *Mniotilta migrans*, *Helminthophaga vermivorus*, and *Sialia motacilla* breed in abundance) is sufficient evidence that it is not the Southern bird. That it does not occur in the region above specified is pretty clearly shown by the fact that neither Edgar A. Mearns (of Highland Falls, near West Point) nor Eugene P. Bicknell (of Riverdale), two of our most enterprising young collectors, have ever met with even a single straggler of the genus, other than *C. borealis*, although they have both made the birds of the Hudson River Valley a special study.

(*To be continued.*)

DESCRIPTIONS OF THE FIRST PLUMAGE IN VARIOUS SPECIES OF NORTH AMERICAN BIRDS.

BY WILLIAM BREWSTER.

II.*

24. *Helminthophaga chrysoptera*.

Fall plumage: male. Upper parts bluish-gray, washed strongly with olive-green on the back. Forehead and crown yellow, somewhat obscured by greenish streaking. Occiput bright greenish-yellow. Patch on wings clear yellow. Band through the eye and entire under parts, as in the adult. Chin, throat, and jugulum black, each feather broadly edged with soiled white. White maxillary stripes fairly meeting on anterior portion of chin. (This last feature may probably be explained by individual variation, not by age. I have seen many adults similarly characterized.)

Fall plumage: female. Remiges, rectrices, etc., as in adult. Pileum and nape uniform olive-green; back and rump bluish-gray, washed with

* For Part I, see this volume, pp. 15-23.

greenish-olive. Upper tail-coverts clear bluish-gray. Sides of head and entire under parts with a slight wash of brownish-yellow; otherwise colored like the adult. From two specimens in my collection shot at Cambridge, Mass., July 18, 1874. It may be well to mention that these birds are in somewhat transitional dress, and have hardly, perhaps, passed from the first plumage, but as the female differs but little from a specimen of the same sex in the perfected fall dress, taken August 21, 1875, I have thought it best to describe them both as in full autumnal plumage.

25. *Helminthophaga ruficapilla.*

First plumage: female. Remiges, rectrices, etc., as in adult. Two conspicuous wing-bands of bright buff. Pileum and nape light ashy, tinged with fulvous. Back ashy, just touched with green; rump bright olive-green. Supra-orbital line, ring around eye, and the throat, bright buff. Lores, maxillary line, and auriculars pale ashy. Breast and crissum gamboge-yellow, each feather tipped with whitish, producing a somewhat hoary appearance. Abdomen pale yellow; sides dull cinnamon, with a shade of ashy. From a specimen in my collection taken at Upton, Me., August 14, 1873. A full series of specimens illustrates well the progressive stages. The fall plumage is very quickly acquired by young of this species.

26. *Dendroeca virens.*

First plumage: male. Remiges and rectrices as in adult; greater and median wing-coverts just tipped with soiled white, forming two very narrow, indistinct wing-bands. Rest of upper parts dark slaty-brown, each feather of the back edged with bright greenish. Superciliary stripes (just meeting in a narrow line on the forehead), eyelids, maxillary line, and chin, bright yellow. Sides of head dark slate; under parts soiled white, each feather on the breast and sides with a terminal spot of black; on the throat and jugulum, these spots become large blotches of dark slate, the feathers being just tipped and edged with light yellow. From a specimen in my collection shot at Cambridge, Mass., July 30, 1875. Like most of the previously described young Warblers, this bird has a narrow central line of yellow feathers extending down the throat and jugulum to the breast.

27. *Dendroeca cærulescens.*

First plumage: male. Remiges and rectrices as in autumnal males, the former slightly paler in color. Rest of upper parts, including the wing-coverts, dark olive-brown; sides of head very dark brown; lores black; throat, jugulum, lower eyelids, and a very conspicuous supra-orbital line, pale buff; breast and sides ashy, tinged with olive. Abdomen, anal region, and crissum strong sulphur-yellow. White spot on base of primaries fully developed.

First plumage: female. Remiges and rectrices as in autumnal female.

Rest of upper parts, including wing-coverts and sides of head, light olive-brown. Lores dull black. Superciliary line, both eyelids, throat, jugulum abdominal and anal regions, with crissum, light buff. Breast and sides olive, tinged with buff. Spot on base of primaries dirty-white. From two specimens, male and female, in my collection, shot with parents at Upton, Me., August 11, 1873. The male above described shows a few black feathers on one side of the throat. Several adult females in my collection, taken both in spring and fall, lack the white wing-patch altogether. Others have it but faintly indicated.

28. *Dendrœca coronata*.

First plumage: female. Upper parts, in general, dull grayish-white, tinged with brownish, heavily streaked with slaty-black, the streaks broadest on the back and narrowest on the pileum; rump soiled white, with well-defined streakings like the back. Lower parts pale lemon, tinged with brownish on the throat, narrowly but distinctly streaked with dull black over the entire surface. From a specimen in my collection, shot at Upton, Me., August 7, 1874. The first plumage of no other bird that I am acquainted with exhibits such a remarkable variation from the more mature stages. The specimen just described resembles closely, in general markings and coloration, the Pine Finch (*Chrysomitris pinus*). As is well illustrated by a full suite of specimens in transitional stages, the yellow of the rump is acquired early in the first moult, which is very nearly completed, in most cases, before that of the crown appears.

29. *Dendrœca Blackburniæ*.

First plumage: male and female. Remiges, rectrices, etc., as in autumnal adult; rest of upper parts uniform dark brown, each feather on the back edged with light buff; the white scapular stripe poorly defined. Head markings precisely similar *in pattern* to the adults, but with the orange everywhere replaced by white, slightly tinged with buff on posterior half of superciliary line. Throat and entire under parts, in the male, clear white, tinged with pale yellow, each feather (excepting on throat) spotted terminally with black. From two specimens in my collection taken at Upton, Me., August 5 and 6, 1874. One of these, the male, has a few orange feathers on the throat, indicating the coming fall plumage.

“Young in autumn. Above similar to the adult female in fall plumage, but more olivaceous; all the markings less distinct. Superciliary stripe and entire lower parts, except the crissum, pale yellowish-buff, hardly brighter on the jugulum. Sides very faintly streaked with grayish. In my collection (No. 1003), Mt. Carmel, Ill., August 15, 1870.” — R. R.

30. *Dendrœca castanea*.

First plumage: female. Remiges, rectrices, primary coverts, and alulae as in adult. Pileum, nape, and rump dull brown; back dull olive-green;

upper tail-coverts slaty-black. Entire under parts creamy-white, with the slightest possible tinge of clay-color, varying to ashy on the breast. No trace of chestnut on the flanks. Sides of head buff, strongly tinged with greenish on the auriculars and maxillary line. Each feather of the body, both above and beneath, with a large terminal spot of black; the posterior half of abdomen, anal region, and crissum are, however, immaculate. In my collection, from Upton, Me., August 9, 1873.

A very complete suite of specimens, taken late in August and early in September, illustrates well the development of the plumage of the young of this species. The spotted feathers of the under parts, with the exception of a narrow line down the centre of the breast, are the first to disappear, and simultaneously with their removal, the chestnut flank-patches become apparent. Next the pileum and nape take on the autumnal green, and last of all the feathers of the back and central line beneath are changed. Adults of this species in fall dress are indistinguishable from the young, except by the more pronounced chestnut on the sides.

31. *Dendrœca pennsylvanica.*

First plumage: male. Remiges, rectrices, etc., as in spring specimens. Wing-bands white, scarcely edged with yellow, and the general aspect of wing much duller than in fall specimens. Rest of upper parts, sides of head, jugulum, breast and sides, pale cinnamon, brightest on pileum, lighter on throat and sides of head. Feathers of back with central spots of dull black. Abdomen, anal region, and crissum creamy-white. From a specimen in my collection shot at Cambridge, Mass., July 18, 1874. It is not a little remarkable that the wing-markings of this bird are much more nearly like those of adults in spring than of the young in autumn.

32. *Dendrœca maculosa.*

First plumage: female. Remiges and rectrices slightly paler than in adult; greater and middle wing-coverts just tipped with fulvous, forming two narrow wing-bands; rest of upper parts, sides of head, including orbital region and eyelids, and breast, dark ashy, somewhat lighter on rump. Abdomen, anal region, and crissum pale sulphur-yellow, blotched somewhat indistinctly anteriorly with ashy. Throat pale ashy, with a few yellow feathers intermixed. From a specimen in my collection shot at Upton Me., August 10, 1874. This bird was very young, indeed barely able to fly. Several specimens a little further advanced show an increased amount of yellow on the throat and abdomen, but are otherwise similar.

33. *Dendrœca discolor.*

First plumage: male. Remiges, rectrices, etc., as in adult. Wing-bands very rich buff; rest of upper parts, with sides of head, light cinnamon, becoming almost ashy on the forehead and rump, and tinged slightly with yellowish-green on the back. Eyelids dirty white. Entire under parts pale lemon-yellow, somewhat duller, and with a shade of ashy on

the breast and sides. From a specimen in my collection shot at Cambridge, Mass., July 11, 1873. This bird has also two patches of bright yellow on the breast.

34. *Perissoglossa tigrina*.

First plumage: female. Remiges, rectrices, and primary coverts as in adult. Pileum, nape, rump, and upper tail-coverts dark slaty-brown, the back with an indistinct patch of olive-green. Eyelids, throat, jugulum, and sides of breast dark slate; abdomen, anal region, and crissum solid white, tinged with dull yellow. From a specimen in my collection shot at Upton, Me., August 21, 1874. This bird exhibits a few irregular patches and isolated feathers of dull yellow on the breast and throat, fore-runners of the fall plumage.

35. *Siurus auricapillus*.

First plumage. Remiges, rectrices, etc., as in the adult. Rest of upper parts dull fulvous-brown; *the crown without stripes*, all the feathers very indistinctly darker centrally; lower parts paler, more buffy, fulvous, growing gradually white toward the crissum, the buffy portions (breast and sides), with very fine indistinct streaks of dusky. From a specimen in my collection obtained near Washington." — R. R.

36. *Oporornis formosa*.

First plumage. Remiges, rectrices, primary coverts, and alulae as in the adult. Pileum and back dull raw-umber-brown, tinged with rusty on the back and scapulars; throat, jugulum, breast, and sides pale grayish-fulvous, the abdomen and crissum paler, and slightly tinged with yellow. *No markings of any sort about the head.* My collection, Mt. Carmel, Ill., July 27, 1875." — R. R.

37. *Icteria virens*.

First plumage. Remiges, rectrices, etc., as in the adult. Head, superiorly and laterally, uniform grayish-olive, with a barely appreciable whitish supraloral line and orbital ring, and *without black markings*. Whole throat pale ash-gray (almost white on the chin), stained laterally and anteriorly with yellow; entire breast gamboge-yellow, obscured with olivaceous-gray across the jugulum (probably entirely gray at first, the yellow feathers being probably the beginning of the first moult). Abdomen white; flanks and crissum pale buff. In my collection from Mt. Carmel, Ill., July 19, 1875." — R. R.

38. *Myiodioides canadensis*.

First plumage: female. Remiges, rectrices, etc., similar to the adults. Rest of the upper parts, including wing-coverts and sides of head, uniform deep dull cinnamon; the greater coverts tipped with fulvous. Throat, breast, and sides very light cinnamon, tinged with olive. Anal and abdominal regions pale sulphur-yellow. No conspicuous spots, stripes, or

markings anywhere. From a specimen in my collection shot at Upton, Me., August 4, 1874. This bird was so young as to be scarcely able to fly, and, with the rest of the brood, was attended by the female parent.

Adult in autumn: male. Similar to adult in spring, but with the yellow of the under parts much more intense, and the black spotting on the breast slightly clouded by the yellow tipping of the overlapping feathers. From a specimen in my collection shot at Upton, Me., August 29, 1874.

Young in autumn: male. Pileum and back greenish-olive; nape and rump bluish-ash, slightly tinged with olive. Centres of a few feathers on the forehead and cheeks, with a continuous line along the side of the neck to the breast, dusky-black. A broad band of very small spots (each one not more than one quarter of the size of those exhibited in the adult plumage) across the upper part of the breast black. Otherwise similar to the adult. In "History of Birds of North America," Vol. I. p. 320, Mr. Ridgway says, "In the young [these spots] are obsolete."

39. *Geothlypis philadelphia.*

First plumage: female. Remiges, rectrices, etc., as in adult. Rest of upper parts, with wing-coverts and sides of head, dull reddish-brown, becoming almost cinnamon on the back, and tinged strongly with ashy on the pileum. Entire under parts light reddish-brown, most pronounced on the abdominal and anal regions, becoming lighter on the throat, and darker, with a strong olive suffusion, on the breast and sides. No appreciable maxillary or supra-orbital stripes. From a specimen in my collection shot at Upton, Me., August 11, 1876. This bird was very young; in fact, barely able to fly. A slight doubt exists in my mind as to its identity, for I did not actually see the parent birds feed it, though both were in the immediate vicinity and exhibited much solicitude. This specimen is separable from the corresponding stage of *G. trichas* by the ashy cast of the pileum and the absence of brownish on the sides.

Autumnal plumage: young male. Entire upper parts olive-green, the feathers of the pileum and nape being just tipped with this color and showing plainly the ashy underneath when disarranged. Sides of head, with broad bands extending down each side of the throat and nearly meeting across the jugulum, ash, washed with greenish-olive. Sides, with a broad connected band across anal region and breast, dull olive-green. Rest of under parts, with central areas of throat and jugulum, very clear rich yellow, intensifying into a spot of orange on the breast. In two specimens (both males) a yellow tipping of the feathers on the jugulum nearly conceals much black underneath, which becomes conspicuous when the plumage is slightly disarranged.

Autumnal plumage: young female. Similar to the male, but with a more olive cast to the green of the dorsal aspect, less ashy on head, and the spot on the breast of richer, deeper color, and broader diffusion. The young of both sexes in autumnal plumage have the upper and lower eye-

lids *conspicuously fulvous-yellow*. In one specimen (male, taken August 21), the eyelids are *dirty-white*. From seven specimens (two females, five males) in my collection shot at Upton, Me., August, 1874. Irrespective of generic characters, the young of *G. philadelphia* in autumn are at once distinguishable from those of *Oporornis agilis* in corresponding stages, by the total absence of ashy on the central regions of throat, jugulum, and breast. So marked is the difference that obtains in this respect that I am easily able to separate the two species, when lying side by side, at a distance of fifteen or twenty feet.

40. *Geothlypis macgillivrayi*.

Young autumnal plumage: male. Entire upper parts exactly as in *G. philadelphia* of corresponding age and sex. (See preceding species.) Sides of head very dark ashy, washed with olive. *Eyelids white*. Forepart of the breast light ashy-gray, with a slight superficial wash of olive, shading into buffy-white on the chin. (Again compare with preceding species.) Rest of under parts clear rich yellow, obscured somewhat with greenish-olive on the sides. Upon raising, or even slightly disarranging, the feathers of the throat, broad subterminal bands of black appear on each feather. These bands or blotches, as in the young *G. philadelphia*, are concealed by the ashy tips of the overlapping feathers. From a specimen in my collection shot at Nicasio, Cal., by Mr. C. A. Allen, August 1, 1876.

41. *Geothlypis trichas*.

First plumage: male. Remiges, rectrices, etc., as in adult. Wing-coverts continuously light brown. Rest of upper parts, including sides of head, brown, lightest on rump, and slightly tinged with olive on the back. Throat yellowish-olive, deepening to dark clear olive on jugulum, breast, sides, and anal region. Abdomen dull yellow, with its lateral margins bounded by bands of fulvous-brown. From specimen in my collection shot at Upton, Me., August 26, 1874. Two other specimens, taken respectively July 28 and August 10, present no appreciable difference from the birds first described.

42. *Pyrranga rubra*.

Occasional plumage: male. Wings and tail black; entire plumage of body rich orange, with a greenish tinge on flanks and anal region. From a specimen in my cabinet, collected by Mr. C. J. Maynard, at Waltham, Mass., May 27, 1869. This remarkable specimen I for a long time considered unique, but I have recently examined another in the possession of Mr. Arthur Smith, of Brookline, which is its precise counterpart, and Mr. Ridgway tells me he has seen still others. This plumage is not to be confounded with the ordinary immature one of this bird, where the scarlet is simply of a lighter shade or mixed with patches of yellowish-green. It is a pronounced uniform coloring, and apparently a completed plumage.

Unquestionably it is abnormal, but hardly to be placed in a category with albinism, and probably it is not very unfrequent. Adult males of *P. rubra* change to the greenish autumnal plumage of the female and young, a fact not generally known. They may in that stage be distinguished by the blacker coloring of the wings and tail. I have never seen the young males in autumn with red feathers appearing in the plumage, as spoken of by writers; probably such specimens may be referred to adult birds taken in August or September, with the moult only partially effected; many of such examples I have now before me, all unquestionably adults. The scarlet bands on the wing-coverts of some specimens are to be regarded as individual adornments, independent of age. Many comparatively immature specimens possess them, while in some of the finest birds they are wanting.

43. *Hirundo horreorum*.

First plumage: female. Fork of tail not deep; outer feathers projecting one-half inch beyond the inner ones. Remiges and rectrices brown; upper parts, in general, glossed with dull steel-blue; feathers of rump and upper tail-coverts edged with rusty; frontal band narrowed to a mere line of pale fawn-color. Beneath similar to adult, but everywhere paler. From a specimen in my collection taken at Rye Beach, N. H., August 21, 1872.

44. *Tachycineta bicolor*.

First plumage: male. Upper parts uniform dark slate, with a fine silky gloss; feathers of interscapular region faintly edged with pale fawn. Secondaries edged and tipped with pale cinnamon-gray. Under parts soiled white, with a faintly indicated pectoral band of pale ashy-brown. From a specimen in my collection, shot at Cambridge, June 22, 1872.

A good series of summer specimens shows well the transitional stages. The first plumage is worn much longer than in most birds, and the autumnal dress very slowly acquired, the metallic tinted feathers appearing one or two at a time. The remiges are also moulted by the young, as well as by the adult, and both in the autumnal plumage have the last pair of secondaries broadly tipped with pure white. This remarkable feature, so far as the specimens at hand go to show, is entirely characteristic of this plumage.

45. *Petrochelidon lunifrons*.

First plumage: male. Top of head, back, and scapulars dark brown; collar around nape, dull ashy, tinged anteriorly with rusty. Rump as in adult, but paler; forehead sprinkled with white, and with a few chestnut feathers. Secondaries broadly tipped with ferruginous. Throat white, a few feathers spotted centrally with dusky. Breast and sides ashy, with a rusty suffusion, most pronounced on the latter parts. A very small area of pale chestnut on the cheeks. From a specimen in my collection taken at Upton, Me., July 27, 1874.

46. *Cotyle riparia.*

First plumage: male. Upper parts brown, each feather edged with ferruginous, this edging broadest on the rump and secondaries, narrowest on the crown and nape. Beneath like the adult, but with the pectoral band strongly washed with ferruginous, and the throat thickly spotted with the same color. In my collection, from Rye Beach, N. H., August 24, 1872. Autumnal specimens have the secondaries tipped with white, but not so broadly as in *Tachycineta bicolor.*

47. *Ampelis cedrorum.*

First plumage: female. Above generally duller cinnamon than in adult, with obscure streakings of dusky-buff; rump grayish-brown with a tinge of olive. Tail narrowly tipped with gamboge-yellow. Two secondaries on each wing slightly tipped with the red waxen appendages. Entire under parts brownish-buff, palest about anal region, deepest on throat and chin; breast and sides streaked thickly with cinnamon-brown. A dull black line, starting from the nostril, passes through the lore to the eye, where it terminates, embracing, however, the anterior half of both eyelids. From a specimen in my collection, taken at Upton, Me., August 14, 1874. I have seen specimens of this species in the first plumage with not only the secondaries wax-tipped, but several of the tail-feathers also. Nor is this horny appendage peculiar to the male, as has been stated, for several undoubted females before me have it fully developed. Much variation likewise obtains among different individuals in respect to the number and position of these appendages. One specimen (a male, Cambridge, March 21, 1870) has *every feather* of the tail conspicuously wax-tipped, in addition to nine of the secondaries on each wing, while another has the primaries (excepting the first three) tipped broadly with white, and in the centre of each white spot a smaller one of yellow.

NOTES ON SOME OF THE BIRDS OF CALAVERAS COUNTY,
CALIFORNIA, AND ADJOINING LOCALITIES.

BY ROBERT RIDGWAY.

SEVERAL small lots of birds received at the National Museum from its correspondent, Mr. L. Belding, of Marysville, California, collected chiefly in Calaveras County, in that State, are of great in-

terest, as showing a somewhat remarkable fauna for a locality situated as this is on the Pacific slope of the Sierra Nevada, there being a curious intermingling of Eastern, Northern, and Southern species with those usually considered as truly "Californian." The collections thus far received embrace only forty-seven species (including races), a list of which, with remarks, is given below:—

1. *Mimus polyglottus*. No. 73,609, December 26, 1877.
2. *Myiadestes townsendi*. No. 73,610, ♂ ad., May 4, 1877.
3. *Phænopepla nitens*. No. 73,534, Murphy's, May, 1877.
4. *Cinclus mexicanus*. No. 73,533. No date.
5. *Regulus satrapa*. No. 73,535, ♂ ad. No date.
6. *Catherpes mexicanus*, *β. conspersus*. No. 73,045, Murphy's, February 7, 1877.
7. *Thryomanes bewicki*, *β. spilurus*. No. 73,612, January 5, 1877.
8. *Sitta carolinensis*, *β. aculeata*. No. 73,608, January 5, 1877.
9. *Sitta canadensis*. No. 73,534. Big Trees, alt. 4,500 feet, May 19.
10. *Helminthophaga ruficapilla*. Several specimens in very bright spring plumage, agreeing entirely with Eastern examples both in colors and proportions. The supposed Western race, "*var. gutturalis*" (Hist. N. Am. Birds, I, p. 191), based upon a special plumage, is therefore untenable. This common "Eastern" species, of which autumnal specimens only have been recorded from the Western Province, Mr. Belding finds quite common on the Sierra Nevada, and has ascertained that it breeds in Calaveras County.
11. *Helminthophaga celata*, *β. lutescens*. Nos. 73,613, juv., Big Trees, May, 1877, and 73,614, ad., January 8, 1878 (!) A permanent resident, both breeding and wintering.
12. *Dendrocæca occidentalis*. Nos. 73,039, ♂, and 73,040, ♀, Big Trees, May 20, 1877. In the brightest spring plumage, the male with the whole head, except throat, pure gamboge-yellow, the pileum immaculate!
- [13. *Dendrocæca coronata*. Mr. Belding writes that he thinks he has got this species "during a recent visit to Murphy's." This is very likely, since it is now known to be of not uncommon occurrence in certain parts of California.* I have a specimen obtained April 9, 1877, at Nicasio, Marin County, by Mr. C. A. Allen, who writes me that he has frequently taken it. I am also informed by M. J. A. Allen that the Museum of Comparative Zoology possesses specimens collected at Haywood, Alameda County, by Dr. J. G. Cooper.]
- [14. *Geothlypis trichas*. Two specimens seen at Marysville, January 2, 1878 (!).
15. *Lanivireo solitarius*. Nos. 73,041, and 73,042, males, Big

* Has been subsequently received from Mr. Belding.

Trees, May 10, 1877. Apparently the true *solitarius*. Of common occurrence, and breeding.

16. *Lanivireo cassini*. No. 73,537, ad. No date.
17. *Vireosylva gilva*, β . *swainsoni*. No. 73,043. No date.
18. *Collurio borealis*. Nos. 73,615 and 73,616, January 2 and 8, 1877.
19. *Collurio ludovicianus*. Nos. 73,617 and 73,618. No date. These examples, like most Californian ones, are by no means referable to *excubitoroides*, but are fully as dark as the darkest individuals of true *ludovicianus* from the Southern Atlantic and Gulf States.
20. *Hesperiphona vespertina*. No. 73,538, ♂ ad. No date.
21. *Pinicola enucleator*, β . *canadensis*. No. 73,539, ♂ juv. Soda Springs, Placer County, September 28, 1877.
22. *Carpodacus cassini*. No. 73,048, ♂ ad. Big Trees, May 20, 1877.
23. *Chrysomitris tristis*. No. 73,630. No date.
24. *Chrysomitris lawrencii*. No. 73,629, ♂ ad., January 9, 1878.
25. *Chrysomitris pinus*. No. 73,540. Murphy's. No date.
26. *Chondestes grammaca*. No. 73,541. Murphy's, February, 1877 (!).
27. *Poœcetes gramineus*, β . *confinis*. No. 73,542. No date.
28. *Passerculus sandwichensis*, γ . *alaudinus*. Nos. 73,071, April, 1877; 73,625-7. No date. ("Summit of Sierra Nevada, lat. 39°.")
29. *Zonotrichia leucophrys*. No. 73,543. No date.
30. *Spizella socialis*, β . *arizonæ*. Nos. 73,544, Soda Springs, Placer County, September, 1877, 73,628, Calaveras County. No date; also seen January 6, 1878.
31. *Melospiza fasciata*, β . *guttata*. No. 73,050, ♂ ad. Murphy's, March 20, 1879. No. 73,619. No date.
32. *Melospiza fasciata*, γ . *fallax*. No. 73,621. No date.
33. *Melospiza fasciata*, δ . *heermanni*. No. 73,621, July, 1877. Probably the resident form.
34. *Melospiza lincolni*. Nos. 73,540, 73,622-4. No dates.
35. *Passerella iliaca*, δ . *megarhyncha*. No. 73,049, ♂ ad. Big Trees, May, 1877.
36. *Myiarchus cinerascens*. No. 73,546. Murphy's, April 17, 1877.
37. *Sayornis nigricans*. A very curious albinoscent example of this species (No. 73,611) is colored as follows: Prevailing color very pale pearl-gray, fading to white on the abdomen and lining of the wing. Wing-coverts tipped with creamy buff, forming two distinct narrow bands. The specimen is a full-grown young one, as shown by the buff wing-bands and the texture of the feathers. Slight indications of the normal plumage are seen in a small black spot just above the posterior angle of the right eye, and several black feathers among the lesser wing-coverts, while, according to the collector, there was a spot of the same color on the breast, but this

was carried away by the shot. The specimen was obtained at Stocton, July, 1877.

38. **Contopus richardsoni**. No. 73,547. No date.

39. **Empidonax pusillus**. No. 73,044. Stocton, July, 1877.

40. **Empidonax obscurus**. No. 73,047. Murphy's, April 28, 1878.

41. **Empidonax hammondi**. Nos. 73,045-6. Murphy's, April 28, 1878.

42. **Picus nuttalli**. No. 73,033. Murphy's, Calaveras County (alt. 2,000 feet), April, 1877.

43. **Picus pubescens**. An adult male (No. 73,606), collected December 27, 1877, is absolutely typical *P. pubescens*. There is a large cluster of white spots covering the lesser wing-covert region, while the greater coverts have a row of white spots at the base, more or less concealed by the middle coverts; the secondaries and tertials are likewise completely crossed by bands of white spots. I have seen very many Western examples of this bird *approaching* the true *pubescens*, to a greater or less degree, but this is the first I have seen having the row of spots at the base of the greater coverts, and the conspicuous cluster of white spots, forming an irregular broken patch on the middle coverts, — the essential characters of *pubescens*, as restricted.

44. **Picus pubescens, β . gairdneri**. No. 73,607, ♂ ad. December, 27, 1878.

45. **Sphyrapicus thyroideus**. Nos. 73,548, ♂ ad. and 73,559, ♀ ad. No dates.

46. **Colaptes auratus, β . mexicanus**. Nos. 73,603, and 73,605. December, 1877.

47. **Colaptes auratus, γ . hybridus**. Nos. 73,602-4, December, 1877. This series is one of great interest. One specimen corresponds very nearly to *C. "ayresii"* of Audubon, having red "mustaches," gray throat, and yellow shafts; the latter, however, have a decided orange cast, while there is merely a trace of the scarlet occipital crescent. The most interesting specimen of all, however, is No. —, of which, unfortunately, the tail only was sent. In this the rectrices are deep red, as in true *mexicanus*, with the exception of the middle pair, which are pure gamboge-yellow, without a trace of orange; the contrast being thus very striking. Another specimen, of which the tail only was sent, is similar except that the middle tail-feathers are pale-pinkish instead of yellow.

Records of the occurrence on the Pacific Slope of species formerly considered exclusively Eastern, have now become so numerous as to render it extremely probable that, as the various districts of our Western domain are more fully explored, the number of species common to both sides of the continent will be considerably increased and the list of those peculiar to the Eastern Province correspondingly diminished. The transfer from the latter category to the former may be considered as established with regard to several of the species enumerated above, as *Dendroica coronata*,

Helminthophaga ruficapilla, *Lanius solitarius*, *Collurio ludovicianus*, and *Zonotrichia leucophrys*. It should be borne in mind, however, that every species is very much more local in the West, where modifications in topographical details are intricate, involving very great variations of climate and vegetation within a small compass of territory, than in the East, where the whole country presents a great uniformity of surface, thus allowing a much more general dispersion of vegetable and animal life.

NOTES ON THE BREEDING HABITS OF HUTTON'S VIREO (*VIREO HUTTONI*) AND THE GRAY TITMOUSE (*LOPHOPHANES INORNATUS*) WITH A DESCRIPTION OF THEIR NESTS AND EGGS.

BY WILLIAM A. COOPER.

HUTTON'S Vireo (*Vireo huttoni*) breeds in the vicinity of Santa Cruz, though not in abundance. Retiring in habits, their nests and eggs are rarely found. April 7, 1874, I found a nest placed ten feet from the ground, suspended from a dead branch of a *Negundo*, containing three eggs incubated about five days. March 30, 1875, I found another nest placed eight feet from the ground, suspended from the small twigs of a *Frangula*. The bird showed little signs of fear, and would not leave the nest till I almost touched her; then she flew to a tree near by, and uttered a single note, *twea*, repeated every three or four seconds. When I took the nest she hopped around me from twig to twig, venting her sorrow in a plaintive *twik, twea; twik, twea*.

The nest — a neat, compact structure, composed of fine vegetable fibres, bits of paper, and grasses covered on the outside with green and gray mosses, lined with fine grasses — measures 3.25 in ches in diameter outside, 1.75 inside; depth 2.25 outside, 1.50 inside.

The eggs, four in number, are white (a delicate blush-color before blown), marked with minute dots of reddish-brown, more numerous toward the larger end. They measure respectively, .70 × .52, .70 × .51, .69 × .51, .68 × .52. Two other nests were found, each containing four eggs. They were placed, one in a *Negundo*, thirty feet high, the other at the extremity of an oak limb, twenty-five feet from the ground. Of the latter the female was so unsuspecting that when caught and removed from the nest she immediately returned to it.

April 4, 1877, while collecting on the foot-hills four miles from Watsonville, my undivided attention was drawn toward a Gray Titmouse, whose scolding outcry, if not intended for me, was nevertheless so taken. Observing that the bird had a large insect in its bill, I concluded it was about to feed its young, or possibly its mate. Taking my station behind the trunk of a tree, I waited in vain for nearly an hour for it to enter its nest. It flew from one branch to another, favoring one part of the tree, uttering its cry continually. My time being limited, I concluded to examine the tree, and was agreeably rewarded by finding the nest immediately. This was placed in a hollow in the end of a limb of an oak, five feet from the ground, the mouth of the hole very small. The female was on the nest, and would not leave, fighting even unto death.

The nest is composed outwardly of grasses, the inner portion of fur of rabbits and other animals, besides a few hairs and feathers. It measures 7.50 inches in diameter outside, 2.50 inside; depth, 2.50 outside, 1 inside.

The eggs, four in number, had been incubated about five days. The ground-color is white, marked over the whole egg with minute irregular spots of a pale reddish color. The most spotted egg has a perceptible pinkish appearance. Measurements, $.68 \times .53$, $.68 \times .52$, $.64 \times .52$, $.64 \times .52$.

I anticipate finding, in additional sets of the eggs of this species, deeper-colored and larger markings, with considerable variation of size and shape, besides a larger number of eggs.

Santa Cruz, California.

A DESCRIPTION OF UNUSUALLY DEVELOPED INDIVIDUALS OF THREE SPECIES, AND REMARKS ON UNCOMMON PLUMAGES IN SEVERAL OTHERS, TAKEN NEAR WEST POINT, N. Y.

BY EDGAR A. MEARNS.

1. *Geothlypis philadelphia*, (Wilson) Baird. MOURNING WARBLER. — A specimen of this species (No. 1000 ♂, May 26, 1876, E. A. M.) is remarkable for its high development. All of its markings are unusually bright; the chin, throat, and forepart of breast almost solid black; the feathers of the chin and upper part of the throat only exhibiting the

faintest margins of ash. Professor Baird* has remarked: "It is quite possible that in the full-plumaged male the entire throat may be black, as there is a tendency to this in some specimens."

2. *Setophaga ruticilla*, (Linné) Swainson. REDSTART. — A male of this species, which I took here, is also remarkable for its high state of development (No. 1003 ♂, May 17, 1876, E. A. M.). It is a fully adult and highly plumaged bird. Its chief peculiarity consists in the extreme development of the orange-red on the ventral surface, and the restriction of the black to the forepart of the breast, where its margin is quite sharply defined, being abruptly intercepted by the orange-red, which occupies the *whole under parts and sides of the body, with the exception of the under tail-coverts*, which are white at base, the longest feathers being blackish. The orange-red at the base of the rectrices and remiges is also much less restricted than in the normally plumaged individual.

3. *Ampelis cedrorum*, (Linné) Sclater. CEDAR-BIRD. — I have been so struck by the great variation in different specimens of this species, in regard to the red wax-like appendages, that I have taken particular pains to procure a large series of specimens illustrating this difference. In this series I can scarcely detect any sexual difference in that respect, except that the particularly well-developed specimens are all males. In the normal plumage the waxen appendages are confined to the tips of the secondary remiges, but in my cabinet are several specimens which have them affixed to the *primaries*, and in several instances even to the *rectrices*; but they are usually small and few in number. One specimen has several of these attachments to the primaries, which are nearly as well developed as those on the secondaries. But the most remarkable specimen is a handsome male (No. 545, ♂ ad., April 11, 1875, Highland Falls, N. Y., E. A. M.), having these ornaments attached, not only to each of the secondaries and *three of the primaries*, but each of the rectrices is embellished by a well-developed red appendage. Several other specimens have large red tips to each of the rectrices; and one (No. 1558 ♂, Feb. 23, 1878, E. A. M.) has *five* of its primary remiges (5th to 9th) tipped with yellow. Professor Baird† says: "A specimen from Guatemala (No. 50,455 ♂) is almost identical with examples from the United States, but differs in having a small spot of yellow at the tip of each primary; also there are red appendages on the tip of a few tail-feathers, as well as the *longest feather of the lower tail-coverts*."‡

While speaking of this species, it may be well to add, that in specimens taken in worn plumage, late in summer, the colors are very much bleached, all of the colors being very much paler; the white band across the fore-

* Birds of N. Am., by Baird, Cassin, and Lawrence (Vol. IX of Pacific Railroad Reports), p. 244, 1858.

† Baird, Brewer, and Ridgway, Birds N. Am., Vol. I, p. 401, 1874.

‡ Italics my own.

head is very much broadened, and the black of the chin much lightened. The top of the head and neck has an ochraceous suffusion, and the cinnamon-color of the back extends into, and partially subdues the ash of the rump.

4. *Helminthophaga peregrina*, (Wilson) Cabanis. TENNESSEE WARBLER. — I have a curious albinistic variety of this species (No. 92 ♂, May, 1874, E. A. M.). It was shot among the blossoms of a plum-tree, where it was seen skipping about in the liveliest manner. Its head is pure white, except a very slight sulphury suffusion on the crown; the residue of the plumage is much lightened, and with occasional patches of sulphury-white feathers on the back.

5. *Dendrocæca pennsylvanica*, (Linné) Baird. CHESTNUT-SIDED WARBLER. — A spring female of this species (No. 1437 ♀, May 19, 1877, E. A. M.) seems to have passed by its spring moult, since it is still in the autumnal plumage, except for the appearance of a few black streaks on the back. The plumage is worn and dingy, and exhibits no trace of the chestnut side-stripe.

6. *Corvus americanus*, Audubon. COMMON CROW. — There is a peculiarity of the plumage of the Crow, which I have noticed in a number of specimens shot during the breeding season, in May. All specimens shot at this season do not exhibit this peculiarity, and some show it in a more marked degree than others. These specimens are characterized by the entire absence of the violet gloss on the wings and tail, those parts being of a lustreless, purplish-brown color. Some specimens have the concealed bases of the feathers of a fine, violet-glossed black, and the residue of a rich bronze hue.

My attention was first attracted to this state of plumage by two birds which I shot in the very act of devouring the eggs of the Night Herons, in the heronry on Constitution Island, in the Hudson River, on the 23d of May, 1877. These birds were extreme examples. This condition of plumage may not be limited to the breeding season, for I have a specimen shot in winter, which has one of the rectrices of a rich, purplish bronze-color; but I found this plumage prevailing in the greater number of specimens shot during the last week in May.

7. *Picus pubescens*, Linné. DOWNY WOODPECKER. — A female of this species (No. 449 ♀, February 26, 1875, E. A. M.) presents a very unusual appearance. It still retains a number of red feathers on both sides of the *nape*. The red feathers on the *crown* are said to be characteristic of the *young* female. It is interesting to know that the red feathers are retained so late in the season. The red patches on the nape were so conspicuous in the living bird as to cause it to be shot.

8. *Myiodiactes mitratus*, (Gmelin) Audubon. HOODED WARBLER. — Mr. C. Hart Merriam, in his late "Review of the Birds of Connecticut" (pp. 25 and 29), rectifies an error in the recent descriptions of the females of this species. I wish to add my testimony to his conclusions, "that the

female bird, like the male, is several years — at least three — in attaining its full plumage; and that the two sexes, when fully adult, can only be distinguished by the fact that, in the female, the throat, though strongly tinged with black, is never *pure black* as in the male." Long ago I discovered these facts, as the bird is an abundantly breeding summer resident here, where I have taken several of their nests in a single walk. With a large series of specimens before me, I can fully indorse Mr. Merriam's views. The females of the second summer are entirely without any black upon the head, and I have frequently found them sitting upon their eggs in this condition. Males of the same age show very evident traces of black. Only in extreme examples does the black on the hood and throat of the female approach the purity of those parts in the male.

9. *Siurus motacilla*, (Vieillot) COUES. LARGE-BILLED WATER-THRUSH.—I wish to call attention to the fact that the chin and throat of this species are *not* "entirely immaculate,"* as described in the books. On the contrary, I have never seen a specimen, in the large number of birds belonging to this species which I have handled, that lacked minute markings of brown on the chin and throat, though these are much less strong than in *S. naevius*. There is also a whitish stripe extending from the base of the maxilla to the back of the eye, involving the under lid, and separated, anteriorly, from the superciliary line, extending from the bill, above the eye, to the nape, by a narrow dark band. This stripe is often quite conspicuous.

NOTES ON *JUNCO CANICEPS* AND THE CLOSELY ALLIED FORMS.

BY T. M. BREWER.

AMONG a collection of nests and eggs received the past season from Colorado, coming from the vicinity of Summit County, the highest inhabited portion of that State, are three nests of the *Junco caniceps*. They are assigned to the common resident *Junco* of that region by Mr. Edwin Carter, who identified them; the parents, in each instance, having been shot on the nest, and ascertained to be the bird there known as the Cinereous Snow-bird. Unfortunately the individual parents were not preserved with their nests, so that it is now impossible to verify these identifications. It therefore remains an interesting question whether the eggs of the *Junco caniceps* exhibit such surprising variations as are shown in these sets, or

* Baird, Brewer, and Ridgway, *Hist. of N. Am. Birds*, Vol. I, p. 287, 1874.

whether there is more than one species that breed in the high mountain-regions of Colorado. I use the word "species" for the mere convenience of expression, but not as assuming that the several forms of *cinereus*, *dorsalis*, *caniceps*, etc. are *bona fide* species.

There are in the Smithsonian collection well-identified sets of the eggs of *Junco cinereus*, *dorsalis*, and *caniceps*, one set of each. Of course this is not enough to establish the typical peculiarities of their eggs. The set of *Junco cinereus* were taken by Mr. Henshaw in the mountains of Southern Arizona, at an altitude of 9,500 feet. It was taken August 1st, the eggs were fresh, and it was probably the second laying of the season. They appeared to me to be of an unmixed greenish or bluish white. When taken they were said, while almost immaculate, to show the presence of a few minute punctate reddish-brown spots, irregularly disposed over the surface, and Mr. Henshaw writes me, under date of February 18, 1878, "two of the four eggs still show the minute reddish-brown punctulations — they can scarcely be said to be spots — alluded to in my report, though these are fainter than when first collected. There are perhaps twenty of these isolated dots scattered over the surface; without a critical notice the eggs would be passed by as immaculate. The ground-color of these eggs is now a dead bluish-white, and shows no trace of green." *

The set of *Junco dorsalis* was also taken by Mr. Henshaw in the mountains near Camp Apache, Arizona. These four eggs had the same pale greenish-white ground-color, and all exhibit, on careful examination, brownish-red spots, very minute, and scattered over the whole surface, — in one egg much more abundantly, — forming a confluent curve around the larger end. The eggs of the two sets are about equal in size, ranging from .84 to .77 of an inch in length, and averaging about .63 in breadth.

"The set of *Junco caniceps*," Mr. Henshaw writes me, "were taken in Colorado by Mr. J. H. Batty. There were originally five in the nest. The measurement of the remaining four are .82 × .61, .83 × .61, .78 × .60 .86 × .62; ground-color bluish-white (probably originally with a tinge of greenish), profusely overlaid with small irregular spots, and blotches of reddish-brown and lilac. The eggs of this set vary considerably in the amount of markings and the manner of distribution. In two these consist of minute punctulations that

* In his report Mr. Henshaw describes it as greenish-white.

over-cloud the ground-color. In the rest the markings are bolder and very conspicuous at the larger end, where they are confluent in a ring."

Of the three sets of the eggs of *Junco caniceps*, from Mr. Edwin Carter, in one the eggs are almost entirely white, with a very slight tinge of greenish, and measure .83 of an inch in length, and from .59 to .61 in breadth. More or less diffused over the whole surface of the eggs are very minute and quite obscure reddish dots. Around the larger end in each case are fainter cloudings of purple, clearly perceptible, if looked for, but liable to escape notice if not carefully observed. This set, in its general characteristics, is very similar to the eggs of *Junco cinereus* above mentioned, and intermediate between them and those of the *Junco dorsalis*. In regard to its identity there seems to be no doubt. Mr. Carter writes me: "Of the set in your possession I am positive. I took it, June 23, 1873, having walked four miles to secure it. On the same day, and in the same locality, I found another nest, which was secured. Both birds were startled from their nests and shot, without leaving my sight."

The second set mentioned is now in my possession, and is more plainly and strongly marked than either of the sets referred to in the Smithsonian, more so even than that of *Junco caniceps*. The eggs, three in number, measure .82 × .60, .80 × .61, .81 × .60. The markings are a combination of rusty and purplish brown, often confluent and concentrated in greater blotches about the larger ends, while also more or less diffused over the whole surface of the eggs.

The third set, now in the Cambridge Museum, was taken by Mr. Carter's partner, Mr. Wilkinson, in the high mountains bordering the South Park. He flushed the parent from its nest and shot it, but it unfortunately did not preserve it. For the following description of this set, I am indebted to Mr. J. A. Allen: "'*Cinereous* Snow-bird, South Park, Colorado, July 12, 1876. Nest on ground; four eggs.' The above is a full transcript of the collector's label. No nest was sent. Coll. M. C. Z., No. 1685. Ground-color white, minutely sprinkled all over with reddish-brown surface-markings, and deeper ones of a pale lilac. The markings are much more abundant near the larger end, where they form a rather broad band; in some of the specimens the smaller end is merely sprinkled rather thickly with minute dots, extending over the whole end. The reddish-brown markings are much the coarser and more prominent, and on one specimen form quite large blotches. The eggs measure, respectively, .88 × .63, .88 × .62, .90 × .65, .89 × .62."

Their large size and the peculiarity of their markings, so different from those of any *Junco* that I have ever seen, suggested a suspicion that they might be the eggs of the *Junco aikenii*, but this Mr. Carter does not regard as probable. The nests of the first two present nothing peculiar in their construction. They are saucer-shaped, and are merely loose aggregations of grasses and stems of plants, lined with fine material of a like nature.

Mr. Carter is confident that he has never met with more than three forms of *Junco* in Colorado, namely, *caniceps*, *oregonus*, and *aikenii*; the latter two he has known since 1859, when he first met with them in large numbers near Central City, but his observations have been mainly confined to the higher altitudes. He met with *aikenii* in the greatest abundance on the eastern slope of the main range, at an elevation of eight thousand feet, twelve years before Mr. Aiken first brought it to the attention of naturalists. The latter's first specimens were procured in the lower and eastern limit of their habitat, which will account for his speaking of their scarcity and their straggling habits. The same winter (1871-72) Mr. Carter, in his camp, a few miles west, and at an altitude greater by some three thousand feet, met with these individuals every day, in flocks of from a few individuals to those of a hundred or more.

Mr. Carter is also quite sure that all the adults of this species, of both sexes, are always found to possess the white wing-bands well defined, and that it is only the birds of the first year, in immature plumage, that furnish what has been mistaken for an intermediate form between this species and the typical *Junco hyemalis*. Mr. Carter has never, to his knowledge, met with *oregonus* or *aikenii* in Colorado during the breeding season, but thinks that they all move farther north to nest.

EFFECTS OF THE WARM WINTER ON THE MIGRATION OF BIRDS.

BY JOHN MURDOCH.

IT is well known that in ordinary winters all our summer residents and autumnal visitors have taken their departure from the neighborhood of Boston by the month of December. From the

early part of September, when the Warblers and other gay summer visitors begin to leave us, the fall is a season of successive departures, until, when the ground is fairly covered with snow, nothing remains but those birds, like the Chickadee, who pass the whole year with us, and our regular winter-guests from more northern districts, who find our winters, severe as they are, more genial than the rigors of Canada and Labrador.

This winter, however, matters have been somewhat different. The delightful autumn weather persistently continued, until one began to doubt whether we were to have any winter at all. Up to the 30th of December there had not fallen an inch of snow, and the ponds and streams were hardly frozen, while in many places the grass was still green.

Naturally, some of our migratory birds took advantage of the clemency of the season to avoid starting on their long and tiresome journey, before they were actually forced to.

On December 29, while walking at a short distance from my house, in Roxbury, Mass., I was somewhat surprised to see a pair of Bluebirds (*Sialia sialis*) fly up from a fence, near at hand, and alight upon a tree not far off. There was, of course, no doubt as to their identity, as a Bluebird is not easily mistaken. This bird usually leaves us by the early part of November. On the same day, in Sharon, Mass., a friend of Mr. Ruthven Deane actually shot a Bluebird out of a small flock.

The Catbird (*Mimus carolinensis*) generally departs by the middle of October, but Mr. C. W. Townsend, a member of this Club, informs me that one of these birds was taken by J. F. Carleton, in a field at Woods Hole, Mass., on the 28th of last December.

Mr. Townsend also saw as late as the first of January small flocks of the Yellow-rumped Warbler (*Dendroica coronata*), in the woods, near the shore, at Magnolia, Mass. This bird has been known to linger as late as the early part of December on Cape Cod, but never so far north of the Cape.

These instances all point to the probability that many of our autumn visitors took advantage of the season to prolong their stay beyond their usual custom.

Recent Literature.

SHARPE'S "CATALOGUE OF THE BIRDS IN THE BRITISH MUSEUM." — Three volumes of this important work have now appeared. The first, devoted to the Diurnal Birds of Prey, was published in 1874; the second, embracing the Owls, in 1875; and the third, treating of several families of Passerine birds, in 1877.* These volumes are intended to embrace descriptions of all the known species of the groups treated, and hence form invaluable hand-books. The descriptions are generally very detailed, embracing an account of the various stages of plumage through which the different species pass, and copious bibliographical references are given. While the labor bestowed upon these volumes is evidently very great, they are not in all respects what we should like to see them. No generic diagnoses, for instance, are given beyond what may be gleaned from the "Keys to the Genera" of each subfamily, and generally no comparative characters of the species, except those afforded by the "Keys" accompanying the genera. The keys themselves, both of the genera and species, are a great help in determining the species, but do not always fully serve their intended purpose. The species are generally described without direct comparison with their near allies, and although the descriptions are sometimes greatly extended, they too often fail to duly emphasize important or distinctive points. By a judicious grouping of common characters and contrasted diagnoses, the essential points of difference between closely allied forms would have been made more prominent, and the amount of text rather lessened than increased. Our gratitude for a general work on the birds of the world, containing so many points of excellence as the present, ought perhaps to soften our criticism, especially when it is remembered how few have either the courage, the endurance, or access to the necessary material, for the great task Mr. Sharpe has so energetically undertaken and is so ably carrying out.

The Raptorial Birds are treated as an order (*Accipitres*), with three suborders, *Falcones*, *Pandiones*, and *Striges*. For the Diurnal Birds of Prey, the old family divisions of *Vulturidæ* and *Falconidæ* are retained, except that the Fish-Hawks (genera *Pandion* and *Poliouëtus*) are removed from the latter to form the wholly untenable "suborder" *Pandiones*. The

* Catalogue of the Birds in the British Museum. Vol. I. Catalogue of the Accipitres, or Diurnal Birds of Prey. By R. Bowdler Sharpe. Svo. pp. xiii, 480, pls. xiv. London, 1874. Vol. II. Catalogue of the Striges, or Nocturnal Birds of Prey. By the same. Svo., pp. xi, 326, pls. xiv. 1875. Vol. III. Catalogue of the Coliomorphæ, containing the families Corvidæ, Paradiscidæ, Oriolidæ, Dieruridæ, and Prionopidæ. By the same. Svo, pp. xiii, 344, pls. xiv. 1877.

Owls (*Striges*) are all referred to the family *Bubonidae*, except the genera *Strix* and *Phodilus*, which alone constitute the family *Strigidae*.

Mr. Sharpe gives the number of species of the Diurnal Birds of Prey as three hundred and seventy-seven, of which twenty-three are regarded as doubtful. Of the remainder three hundred and twenty-five are represented in the collection of the British Museum, the total number of specimens falling little short of twenty-five hundred.

Respecting the North American species, it may be noted that our common Rough-legged Hawk is considered as specifically distinct from the European, the two bearing the names respectively of *Archibuteo sanctijohannis* and *A. lagopus*. The Golden Eagles (*Aquila chrysaetus*), the Peregrine Falcons (*Falco communis*), and the Fish-Hawks (*Pandion haliaetus*), on the other hand, are regarded as identical. The generic term *Cerchneis* (Boie, 1826) is adopted for the Sparrow-Hawks, of which several of Mr. Ridgway's varieties are raised to the rank of species.

Of the Owls, about one hundred and ninety species are recognized, of which ten are regarded as doubtful. They are represented in the British Museum by about eleven hundred specimens. The Snowy Owl (*Nyctea scandiaca*) of North America, contrary to the opinion of some American writers, is held to be identical with that of Europe, the two being considered as not separable even as races, Mr. Sharpe being unable to appreciate any differences of color, but admitting a slight difference in the amount of feathering of the toes. The Long-eared Owls (for which the generic name *Asio*, Brisson, 1766, is adopted) of America and Europe he admits as subspecies of a circumpolar "*Asio otus*." The nearly cosmopolite Short-eared Owl (called "*Asio accipitrinus*") he divides into several races or subspecies, of which the American (its habitat including both North and South America) forms "*β. Asio cassini*." Richardson's Owl is regarded as identical with the European Tengmalm's Owl (*Nyctale tengmalmi*). Of the Barn-Owls (*Strix flammea*), while recognizing a number of "striking forms," he says: "My conclusion with regard to the Barn Owls is, that there is one dominant type which prevails generally over the continents of the Old and New Worlds, being darker or lighter according to different localities, but possessing no distinctive specific characters. Insular birds vary, but cannot be specifically distinguished, as they can always be approached by continental specimens in a large series."

In the third volume Mr. Sharpe enters upon the great series of Passerine Birds, of which he here treats the families *Corvidæ*, *Paradisidæ*, *Oriolidæ*, *Dicruridæ*, and *Primopidæ*, which he unites to form the group *Coliomorphæ*, equal to the *Coliomorphæ* of Sundevall, with some genera added and others excluded. The species here described by Mr. Sharpe number three hundred and sixty-seven, all but about fifty of which are represented in the British Museum, the number of specimens being a little over two thousand. Of these four families the *Corvidæ*, or Crows and Jays, are alone represented in America, the others being mainly African, Indian, and

Australian. In respect to North American species, the Raven (*Corvus corax*) is not separated even varietally from the Raven of the Old World, Mr. Sharpe stating that the characters given by authors for their separation do not hold good in his series of specimens. In respect to changes of nomenclature among North American species, it may be noted that the old genus *Corvus* is here much subdivided, so that our Fish-Crow stands as *Colæus ossifragus*, and the Common Crow as *Corone americanus*; *Nucifraga* (Brisson, 1760) appears in place of *Picicorvus* for the Clarke's Crow, and *Cyanurus* is regarded as a synonyme of *Cyanocorax*, our Blue-Jay (*C. cristatus*) being referred to the genus *Cyanocitta*. Nearly all of the numerous forms of Western Jays (genera *Perisoreus*, *Cyanocitta*, and *Aphelocoma*), recognized as varieties by American ornithologists, are raised by Mr. Sharpe to the rank of species, two of which (*Perisoreus capitalis* and *P. obscurus*) are figured. In this volume, in fact, very few "subspecies" are recognized.

We are sorry to see in Mr. Sharpe's third volume several instances of the use of the same name in a generic and specific sense for the same species, with such ridiculous results as "*Pica pica*," "*Pyrrhocorax pyrrhocorax*," etc., which is not only opposed to good taste, to say the least, but to a very generally accepted rule of nomenclature. Also that the value of his very full bibliographical references is impaired by his not adding the date of publication. This was very uniformly done in the first volume, and to some extent in the second, and we sincerely hope he will see fit to resume the practice in his later volumes. — J. A. A.

ROWLEY'S "THE PIED DUCK."—Mr. G. D. Rowley's monographic essay on the Labrador or Pied Duck (*Somateria labradoria*)* is a timely and exhaustive contribution to the history of a species believed to be rapidly approaching extinction. Nearly all that relates to its literary history is here brought together, the paper consisting largely of excerpts gathered from the writings of all authors who have referred to the species. While apparently of rather frequent occurrence along our Atlantic coast, as far south at least as Long Island, New Jersey, and Delaware, fifty to thirty years ago, it has of late been rarely observed and few specimens appear to have been taken since 1868. Its last-recorded capture, as appears from a letter from Mr. George N. Lawrence, published in Mr. Rowley's paper, seems to have occurred "in the fall of 1874," when a specimen was obtained by Mr. J. Wallace, from Long Island, from which source the same gentleman had obtained four or five others during the previous five years. All were females or immature males, and only one adult male is known to have been taken in the last twenty years.

* *Somateria labradoria* (J. F. Gmelin). The Pied Duck. By G. D. Rowley, M. A., F. L. S., F. Z. S., etc., etc. Ornithological Miscellany, Vol. II, Part VI, pp. 205–223, with 5 plates, 1877. London, Quaritch, 15 Piccadilly, W.; Trübner & Co., Ludgate Hill, E. C.; R. H. Porter, 6 Tenterden St., Hanover Square, W.

Mr. Rowley here gives not only the literary history of the species, but discusses its relationship to the Eiders. Although following Mr. A. Newton in placing it in the genus *Somateria*, he does it with some degree of reservation. His paper is enriched with five plates, in which are figured the sterna of all the Eiders (*Somateria stelleri*, *S. spectabilis*, and *S. mollissima*), with that of the present species, and the bill and feet of this species and of the common Eider. A beautifully colored plate is also devoted to the illustration of the adult male, female, and young male. He has, however, to lament his ignorance of the nest and eggs, of the nestling plumage of both sexes, as well as of some of the subsequent immature stages, and calls the attention of American ornithologists to the importance of securing a scientific examination of the body of any specimen which the future may afford, notes of the color of the soft parts, and the preservation of the skeleton.

The paper also contains extracts from letters from Professors S. F. Baird and the late James Orton, and Messrs. D. G. Elliot and George N. Lawrence, concerning the recent occurrence of this bird along the Atlantic coast of North America, and closes with a list of all the specimens known to the author to be extant. These number only thirty-three, of which about twenty are preserved in different collections in the United States, and the remainder in European museums. About one half are adult males, and most of the remainder adult females. The localities, so far as known, are Long Island, New York, thirteen specimens; Calais, Me., two; Halifax Harbor, one; "Labrador," one, and one is recorded from Delhi, Michigan; eighteen in all, leaving fifteen from unknown localities. — J. A. A.

STREETS'S NOTES ON THE BIRDS OF LOWER CALIFORNIA AND THE HAWAIIAN AND FANNING ISLANDS. — Dr. Thomas H. Streets's report of his Natural History explorations made in connection with the United States North Pacific Surveying Expedition of 1873-75* includes notes on about fifty species of birds, of which rather more than one half were collected on the coast of Lower California and adjoining portions of the Mexican coast. The author acknowledges his indebtedness to Dr. Elliott Cones, U. S. A., for the identification of the birds, and adds that he has "kindly furnished the notes accompanying that portion of the ornithological collection from the Californian Peninsula." The collection contains two specimens of Mr. Lawrence's rare *Passerculus guttatus* (known previously, from a single specimen from San José del Cabo), which, though formerly regarded as a variety of the *P. rostratus*, is here provisionally accepted as

* Contributions to the Natural History of the Hawaiian and Fanning Islands and Lower California, made in connection with the United States North Pacific Surveying Expedition, 1873-75. By Thos. H. Streets, M. D., passed Assistant Surgeon, U. S. Navy. Bulletin of the United States National Museum, No. 7, p. 172 (Birds, pp. 9-33), Washington, 1877.

a good species. It also embraces specimens of the rare Kuhl's Parrot (*Coriphilus kuhl*) of the Fanning Islands, the precise habitat of which is now for the first time determined, and three new species, one of which, *Puffinus (Nectris) nativitatis*, from Christmas Island, is here for the first time described. The others are a Gallinule (*Gallinula sandvicensis*, Streets, Ibis, 1877, p. 25) from the Hawaiian Islands, and a Duck (*Chauliastur couesi*, Streets, Bull. Nat. Orn. Club, Vol. I, 1876, p. 46) from Washington Island. The breeding habits and eggs of Craver's Auk (*Brachyrhamphus craveri*) are also described, and there are many valuable biographical and other notes on several hitherto little known species. — J. A. A.

BENDIRE'S NOTES ON THE BIRDS OF SOUTHEASTERN OREGON. — In a list embracing one hundred and ninety-one species and varieties, Captain Bendire * gives the results of field observations made in the vicinity of Camp Harney, Oregon, covering a considerable period. Aside from some former notes by the same author, † which treated more especially of the winter birds of this locality, we have here our first detailed information respecting the ornithology of the immediate region under consideration. Camp Harney, the central point, is situated on the southern slope of one of the western spurs of the Blue Mountains, and has an altitude of about four thousand eight hundred feet. The country to the northward is mountainous, and well forested with pine, spruces, and fir, intermixed with groves of aspen and juniper; in all other directions it is open, consisting of desert wastes of sagebrush and greasewood, with here and there more fertile tracts covered with nutritious grasses. As would be naturally expected, fully one half of the species are emphatically Western, or are represented by Western varieties. The fauna is distinctly, however, that of the Middle Province, although a few forms usually considered as confined to the Pacific slope are here represented. The list is enriched with copious biographical notes, including descriptions of the breeding-habits, nests, and eggs of a large number of the less well-known species, and forms a most important contribution to the ornithology of the West. — J. A. A.

RIDGWAY'S REPORT ON THE ORNITHOLOGY OF THE FORTIETH PARALLEL. — This long-delayed work ‡ has by no means lost its importance

* Notes on some of the Birds found in Southeastern Oregon, particularly in the Vicinity of Camp Harney, from November, 1874, to January, 1877. By Captain Charles Bendire, U. S. Army. Proc. Bost. Soc. Nat. Hist., Vol. XIX, pp. 109-149, Nov. 1877.

† Notes on Seventy-nine Species of Birds observed in the Neighborhood of Camp Harney, Oregon, compiled [by Dr. T. M. Brewer] from the Correspondence of Captain Charles Bendire, 1st Cavalry U. S. A. Proc. Bost. Soc. Nat. Hist., Vol. XVIII, pp. 153-168, Nov. 1875.

‡ Report of Geological Explorations of the Fortieth Parallel. Clarence King, VOL. III.

through its late appearance, due to circumstances wholly beyond the control of its author. Based on field-work extending from about June 1, 1867, to the middle of August, 1869, and restricted to a comparatively limited field, not previously to any great extent explored, we have just what all the circumstances of the case would seem to warrant one in expecting, a thorough and exhaustive account of the ornithology of an interesting belt of country. The observations were mainly limited to that portion of the Great Basin included between the thirty-ninth and forty-second parallels, and extending from the Sierra Nevadas to the Wahsatch Mountains. First is given an account of the route of the survey, with a list of the camps. Then follows a short account of the physical features of the region, with a discussion of its "local avifaunæ," especial reference being had to the *station* of the different species represented. The term "avifauna" is hence here used in a rather unusual sense, referring rather to the habits of the species than to geographical areas. Thus we have (I) an "Arboreal Avifauna," subdivided into five categories of species, in relation to whether they frequent (1) the upper coniferous forests, (2) the cedar or nut-pine groves, (3) the aspen groves or copses, (4) the cañon shrubbery, and (5) the wooded river-valleys; (II) a "Terrestrial Avifauna," consisting of (1) birds of the sagebrush, (2) birds of the mountain meadows or peaks, and (3) birds of the lowland meadows; (III) a "Mural Avifauna," embracing (1) species strictly saxicoline, (2) species saxicoline only in nesting habits, and (3) species nesting in earth-banks; and, (IV) an "Aquatic Avifauna," consisting of aquatic species. These divisions are of course serviceable in indicating the station and habits of the different species, but do not, of course, strictly characterize faunal areas, in their usual geographical signification. "Descriptions of the localities where collections or observations were made," numbering forty-three, then follow, including lists of the species observed at each of these, where much time was spent. "General remarks on the Avifauna of the Great Basin," with an analysis of the species in reference to their geographical range, conclude the introductory portion of the Report, which forms, altogether, nearly ninety pages of exceedingly interesting matter. The "Report

Geologist in charge. Vol. IV, Part III, Ornithology. By Robert Ridgway. 4to. pp. 303 - 670. 1877.

[As an important bibliographical matter to be remembered, it should be stated that current literature for a few years has contained repeated anticipatory citations of such a work as being then "in press,"—these citations sometimes involving questions of precedence; but the work, which was stereotyped in 1870, was entirely remodelled, and never appeared in its original form. The stereotype plates were melted in 1876, and no perfect copy of the original report exists though a single mutilated set of proofs is, or was, in possession of Dr. Cones. The matter was reset in 1876 or 1877, and the entire remodelling of the subject renders previous citations of the original suppressed report frequently inapplicable. — E. C.]

Proper" consists of a general list of the species, with limited bibliographical references, and copious biographical and other notes, including lists of the specimens obtained, their measurements, color of bill, feet, iris, etc., as recorded from the fresh specimen before skinning, with a record of nests and the number of eggs found in each. Many of the biographical notices are quite extended, and add greatly to our knowledge of the species to which they pertain. The Report, as a whole, is quite free from strictly technical matter, and hence attractive to general readers and amateurs, as well as of great value to specialists. Space forbids particular reference to even the more noteworthy portions of this part of the Report, but we can scarcely omit calling attention to the account of the Western Kingbird (*Tyrannus verticalis*), in which is detailed the wonderful intelligence and affection of several young birds of this species reared as camp pets, and which became thoroughly domesticated.

Although many of the observations and results of Mr. Ridgway's field-work with the Survey of the Fortieth Parallel are not now for the first time placed before the public, the Report seems to have lost little of its freshness. Although originally prepared, and even stereotyped, as early as 1870, it has been so recast that in point of nomenclature it represents the author's later views. — J. A. A.

RECENT LISTS OF THE BIRDS OF CENTRAL NEW YORK. — In "A Directory of the Ornithologists of the United States," published at Utica, N. Y., 1877, by S. L. Willard, Esq., sixteen pages are devoted to "A List of the Birds of Central New York." The author's remarks in the way of a prelude are thus briefly expressed: "The following is a complete list of the birds of Central New York, with notes on their abundance." This might lead one to expect a valuable contribution to our science, but a perusal of the "List" proves this supposition to be erroneous. Two hundred and sixty-seven species are enumerated, and among them are mentioned *Lophophanes bicolor*, *Polioptila cærulea*, *Protonotaria citræa* ("occasional in Central districts; rare in Northern districts"), *Helminthophaga celata*, "*Seiurus ludovicianus*," *Oporornis agilis*, *Stelgidopteryx serripennis*, *Vireo philadelphicus*, *Ammodromus caudacutus*, *Melospiza lincolni*, *Chondestes grammaca*, *Guiraca cærulea*, *Cardinalis virginianus* ("summer resident"), *Quiscalus major*, *Corvus* "*carnivorus*" ("resident"), *Empidonax acadicus*, *Campephilus principalis*, *Strix pratincta*, *Cathartes aura*, *Meleagris gallopavo* var. *americana*, *Tetrao canadensis* ("resident in Northern districts"), *Cupidonia cupido*, *Lagopus albus*, *Ægialitis wilsonius*, *Micropalama himantopus*, *Ardea egretta*, *A. candidissima*, *A. cærulea*, *Fuligula collaris*, *Histrionicus torquatus*, *Rhynchops nigra* ("occasional winter resident"), and many others of equal interest. But the author gives no data whatever concerning the dates and localities at which the specimens were procured; nor does he, in a single instance, mention an authority in connection with the occurrence of a species, thus holding himself responsible for all state-

ments made, a much graver responsibility than our young friend imagined when he undertook the task. Being somewhat familiar with the region to which this list pertains, I was requested to review it for the *Bulletin*, which circumstance led me to make inquiries of its author concerning about seventy of the species therein mentioned. Of this number he had the candor to admit that about thirty were included upon no grounds whatever, while some twenty more were taken from DeKay (and some of these were not known by DeKay, according to his own statements, to occur at all in New York State, and nearly all the others were known to him only from the vicinity of the coast, — far beyond the limits of “Central New York”). Quite a number of others rest on the strength of statements made by wholly unreliable boys, who thought they had “seen” the bird in question! On the other hand, some few species were inserted on the authority of perfectly reliable collectors (Romeyn B. Hough of Lowville, and Fred. J. Davis of Utica); but since the author did not see fit to mention authorities, it is impossible to discriminate between truth and error, and he must be held responsible for the whole. Above are the facts; I refrain from comment. It is due the author, however, to state that the “List” was prepared in great haste while the “Directory” (in which it appears) was passing through the press. He is now but “too well aware of its imperfections,” and when next he favors us with a contribution it will, no doubt, be worthy of a far different criticism from that which it has been my duty to give in this instance.

A word about local lists in general: There is, I fear, among our younger and less experienced collectors a strong and lamentably contagious tendency to rush into print before having become sufficiently familiar with the habits, distribution, and relative abundance of our birds, to be capable of preparing a creditable paper. Thus it is that very truthful and well-meaning people are sometimes led to display their ignorance in a most unnecessary and unfortunate manner. And it sometimes happens that less conscientious observers, who have not yet learned the importance of substantiating their own statements, or failing to recognize the value of exact data, so far forget themselves as to yield to the temptation of swelling their lists by the addition of species concerning which they know absolutely nothing. Mistakes are always liable to occur in human productions, and are to be expected — yes, may even be looked for, perhaps, with no inconsiderable degree of confidence — in works pertaining to this particular line of research; therefore, when found, they should be corrected in a spirit of scientific charity and lenient good-will. But when a man sits down, and in cold blood writes a list of birds on the authority of his own fertile imagination, he must expect to take the consequences. “Bad lists,” writes Mr. J. A. Allen, “are, of course, far worse than none at all, and if incompetent aspirants to fame in this direction will make such ventures, it is best, I think, not only for science, but for them personally to show them that such things are not to be done with impunity.”

The Rathbun-Fowler list of the Birds of Central New York has already been noticed in this journal (Vol. III, pp. 34, 35). Its title is "Complete List of the Birds of Cayuga, Seneca, and Wayne Counties." Like Willard's list, it assumes too much. Ornithologists of larger experience are more modest, and seldom employ the term "complete" in connection with their own works. The paper in question, however, was evidently prepared with some caution, and when carefully revised (in which task its author is now engaged) will certainly constitute a valuable contribution to the Ornithology of the State.

In the "Auburn Daily Advertiser" of September 3, 1877, under the heading "ORNITHOLOGICAL," T. J. Wilson, M. D., remarks: "I would make the following annotations to Mr. Frank R. Rathbun's 'List' from my own observations." He then goes on to mention sixteen species; and among other equally instructive sentences, occur these: "*Turdus mustelinus*. Found breeding in great numbers on Howland's Island." "*Parus atricapillus*. Found breeding along the river in numbers, in June '76." "*Geothlypis trichas*. Breeds commonly on Howland's Island, but leaves for the South in July." "*Collurio borealis*. A not uncommon winter visitor. I have one now taken by my brother in '76." Unfortunately the author does not deem it necessary to mention, directly, to what portion of the State his list pertains (though "Central New York" is evidently implied), but if "Howland's Island" and "the river" fall within the limits of the United States, the above information is certainly of great value! He also states that "*Rallus crepitans*" was taken on *Seneca River* in August, '75, but, if not too presumptuous, I would beg leave to suggest that the bird may prove to be *R. elegans*. The finding of a nest (two eggs) of the Black Rail (*Porzana jamaicensis*) "in the reeds below Cayuga, May 30, '75," is likewise mentioned, and, if correct, is really a valuable note.

By far the best of these recent lists which I have seen, is that of "The Summer Birds of the Adirondacks in Franklin County, N. Y.," by Theodore Roosevelt, Jr., and H. D. Minot. Though not redundant with information, and mentioning but ninety-seven species, it bears *prima facie* evidence of reliability,—which seems to be a great desideratum in bird-lists nowadays. Based on the sound principle of exclusion, it contains only those species which the authors have themselves observed there, and consequently furnishes that which was most needed, i. e. exact and thoroughly reliable information concerning the most characteristic birds of the limited region (Franklin County) of which they treat.

For the benefit of those who have not had experience in this matter, and who may be contemplating publication, I would suggest the observance of four simple general rules, which, if adhered to, will place the authors of future "Local Lists" beyond unpleasant criticism, and save much ill-feeling.

1. Never mention a species unless you have positive proof that it has actually been killed in the region under consideration.

2. Never mention the less common species, without stating date and locality of capture, and name of collector.

3. Always give the authority for all statements which you are not personally responsible for.

4. Never trust to the identification (much less mere *opinion*) of an inexperienced collector, but make it a rule to see for yourself, and fully identify each species. If the slightest doubt remains concerning the identity of a bird, it is far better to send it at once to some acknowledged authority than run the risk of error. — C. H. M.

BARROWS'S "CATALOGUE OF THE ALCIDÆ."—Of the twenty-one species of *Alcidae* recognized by Mr. Barrows,* nine appear to be unrepresented in the Society's collection; of the remaining twelve short original descriptions are given, sufficiently detailed for the easy recognition of the species. Mr. Barrows does not think the family can be subdivided into groups of a higher than generic value. The true affinities of the species he believes can only be determined by a thorough study of their embryological development. The character of this paper indicates that in Mr. Barrows we have a valuable accession to our corps of ornithological students.— J. A. A.

FEILDEN'S "LIST OF BIRDS OBSERVED IN SMITH SOUND," etc.† — In this list Captain Feilden, R. A., enumerates twenty-four species observed by the recent British Arctic Expedition "in Smith Sound and northward, between the seventy-eighth and eighty-third degrees of north latitude," all of which are well-known Arctic forms. The land birds are *Falco candicans*, *Nyctea scandiaca*, *Plectrophanes nivalis*, *Corvus corax*, and *Lagopus rupestris*. The waders embrace *Strepsilas interpres*, *Aegialitis hiaticula*, *Calidris arenaria*, *Phalaropus fulicarius*, and *Tringa canuta*. The swimming birds include *Sterna macrura*, *Pagophila charnea*, *Rissa tridactyla*, *Larus glaucus*, *Stercorarius longicaudatus*, *Procellaria glacialis*, *Uria grylle*, *Mergulus alle*, *Alca brunnichi*, *Colymbus (septentrionalis ?)*, *Harelda glacialis*, *Somateria mollissima*, *S. spectabilis*, and *Bernacla brenta*. Most of them were repeatedly met with at different localities, some of them in considerable numbers, and many were observed breeding. The quite detailed notes respecting the species of this list render it a paper of unusual interest. — J. A. A.

* Catalogue of the Alcidae contained in Museum of the Boston Society of Natural History, with a review and proposed classification of the Family. By W. B. Barrows. Proc. Boston Soc. Nat. Hist., Vol. XIX, pp. 150-165, November, 1877.

† List of Birds observed in Smith Sound, and in the Polar Basin during the Arctic Expedition of 1875-76. By H. W. Feilden. His. Fourth Series, Vol. I, pp. 401-412, October, 1877.

ON THE MOULT OF THE BILL AND PALPEBRAL ORNAMENTS IN *FRATERCULA ARCTICA*.* — The remarkable changes which the bill and eyelids of the Common Puffin undergo after the breeding season have been hitherto unknown. The author's exposition of the matter reveals a phenomenon as yet unparalleled among birds. Temminck acknowledged (*Man. Orn.* 2d ed. ii, 932) his inability to describe the various conditions of this common bird, and the efforts of subsequent naturalists to supply the required information have been unavailing. The Puffin is a bird which must be studied alive. Discovering that two islands off Brittany, one in the Channel and the other at sea, harbored hundreds of these birds during the breeding season, the author found the material for his investigations.

In the spring, when the birds come to breed on these islands, they are all alike in plumage and ornamentation: the cheeks are grayish-white; the bill is high and thick opposite the nostrils; there is a boss or bead (*ourlet*, a "hem") along the base of the upper mandible; the gonys is

* De la Mue du Bec et des Ornaments Palpebraux du Macareux arctique, *Fratercula arctica* (Lin.) Steph. après la saison des amours. Par le Docteur Louis Bureau. Extrait du Bulletin de la Société zoologique de France, 1877. 8vo. Paris, 1878. pp. 1-21, pl. IV, V.

The translator presents this remarkable and most important paper nearly entire, though with the utmost condensation in language, to bring it within limits. As reviewer, he need only witness the care and fidelity with which Dr. Bureau's investigations were evidently conducted, and the clearness with which the novel results are brought out. The paper is illustrated with several figures on two plates, one of them colored and furnished with movable pieces gummed on, on raising which both the process of the moult and its results are seen at a glance. How much we learn — how little we know! Here is a bird that *sheds part of its bill*, and we only just now find it out, though the bird has been "known" for ages. The author's happy experience should provoke new inquiry into the various curious North Pacific species, some of which may yield up similar secrets. "*Stigmatorrhina lathamii*," the "Saddle-billed Auk" was made a new genus of, though now known to be nothing more or less than *Lunda cirrhata*. The remarkable case of *Ceratorhinus "suckleyi"*, = *C. nonoccrata*, now seems less singular, though we do not yet know the details; perhaps the "horn" may be moulted. *Ptychorhynchus alenticus* has a wrinkled membrane at base of the bill, which may be something different at other times. *Simorhynchus cristatulus*, as known to us in full dress, has a curious horny formation at the angle of the mouth, wanting in the so-called *S. "dubius"* and *S. "tetralculus."* *Simorhynchus microceros* has a curious knob or caruncle on the base of the culmen, not seen in the so-called *S. "pusillus."* M. Bureau's discovery puts the family in an entirely new light. Besides its special application, it has, what the author might have signalized, an interesting bearing on the homology of feathers with other epidermal productions; we may now speak of the "moulting" of the horny covering of the beak, as well as of the feathers. —

TRANSLATOR.

regularly convex; the eyelids are vermilion red, and furnished with two horny plates, and there is a large yellow rosette at the angle of the mouth. The young are reared by the middle of July, and by the end of this month, or early in August, the birds go to sea; after which not one is to be seen on the rocks so lately full of life. Autumn advances; the Puffins are scattered over the waters, and a blank in their history ensues. But soon the wintry winds grow violent, and after some storm, hundreds of Puffins are washed ashore, dead or dying of inanition. These victims are mainly young birds; but adults share the same fate if the storm occurs during the moult, when the loss of the quills reduces the wings to mere stumps. Three times in the winter of 1873, after storms, M. Martottan found thousands of dead Puffins rolling in the sand. Willughby and Baillon have recorded similar observations. The Puffins which are thus washed on the French coast in winter are emaciated to the last degree, and are different in plumage from those we kill in the breeding season. The orbital region is more or less blackish; there is no red ring round the eyes, nor horny plates on the lids, nor rosette at the angle of the mouth. Still more curiously *the bill itself is differently formed*; it has neither the same size nor shape nor color; the horny covering even is not the same. The bill is small, without any boss at the base, and furnished opposite the nostrils with a soft grayish skin instead of a solid and bluish horny plate. Authors considered such Puffins as the *young*, until M. Vian, recognizing adults among them, described them as a new species, *Mormon grabæ* (Bull. de la Soc. Zool. de France, 1^{re} année, 1876, p. 4). Neither one nor the other of these conclusions is admissible. The first supposition, of immaturity, falls before the facts the author presents; in view of which, Vian himself has abandoned his position.

The author devotes a couple of pages to the steps of the investigation by which he was led to discover the metamorphosis he had already suspected, being at length rewarded with actual witness of the transformation. He continues: The covering of the bill of these birds, which in spring forms a solid homogeneous horny sheath, *loosened and fell apart like the pieces of a coat of mail*; the rosette at the angle of the mouth shrivelled and grew pale; the horny plates about the eye had fallen in some specimens and were loosened in others; the red feet became yellow; and finally the change of plumage began in some specimens. In a word, the adult *Larventauscher** grew under his eyes into what some have considered as the young of *Mormon arctica*, and into what has been called *M. grabæ*.

* Brehm (Handb. der Naturg. Vög. Deutsch.) once calls the Puffin *Larventauscher*, elsewhere invariably writing *Larventauscher*. If the first orthography is correct, we may conclude that the moult of the bill was known to the fishermen of the Baltic long before M. Bureau discovered it. For *der Larventauscher* is, in effect, *der Vogel der seine Larve tauscht, l'oiseau qui change son masque, the bird that unmaskes*. As to *der Larventauscher*, it properly signifies *der Tau-*

To get an idea of these remarkable changes (which the author illustrates as already described) it is first necessary to understand the composition of the bill in the adult in spring and in winter. *Fratercula arctica*, adult, in spring has the bill high at the base, with the under outline regularly curved from base to tip. The bill is divided into two very distinct parts: one posterior, which is moulted; the other anterior, and persistent.

1. The *hind part* is made up of a set of nine sutured horny pieces which come apart and fall off after the breeding season. Those of the upper mandible are: (1) the horny basal boss, (2) the nasal buckler, (3, 4) the two (one on each side) subnasal lamellæ, (5, 6) the two (one on each side) transparent lamellæ, which cover the hind part of the first ridge; and of the under mandible, (7, 8) the two (one on each side) horny selvages (corresponding to the boss on the upper mandible), and (9) the mental buckler.

2. The *fore part*, which is persistent, shows three ridges and three grooves, designated, from base to tip, as the first or great ridge, the second or middle ridge, the third or lesser ridge; the first or great groove, the second or middle groove, the third or lesser groove; the bill ending with a smooth space, forming a triangle with curvilinear base, and termed the point of the bill.

At the angle of the mouth a thickened skin, folded and scalloped, forms a large orange-yellow rosette. The ornaments of the eyelids consist of a thick vermilion-red edge, and two dark gray horny appendages, the upper one triangular, the lower elongate.

Let us now see what the appearance is in winter, or after the breeding season. The aspect is entirely different. The bill is smaller, as if cut away at the forehead, especially the under mandible, the outline of which is broken instead of forming a regular curve. We still find the two well-distinguished parts already indicated in the breeding adult; the fore part is intact, but the hind part is strangely modified *by loss of the nine horny pieces*. It has lost its thickness and its firm texture; it is covered with a thick skin, which presents on the upper mandible (1) *the membranous boss*; (2) *the nasal membrane*; and on the lower mandible (3) *the membranous selva*, and (4) *the mental matrix*. The commissural rosette is reduced to a narrow pale yellow band. The eyelids are uncolored, and have lost the horny appendages.

cher mit einer Larve versehen, le Plongeon à masque, the masked Diver, — a very suitable name, though any German reader will perceive that its composition is not very happy. It is therefore not impossible that the true vernacular name was the first; though ornithologists, not understanding the allusion to the change of the “mask,” would see in the final-*tauscher* nothing but the German name of Diver, *Taucher*. If *der Larventauscher, Changeur de masque, Unmasker*, is the real name of *Fratercula arctica*, it might be well restored, as none could possibly be more appropriate or expressive.

Understanding then the conformation of the bill, both in the breeding season and in the winter, it remains to show how the change is effected. The bird acquires its full breeding array in three ways: (1) by hypertrophy, (2) by horny growths, (3) by coloration; and, conversely, loses it in three ways, (1) by atrophy, (2) by loss of the horny growths, (3) by decoloration.

The transformations of the bill relate exclusively, as already said, to the hinder part. A. UPPER MANDIBLE: 1. The *horny boss* is that forked piece which surrounds the base of the upper mandible. It is perforated with many little holes in regular oblique series, through which rudimentary *perforating feathers* pass out. In May, at the height of the breeding season, it is translucent, of a sort of flesh-color difficult to describe, more or less tinged with yellow or violet, rather variable in shade in different specimens. In falling off it loses this coloration, and becomes horn-yellow, like any claw about to be shed. It generally comes off whole, but may break apart at the top, or towards the middle of either of its forks. Its fall leaves exposed the *membranous boss*, in which the perforating feathers are implanted, and which, the following season, reproduces a new horny boss. 2. The *nasal buckler*, situated in front of the horny boss, is forked like the last, and saddled on the upper mandible, having two broad triangular sides united. It falls off in three pieces, — one large and two small. The two little pieces (one on each side) called the *subnasal lamelle* are always detached first; the large saddle-shaped piece follows; but it is so fragile that it is generally broken near the top before it finally falls off. The author, however, succeeded in securing one nasal buckler intact, this "*précieuse pièce cornée*" coming from a wounded Puffin held by the wings, who clawed it off in trying to defend himself. The nasal buckler has the effect of causing a hard horny protuberance of the nasal region, and thus thickening the base of the bill. Its loss uncovers the *nasal membrane*, which in winter shrinks away from the forehead, and the following spring produces a new buckler. 3. The pre-nasal fissure establishes the separation between the nasal buckler and the first or great ridge; in winter it is wanting, being replaced by the corresponding temporary groove. 4. The *transparent lamella* is a horny pellicle of a beautiful orange-color, which covers the hinder part of the first or great ridge, and is so closely blended therewith as to be only distinguished in spring by its coloration. This lamella grows transparent when about to fall, and is detached by exfoliation, exposing the first or great ridge, which is entirely red in winter. 5. *Ridges and grooves*. These are subject to no other changes than those resulting from simple desquamation and partial decoloration. B. LOWER MANDIBLE. Its transformations are still more curious and noteworthy. 1. The *horny sledge* is of the brightest orange in the breeding season. Its fall exposes the *membranous sledge*, which, yellow at first, soon loses its coloration. 2. The *mental buckler* represents both the nasal buckler and the transparent lamella. It comes off whole, its two sides joined

below. The fall of this large piece exposes the *mental matrix*, and a membranous triangular space, susceptible of being retracted or drawn in. This is the Triangle of atrophy (*le Triangle atrophique*) to which special attention should be paid.

The strangest change is certainly that produced in the *depth* and *shape* of the lower mandible. In the adult, in spring, the base of the lower mandible is produced (downward and backward), and the outline of the gonys is a regular curve. In winter the base is narrowed or constricted, and the lower border forms two straight lines meeting at an angle. It looks as if the lower corner of the bill had been *chopped off*; and the way this comes about is as follows: Loss of the mental buckler exposes the yellowish membranous "triangle of atrophy," which gradually shrinks, and is withdrawn into the fossa formed by the slight divergence of the forks of lower jaw (i. e. into the interramal space). In some specimens the process of retraction is not accomplished at once; for after the loss of the mental buckler, the atrophic triangle is often covered with a delicate horny pellicle which exfoliates and soon falls. This disappearing triangle can only be studied on the living subject; and ornithologists should be on their guard lest they fall into error in examining specimens in course of transformation, either after complete drying or before the secondary and final exfoliation just mentioned. In default of examination of the living subject a good idea may be gained by getting a specimen in full breeding array, with a bill so thin as to be translucent at this part. In a very favorable specimen in the author's possession examined by transmitted light, the bony part of the jaw formed the shadow, the atrophic space the penumbra, while the horny tip was translucent. It is supposed that such specimens might easily be secured in April or early May, before the horny pieces are fully developed. Another good way, open to any one, is to remove the horny sheath of the mandible by prolonged maceration; when the atrophic part, thus uncovered and softened, is seen in its normal condition. The horny sheath of either mandible *will come off whole* by maceration, — the separation of the several pieces of which it is composed being a vital process only accomplished at the time of the moult.

The commissural rosette, in spring a thick naked rugous skin of a beautiful orange-color, afterwards wastes away and turns pale. The transformations of the parts about the eye seem very simple after what has gone before. The red border of the lids shrinks and loses color. The horny protuberances fall off, leaving a naked skin which rapidly shrinks and disappears.

The author concludes this remarkable paper with some pertinent and suggestive observations on other species of *Fratercula*, and on *Luuda cirrhata*. — ELLIOTT COUES, *Washington*, March 15, 1878.

General Notes.

HABITS OF THE KINGFISHER (*Ceryle alcyon*). — The following observations are communicated by Mrs. Mary Treat, Green Cove Spring, Florida : “A Kingfisher whose feeding-ground is just in front of my windows fishes from a private wharf, where he is seldom disturbed, and has become so tame that he pursues his avocations without concern, though I may be standing within a few feet of him. I learned that he ejects from the mouth the bones, scales, or other indigestible portions of his food, just like a bird of prey. When the water is so rough that it is difficult for him to procure fish, instead of seeking some sequestered pool he remains at his usual post, occasionally making an ineffectual effort to secure his customary prey, until, nearly starved, he resorts to a sour-gum tree (*Nyssa aquatica*, L.) in the vicinity, and greedily devours the berries. Returning to his post, he soon ejects a pellet of the large seeds and skins of the fruit. I have saved some of these pellets, as well as those composed of fish-bones and scales.” The remains of fish which are found in the bird’s breeding-holes, giving rise to a very general impression that the nest is constructed of these materials, are probably deposited in this way. The interesting instance of the bird’s feeding on fruit brings out the relationship between the truly piscivorous species and certain exotic non-aquatic representatives of the family. — ELLIOTT COVES, *Washington, D. C.*

THE PAINTED LARK BUNTING (*Plectrophanes pictus*) IN TEXAS. — On November 23, 1876, I saw a flock of *Plectrophanes*, which I thought were different from either *P. maccorni* or *P. ornatus*, and shot one, which proved to be different. On December 20 I shot another, and on December 22 three others. One of these, being sent to Mr. Robert Ridgway, of the Smithsonian Institution, he has kindly identified it for me as *Plectrophanes pictus*, and states that this is its first record south of Illinois. They are less easily taken than *P. maccorni*, as they do not fly so compactly as does that species. Their note while on the wing is a simple chirp, while the flocks of *P. maccorni* keep up constant chatter while on the wing. Whether *P. pictus* is an accidental or a regular winter visitor to Texas, I am unable to state. They were quite plentiful here last winter (1876-77), but may have been driven farther south than usual by the uncommonly cold weather, which had driven away the Robins, Harris’s Sparrow, and even *Plectrophanes ornatus*, all of which were abundant the previous winter. — G. H. RAGSDALE, *Gainsville, Texas.*

NOTES ON A FEW BIRDS OBSERVED IN NEW MEXICO AND ARIZONA IN 1876. 1. *Turdus migratorius*. Winters abundantly in New Mexico; a few summer in the high mountains.

2. **Mimus polyglottus**. Abundant in summer. Nesting in low bushes, grape-vines, etc.

3. **Harporhynchus crissalis**. I saw this species on the Gila in New Mexico, and in Arizona, in brushy broken localities. Not common.

4. **Sialia mexicana**. Abundant in winter. A few stay in the high mountains all summer.

5. **Sialia arctica**. Very scarce in winter. I saw not more than a dozen in the season. They frequent the low valleys.

6. **Auriparus flaviceps**. Sparingly found in summer in broken localities along the Gila in New Mexico, usually in the mouths of cañons at the edge of the river bottom. In Arizona frequents the mesquit. Nests in a low bushy tree, called there "hackberry." The nests are bulky, composed of thorny twigs on the outside, and lined with grass, with a small hole in one side. June 2 I found a nest containing four young birds able to fly; June 16, another nest containing three eggs. The eggs were green, much blotched with brown. Very young birds have the head uniform in color with the back.

7. **Dendroeca blackburniæ**. I killed a female, near Fort Bayard, N. M., in May.

8. **Vireo vicinior**. Rare. Found in rough broken localities in the bluffs bordering the Gila, keeping in the scrub oaks. They are very shy. Their song is similar to that of *V. plumbeus*, but the pauses between the notes are not as distinct.

9. **Vireo pusillus**. Common on the Gila. Nests in willow thickets, the nest being placed in a fork of a twig, usually about two feet from the ground.

10. **Hesperiphona vespertina**. Sparingly found in piny districts in New Mexico, both summer and winter.

11. **Pipilo aberti**. February 11, I saw several birds of this species in the cottonwoods on the Gila bottom near old Fort West, N. M. They were clinging to the bark of the larger trees like Nuthatches, searching for insects in the crevices. I never saw these birds away from the immediate bottom of the Gila or its larger tributaries. They usually nest in the thick willows, although I found one nest in a cottonwood-tree, thirty feet or more from the ground, concealed in a thick bunch of the mistletoe, so common in such trees. They are abundant, but very shy at all times.

12. **Pipilo megalonyx**. Very abundant all through New Mexico and Arizona, in brushy districts.

13. **Pipilo fuscus**. Common over the same region as the last, but more partial to rocky localities.

14. **Pipilo chlorurus**. Observed on the Gila during the early spring migration.

15. **Junco oregonus**. This species, and var. *unnectens*, are plenty in timber everywhere.

16. **Junco cinereus** var. **dorsalis**. Common in the high mountains. July 16, I found a nest under a tuft of grass, which contained three eggs, perfectly fresh. The eggs are, when blown, white, slightly tinged with green, speckled sparsely all over, except at the smaller end, with small brownish dots. They measure $.58 \times .74$, $.62 \times .76$, and $.63 \times .77$. I took young birds of the year in the early part of July.

17. **Corvus americanus**. I saw a flock of a dozen or so on the Rio Mimbres in April, and killed one. These were the only ones I had seen since leaving Kansas, except three seen in South Park in October, 1873, one of which I killed.

18. **Myiarchus crinitus**. I killed a male in the cottonwoods along the Gila, New Mexico, June 12.

19. **Scops asio** var. **maccalli**. On April 19 I heard a screaming noise proceeding from a Woodpecker's hole in a pine. I climbed the tree, and pulled out a female McCall's Owl, and immediately after a male Sparrow-Hawk flew out. The Owl was apparently breeding, but the hole contained no eggs.

20. **Cyrtonyx massena**. April 14 I nearly stepped on a pair of Massenas, in a trail. I stopped, and was hesitating whether to put my hat over them or step back and shoot them, when they settled the matter by flying away, both my barrels missing fire. May 12, as I was riding through the timber, I heard a Partridge fly up behind the horse. Looking back, I saw that it was a female Massena. I stopped the horse, and, without getting off, looked for the mate, and saw it lying flat in the grass within eight inches of the track of the horse's hind foot. The female will not lie as close as the male, but both lie so close that it is only by accident that they are ever seen.— F. STEVENS.

CAPTURE OF *ÆGIALITIS MELODA* VAR. *CIRCUMCINCTA*, RIDG., ON LONG ISLAND.— While collecting April 30, 1873, on the outer beach, near Rockaway, Long Island, I shot several specimens of the Piping Plover. One, an adult male, had the pectoral band complete across the jugulum, a peculiarity I could not discover in any others. The band is unusually broad, curving anteriorly somewhat, and is slightly enlarged in the middle toward the throat, giving it the outline of a top of a shield, whereas in those specimens which have the markings on the neck *nearly* meeting, the lines converge to a point in an hour-glass shape. The dimensions are, $6.77 \times 14.25 \times 4.65$; tail, 2.10; bill, .55; tarsus, .90, male adult, agreeing in the main with Mr. Ridgway's type (breeding plumage, male adult, July 8, Loup Fork of the Platte, Am. Nat., VIII, 1874, 109) excepting length, which he gives as $6\frac{1}{2}$ inches, which is much below the average. The same day I shot a female with just a faint line of dusky uniting the dark patches of the neck, formed by the edgings only of two or three feathers, all the way across. I doubt whether this should be regarded as the female of var. *circumcincta*, however.— C. H. EAGLE.

NEST AND EGGS OF SELASPHORUS PLATYCERCUS. — The following interesting observations are communicated by Mr. Edwin A. Barber, of West Chester, Pa. : “While stationed in the extreme southwestern corner of Colorado, near the head-waters of the Rio la Plata, with a branch of the United States Geological Survey, during the summer of 1875, I was so fortunate as to observe large numbers of the Broad-tailed Humming-Bird. Our party was encamped on a small spring-rill, along the banks of which a thick hedge of dwarf willows had sprung up, and through and over this thicket these little birds were darting and chattering all day long. On July 26 I searched the bushes for nests, and in a couple of hours I discovered *five*, each containing two diminutive white eggs. Mr. W. H. Holmes found two more. I contented myself with securing two sets, picking out those which represented extremes of form. Both nests were composed of vegetable cotton and thistle-down, and were covered externally with lichens and bark-fibre, so that in color they resembled the twigs to which they were attached. The color and form of the two nests, however, differed materially, — one was broad, shallow, with thick walls, and of a brown color; while the second was narrow, elevated, and of a light yellowish hue. Each of the nests was built not more than three to five feet above the ground, and not one of them was fastened to the main trunk or larger limbs of the shrubs, like the nests of our Ruby-throat. On the contrary, they were all suspended by slender swaying twigs, often directly over the flowing water. One was attached to a little piece of curled bark, which presented a horizontal resting-place, just large enough for the nest. The eggs are not distinguishable from those of *Trochilus colubris*, except that, in some instances, the former may be a trifle larger than the latter. The fact that the nests were found containing eggs in the latter part of July would indicate that two broods of young are raised during the season. All of my specimens of eggs had been laid for the space of about a week, as the embryos were all advanced to about the same stage of development, and I had great difficulty in blowing them. I believe there is no other case on record where the eggs of this species have been found in such numbers within a limited space.” — ELLIOTT COUES, *Washington, D. C.*

NESTING OF VIREO OLIVACEUS. — Mr. W. L. Collins, of Frankford, Philadelphia, Pa., writes : “Whilst walking in a grove I found a nest of this species, upon which the female was sitting, although the framework was barely completed. Watching awhile, I presently saw the male fly to the nest with some soft substance in his bill, which he gave to his mate to arrange on the nest while he went in search of more. On then looking into the nest, I was surprised to find that it contained three eggs. Three or four days afterward, I again visited the spot, and found that the structure had been completed in the interval. Thus the female had begun to lay some time before the nest was ready for the reception of eggs.” — ELLIOTT COUES, *Washington, D. C.*

CALIFORNIAN PRAIRIE CHICKENS. — It is always safest for naturalists to *salt down* newspaper extracts on scientific subjects, and usually best to leave them permanently in pickle, as the proverbial "grain of salt" is rarely sufficient to correct their bad savor. The severe attempts to cater to the marvelling tastes of their readers lead editors of newspapers to corrupt the foundation of facts on which stories sometimes rest, until we scarcely know whether they have any real foundation. Thus, as quoted in the "Naturalist," for February, p. 124, the "Salinas Index" of California tries to make out that the Prairie Chicken has followed the Central Pacific Railroad-track from Nebraska west to Winnemucca, and from there striking "off the track," reached Surprise and Shasta valleys, California. I can scarcely believe that Dr. Cones or any well-posted ornithologist should let such a blunder go uncorrected, but as it is, it needs only a few references to set it right.

In Vol. VI of Pacific R. R. Reports, p. 94, Dr. Newberry, in 1857, wrote that he found *Tetrao phasianellus* from Canoe Creek, fifty miles northeast of Fort Reading, Cal., more and more abundant toward the northeast into Oregon. It was, indeed, from its abundance in the Upper Columbia River country, that Ord, as long ago as 1815, named it *T. columbianus*, now retained as the name of this variety as compared with the true *T. phasianellus* of British America, both being chiefly Western birds, though extending east to Wisconsin, perhaps to Illinois, where they are confounded with the more eastern Prairie Chicken.

All this was clearly set forth in the latest work on Californian Ornithology, published in 1870, and even the southern limit near lat 39° in Nevada indicated.*

If the species had any tendency to spread in California with the increase of agriculture, it has now had more than twenty years to do so, but from the account quoted does not seem to have made much if any progress. Attempts to naturalize it just north of San Francisco Bay have been made, but though it may succeed there, the climate of most other parts of California does not appear well suited to it. — J. G. COOPER, M. D., *Haywood, Cal.*

REPORT OF THE SECOND CAPTURE OF THE ORANGE-CROWNED WARBLER (*Helminthophaga celata*) IN NEW HAMPSHIRE. — Mr. Edward G. Gardiner, of Boston, informs me that a specimen of this rare Warbler was taken at the Isles of Shoals, September 9, 1877, by two young collectors, Messrs. Outram and Edward A. Bangs. The bird was a female, and was in company with a small flock, supposed to be of the same species, though no more were captured. Three specimens of this bird have been recorded

* Ridgway, in Bull. Essex Inst. 1874, gives only "Upper Humboldt Valley," near lat. 41°, but it was found near Salt Lake City, by Nelson, in 1872.

from Massachusetts and one from New Hampshire.* — JOHN MURDOCH, Roxbury, Mass.

ROBINS' EGGS, SPOTTED. — My friend, Mr. Oliver Lockhart, of Lake George, early in June, found a Robin (*Turdus migratorius*) building in a pine-tree near his house. When the nest was completed, and the bird had laid her eggs, he was surprised to find them spotted. One, which he kindly sent me, was marked very much like a Scarlet Tanager's (*Pyrranga rubra*) egg, the greater number of spots being at the larger end; the rest of it was sparingly spotted; otherwise it was a normal Robin's egg. — A. K. FISHER, Sing Sing, N. Y.

SOME NEW TRAITS FOR THE RED-HEADED WOODPECKER (*Melanerpes erythrocephalus*). — A remarkable instance of foresight in several birds of this species in "looking out for a rainy day ahead" has been communicated to me by my friend Mr. G. S. Agersborg of Vermilion, Dakota Ter., and I cannot do better than quote extracts from his letter: "I have forgotten to mention to you an interesting fact about *Melanerpes erythrocephalus*. Last spring in opening a good many birds of this species with the object of ascertaining their principal food, I found in their stomachs nothing but young grasshoppers. One of them, which had its headquarters near my house, was observed making frequent visits to an old oak post, and on examining it I found a large crack where the Woodpecker had inserted about one hundred grasshoppers of all sizes (for future use, as later observations proved), which were put in without killing them, but they were so firmly wedged in the crack that they in vain tried to get free. I told this to a couple of farmers, and found that they had also seen the same thing, and showed me the posts which were used for the same purpose. Later in the season the Woodpecker, whose station was near my house, commenced to use his stores, and to-day (February 10) there are only a few shrivelled-up grasshoppers left. I have now not seen this bird for over two weeks."

A similar habit is related of the California Woodpecker (*Melanerpes formicivorus*) by Dr. Heermann in California, and Mr. J. K. Lord in British Columbia; the food in this instance being acorns, which were wedged tightly in crevices, and in some cases the hollow stems of reeds were used.† — H. B. BAILEY, New York City.

SPURIOUS PRIMARIES IN THE RED-EYED VIREO. — On September 3, 1877, at Bar Harbor, Me., I shot a Red-eyed Vireo (*Vireo olivaceus*) which is curiously abnormal in having well-developed spurious first pri-

* See note by William Brewster, with references, Bulletin of the Nutt. Orn. Club, Vol. I, No. 4, p. 94.

† See Baird, Brewer, and Ridgway, History of Birds of North America, Vol. II, pp. 568, 569.

maries, which measure 1.16 inches in length, the wing measuring 3.15 inches. Through the kindness of Mr. J. A. Allen, I have examined the Vireos of this species in the collection of the Museum of Comparative Zoölogy, and find in a series of about seventy specimens four more cases of the same variation. They are as follows: No. 23,281 (Coll. M. C. Z., from Coalburg, W. Va.) with spurious primaries on both wings measuring 1.17 inches (wing, 3.23); No. 23,274 (Coll. M. C. Z., same locality), with a spurious primary only on the left wing, measuring 1.10 inches (wing, 2.92); No. 4285 (Coll. M. C. Z., from Newtonville, Mass.), with spurious primaries on both wings, measuring 1.09 inches (wing, 3.02); and No. 4793 (Coll. M. C. Z., same locality) with a spurious primary on the left wing, measuring 1.15 inches, the wing measuring 3.21. It may be well to say that they are not the first primary coverts, but are true spurious primaries, lying in the same plane as the other primaries, and differing from the spurious primaries of other species of this family only in being somewhat smaller. This variation seems particularly interesting from the fact that the presence or absence of a spurious primary has been to some extent taken as a basis of classification in this family. — CHARLES F. BATCHELDER, *Cambridge, Mass.*

THE EUROPEAN WIDGEON (*Mareca penelope*) IN THE UNITED STATES. — I take great pleasure in noting the capture on the Atlantic coast of the United States of two specimens of *Mareca penelope*, which I am assured have not been recorded.

One is in the collection of Mr. Geo. N. Lawrence, who has kindly given me the facts concerning its capture, as far as known; the other in my own. The first, which is a fine adult male, Mr. Lawrence said he procured from a gunner who captured it on the coast of Virginia, in 1855. My specimen, an immature male, I procured in Fulton Market, N. Y., January 6, 1873, and as far as I could ascertain, it came from Southamp-ton, L. I. — N. T. LAWRENCE, *New York.*

THE SHARP-TAILED FINCH (*Ammodramus caudacutus*) IN MAINE. — Dr. Brewer strangely misquotes me on page 48 of the present volume of the "Bulletin," in reference to the Sharp-tailed Finch (*Ammodramus caudacutus*). In my note to which he refers, no mention is made of the capture of a "single" specimen in Scarborough, Me., nor indeed of the capture of any specimen at all. What I did say (see Bulletin, Vol. II, p. 27) was that I had found the species a rare inhabitant of a part of Scarborough Marsh.

Late in October, 1876, I observed a few individuals of this species on Pine Point, — a sandy strip of land which forms the seaward extremity of the great Scarborough Marshes. Aside from the fact that this was considerably to the east of their previously known range, I was surprised to find them here, for I had carefully examined the Point and its vicinity, at other seasons of the year, without detecting a single specimen. Accord-

ingly, during the season of 1877, I made the Sharp-tailed Finch the object of almost daily expeditions, from early spring until late autumn; but, in confirmation of my suspicions, not a bird was to be found until about October 1. At that date great numbers appeared on the marshes and sea beaches adjacent to Pine Point, and for a couple of weeks they fairly swarmed in their favorite haunts. They were noticeably less numerous during the latter part of the month, and by November 1, only stragglers remained. I captured the last of the season on November 15.

To the best of my knowledge, then, although abundant during the autumnal migration, the Sharp-tailed Finch is not to be found in this vicinity during the spring and summer months. — NATHAN CLIFFORD BROWN, *Portland, Me.*

THE WHITE-THROATED WARBLER (*Helminthophaga leucobronchialis*) IN CONNECTICUT. — Through the kindness of Mr. Charles M. Carpenter of Providence, R. I., I have lately had the pleasure of examining a specimen of this recently described Warbler, which was shot by that gentleman at Wauregan, Conn., May 25, 1875. The locality was a wild hillside covered with scrub-oaks and a sprinkling of young pines. Mr. Carpenter's attention was first drawn to its presence by its song, which at the time he mistook for that of the Golden-winged Warbler (*H. chrysoptera*), though he thinks that it differed in being somewhat higher and shriller. The sex of this bird was not determined by dissection, but it is unquestionably a male. It agrees closely in every particular with my type of the species, as does also Mr. Wood's specimen, which I have likewise seen at Philadelphia. Indeed, it would be difficult to select three individuals of any species which vary so little *inter se*. The olive-green wash which is spread over the upper parts, with the exception of the nape, where an area of unmixed bluish-ash forms a narrow collar, is a marked feature in all three specimens, though the silky white of throat, cheeks, and lower eyelids, with the narrow restricted black line through the eye, may be regarded as the most salient points. The validity of this distinctly characterized species must now be regarded as established, but further facts relating to its habits and distribution remain to be elicited by future investigation. — WILLIAM BREWSTER, *Cambridge, Mass.*

THE OCCURRENCE OF MYIARCHUS CRINITUS VAR. ERYTHROCERCUS, SCLAT., AT FORT BROWN, TEXAS.* — This bird appears to be a rather abundant summer visitor in the vicinity of Fort Brown, and during the last two summers I have taken specimens at intervals from April 1 until the latter part of September. It bears a close resemblance to var. *crinitus*,

* In justice to the author it should be stated that this note was received for publication December 5, 1877, and was unavoidably omitted from the January number. Compare Bull. U. S. Geol. and Geogr. Survey of the Terr., Vol. IV, No. 1 (Feb. 5, 1878), p. 33, fifth paragraph. — Eds.

and I was not aware of its being a distinct variety for a considerable time. I cannot at present say certainly whether var. *crinitus* breeds here, but am inclined to think that it occurs only in the spring and autumn.

A set of eggs, identified by the capture of one of the parents, was taken on the 10th of May, 1877. The nest was placed in the end of a broken branch of an anacahuite tree, about ten feet from the ground; it was made of locks of wool and hairs, and contained five eggs slightly advanced. These measure $.94 \times .69$. Besides this identified nest two others were found, but, thinking at the time that they were of true *crinitus*, I did not shoot the parents. Of these, one was taken, May 14, in an old excavation of *Centurus aurifrons*, and contained three fresh eggs. They are larger than those of the first set (1.01×0.70), the ground-color darker, and the markings heavier. The third nest was in a hollow stump less than two feet from the ground, and on June 4 contained six young.

It is worthy of note that no snake-skins were used in the construction of these nests.—J. C. MERRILL, M. D., *Assistant Surgeon, U. S. A., Fort Brown, Texas.*

[I have carefully compared the two sets of the eggs of *M. erythrocerus*, here referred to, with sets of *M. crinitus*, *M. cinerascens*, *M. cooperi*, and *M. stolidus*. These all have a strong family resemblance, those of the *erythrocerus* being distinguishable by larger size and much greater abundance of large confluent blotches of lilac and purplish brown. The eggs described in *North American Birds* (Vol. II, p. 339) as those of *M. cinerascens* undoubtedly are really eggs of this species.—T. M. BREWER.]

THE GOLDEN EAGLE IN THE HUDSON HIGHLANDS.—This splendid bird, which was formerly quite characteristic of this wild mountainous region, is now becoming quite scarce. It was formerly known to nest upon the cliffs on the west side of the Hudson, north of West Point; and it is still a problem whether at least one pair do not still breed there.

I have never been able to discover any nest, though I have carefully examined each of the three principal ledges lying between West Point and Cornwall; but these cliffs are so vast and inaccessible, that it is impossible to examine them satisfactorily from either top or bottom, even with the aid of a good glass. As I have seldom undertaken these fatiguing excursions during their breeding season, I have not ascertained the fact of their presence there at that season; but in winter I have occasionally seen a single individual flying near the top of the mountains.

Several years ago, a Golden Eagle was shot opposite those cliffs by a farmer at Cold Spring, while in the act of destroying a goose belonging to the farmer.

A few days since, through the kindness of my friends, Professor Robert Donald and Mr. Sanford R. Knapp, of Peckskill, I examined a finely mounted specimen of this Eagle, in the possession of the latter gentleman. It was in the plumage of the young male (the basal two-thirds of the tail

being white), and measured seventy-eight inches in expanse. It was shot by a farmer three miles east of Peekskill, on the 16th of November, 1877. A third specimen was taken in the Palisades of the Lower Hudson in October, 1875. This was a fine adult specimen. The sportsman who shot it said that "he saw it in a tree over his head, and killed it with a charge of No. 9 shot."

I have seen this Eagle on several occasions, but never in summer. In March, 1876, two Golden Eagles were found in a certain spot in Putnam County for several weeks, but I did not succeed in shooting them. In April, 1872, I saw one twice, whose tail was all white, save a narrow terminal bar of black.

An aged hunter, Mr. William LeForge, positively asserts that Eagles nest upon the cliffs north of West Point. In support of this statement, he related to me, in substance, the following circumstance: A few years ago, (about ten?) on the occasion of the death of an old man, who lived the life of a hermit, near the summit of a mountain between "Cro's Nest" and "Storm King," the remains had to be carried down to the foot of the mountain to the river. On their way down the company (conducted by LeForge) halted at the foot of a ledge, where their attention was attracted to the "hissing" of some young Eagles on the rocks above them. — EDGAR A. MEARNS, *Highland Falls, N. Y.*

MEANING OF THE WORD "ANHINGA." — Correspondence of interest respecting etymologies of ornithological names with W. C. Avery, of Contentment, Ala., elicits the following derivation and meaning of the strange-looking word "Anhinga," as applied to the Snake-birds (species of *Plotus*).

"Thinking it probably Spanish, I sought it in Leone's Dictionary, where I found, not *Anhinga*, but *Anhina*, 'an aquatic bird of prey in Brazil, called the Darter, *Plotus*.' *Anhina* is undoubtedly the Spanish or Portuguese word; but how has it been corrupted into *Anhinga*? In a French Encyclopædia I find the following: 'Anhinga, nom brésilien de ces oiseaux. . . . La longueur démesurée de leur cou, jointe à sa minceur, leur donne une figure étrange. . . . on dirait des canards qui ont pour cou un long serpent.' Hence the name 'Snake-bird,' Portuguese *Anhina*, from the Latin *Anguina*? (*Anguis*, a snake)." This derivation seems to be undoubtedly correct, *Anhinga* being corrupted from *Anhina*. — ELLIOTT COUES, *Washington, D. C.*

LATE CAPTURE OF THE YELLOW-BELLIED FLYCATCHER IN MASSACHUSETTS. — Mr. W. B. Barrows informs me that on November 29, 1876, he took a male *Empidonax flaviventris*, at Reading, Mass. The day was so cold that ice was forming rapidly in the shade; yet the bird had the same motions which characterize it in June, and though it had an empty stomach, was very fat and apparently in the best of spirits. It was, however, silent so far as was observed. I also learn from Mr. H. A. Purdie

that a specimen of this species was taken by Mr. W. W. Eager in Newton, Mass., December 1, 1876. These are certainly late dates for the capture of any species of the genus *Empidonax* in Massachusetts. — J. A. ALLEN, *Cambridge, Mass.*

THE IPSWICH SPARROW (*Passerculus princeps*) ON LONG ISLAND, N. Y., — On the 1st of January, 1878, I took a fine specimen of the *Passerculus princeps* at Rockaway, Long Island. The bird when taken was in company with Savanna and Tree Sparrows (*Passerculus savanna* and *Spizella monticola*), and was found among a low range of sandhills that skirt the main shore of the bay at Far Rockaway. Another was observed the same day, but, being very wild, I was unable to procure it. This makes the fifth specimen that has been taken in the same locality: the first in December, 1870, the second and third in November and December, 1872, the fourth, November, 1874, and the fifth, January, 1878. — N. T. LAWRENCE, *New York City.*

THE STILT SANDPIPER (*Micropalama himantopus*) AT PORTLAND, MAINE. — Mr. H. A. Purdie, in his review of a recent "Catalogue of the Birds of New England," stated (this Bulletin, Vol. I, p. 73) that *Micropalama himantopus* is migratory along the whole New England coast. This elicited the rather sweeping assertion from the author of the Catalogue that the bird had "not been found in any part of that coast from St. Andrews to Kittery" (Bull., Vol. II, p. 48). I desire to contribute my evidence in support of Mr. Purdie's statement. *M. himantopus* has been repeatedly taken on the marshes and sandbars in the vicinity of Portland, Me., during the early part of autumn. — NATHAN CLIFFORD BROWN, *Portland, Me.*

NESTING-HABITS OF PARUS MONTANUS.* — The nest was built at the bottom of a seam in a very rotten stump. The top of the seam was two feet from the ground, the bottom about a foot below the entrance. The bird had slightly and irregularly enlarged the passage to the nest, which was composed of fibrous roots, lined with wool gathered from the bushes where sheep had grazed, and contained seven white eggs. †

I visited the nest daily for some time, and finally found the female sitting. As I neared the stump I was somewhat startled by a loud hissing noise, and looked in at the nest expecting to find a snake, but discovered only the owner, who, with wings outspread, mouth open, and eyes glistening, hissed almost continually. I desired to see the nest, and tried to drive her from it by violently striking the stump, but she was not to be dislodged so easily, and I left her, hoping to find her not at home next

* Communicated by R. Ridgway.

† It would be interesting to know whether the eggs are spotted or not; if unspotted, they form a notable exception to the rule in this genus. — R. R.

morning. Upon my next visit, the day after, she greeted me again with hisses and other demonstrations of anger; and after watching her several minutes, during which time she kept up her attitude of defiance, I again left her mistress of the situation. The next morning she saluted me as before, but being by this time determined to examine the nest I inserted a stick, at which she advanced, pecking and hissing vigorously. She fought long and well, but might finally prevailed, and she slipped out, as she could have done at any time if so inclined, and flew to a neighboring tree, from which she watched me with much interest and indignation. She returned to her nest soon after I had left it. After the rough treatment of this occasion, she would invariably leave the nest at my approach, doubtless hearing my footsteps, as she could not possibly see me.

Some days after this, I found a pair of these birds building in a low stump which stood in a meadow, but I did not remain in the neighborhood long enough to learn the number of eggs or test the courage of the female while incubating. — L. BELDING, *Marysville, Cal.*

PERSISTENCY IN NEST-BUILDING BY A PAIR OF CITY ROBINS.—Mr. H. H. Clark of this city has kindly placed at my disposal some very interesting observations made by him last season relative to the perseverance displayed by a pair of Robins (*Turdus migratorius*) at nest-making under difficulties. A pair of these birds selected for a nesting-site a place in his garden so frequented by cats—the great enemy of town-breeding birds—that it seemed certain the young, if not, indeed, the mother-bird, would be destroyed by them if the birds were allowed to build in the place they had chosen. So, in order to avoid the threatened danger to the brood, as well as the pain of witnessing their destruction, Mr. Clark resolved to intercept their work, hoping thereby to force them to choose a safer nesting-place. He accordingly pulled down their partly formed nest. The next morning there was a great outcry from the birds over their loss, and no little commotion among the other Robins of the neighborhood. To his surprise the birds immediately set to work to rebuild the nest, aided by several of their sympathizing neighbors, who brought materials faster than the architect seemed able to properly bestow them, so that in a single morning considerable progress was made with the new structure. The next morning the birds found their nest had been again destroyed. Not a whit discouraged, they resumed their labors, building again in the same spot as before, but this time without help. The nest was now constructed with greater care, being securely fastened by strings passed round the branch on which it rested, which were also carried up and made fast to a limb above. These precautions availed them nothing, for this nest shared the fate of the others. An act begun in a spirit of kindness toward the birds was now continued in the interest of scientific investigation. A fourth time the persistent birds rebuilt their nest at the same spot, with to them

the same sad result. For the fifth time they began to rebuild the nest; this was too much for my informant's feelings to resist, and he resolved to let them carry out their plans. To his surprise, however, they soon began to destroy the structure themselves, taking the materials to a branch higher up, as if divining not only the source of their troubles, but the reason that had prompted the repeated removal of their nest; but after a morning's work the nest was abandoned, and another site for it was selected some rods away in a safer position. Here again, however, they later came to grief, their eggs being taken by a ruthless boy, an habitual robber of bird's-nests.

The interesting points here brought out are the tenacity with which this pair of Robins adhered to their chosen nesting-place; the concerted action of their sympathizing neighbors in aiding them at first to rebuild; the later greater care they displayed in more firmly attaching the nest to its resting-place; and finally the apparently intelligent recognition of the source and cause of their troubles, and voluntary choice of a safer location. — J. A. ALLEN, *Cambridge, Mass.*

DEADLY COMBAT BETWEEN AN ALBINO ROBIN AND A MOLE. — The following interesting and curious incident is quoted from a letter received by me from Miss Maria R. Audubon, granddaughter of the celebrated naturalist, dated Newark, N. J., February 4, 1878. — RUTHVEN DEANE.

"We have had a Robin of the albino type which for two years has built its nest in the same tree, and devoured an immense number of worms from the lawn around the house. It became quite tame, and we naturally felt a sort of ownership in it. One morning I saw something moving or jumping on the ground just under the tree, and on investigation it proved to be the Robin engaged in deadly combat with a mole. I tried to drive the Robin away, and found the mole had it firmly held by the wing. I set it free, and poked the mole off with a stick to some distance. . . .

The Robin flew to a branch of the tree, did not seem much hurt, plumed itself, and finally disappeared among the foliage; the mole, too, made off in an unknown direction. I could find no reason for this unusual battle; no corpses of young Robins could be seen to make feasible the suggestion that a fledgling had fallen from the nest and been attacked by the mole, thereby bringing down the wrath of the parent bird; we knew the mole had not climbed the tree, and we had never heard of a Robin eating a mole.

"Neither party was seen again that day till towards evening, when the Robin was again on the lawn as usual. The next morning I passed the tree about the same hour as on the previous day, and there lay the mole and the Robin, 'beautiful in death,' to use a poetic license, for they really looked very unpleasant. Their bodies were not cold; the Robin very much ruffled as to plumage and bloody about the throat and under the right wing; the mole with his glossy coat 'all the wrong way,' and severely pecked about the head and throat. There was no life in either after I found them."

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THE EAVE, CLIFF, OR CRESCENT SWALLOW (*PETROCHELIDON LUNIFRONS*). *

BY DR. ELLIOTT COUES, U. S. A.

DISCOVERY of this notable Swallow, commonly attributed to Say, was made long before Long's expedition to the Rocky Mountains, though the species was first named in the book which treats of that interesting journey. The bird may have been discovered by the celebrated John Reinhold Forster; at any rate, the earliest note I have in hand respecting the Cliff Swallow is Forster's, dating 1772, when this naturalist published in the *Philosophical Transactions* "An Account of the Birds sent from Hudson's Bay; with Observations relative to their Natural History; and Latin Descriptions of some of the most Uncommon," — a rather noted paper, in which seven new species, viz., *Falco spadiceus*, *Strix nebulosa*, *Emberiza* [i. e. *Zonotrichia*] *leucophrys*, *Fringilla* [i. e. *Junco*] *hudsonias*, *Muscicapa* [i. e. *Dendroica*] *striata*, *Parus hudsonicus*, and *Scolopax* [i. e. *Numenius*] *borealis*, are described, with references to various other new birds by number, such as "*Turdus* No. 22," which is *Scolecophagus ferrugineus*, and "*Hirundo* No. 35," which is *Petrochelidon lunifrons*. The next observer — in fact, a rediscoverer — was, perhaps, Audubon, who says that he saw Republican or Cliff Swallows for the first time in 1815 at Henderson, on the Ohio; that he drew up a description at the time, naming the species *Hirundo republicana* [sic]; and that he again saw the same bird in 1819 at Newport, Ky., where they usually appeared about the 10th of

* By permission, from advance sheets of the "Birds of the Colorado Valley," Vol. I.

April, and had that year finished about fifty nests by the 20th of the same month. The next year, namely, 1820, Major Long and Sir John Franklin found these birds again, in widely remote regions, — the first named during his expedition to the Rocky Mountains, and the latter on the journey from Cumberland House to Fort Enterprise, and on the banks of Point Lake, in latitude 65°, where its earliest arrival was noted the following year on the 12th of June. Dr. Richardson says that their clustered nests are of frequent occurrence on the faces of cliffs of the Barren Grounds, and not uncommon throughout the course of the Slave and Mackenzie's Rivers; and that their first appearance at Fort Chipewyan was on the 25th of June, 1825. Major Long's discovery was named *Hirundo lunifrons* by Say in 1823; and the following year Audubon published his hitherto MS. name *respublicana* in the Annals of the New York Lyceum of Natural History, with some remarks on the species, in connection with some observations of Governor De Witt Clinton, who called the bird *Hirundo opifex*. Meanwhile, Vieillot had described the West Indian conspecies as *Hirundo fulva*; and the future Prince Bonaparte adopted this name for our species in 1825. Thus in the short space of two years, 1823 - 25, the interesting Anonyma, "No. 35," before known only by number, like the striped inmates of some of our penal establishments, suddenly became quite a lion, with titles galore in the binomial *haut ton*. But it was not till 1850 that it was actually raised to the sublime degree of *Petrochelidon*, though it had long been taken and held to be a master-mason.

The Cliff Swallow has been supposed by some to be an immigrant of comparatively recent date in the Eastern United States; but it does not appear that any broad theory of a general progressive eastward extension is fairly deducible from the evidence we possess. On the contrary, much of the testimony is merely indicative of the dates, when, in various parts of the country, the birds began to build under eaves, and so established colonies where none existed before; and some of the evidence opposes the view just mentioned. The Swallows, as a rule, are birds of local distribution in the breeding season, notwithstanding their pre-eminent migratory abilities; they tend to settle in particular places, and return year after year; and nothing is better known than that one town may be full of Swallows of several kinds unknown in another town hard by. I suppose the real meaning of the record is "only this and nothing

more." Nevertheless, these accounts are interesting, and all have their bearing on the natural history of this remarkable bird. It was unknown to Wilson. In 1817, between Audubon's times of observation in Kentucky, Clinton says he first saw Eave Swallows at Whitehall, New York, at the southern end of Lake Champlain. Zadock Thompson found them at Randolph, Vt., about the same time. Mr. G. A. Boardman tells me that they were no novelty at St. Stephens, New Brunswick, in 1828. Dr. Brewer received their eggs from Coventry, Vt., in 1837, when they were new to him; but the date of their appearance there was not determined. They are said by the same writer to have appeared at Jaffrey, N. H., in 1838; at Carlisle, Pa., in 1841; and the appearance of a large colony which he observed at Attleborough, Mass., in 1842, indicated that they had been there for several years. During the last-mentioned year they were present, apparently for the first time, in Boston and neighboring metastatic foci of the globe. The record also teaches that these birds do not necessarily change from "Cliff" to "Eave" Swallows in the East, for in 1861 Professor Verrill discovered a large colony breeding on limestone cliffs of Anticosti, remote from man, and in their primitive fashion. That the settlement of the country has conduced to the general dispersion of the birds during the breeding season in places that knew him not before, is undoubted; but that any general eastward migration ever occurred, or that there has been in recent times a progressive spread of the birds across successive meridians, is less than doubtful, — is almost disproven. Birds that can fly like Swallows, and go from South America to the Arctic Ocean, are not likely to cut around *viâ* the Mississippi or the Rocky Mountains, houses or no houses. Moreover, the scarcity or apparent absence of these birds in the Southern States, or most portions thereof, may be simply due to the ineligibility of the country, and only true for a part of the year. It cannot be that the breeding birds of Pennsylvania, New York, and New England come and go by other than a direct route; and if not detected in the Southern States, it must be because they fly over the country in their migrations, and do not stop to breed. It is authenticated that they nest at least as far south as Washington, D. C., where Drs. Coues and Prentiss found them some twenty years ago to be summer residents, arriving late in April and remaining until the middle of September, though they were not as abundant as some of the other swallows.

It may be remembered in this connection that a happy conjunction of circumstances is required to satisfy these birds. Not only are cliffs or their substitutes necessary, but these must be situated where clayey mud, possessing some degree of adhesiveness and plasticity, can be procured. The indication is met at large in the West, along unnumbered streams, where the birds most do congregate; and their very general dispersion in the West, as compared with their rather sporadic distribution in the East, is thus readily explained. The great veins of the West, — the Missouri, the Columbia, and the Colorado, — and most of their venous tributaries, returning the humors from the clouds to their home in the sea, are supplied in profusion with animated congregations of the Swallows, often vastly more extensive than those gatherings of the feathered Sons of Temperance beneath our caves, where the sign of the order — a bottle, neck downward — is set for our edification.

All are familiar, doubtless, with the architecture of these masons; if any be not, the books will remove their ignorance. But there are many interesting details, perhaps insufficiently elucidated in our standard treatises. It is generally understood that the most perfect nest, that is, a nest fully finished and furnished with a neck, resembling a decanter tilted over, — that such a “bottle-nosed” or “retort-shaped” nest is the typical one, indicating the primitive fashion of building. But I am by no means satisfied of this. Remembering that the Swallows are all natural hole-breeders, we may infer that their early order of architecture was a wall, rampart, or breastwork, which defended and, perhaps, enlarged a natural cavity on the face of a cliff. Traces of such work are still evident enough in those frequent instances in which they take a hole in a wall, such as one left by a missing brick, and cover it in, either with a regular domed vestibule or a mere cup-like rim of mud. It was probably not until they had served a long apprenticeship that they acquired the sufficient skill to stick a nest against a perfectly smooth, vertical support. Some kind of domed nest was still requisite, to carry out the idea of hole-breeding, a trait so thoroughly ingrained in Hirundine nature, and implying perfect covering for the eggs; and the indication is fully met in one of the very commonest forms of nest, namely, a hemispherical affair, quite a “breastwork” in fact, with a hole at the most protuberant part, or just below it. The running on of a neck to the nest, as seen in those nests we consider the most elaborate, seems to merely represent a surplusage of

building energy, like that which induces a House Wren, for example, to accumulate a preposterous quantity of trash in its cubby-holes. Such architecture reminds me of the Irishman's notion of how cannon are made, — by taking a hole and pouring the melted metal around it. It is the rule, when the nest is built in any exposed situation. But since the Swallows have taken to building under eaves, or other projections affording a degree of shelter, the bottle-necked, even the simply globular nests seem to be going out of fashion; and thousands of nests are now built as open as those of the Barn Swallow, being simply half-cups attached to the wall, and in fact chiefly distinguished from those of Barn Swallows by containing little or no hay. I suppose this to be a piece of atavism,— a reversion to primitive ways. The Barn and Eave Swallows are our only kinds that do not *go into a hole* or its equivalent; and the indication of shelter or covering, in all cases indispensable, being secured by the roof itself beneath which they nestle, the special roofing of each nest becomes superfluous. Hence the open cups these Swallows now construct.

Considering how sedulously most birds strive to hide their nests, and screen themselves during incubation, it becomes a matter of curious speculation why these Swallows should ever build beneath our eaves, in the most conspicuous manner, and literally fly in the face of danger. Richardson comments on this singular and excessive confidence in man, too often betrayed, and which cannot, on the whole, be conducive to the best interests of their tribe. He speaks of a colony that persisted in nesting just over a frequented promenade, where they had actually to graze people's heads in passing to and from their nests, and were exposed to the curiosity and depredations of the children; yet they stuck to their first choice, even though there were equally eligible and far safer locations just at hand. Sir John wonders what cause could have thus suddenly called into action such confidence in the human race, and queries what peculiarity of economy leads some birds to put their offspring in the most exposed situation they can find. We have all seen the same thing, and noted the pertinacity with which these and other Swallows will cling to their caprices, though subjected to every annoyance, and repeatedly ejected from the premises by destruction of their nests. I have two notable cases in mind. At Fort Pembina, Dakota, a colony insisted on building beneath the low portico of the soldiers' barracks, almost within arm's reach. Being noisy

and untidy, they were voted a nuisance, to be abated ; but it was " no use " ; they stuck, and so did their nests. In the adjoining British province of Manitoba, at one of the trading-posts I visited, it was the same thing over again ; their nests were repeatedly demolished, on account of the racket and clutter they made, till the irate lord of the manor found it cheaper in the end to let the birds alone, and take his chances of the morning nap. I think such obstinacy is due to the bird's reluctance to give up the much-needed shelter which the eaves provide against the weather, — indeed, this may have had something to do with the change of habit in the beginning. The Cliff Swallow's nest is built entirely of mud, which, when sun-baked into " adobe," is secure enough in dry weather, but liable to be loosened or washed away during a storm. In fact, this accident is of continual occurrence, just as it is in the cases of the Chimney-Swifts. The birds' instinct, — whatever that may mean ; I despise the word as a label of our ignorance and conceit, — say, rather, their reason, teaches them to come in out of the rain. This may also have something to do with the *clustering* of nests, commonly observed when the birds build on the faces of cliffs ; for obviously such a mass would withstand the weather better than a single edifice.

It is pleasant to watch the establishment and progress of a colony of these birds. Suddenly they appear, — quite animated and enthusiastic, but undecided as yet ; an impromptu debating society on the fly, with a good deal of sawing the air to accomplish before final resolutions are passed. The plot thickens ; some Swallows are seen clinging to the slightest inequalities beneath the eaves, others are couriers to and from the nearest mud-puddle ; others again alight like feathers by the water's side, and all are in a twitter of excitement. Watching closely these curious sons and daughters of Israel at their ingenious trade of making bricks, we may chance to see a circle of them gathered around the margin of the pool, insecurely balanced on their tiny feet, tilting their tails and ducking their heads to pick up little " gobs " of mud. These are rolled round in their mouths till tempered, and made like a quid into globular form, with a curious working of their jaws ; then off go the birds, and stick the pellet against the wall, as carefully as ever a sailor, about to spin a yarn, deposited his chew on the mantel-piece. The birds work indefatigably ; they are busy as bees, and a steady stream flows back and forth for several hours a day, with intervals for rest

and refreshment, when the Swallows swarm about promiscuously a fly-catching. In an incredibly short time the basement of the nest is laid, and the whole form becomes clearly outlined; the mud dries quickly, and there is a standing-place. This is soon occupied by one of the pair, probably the female, who now stays at home to welcome her mate with redoubled cries of joy and ecstatic quivering of the wings, as he brings fresh pellets, which the pair in the closest consultation dispose to their entire satisfaction. In three or four days, perhaps, the deed is done; the house is built, and nothing remains but to furnish it. The poultry-yard is visited, and laid under contribution of feathers; hay, leaves, rags, paper, string — Swallows are not very particular — may be added; and then the female does the rest of the “furnishing” by her own particular self. Not impossibly, just at this period, a man comes with a pole, and demolishes the whole affair; or the *enfant terrible* of the premises appears, and removes the eggs to enrich his sanded tray of like treasures; or a tom-cat reaches for his supper. But more probably matters are so propitious that in due season the nest decants a full brood of Swallows, — and I wish that nothing more harmful ever came out of the bottle.

Seeing how these birds work the mud in their mouths, some have supposed that the nests are agglutinated, to some extent at least, by the saliva of the birds. It is far from an unreasonable idea, — the Chimney-Swift sticks her bits of twigs together, and glues the frail cup to the wall with viscid saliva; and some of the Old World Swifts build nests of gummy spittle, which cakes on drying, not unlike gelatine. Undoubtedly some saliva is mingled with the natural moisture of the mud; but the readiness with which these Swallows’ nests crumble on drying shows that saliva enters slightly into their composition, — practically not at all, — and that this fluid possesses no special viscosity. Much more probably, the moisture of the birds’ mouths helps to soften and temper the pellets, rather than to agglutinate the dried edifice itself.

In various parts of the West, especially along the Missouri and the Colorado, where I have never failed to find clustering nests of the Cliff Swallow, I have occasionally witnessed some curious associates of these birds. In some of the navigable cañons of the Colorado I have seen the bulky nests of the Great Blue Heron on flat ledges of rock, the faces of which were stuccoed with Swallow-nests. How these frolicsome creatures must have swarmed around the

sedate and imperturbable Herodias, when she folded up her legs and closed her eyes, and went off into the dreamland of incubation, undisturbed in a very Babel! Again, I have found a colony of Swallows in what would seem to be a very dangerous neighborhood, — all about the nest of a Falcon, no other than the valiant and merciless *Falco polyagrus*, on the very minarets and buttresses of whose awe-inspiring castle, on the scowling face of a precipice, a colony of Swallows was established in apparent security. The big birds seemed to be very comfortable ogres, with whom the multitude of hop-o'-my-thumbs had evidently some sort of understanding, perhaps like that which the Purple Grackles may be supposed to have with the Fish-Hawks when they set up housekeeping in the cellar of King Pandion's palace. If it had only been a Fish-Hawk in this case instead of *Falco polyagrus*, we could understand such amicable relations better, — for Cliff Swallows are cousins of Purple Martins, and, if half we hear be true, Progne was Pandion's daughter.

NEST AND EGGS OF THE BLUE CROW (*GYMNOKITTA*
CYANOCEPHALA).

BY H. W. HENSHAW.

THE Blue Crow, or Maximilian's Jay, is one of the most notable and characteristic of the birds inhabiting the Interior Region, to which it is very closely confined, and of the limits of which its presence may be accepted as an almost certain indication. Notwithstanding the fact that upon the Pacific slope are found in greatest abundance the same trees from which the bird derives the main part of its subsistence, the yellow pine, piñon, and juniper, it shuns the west side of the Sierras, and occurs only within the limits of the great interior basin and upon the eastern slope of the Rocky Mountains. As its powers of flight are most ample, it is within this area confined to no special limits of locality. By the Mexicans it is called the Piñonario or Piñon Bird, and most appropriately is it named; for, wherever within the limits assigned this tree is found, there, at any season of the year, but especially in fall,

may the presence of this bird be confidently expected. Although having no liking for the heavy coniferous forests, it being the very rare exception to find the species therein, it yet shares with the Clarke's Crow a fondness for the seeds of the yellow pine, and in winter, the supply of piñon nuts failing, and where the country is but sparsely timbered, it will often be found plundering these trees of their nutritious seeds.

Finally, juniper berries may be mentioned as making the third most important item of fare. But doubtless during a bad year any of the smaller seeds are acceptable, and perhaps berries do not come amiss. Certainly I have more than once seen these Jays massing into flocks on the ground and feeding greedily upon grass seeds, and others report a similar experience.

To none of our species can the term "resident" be applied with more exactness than to the present bird. Although its roving disposition is perfectly apparent at all seasons, and although, except during the limited period of parental duties, its excursions are constant and wide, yet in no part of its wide range does it appear to be migratory, as the term is correctly understood. I have never myself found it living among the high mountains, and believe this is contrary to its more usual habits. But in Arizona, according to Dr. Cones, it is so found, and there, as he suggests, it doubtless does migrate to the extent of forsaking them in winter for the more congenial lower districts. Usually, however, no change of habitat with varying season takes place, and, wherever it occurs in summer, it is also to be seen in winter; although the ever-restless bands cover in their journeyings a radius of many miles, being seen here to-day, to-morrow there, according as their tastes suggest a change of diet, or as mere caprice may urge. Thus they may often appear to have migrated from a district which in reality they have left only to return to in a few days. Its gregarious disposition is one of its most marked and constant traits, and has been recorded by all who have ever seen the species in the field. This close association of many individuals appears to persist throughout the year, as well during the breeding as at other seasons.

Although so common and, in many respects, so well known a bird, the acquaintance of most of its many observers has ceased with the beginning of the nesting period, and it has been only within a comparatively short time that any information of its habits at this season has reached us. Mr. Ridgway was the first to supply any exact

facts; but his experience was limited to the discovery of the nests and young, which he found fully fledged as early as April 21. This was in 1868, and the eggs remained undescribed till 1875, when Mr. Aiken secured a nest with its complement in Colorado.

For additional information concerning the nests and eggs of this curious bird we are indebted to the zeal of Mr. H. G. Parker of Carson City, Nev., who during the past spring has visited a breeding colony on the same range of low piñon-covered hills where nine years ago Mr. Ridgway obtained his facts respecting their nests. This is a locality perfectly typical of the tastes of the bird, and here they have maintained their hold for an indefinite term of years, and reared many successive generations of young. Mr. Parker visited the locality during the latter part of March, and found the pairs then leisurely at work making their nests. On the 5th of April he found the females sitting, and took two nests, one with three, the other with four eggs. One of the nests with its complement, presented by Mr. Parker to the Smithsonian Institution, is now before me, and offers the following description: To begin with, it is a really handsome structure, and indicates a higher order of constructive ability than is usual in the Jay family. It is strongly made, and though somewhat bulky and Jay-like externally, is more compact and deeper, with higher sides than is ordinarily seen. As a matter of course, the piñon-tree being almost the only living thing found on these dry and desolate hills, the nest is made up largely of twigs from this tree, which were evidently, as shown by the fresh ends, broken off by the birds, not gathered from the ground. These are interlocked firmly, so as to afford an admirable supporting base for the nest proper. Here again the birds have had recourse to the piñon, and have utilized long strips of the tough, fibrous, but soft bark which make up the bulk of the lining. Fine shreds of the same and a few straws nicely arranged complete the interior. The external diameter of the nest is nine and one half inches; internal, four; depth, three. The eggs are of a greenish-white color, profusely spotted everywhere with small blotches of light brown and purple. In one specimen the brown shows a faint reddish tinge. Towards the larger ends the markings become more numerous, and near the apex show a decided tendency, so usual in spotted eggs, to form a confluent ring. They measure $1.27 \times .87$, $1.27 \times .88$, $1.27 \times .87$, $1.23 \times .87$. They thus appear to correspond very closely with Mr. Aiken's set, and show only slight variations in size. They

hardly need comparison with the eggs of any other of the Jays, having a much purer white ground-color and a very different style of spotting.

The nest above described was found on the horizontal branch of a nut-pine, toward the top, but only nine or ten feet from the ground. Both our other observers' accounts indicate a similar position for the nests, and it is probable that very little variation in this respect is to be looked for.

Later Mr. Parker writes that he has since found a second colony in another portion of the same range of hills, where "thousands" breed. Unfortunately he was too late for the eggs.

DESCRIPTIONS OF THE FIRST PLUMAGE IN VARIOUS SPECIES OF NORTH AMERICAN BIRDS.

BY WILLIAM BREWSTER.

III.*

48. *Vireo olivaceus.*

First plumage: male. Remiges, rectrices, and greater wing-coverts as in adult; rest of upper surface, including the lesser wing-coverts and rump, light cinnamon, tinged with ashy, and upon the interscapular region washed faintly with dull green; cheeks pale buff. Supra-orbital line and entire under parts silky white, with a delicate wash of pale brown on the sides. From a specimen in my collection taken at Upton, Me., July 30, 1874.

49. *Vireo gilvus.*

Autumnal plumage: young female. Crown precisely as in spring adult; interscapular region much more strongly tinged with olive-green. Primaries and secondaries tipped with ashy-white. Anal and abdominal regions silky-white. Rest of under parts creamy-buff, lightest on throat and crissum, most pronounced on the pectoral region, and intensifying into rich, though dull, brownish-yellow on the sides. From a specimen in my collection, shot at Concord, Mass., September 12, 1877.

50. *Vireo flavifrons.*

First plumage: male. Remiges and rectrices similar to those of the adults, but with the primaries and secondaries tipped and edged broadly

* For Parts I and II, see this volume, pp. 15 - 23, 56 - 64.

with white. Rest of upper parts uniformly blue-gray, tinged with cinnamon. Throat, cheeks, and pectoral region anteriorly, very pale yellow. Rest of under parts silky-white. From a specimen in my collection obtained at Cambridge, Mass., June 30, 1871.

51. *Vireo solitarius*.

First plumage: female. Upper parts dark ashy, becoming lighter on the rump, and washed strongly with olive-green on the interscapular region. Abdominal region and throat soiled white, the latter with a faint ashy tinge. Sides and crissum pale greenish-yellow. A V-shaped patch of fawn-color on the lower pectoral region. From a specimen in my collection shot at Upton, Me., August 23, 1873.

This bird is in transitional dress, being slightly past the first plumage.

52. *Vireo noveboracensis*.

First plumage: female. Entire upper parts brownish-olive; wing-bands pale fulvous. Throat, cheeks, and breast fulvous-ash. Central portions of abdominal and anal regions soiled white. Sides and crissum pale yellow, tinged with buff. Otherwise similar to the adult. From a specimen in my collection obtained at Cambridge, Mass., July 20, 1871.

53. *Pinicola enucleator*.

First plumage: male. Forehead, crown, cheeks, and throat dull yellowish-brown, lightest on the throat, with a few blood-red feathers intermixed on the forehead and cheeks. A dusky line through the lores. Occiput and interscapular region purplish olive-brown; nape a lighter shade of the same color; tail-coverts and rump dull yellowish-red; wing-bands and edging of secondaries light wood-brown; entire under parts reddish-brown, lightest on abdomen, most pronounced on breast and sides. From a specimen in my collection shot at Upton, Me., August 27, 1874.

Young birds in the second or autumnal plumage exhibit almost endless variations of coloring. The males may be distinguished in most cases by the coppery-red on the crown and rump; but some females have the ordinary brownish-yellow on those parts, strongly tinged with red. One young male in my collection exhibits a broad pectoral band of light rose-color mixed with reddish-yellow.

54. *Carpodacus purpureus*.

First plumage: female. Above dark brown, shading to lighter on the rump, each feather edged with light reddish-brown. The forehead and supra-loral line streaked with grayish. Under parts dull white, thickly streaked everywhere, except on crissum and anal region, with very dark brown. From a specimen in my collection taken at Cambridge, July 9, 1873. Although this bird is in strictly first plumage, it differs scarcely appreciably in coloring from autumnal specimens.

55. *Loxia leucoptera*.

A male and female of this species, received from Mr. J. G. Rich, and shot by him at Upton, Me., some time in April, differ widely in coloring from any specimens which I have previously examined. The male is very brilliant *carmine*, nowhere streaked or obscured except on the sides, abdomen, and forehead. The wings, tail, and scapulars are very clear glossy-black; the white wing-bands unusually broad and clearly defined. The female is similarly marked, with pale orange replacing the carmine of the male. The rump and breast exhibit large areas of the purest orange, which, however, is scarcely less pronounced on the back and crown, although there somewhat obscured by a dusky pencilling. Whether these specimens represent some regular seasonal phase of plumage, or are simply aberrant types, I am unable to decide. Both are apparently adult birds.

56. *Loxia curvirostra americana*.

First plumage: female. Upper surface generally brown, each feather edged and tipped with dull gray. Interscapular region washed with greenish-olive; rump yellowish-white, with a greenish tinge; a few only of the feathers with darker centres. Beneath dull ash, lighter on the abdomen, washed with greenish across the breast, each feather with a central streak of dark brown. From a specimen in my collection obtained at Upton, Me., June 25, 1873. In general aspect this specimen is much darker than the adult female. It was moulting, and had acquired a few feathers of the autumnal plumage.

57. *Chrysomitris pinus*.

First plumage: female. Strong *mustard-yellow*, tinged on the upper parts with brownish-olive, every feather, excepting those on the abdomen, streaked with dark brown. Wing-bands and outer edging of secondaries fulvous. From a specimen in my collection, shot at Upton, Me., August 18, 1873. The first plumage of this species is certainly most remarkable. The yellow is by no means a mere wash or tinge of color, but pure, strong, and uniformly distributed. In a series of five or six specimens collected at about the same time, several exhibit a brownish cast, especially on the upper parts, while scarcely any two agree as to the relative amount and color of the dusky streaks. In one example they are very broad and almost black, in another, tear-shaped and of a dull brown.

58. *Chrysomitris tristis*.

First plumage: male. Crown, interscapular region, and rump light reddish-brown, tinged with olive. Wing-bands and a broad edging upon the secondaries intense fawn-color. Forehead and entire under parts fulvous-yellow, most prominent on the sides. From a specimen in my collection, shot at Upton, Me., August 29, 1873.

59. Plectrophanes ornatus.

First plumage: female. Above light reddish-brown, every feather streaked centrally with very dark brown, most heavily so upon the crown. Greater and middle wing-coverts pale ashy, tinged with reddish. Lores and superciliary stripes dull gray, the latter minutely dotted with brown. Under parts pale fulvous, streaked somewhat finely with brown upon the breast and jugulum, with a maxillary series of spots of the same color. From a specimen in my cabinet, collected by Dr. Cones, September 3, 1873, at Souris River, Dakota.

60. Passerculus savanna.

First plumage: male. Above light brownish cream-color, streaked thickly and finely on the top of the head and nape, more broadly on the back, with dark brown. Beneath dull white, strongly tinged anteriorly with brownish-yellow, finely streaked everywhere excepting upon the abdominal and anal regions with dull black. Wings paler than in adult, with the greater and middle coverts tipped with fulvous. From a specimen in my collection, shot at Upton, Maine, August 11, 1873.

61. Coturniculus henslowi.

First plumage. Top of head, neck, upper parts of back and rump, olivaceous brown; crown with a broad black-spotted stripe on each side. Feathers of interscapular region with heavy central spots of dull black. Beneath pure delicate straw-color, lightest on the abdomen, deepest, with a strong buffy tinge, on the throat, breast, and sides; *no spots or markings of any kind on the under parts.* Outer edging of primaries and secondaries dull cinnamon; wing-coverts buff. Lores and spot upon the auriculars dusky. Bill colored like that of the adult. From two specimens in my cabinet, collected at Concord, Mass., June 19, 1878. With the single exception of *Chrysomitris tristis*, this is the only species of the *Fringillidæ*, so far as I am aware, in which the young in first plumage are entirely immaculate beneath.

Autumnal plumage: young female. Bill black. Crown, cheeks, and superciliary line, anteriorly, reddish-buff. A narrow maxillary and inframaxillary stripe and a small spot behind the auriculars, black. Top of head with two broad stripes of dark brown upon the sides. Post-orbital space, neck, nape, and back anteriorly dull olive-green, the nape dotted finely with dusky. Tertiaries, upper tail-coverts, and feathers of interscapular region with broad, rounded, central spots of black, shading round their edges into dark chestnut, and tipped narrowly with ashy-white. Outer surface of wing similar to the adults, but paler. Under parts pale reddish-buff, fading into soiled white upon the abdomen. A broad *continuous* band of black spots across the breast, extending down the sides to the crissum. Throat flecked faintly but thickly with dusky. Chin, jugulum, and central abdominal and anal regions unspotted. From a specimen in

my cabinet, collected at Osterville, Mass., November 6, 1874. In the absence of sufficient material for comparison, I am unable to say whether this specimen represents the typical autumnal plumage or not. The black bill is, to say the least, a remarkable feature, and one not found in either the adult or young in first plumage.

62. *Coturniculus passerinus.*

First plumage: male. Upper surface, including sides of neck, dark brown, each feather edged and tipped with pale fulvous, — no chestnut marking. Sides of head ochraceous, spotted finely with dusky. Superciliary line pale buff. Greater and middle wing-coverts dull white. Beneath dull white (in some specimens with a decided yellowish cast). Sides with a few dusky streaks. A broad continuous band of ovate black spots across the breast and jugulum, running upward in a narrowing line to the base of the lower mandible. Several specimens in my cabinet, collected at Nantucket, Mass., in July, 1874. This species in the first plumage may be at once separated from *C. henslowi* in the corresponding stage by the conspicuous band of spots upon the breast, and by the darker and more uniform coloring of the upper parts.

63. *Ammodromus maritimus.*

First plumage. Above light olive-brown, with dusky streakings, broadest upon the interscapular region, narrower and more uniformly distributed upon the occiput and nape. A broad superciliary stripe of fulvous extending backward to the occiput, finely spotted with dusky upon its posterior half. Sides of head dull olive, with irregular patches of fulvous. Wing-bands of pale fulvous upon the greater and middle coverts. Beneath pale brownish-yellow, fading to soiled white posteriorly. Sides, and a broad continuous band across the breast, spotted with dull brown. From a specimen in my collection, taken at Bath, Long Island, September, 1872.

64. *Ammodromus caudacutus.*

First plumage: male. General coloring, both above and beneath, bright reddish-brown, nearly as in the superciliary stripe of the adult. Feathers of interscapular region streaked centrally with dark brown; nape brownish-olive, unspotted. Two broad stripes of dark brown on the sides of crown. Wings and tail scarcely more reddish than in adult. Sides of head with fewer dark markings. Sides of breast somewhat thickly streaked with dusky; otherwise unmarked. From a specimen in my collection, taken at Rye Beach, N. H., August 20, 1869. It is not a little remarkable that in a family whose young are nearly without exception more thickly streaked or spotted than their parents, — and often, indeed, conspicuously marked in this manner, when the parent is entirely plain, — this bird in first plumage should exhibit less streaking beneath than the adult, which has not only a *continuous* band of dusky markings across the breast,

but also the sides thickly marked in a similar manner. In view of this fact, the further development of the young is most interesting. When the autumnal plumage is acquired, the dusky streakings upon the sides of the breast are entirely lost, and do not again appear until after the spring moult, when, as previously stated, they are distributed over much larger areas. A nearly analogous case of development is afforded by the Arctic and Wilson's Terns, whose young have the bill and feet at first pale red or yellow, afterwards dusky or nearly black, and again, when fully adult, deeper and clearer red than when first from the nest.

65. *Melospiza palustris*.

First plumage: female. Crown blackish, each feather obscurely tipped with lighter. Rest of upper parts reddish-brown, every feather streaked centrally with dull black. Beneath dull ferruginous-brown, fading to soiled white on the abdomen, streaked thickly but narrowly with dull black everywhere excepting on the abdomen. Sides of head dusky, with irregular patches of dark brown. No appreciable ashy anywhere. From a specimen in my collection taken at Cambridge, Mass., June 24, 1872. Specimens in first plumage show considerable variation in the amount of streaking beneath. Some are so faintly marked that at a little distance they appear entirely plain. They may be at once distinguished from examples of *M. melodia* in corresponding plumage by the much darker cast of the upper surface (especially of the crown) and by the finer character of the markings beneath.

66. *Melospiza melodia*.

First plumage: male. Above similar to the adult, but with the crown less rufous, and the markings of the feathers upon the interseapular region decidedly darker. The sides of the head are also more buffy and the markings fainter. Beneath light yellowish-brown, streaked and spotted everywhere, excepting upon the throat and abdomen, with dusky brown, of a much lighter and duller cast than in the adult. From a specimen in my collection shot at Cambridge, Mass., June 24, 1872.

67. *Junco hyemalis*.

First plumage: male. Upper parts dark brown, everywhere suffused with ashy, but most appreciably so upon the top and sides of head; every feather marked obscurely with dull black. Greater and middle coverts tipped with reddish-brown, producing two rather indistinct wing-bands. Throat, and breast anteriorly, ferruginous-ashy, nearly obscured by streakings of dull black. Rest of under parts dull ashy-white, with a faint buffy tinge, spotted everywhere excepting on the abdomen with dusky. Crissum pale fulvous. From a specimen in my cabinet collected at Upton, Me., August 25, 1874. Considerable variation is exhibited by the series of specimens in first plumage before me. Some have the upper

parts dull reddish-brown, with the streakings but faintly indicated, and scarcely any appreciable ashy either above or beneath. The first plumage is worn by the young of this species for an unusually long time.

68. *Spizella socialis.*

First plumage: male. Above light reddish-brown, lighter and with an ashy tinge on the nape and rump, every feather streaked centrally with dark brown. Superciliary line and a poorly defined median stripe upon the crown pale fulvous. Beneath ashy-white, spotted and streaked everywhere, excepting on throat, anal region, and crissum, with dull black. From a specimen in my collection shot at Cambridge, Mass., July 9, 1873.

69. *Spizella pusilla.*

First plumage: male. Above olivaceous-ashy, the feathers of the interscapular region with central streaks of dark brownish-chestnut. Crown, occiput, and nape unmarked. Entire under parts, including sides of head, light brownish-ashy, paler posteriorly. A broad band across the breast of fine, faint, but distinct spots of reddish-brown. From a specimen in my collection taken at Belmont, Mass., July 30, 1875. Young of this species in first plumage are readily separable from those of *S. socialis* by the plain crown and finer spottings of the under parts.

70. *Zonotrichia albicollis.*

First plumage: male. Above bright reddish-brown, darkest upon the crown, the feathers of the interscapular region with obscurely defined dark brown centres. Superciliary stripe, and a poorly defined median stripe upon the crown, brownish-white; no decided yellow anterior to the eye. Beneath brownish-white, with dusky streakings everywhere excepting upon the abdomen. From a specimen in my collection taken at Upton, Me., July 30, 1874.

71. *Zonotrichia leucophrys.*

First plumage. Throat, breast, sides, and interscapular region streaked thickly with dull black, most broadly so on the back; on the throat these streaks are reduced to mere spots; lateral stripes of crown dark brown; central stripe dirty white. Anal and abdominal region immaculate. Crissum faintly spotted. Otherwise like adult. From specimen in the collection of J. Murdoch, obtained by him at Labrador, July, 1876.

72. *Chondestes grammica.*

First plumage. Crown dark brown, faintly tinged with chestnut. A median and two lateral stripes of pale brownish-yellow. Rest of upper parts similar to the adult, but with the rump obscurely spotted, and the streaking on the feathers of the interscapular region much broader. Lores

dull black. Beneath soiled white, thickly streaked everywhere, excepting upon the abdomen, with dull black. From a specimen in my collection obtained at Columbus, Ohio, by Dr. J. M. Wheaton.

73. *Euspiza americana.*

First plumage. Above pale fulvous, with broad markings of dark brown upon the feathers of the interscapular region, and narrower fainter ones of lighter brown upon the crown. Bend of wing, middle and greater coverts, fulvous. Under parts delicate fawn-color, deepest upon the breast. No markings beneath, excepting a faintly indicated line of dusky spots upon the sides of the breast. From a specimen in my cabinet collected at Columbus, Ohio, by Dr. J. M. Wheaton. This bird is very young, scarcely large enough to fly.

74. *Cyanospiza cyanea.*

First plumage: female. Above dark reddish-brown, slightly tinged with olive, a few of the feathers upon the interscapular region with very obscure dusky central markings. Beneath pale reddish-brown, deepest upon the abdominal and anal regions; streaked distinctly on the sides and across the breast with dusky brown. From a specimen in my cabinet collected at Cambridge, Mass., July 15, 1872.

75. *Pyrhuloxia sinuata.*

First plumage: male. Above light ashy-brown, palest on crown and nape. Two rather indistinct wing-bands of fulvous ashy. Crest similar to that of adult, but of a lighter red; bill much darker than in adult. Breast and sides brownish-ash with a few scattered feathers of faint crimson on the median line of the breast and abdomen. From a specimen in my collection obtained by Dr. H. B. Butcher on the Rio Grande in Texas, August 29, 1866. This specimen was moulting, and had already acquired many feathers of the fall dress. The red feathers of the crest and under parts would probably be wanting in very young birds.

76. *Pipilo erythrophthalmus.*

First plumage: male. Above dull reddish-olive, the feathers of the interscapular region with dusky brown centres. Greater wing-coverts and outer edges of two inner tertiaries, deep fulvous. Beneath pale reddish-brown, deepest upon sides and crissum, shading into brownish-white upon the abdomen, thickly spotted and streaked everywhere (excepting on a small space upon the abdomen) with dull black. From a specimen in my collection shot in Cambridge, Mass., June 21, 1874. In a large series of young in first plumage much individual variation occurs. Some specimens are thickly and finely streaked beneath with dull chestnut in place of black, while the upper parts are dull rufous; others, taken during the progress of the first moult, exhibit nearly every conceivable variation of marking in reddish-brown, chestnut, white, and black.

77. *Molothrus ater.*

First plumage: female. Above olivaceous-brown, the primaries, secondaries, greater and middle coverts, and every feather upon the nape and interscapular region, edged with light sugar-brown. Superciliary line and entire under parts delicate brownish-yellow. The throat and lower area of abdomen immaculate; everywhere else thickly streaked with purplish-drab. From a specimen in my cabinet taken at Cambridge, Mass., August 4, 1875. A male in first plumage differs in being much darker and more thickly streaked beneath. Specimens in process of change into the autumnal plumage are curiously patched and marked with the light brown of the first plumage and the darker feathers of the fall dress. *All the remiges and rectrices* are moulted with the rest of the first plumage during the first moult.

 REMARKS ON SOME OF THE BIRDS OF LEWIS COUNTY,
NORTHERN NEW YORK.

BY C. HART MERRIAM.

(Continued from p. 56.)

Melanerpes erythrocephalus. RED-HEADED WOODPECKER. — This handsome bird, the most beautiful, to my eye, of all our Woodpeckers, may be regarded as a common resident in Lewis County; for since my earliest recollection — and the bird has always been a favorite with me — it has been plentiful throughout the entire year, excepting only during those winters which followed unusually small yields of beechnuts.

Like the Yellow-bellied and Golden-winged Woodpeckers, and to a certain extent the Red-bellied also, it is generally considered a truly migratory species wherever it occurs at all (in the Eastern Province) north of the Southern States. In 1862 Dr. Coues gave it as a “summer resident” in the District of Columbia, stating that it “arrives in spring usually the last week in April; leaves about the middle of September.”* Turnbull says (1869) that in East Pennsylvania and New Jersey it is “plentiful, arriving in the latter part of April, and departing in September or beginning of October.”† Again, in 1868, Coues gives it as a “rare summer visitant”‡ to New England, and De Kay tells us (1843) that it “arrives in

* List of Birds ascertained to inhabit the District of Columbia. By Elliott Coues and D. Webster Prentiss. From Smithsonian Report for 1861, 1862, p. 403.

† Birds of East Pennsylvania and New Jersey. By William P. Turnbull, LL. D. Glasgow (Cuts), p. 15, 1869.

‡ Proceed. Essex Inst., Vol. V, p. 263, 1868.

this State from the South in the early part of May, and, after breeding, leaves us again in September; occasionally a few remain during the winter." * Hence it is not to be wondered at that when, during the winter of 1871-72, I mentioned to one of our leading ornithologists the fact of their wintering with us in Northern New York, my statement was received with surprise and, as I thought, no little incredulity. I therefore wrote to my friend, Mr. C. L. Bagg, asking him to send me a lot of Red-headed Woodpeckers as soon as possible, and in a week's time received a box containing over twenty specimens,—all killed in Lewis County and when the snow was three feet deep! This was proof positive. Notes kept by Mr. Bagg and myself during the past six years show that they were abundant here during the winters of 1871-72, 1873-74, 1875-76, and 1877-78; while they were rare or did not occur at all during the winters of 1872-73 and 1876-77. Their absence was in no way governed by the severity of the winters, but entirely dependent upon the absence of the usual supply of beechnuts. While the greater portion of nuts fall to the ground and are buried beneath the snow far beyond the reach of the Woodpeckers, yet enough remain on the trees all winter to furnish abundant subsistence for those species which feed on them.

I have previously called attention to the fact that in this locality "they subsist almost exclusively on beechnuts, of which evidently they are extremely fond, eating them, apparently with equal relish, whether green or fully matured. It is truly a beautiful sight to watch these magnificent birds, together with their equally abundant cousins, the Yellow-bellied Woodpeckers (*Sphyrapicus varius*), creeping about, after the manner of the Warblers, among the small branches and twigs, which bend low with their weight while picking and husking the tender nuts,—the bright crimson of the head, neck, and breast, the glossy blue-black back and creamy-white belly, together with the scarcely less striking colors of their yellow-bellied companions, contrast handsomely with the deep green foliage," * — a scene suggestive of the oft-dreamed-of avian paradise amidst the rich verdure of the tropics rather than the cold forests bordering the Canadian Fauna. Then, as they spread their beautiful wings and in graceful undulatory flight pass from wood to wood, their bright plumage glistening in the sun, and, alighting on the farther side of some convenient tree, peep cautiously about to see if intruders are near, one is so wrapped in admiration that he wishes the days of sorcery and magic had not yet gone, that he might be transformed into one of these splendid birds.

They are suspicious creatures, and if danger threatens, utter a hoarse rattling cry, not at all in harmony with their pretty exterior, and are off in an instant. If slowly and stealthily approached, they sometimes hesi-

* Ornithology of New York, p. 185, 1844.

† Birds of Connecticut, p. 66, 1877.

tate before taking flight, and run up the trunks muttering to themselves in a grumbling, dissatisfied sort of a way, but taking good care to keep the tree well between them and the intruder, at whom, meanwhile, they take an occasional peep, exposing little more than the bill and one eye, however, so that it is no easy matter to shoot them.

During the autumn the scattered pairs for several miles around usually congregate in some suitable wood, containing a plenty of beech-trees, and here spend the long cold winter in company, chattering and chasing one another about among the trees to keep warm, and to help while away the time. "Coe's woods," in this immediate vicinity, has long been famous as the great winter resort for the Red-headed Woodpeckers of the neighborhood, and it is certainly the most suitable place for their purposes to be found for many miles around. This piece of woods, not over an eighth of a mile in extent, contains, besides hundreds of beeches (*Fagus ferruginea*), a large number of elms (*Ulmus americana*), and white ash-trees (*Fraxinus americana*) of great size, most of the tops of which are now dead. What more favorable location than this woods could a Woodpecker desire? Here they have beechnuts in abundance and a bountiful supply of dead limbs and tree-tops far above the reach of the small charges commonly used by bird-collectors.

The Red-headed Woodpeckers have a very provoking way of keeping on the upper side of a very high limb, so that, from below, one can get little more than an occasional glimpse of the bird's head, and an expectant gazing upward at this is very apt to prove unsatisfactory and to result in a stiff neck. At such times, as if in defiance, their harsh rattling note is constantly repeated, and they are rarely quiet unless taken by surprise at close quarters, when they generally slide quickly to the opposite side of the tree, and after running up a short distance, take flight. Still they are by no means so noisy as the Yellow-bellied fellows, who, not content with stretching to the utmost their vocal powers, take especial delight in drumming on hard resonant trees, eave-troughs, and tin roofs.

Though not particularly quarrelsome in disposition, they evidently enjoy an occasional row, both among themselves and with other inhabitants of the forest. But a short time since (May 14), while passing through Coe's woods, I heard a great commotion among the Woodpeckers, and found a couple of *Melanerpes* worrying a pair of Downy Woodpeckers (*Picus pubescens*), who had made their nest in a hole in the dead beech, which was the seat of the difficulty. They chased and dove at one another for some time, the Red-heads being the aggressive party, and made considerable bluster and noise, but, so far as actual fighting was concerned, neither party seemed to make much headway; and I put an end to the affray by shooting the *Melanerpes*, who were so excited that they did not notice me at all. At another time, in midwinter (January, 1876), my attention was called, by the noise they made, to a pair of Red-headed Woodpeckers who were diving at something on one of the highest limbs of

a large elm. A near approach showed the object of their malice to be a handsome black squirrel (*Sciurus carolinensis* var. *leucotis*, Allen), who had been unfortunate enough to excite their ire by climbing a tree in broad daylight. The squirrel at first evaded their attacks from above by clinging to the under surface of the limb, and dodged their lateral shoots by a quick side shift, but this was temporary. The Woodpeckers, realizing that they were not tormenting the squirrel to a satisfactory extent, alighted for a brief council, during which the squirrel took occasion to commence a hasty retreat. But the birds were at him again in an instant, this time changing their tactics, and both dove together, the one following closely behind the other, so that as the squirrel dodged the first he was sure to be struck by the second. The blows from their hard bills were so severe and so painful that the poor squirrel had not been struck half a dozen times when he let go his hold and fell to the ground, but was off and up another tree before I could reach the spot. I witnessed a similar attack upon a gray squirrel (color-variety of same species) last August, but this time the squirrel succeeded in getting into a hollow limb. The time of year at which the above instances occurred precludes the possibility that the cause of the difficulty arose from an intrusion on the nesting-grounds of the Woodpeckers, for the first took place in midwinter, and the second after the young were fully fledged and had left the nest. Neither is it at all likely that the trouble was due to an old grudge which might have arisen from a habit, on the part of the squirrel, of robbing the Woodpeckers of their eggs, for the size of the animal is such as to prevent his ready entrance into the Woodpecker's hole, and should he even succeed in getting in he would doubtless pay the penalty with his eyes if not his life. Hence it seems fair to conclude that the disposition of the bird is not altogether in keeping with its pretty plumage, but that it sometimes plays the part of tyrant over those who, from lack of wings or inferiority of size, are unable to offer adequate resistance.

. During the summer months, when beechnuts are striving to become young trees, and insects are particularly abundant, they feed largely on the latter; and in autumn, in some parts of the country, destroy large quantities of fruit, "ripe cherries and pears seeming to be a favorite repast."*

Like other Woodpeckers they procure larvæ by puncturing dead limbs, and mature insects by searching crevices in the bark, but, unlike other members of the family, they also capture their prey in mid-air, after the manner of the true Flycatchers. Thus occupied, I have several times seen them from fence-posts, and twice from the dead top of "the old gum-tree" (a large spruce), make frequent sallies into the air after passing insects, which were almost invariably secured, so accurate was their aim. Attention has already been called to their fly-catching proclivities by Mr.

* J. P. Giraud, Jr. *Birds of Long Island*, p. 180, 1844.

Samuel Calvin * and others.† In Humboldt County, Iowa, they must be badly demoralized, for Mr. Charles Aldrich states that there they sometimes amuse themselves by braining young poultry. He says: "On watching carefully to ascertain the cause, a Red-headed Woodpecker (*Melanerpes erythrocephalus*) was caught in the act. He killed the tender duckling with a single blow on the head, and then pecked out and ate the brains!" ‡

In the last number of the Bulletin Mr. H. B. Bailey published a letter, relative to the food of this species, from Mr. G. S. Agersborg, of Vermilion, Dakota Ter., which is of such unusual interest that I take the liberty of reproducing part of it here: "Last spring, in opening a good many birds of this species with the object of ascertaining their principal food, I found in their stomachs nothing but young grasshoppers. One of them, which had its headquarters near my house, was observed making frequent visits to an old oak post, and on examining it I found a large crack where the Woodpecker had inserted about one hundred grasshoppers of all sizes (for future use, as later observations proved), which were put in without killing them, but they were so firmly wedged in the crack that they in vain tried to get free. I told this to a couple of farmers, and found that they had also seen the same thing, and showed me the posts which were used for the same purpose." §

Gentry says that in Union and Northumberland counties, in Pennsylvania, "no later than the 10th of August," he has "seen immense flocks, numbering hundreds, in orchards, gleaning among the trunks and branches of apple-trees, for the insects which lurk in their creviced bark. So tame and confiding were they that it was possible to approach within a few paces of them without exciting suspicion or creating alarm." || Not being a migratory species with us, in Northern New York (unless forced to leave by scarcity of food), they are never met with in large flocks, and their wariness depends, of course, upon the amount of persecution to which they are subjected. Well do I remember a winter, about twelve years ago, when in Coe's woods Mr. Bagg and I used to hunt them on snow-shoes with bow and arrow. Then they would often alight close to us, and occasionally paid dearly for their audacity.

During the summer and early autumn they are generally more easily approached than when in winter-quarters.

Yesterday (May 29), while passing a dead stub, I noticed a Red-headed

* American Naturalist, Vol. XI, No. 8, p. 471, August, 1878.

† Harper's Magazine, and Forest and Stream, Vol. IX, No. 24, p. 451, Jan. 17, 1878.

‡ American Naturalist, Vol. XI, No. 5, p. 308, May, 1877.

§ Bull. Nutt. Ornith. Club, Vol. III, No. 2, p. 97, April, 1878.

|| Thos. G. Gentry. Life Histories of the Birds of Eastern Pennsylvania, Vol. II, p. 148, 1877.

Woodpecker fly from a hole in its side about twenty feet from the ground. On shaking the stub I could distinctly hear young birds within, which greatly surprised me, for many of them are not yet breeding, as shown by the size of their ovaries. The parent bird immediately returned, flying about overhead, and sometimes alighted on the stub, uttering, every now and then, her characteristic ker-r-r-ruck, ker-ruck-ruck-ruck.

EVIDENCES OF THE CAROLINIAN FAUNA IN THE LOWER HUDSON VALLEY. PRINCIPALLY FROM OBSERVATIONS TAKEN AT RIVERDALE, N. Y.

BY EUGENE P. BICKNELL.

THE restrictionary causes circumscribing geographical divisions of animal and vegetable life, though as yet but imperfectly understood, are well known to bear little relation to absolute latitudinal parallels, but to be largely independent of these equidistant surface divisions, and likewise to a certain extent uncomformable with isothermal lines. The boundaries of faunal areas are usually of an extremely irregular nature, and in their territorial relations contiguous faunae often present a series of mutual interpenetrations, the apparent invasion by one province of an adjoining district of course being coincident with an opposite extension or penetration of the invaded territory.

Thus from near the northeastern boundary of the Carolinian Fauna two main branches emanate, — one striking up into the valley of the Hudson; the other extending along the Connecticut coast and into the Connecticut valley, through which reaching the Massachusetts border.* The relations between these two tributaries at their junction with the main body of the fauna to which they belong, or their consolidation before reaching that point, is at present but very superficially understood; but from what knowledge we have in the matter it would appear that their interception occurred somewhere near the mouth of the Hudson, thus including New York City and vicinity in the angle formed by their divergence.

The northern limit of the Hudson River branch is as yet unde-

* A Review of the Birds of Connecticut. By C. Hart Merriam, p. 1, 1877.

terminated; but at Riverdale, where, unless otherwise stated, the following observations were taken, the Carolinian Fauna is well represented by the regular occurrence of such characteristic species as *Helmitherus vermivorus*, *Helminthophaga pinus*, *Icteria virens*, *Myiodiodes mitratus*, *Stelgidopteryx serripennis*, and *Empidonax acadicus*, and the occasional occurrence of other equally characteristic Carolinian forms, notices of which follow.

Mimus polyglottis. MOCKING-BIRD. An individual of this species was seen on October 28, 1877, and on November 21, of the same year, a specimen was shot from a fence by the roadside, by a friend, and kindly presented to me. The bird had been observed near the same place on the previous day feeding on the berries of a cedar (*Juniperus virginiana*). It proved to be a female, and was in good condition, the stomach containing cedar berries, and also those of the common poke or pigeon berry (*Phytolacca*). I am aware of two specimens having been seen in the Central Park within the last few years, probably wild birds; and two have recently been killed on Long Island by Newbold T. Lawrence.*

Lophophanes bicolor. TUFTED TITMOUSE. On November 29, 1874, one of these birds appeared in a certain piece of open woodland in the vicinity, and for several weeks thereafter was occasionally noticed about the same spot, and without doubt remained during the winter, as I am almost certain of having heard it in January, and the following March it was often seen or heard about the same woods, being then in full song. It disappeared after March 28. Mr. Geo. N. Lawrence informs me that some years ago, late in the fall, he noticed a number of these birds near Williams Bridge, but a few miles from Riverdale.

Thryothorus ludovicianus. CAROLINA WREN. A specimen was taken in the late fall several years ago by Mr. W. E. Babcock, on a partially wooded slope extending toward the river shore. Two instances of its occurrence on Manhattan Island are recorded by Mr. Lawrence,† and De Kay (p. 55) speaks of having had specimens from Westchester and Rockland Counties, taken as late as the middle of December.

Helmitherus vermivorus. WORM-EATING WARBLER. This species is not uncommon during the summer, usually arriving the second week in May (May 2, this year); and, in 1876, I knew of at least five pairs that reared their broods in the immediate vicinity. In the previous year I secured a nest with complement of five eggs, partially incubated on June 13, and have found young birds able to fly on the 27th of the same month. In very young birds, scarcely able to fly, the olive of the adult is only apparent on the remiges, the remainder of the plumage being of a

* Forest and Stream, Vol. X, No. 13, p. 235, May 2, 1878.

† A Catalogue of the Birds observed in the Vicinity of New York. By Geo. N. Lawrence. 1866, p. 283.

general brownish and deep buffy suffusion, very similar to the color of dead leaves, especially on the breast, and rendering their detection when among the leaves of their favorite haunts very difficult. Does not this adaptation of color to environment in the case of these helpless young appear to be an instance of protective mimicry?

Helminthophaga pinus. BLUE-WINGED YELLOW WARBLER. Common during the summer, and regularly breeding. Arrives after the first week in May (May 2, in 1878), and incubation commences by the last of the month.

Helminthophaga chrysoptera. GOLDEN-WINGED WARBLER. — Though this species must be of somewhat regular occurrence, I have but one record from the immediate vicinity, a male seen on May 11, 1875.

Oporornis formosus. KENTUCKY WARBLER. — Have taken but one specimen in the vicinity, an adult male on May 30, 1875. Mr. J. Wallace informs me that this species occurs during the breeding-season, at Fort Lee, N. J., and that some years since a nest and five eggs with the female bird was taken at that locality. Has been found breeding at Sing Sing, by Mr. A. K. Fisher, N. Y.*

Myiodiocetes mitratus. HOODED WARBLER. — Within the confines of a tract of somewhat elevated though diversified woodland, this species may be seen or heard every day in the early summer after the middle of May, though only on rare occasions has it been noted at other places in the vicinity. In these woods the ground reaches an elevation of (approximately) two hundred and fifty feet, very nearly as high as any land in the vicinity, and here these birds may be found breeding indifferently on the open or wooded summits, or at their base near the low swampy growth bordering the woods. Owing to the encroachment of the Cow Buntings, but a single bird was reared between two nests which I discovered in 1875. I have females in my collection representing well the state of plumage recently spoken of by Mr. Merriam,† and by Mr. E. A. Mearns,‡ of Highland Falls. In one of these birds the black, though well defined in the region of the occiput, is scarcely detectible on the throat; while another, though less definitely marked, represents an almost opposite phase. This bird also breeds abundantly at Fort Lee, N. J., in company with *H. vermivorus* and *H. pinus*, and all three also occur at West Farms, N. Y.§

Stelgidopteryx serripennis. ROUGH-WINGED SWALLOW. — This species is a regular summer visitor, arriving about the last week in April, and though not uncommon in the spring, but few remain to breed. By the first week in August, however, the species again appears, apparently

* Am. Nat., Vol. IX, p. 573.

† Review of the Birds of Conn., pp. 25, 26.

‡ This Bulletin, Vol. III, pp. 71, 72.

§ W. G. Stevens. Forest and Stream, Vol. VI, p. 215.

on its southern migration, and becomes much more abundant than in the spring. On August 5, last, I noticed numbers of these birds in flocks of from ten to thirty individuals lining the fences along the roadside and outnumbering any of the other species with which they were associating. After September 9 none were observed. The greater abundance of this species in spring and late summer than in the intermediate season would seem to indicate a more northern range, and this, taken in connection with the proximity to the Connecticut State line, and the fact that the course of migration at this point tends towards the northeast, would appear to render their regular occurrence there almost assured.

Cardinalis virginianus. CARDINAL REDBIRD. — A male specimen was taken on Manhattan Island in February, 1867, by Mr. George Bird Grinnell, it having alighted near his house during a snow-storm, and on October 12, 1874, I saw a pair at Riverdale, where I also observed a male on June 8, 1872. Mr. Akhurst tells me that on Long Island one or more of these birds are taken almost every year, and further states that he has often found them about Sandy Hook, and knew of a pair breeding years ago near Jersey City.

Corvus ossifragus. FISH CROW. — As will be seen from the following remarks, there is no doubt that a pair of these birds have been in the vicinity during the past season. I first noticed them on February 24, being attracted by their small size, and for several weeks thereafter they were often seen, their peculiarities of note and habit at once distinguishing them from the common Crow.

Their favorite resort seems to be a growth of tall and partially decayed locusts bordering a fresh-water pond, and on two of these trees, standing together somewhat apart from the others, the birds were to be found almost every morning, but, owing to their shyness and the openness of the ground, I was unable to approach within gunshot. In alighting they usually chose the very topmost branches of the trees, and when approached manifested their suspicion by a restless and excited motion of the wings, which appeared to be more pointed than in the more stoutly built *C. americanus*. Their note was an abrupt, expressionless croak, usually delivered singly and at regular intervals. Though other Crows were often seen in the vicinity, this pair kept aloof by themselves, and several times I saw them chased by a clamorous party of their larger relatives. Latterly they have been rarely noticed, and then always singly, thus indicating that they are breeding in the vicinity.

Empidonax acadicus. ACADIAN FLYCATCHER. — Arrives the last week in May, and is not uncommon during the summer, frequenting cool shaded glens or retired woodland usually near a running stream. In any such favorable location in the vicinity these birds may be found every summer, though I have never found more than a single pair occupying any one locality, and know of perhaps six such pairs which are with us

every season. The almost proverbial inconstancy and variableness of these birds in the construction of their nests in different parts of the country, is even apparent at a single locality. Indeed, two nests in my collection, which were taken within a mile of each other, are so entirely dissimilar that were they not positively identified, it would be difficult to believe that they belonged to the same species. This mutability exhibited by the species in question is not confined solely to the construction of their nest; for in one of the above-mentioned nests the three eggs were almost incubated on June 18, while in the other the last of three eggs was deposited on June 28, showing a difference of at least three weeks in their time of laying. It is worthy of remark that the *first* nest found was much more warmly and compactly constructed than the latter, possibly the result of foresight on the part of the bird.

Strix flammea americana. BARN OWL. — Mr. H. B. Bailey informs me, that late in the afternoon of April 5, last, when passing up Fulton Street, New York City, his attention was directed by a crowd of gaping "citizens" to one of these birds perched upon a house-top, over the street. The bird did not offer to fly, and was left where it had been found, a distinct view of course rendering the identification absolute. Mr. Akhurst has "repeatedly" observed it about Snake Hill, N. J.; and two specimens taken by him on Staten Island are now in the collection of the Long Island Historical Society.

Numerous other of our more southern birds have been recorded from the vicinity of New York City, which lack of space will prevent my mentioning here. With regard to *Goniaphea carulea*, however, it might be well to state that besides the specimen recorded by De Kay,* as having been taken on Manhattan Island, Mr. Akhurst in a single day, many years ago, noticed several specimens about Snake Hill, N. J., and again on Long Island, both instances being in the spring. The same gentleman is aware of several (five or six or more) specimens of *Cyanospiza ciris* having been taken on the coast of Long Island, near the Narrows, and he took two specimens near Brooklyn. All of these birds were in fine plumage, and bore no evident signs of having been caged, agreeing in this respect with a male specimen taken at Riverdale on July 13, 1875, which, however, was in somewhat worn plumage. In the "Elliot collection" at the Central Park Museum, I recollect having seen a fine male specimen labelled "New Jersey." It is within the range of possibility that some of these birds may have wandered northward out of their proper habitat, but the popularity of this species as a cage bird, together with the absence of any records from along the Atlantic Coast north of its known range, would render such a supposition improbable. On the other hand, however, the condition of plumage in which the birds were taken, as well as the appearance of the bill and feet, are evidence which would argue in favor of their being wild.

* Birds of New York, p. 146.

NESTING OF THE LARGE-BILLED WATER-THRUSH
(*SIURUS MOTACILLA* [VIEILL.] BP.).

BY WILLIAM BREWSTER.

UNTIL very recently we have had little or no reliable information bearing upon the nidification of the Large-billed Water-Thrush. Audubon speaks of its nest as "placed at the foot and amongst the roots of a tree," and describes the eggs as "flesh-colored, sprinkled with darker red on the larger end"; but as he failed to distinguish this bird from its northern congener (*S. navia*), his account is decidedly unsatisfactory. Mr. T. M. Trippé says * briefly: "It forms a very neat nest of twigs and grass, which it usually conceals under the roots of a tree overhanging a steep bank or ravine," but he tells us nothing concerning the eggs. In June, 1873, a nest with four fresh eggs was taken at Franklin Station, New London County, Conn., by Mr. Ernest Ingersoll, and fully identified by the capture of the female parent. Of the nest he says: † "It was rather loosely and carelessly constructed of fine grass and some little dead fibrous moss; but beneath, a few, and about the outside, particularly in front, many dead leaves were put, as a sort of breastwork to decrease the size of the entrance and more thoroughly conceal the sitting bird. It was underneath the edge of a perpendicular bank eight or ten feet from the water." The eggs were "lustrous white," and "were more or less profusely spotted all over with dots and specks, and some obscure zigzaggings, of two tints of reddish-brown, with numerous faint points and touches of lilac and very pale underlying red."

The writer had the good fortune to secure two fully identified nests of this species in Knox County, Indiana, during the past spring. The first, taken with the female parent May 6, contained six eggs, which had been incubated a few days. The locality was the edge of a lonely forest pool in the depths of a cypress swamp near White River. A large tree had fallen into the shallow water, and the earth adhering to the roots formed a nearly vertical but somewhat irregular wall about six feet in height and ten or twelve in breadth. Near the upper edge of this, in a cavity among the finer roots, was placed the nest, which, but for the situation and the peculiar character of its composition, would have been exceedingly conspicuous. Its presence was first betrayed by the female, which darted off as one of our party brushed by within a few feet. She alighted on a low branch a few rods distant, uttering her sharp note of alarm, and vibrating her tail in the usual characteristic manner, but other-

* Notes on the Birds of Southern Iowa. Proc. Bost. Soc. Nat. Hist., Vol. XV, 1873, p. 234.

† Amer. Nat., Vol. VIII, p. 238.

wise evincing no particular anxiety or concern. The nest, which is before me, is exceedingly large and bulky, measuring externally 3.50 inches in diameter, by 8 inches in length, and 3.50 inches in depth. Its outer wall, a solid mass of soggy dead leaves plastered tightly together by the mud adhering to their surfaces, rises in the form of a rounded parapet, the outer edge of which was nicely graduated to conform to the edge of the earthy bank in which it was placed. In one corner of this mass, and well back, is the nest proper, a neatly rounded, cup-shaped hollow, measuring 2.50 inches in diameter by 2.50 inches in depth. This inner nest is composed of small twigs and green mosses, with a lining of dry grasses and a few hairs of squirrels or other mammals arranged circularly. The eggs found in this nest are of a rounded-oval shape and possess a high polish. Their ground-color is white with a fleshy tint. About the greater ends are numerous large but exceedingly regular blotches of dark umber with fainter sub-markings of pale lavender, while over the remainder of their surface are thickly sprinkled dottings of reddish-brown. But slight variation of marking occurs, and that mainly with regard to the relative size of the blotches upon the greater ends. They measure, respectively, $.75 \times .63$, $.78 \times .64$, $.75 \times .63$, $.76 \times .62$, $.76 \times .62$, $.75 \times .61$.

The second nest was taken May 8, on the opposite side of the same pond, in a precisely similar situation. Attention was first called to its proximity by the presence of the old birds, which were sitting on a mossy log a few yards off, the male pouring forth an almost uninterrupted strain of gushing melody to his mate. Enlightened by previous experience, the writer went directly to the only fallen tree in the vicinity, and almost at the first glance among the earth-laden roots looked in upon the eggs. This nest was very prettily sheltered from the rains, and concealed from prying eyes above, by a large white fungus, about the size and very nearly the shape of a shingle, which projected directly over it from the wall of earth behind, barely leaving sufficient space beneath to admit the passage of the bird. In general character this nest is nearly identical in every respect with the one already described. It has the same rounded outer wall of closely impacted dead leaves, with, however, an admixture of dry mosses, cypress twigs, and strips of bark. In shape it is nearly square, measuring externally 6.50 inches in diameter by 3.54 inches in depth. The inner nest measures 2.73 inches in diameter by 2.50 inches in depth, and is lined with dry grasses, leaf-stems, and a few white hairs. The eggs were four in number and perfectly fresh; probably more would have been laid had the nest been left undisturbed. They agree closely in shape with those of the first set, and have an equally high polish, but are somewhat more heavily and handsomely marked. The color is creamy-white with heavy blotches of umber-brown generally distributed, but occurring most thickly at the greater ends; fine dottings of lighter brown, and a few spots of pale lavender, fill in the intermediate spaces. They measure, respectively, $.71 \times .60$, $.71 \times .60$, $.72 \times .60$, $.72 \times .61$. In each of these two sets the eggs show unusually little variation *inter se*.

On May 12, a third nest, containing five young birds, well feathered and nearly able to fly, was found by my friend Mr. R. Ridgway, on the shore of an isolated little woodland pond. The site, in this instance, was at the foot of a huge stump, the nest being placed in a cavity in the rotten wood. Still another nest was found by the writer, April 29, under the bank of White River, among the earth and roots, and well sheltered by the projection of the bank above. In general construction, as well as situation, this nest was so nearly identical with those already spoken of that any further description would be superfluous. The female was apparently sitting upon the empty nest, and was shot as she flew from it. Upon dissection an egg of full size but without a shell was found in her oviduct, and others in different stages of development in the ovaries. From the above record it may be inferred that the Large-billed Water-Thrush breeds very irregularly, at least in the locality where these observations were made. It seems not unlikely that this may be largely due to the varying height of the water in the different localities which it frequents, the banks of the large rivers and the shores of the ponds connected with them being more subject to inundations in the early spring than the isolated pools and streams among the hills.

DESCRIPTION OF A HYBRID (*HIRUNDO HORREORI-LUNIFRONS*) BETWEEN TWO NORTH AMERICAN SWALLOWS.

BY SPENCER TROTTER.

THE bird from which the following description is taken was shot at Linwood, Delaware County, Pa., May 22, 1878, by Mr. C. D. Wood, whose attainments as an ornithological collector are well known. Unfortunately he did not carefully determine its sex by dissection, though he believed it to have been a male. My attention was first called to it by his informing me that he had shot a cross between the Barn and the Cliff Swallow; and from the following description it will be seen that the bird presents the more strongly marked features of both *Hirundo horreorum* and *Petrochelidon lunifrons*. This blended likeness stamps it as a *hybrid* between the two above-mentioned species. The specimen has been examined by several competent ornithologists, who all pronounce its hybrid nature as unquestionable. The bird is remarkable not only as being the result of a *mésalliance* between two different species, but between two different genera, and it curiously combines the

characters of both $\frac{1}{2}$ in a most marked degree. I have therefore named the bird *Hirundo horreori-lunifrons*, this name suggesting the nature of the hybrid in question.

Description.— Bill similar to that of the Barn Swallow (*Hirundo erythrogastra* var. *horreorum*), but rather stouter. Nostrils opening laterally, partially overhung by membrane, though not so much so as in the above-named species. Tarsi about as long as middle toe without the claw, feathered at the upper end on the inside. Toes cleft as in *horreorum*; the lateral claws reach to base of middle. Tail forked for about *one fourth* of its length, with white spots on the rectrices, but not so strongly marked as in *horreorum*, and the outer feathers are not lengthened and linear as in that species. The wings, when folded, reach nearly to end of tail. Head and back steel-blue with a chestnut-brown frontlet, as in *horreorum*, the chestnut extending farther back on the head than in that species. Rump reddish-white, the color paler than in the Cliff Swallow (*Petrochelidon lunifrons*). Wings similar to those of *horreorum*. Throat and breast chestnut-brown, with a slight central black patch, as in *lunifrons*, and a peitoral band as in *horreorum*. Sides under the wings and under parts generally of a shade varying between that of *horreorum* and *lunifrons*. Crissum reddish-white, the longer feathers with a slight smoky tinge. Lores dusky; rictus slightly bristled. Cheeks steel-blue, as in *horreorum*, but with a slight tendency to chestnut, as in *lunifrons*. Dimensions (from the dried skin): length, 5.88; wing, 4.63; tail, 2.69.

Recent Literature.

ORNITHOLOGY OF THE WHEELER EXPEDITIONS OF 1876 AND 1877. I. REPORT FOR 1876.*— Notice in the Bulletin of this important paper of Mr. Henshaw's upon the ornithology of California was quite accidentally omitted at the time of its appearance in 1877. The report embodies the results of Mr. Henshaw's investigations into the ornithology of California during the summer and autumn of 1875. Field-work began on June 1, and was prosecuted unremittingly up to October 15. The localities most carefully examined were the islands of Santa Cruz, in the Santa Barbara

* Annual Report upon the Geographical Surveys West of the One-Hundredth Meridian, etc. By George M. Wheeler, First Lieutenant of Engineers, U. S. A. Being Appendix JJ of the Annual Reports of the Chief of Engineers for 1876. Washington, Government Printing-Office, 1876. Report on the Ornithology of the Portions of California visited during the Field Season of 1875. By Mr. H. W. Henshaw. pp. 224 - 278.

Channel, at which locality the first two weeks of June were spent ; Santa Barbara, where the party remained until July 13 ; the region about Mt. Whitney, visited in September ; and, lastly, Kernville and Walker's Basin, where the season was ended in October. When it is taken into consideration that much, if not nearly all, of the ground traversed had been previously more or less carefully worked up by ornithological explorers, it is not to be wondered at that comparatively few discoveries are chronicled in the present paper. Among the more important results are the extension, either southward or westward, of the previously recorded range of many species of birds. Several rather tangled problems of seasonal distribution are likewise satisfactorily solved ; as in the case of the two Thrushes, *Turdus Swainsoni ustulatus* and *T. pallasi nanus*, the former being ascertained to be the species which breeds in California, while the latter occurs only as a migrant from regions farther north. *Spizella breweri* is, we notice, accorded specific rank, and on apparently substantial grounds ; but in the case of the Fox Sparrows (genus *Passerella*) we believe the author's more recent investigations have failed to confirm the arrangement settled upon in the present paper. The biographical annotations are often full, and always exceedingly interesting ; especially so is the account of the breeding "rookery," of the Red-and-white Shouldered Blackbirds (*Agelaius tricolor*) in a nettle-bed, and the description of the habits of the little-known Wandering Tattler (*Heteroscelus incanus*).

Mr. Henshaw was misinformed respecting the nest of *Empidonax traillii pusillus* "built in the hollow of a tree." The nest referred to is in the writer's possession, together with the parent birds, which are *Empidonax flaviventris difficilis*. The by far too frequent typographical errors which occur throughout the report somewhat mar its otherwise fair appearance, but we understand that this was unavoidable, as the author was absent and inaccessible at the time of the final revise. As a whole the paper is a most creditable one, and forms a very acceptable contribution to our store of knowledge upon the Ornithology of the State of California.

II. REPORT FOR 1877.* — This report, which we have just received, opens with a description of the country investigated by Mr. Henshaw during the season of 1876, and which lies in the neighborhood of Carson City, Nevada. Immediately following is a systematic and very able consideration of the faunal provinces of the United States, more especially the Middle and Pacific ones. The eastern slope of the Sierras, though properly belonging to the Pacific Province, is shown to be, to a certain extent, intermediate in its character between it and the Middle Province. The

* Annual Report upon the Geographical Surveys West of the One-Hundredth Meridian, etc. By George M. Wheeler, First Lieutenant of Engineers, U. S. A. Being Appendix NN of the Annual Report of Engineers for 1877. Washington Government Printing-Office, 1877. Report on the Ornithology of Portions of Nevada and California. By Mr. H. W. Henshaw. pp. 1303 - 1322.

author draws the line between the Pacific and Middle Provinces at about the eastern foot of the Sierras, deducing this conclusion mainly from the examination of material collected in the neighborhood of Carson and among the eastern foothills of the Sierras. The full results of the season's work are given in two detailed lists, entitled, respectively, "List of Birds observed near Carson City, Nevada, from August 25 to September 16, and from November 10 to November 20, 1876, with Notes," and "List of Birds observed on the Eastern Slope of the Sierras, near Carson City, Nevada, from September 16 to November 7, with Notes." The annotations in both of these lists are in most cases very brief, but some of them possess considerable interest and value. The announcement of the occurrence of *Dendrocygna fulva* in large flocks at Washoe Lake early in the year 1877 is especially worthy of attention. Their appearance in such large numbers is considered by Mr. Henshaw as exceptional, but he regards it as "by no means unlikely that future investigations will show the bird to be a regular summer resident of such portions of this region as are suited to its needs." Among the species occurring upon the eastern slope of the Sierras, *Turdus naxius* is here given for the first time, but unfortunately upon somewhat questionable grounds. The genus *Passerella* is again overhauled, and in the light of more recent investigations a somewhat different and apparently more substantial arrangement decided upon. The three Western forms, *schistacea*, *townsendi*, and *megarhyncha*, stand as varieties of *iliaca*, — a disposition which, we believe, represents Mr. Henshaw's present views upon the subject. — W. B.

ALLEN'S BIRDS OF MASSACHUSETTS.* — It is seldom that one meets with a local catalogue more thoroughly satisfactory in all essential respects than the present one. Careful, conservative, almost to a fault, and as nearly exhaustive as may be possible, in regard to data, authorities, and evidence, in the cases of rare or irregular visitors, it is a model as to what a local list should be. Of course it is not yet quite perfect, for that feature was not to be looked for, but it is sufficiently so for all ordinary purposes. The data that have escaped the author's keen researches are few indeed and generally not important, while very many are now published for the first time.

The first portion of this list presents the names of three hundred and sixteen species of ascertained occurrence in Massachusetts, not one of which can be challenged. This number might even be increased if several forms were recognized as having what the present writer considers their legitimate specific value. About one hundred and thirty-five are marked as breeding within the State, and this number might also be somewhat extended, to the writer's positive knowledge. *Dendroica striata*, for instance,

* A List of the Birds of Massachusetts, with Annotations, by J. A. Allen. Bulletin of the Essex Institute, Vol. X, pp. 3-37, April, 1878.

has been seen in North Adams, in August, with young so immature that they must have been of local origin; *Myiodioces canadensis* breeds every summer in Essex County, the writer having two sets of their eggs taken in Lynn, and of course the omission of the * from *Colaptes auratus* was an accident. Without wishing in the least to criticise this list of one hundred and thirty-five species, would it not be well, if any of these instances given are inferred, rather than known, to designate all such by a distinguishing mark? And where it is positively known that such species as *Turdus pallasi*, *Mimus polyglottus*, *Certhia familiaris*, *Dendroica cerulescens*, etc. have bred within the State, to mention when and where, as is done in the case of *Junco hyemalis*? The list of Massachusetts species supposed to be extirpated is one of almost painful interest, and one we fear to be ere-long materially increased. Specimens of the Wild Turkey have been taken in Franklin County as late as 1842, but railroads have since completed their extinction.

The third list, of probable occurrences, is also a very interesting one, but in regard to several species rests so entirely on mere speculation as to be suggestive of a conflict of opinions as to the ground of this probability. What, for instance, can be suggested as circumstances likely to bring *Saxicola œnanthe* to Massachusetts? It is of rare occurrence in Labrador, and there only breeds in the extreme northeastern corner. Its migrations are either by way of the Faroes, Iceland, and Greenland, or directly across the ocean to South Greenland.* *Guiraca cœrulea* and *Protonotaria citrea* are supposed to approach Eastern Maine from the northwest by a circuitous route, entirely avoiding Southern New England, which, if correctly inferred, does not favor either ever visiting us, though after what has happened it ill becomes one to even seem to prophesy as to what may not occur! Yet the occurrence of *Ægialitis wilsonia* in Massachusetts is another, in the writer's opinion, not to be anticipated.

Three names are given in a list of very doubtful species. One of these, the Small-headed Flycatcher, whatever it may have been, was probably not a *Myiodioces*. Dr. Pickering's recollections of the individual captured by him in Wenham, and identified by Nuttall, were suggestive of a very small true Flycatcher, and so long as grave doubt exists as to this form, and no type has been preserved, its claim to a full acceptance is inadmissible.

Six birds are classed as introduced species, and ninety others are named as extremely rare or occasional visitors. This number, it is possible, will be largely increased through the larger numbers of observers on the lookout for them, and will always contain an indefinite number of names the conditions of whose presence must ever remain an unexplained enigma. In the spring of 1877 a fine fresh specimen of *Cyanospiza ciris* flew into

[* Its capture near Quebec, Canada, and on Long Island, N. Y., and its somewhat frequent occurrence in the Bermudas, might be considered in this connection. (See Baird's Review of American Birds, 1864, p. 61.)—J. A. A.]

an open window in Boylston Street, Boston, and there remains a caged bird. But had it been one before? Probably yes, but possibly no. It had not the appearance or action of one. Yet so probable was it that it had escaped from confinement that it was not thought worthy of a record.

The great merits of Mr. Allen's lists are that they furnish a succinct yet thorough history of all claims, of whatever nature, to be recognized as Massachusetts birds. Its five divisions well present the character of these claims, and show why certain names should not be received. The completeness of the references and data, and the numerous additions, giving new announcements or unrecorded captures, is also quite remarkable. As a matter of course, here and there one or two interesting captures may have escaped his notice, e. g. *Syrnium cinereum*, Lynn, 1872 (History of North American Birds, III, p. 32), while others of which there is no record, and which he could not know, as the capture at Swampscott, August 27, 1876, of *Tringa bairdi*, male, by Mr. Wm. A. Jeffries, and that of a Short-tailed Tern (*Hydrochelidon niger*, Saunders) at Nantucket, August 8, 1877, by Mr. Geo. H. Mackay, both specimens being in the possession of their captors. That these exceptions are so very few attest at once the diligence of the author and the completeness of his list. Thirty-five North American birds have been added to the Massachusetts list since 1867.

— T. M. B.

MR. H. SAUNDERS ON THE STERNINÆ.* — Having had opportunities of examining interesting types of various real or supposed species of *Sterninæ*, the author has anticipated in a measure the monograph of the *Laridæ* upon which he has long been engaged, by giving the gist of his observations in the present revision of the subfamily *Sterninæ*, which may be regarded as the continuation of papers already published in the same periodical on the *Larinæ* and *Lestridinæ*. We have here in condensed and convenient shape the main results of a protracted study, representing much laborious and faithful application; the author has evidently worked with care, and fully availed himself of the unusual facilities he has enjoyed. His examination of the types of various obscure species has enabled him to clear up a good many points hitherto doubtful, and make an exhibit which bears its recommendation on its face. I regard the paper as the most authoritative one we possess on this subject, being prepared, under exceptionally favorable circumstances, by a skilful ornithologist who has made the present family a particular study.

The author, as it seems to me judiciously, greatly reduces the number of genera which have been wildly proposed for birds of this subfamily. Though I formerly admitted a somewhat larger number, in view of my studies of our representatives of the group, than he now recognizes, I freely

* On the Sterninæ, or Terns, with Descriptions of three new Species. By Howard Saunders, F. L. S., F. Z. S. Proc. Zool. Soc., 1876, pp. 638-672, Pl. LXI.

concede all that Mr. Saunders claims respecting the shading into one another of several of them, and agree that if we are to take positive structural modification as the only genus-warrant, the minimum number of five must be accepted. Out of more than thirty (!) genera which have been proposed for this remarkably homogeneous and compact group of only about fifty species, Mr. Saunders only allows *Sterna*, *Hydrochelidon*, *Nenia*, *Gygis*, and *Anous*. But it does not follow that a few others, like *Haliplana* and *Sternula*, are not at least convenient sections or subgenera to recognize in so difficult a group.

The three new species are *S. tibetana*, p. 649 (near *longipennis* and *fluviatilis*), *S. eurynatha*, p. 654. f. 1 (the Atlantic form of *elegans*), and *Gygis micro-rhyncha*, p. 668, f. 5 (with a smaller bill than that of *G. candida*, and white instead of black shafts of the primaries). The colored plate illustrates the heads of three species of *Anous*.

Want of space alone prevents me from giving, as I should wish to do, an abstract of this valuable paper; but I must confine myself to such portion as bears upon the species of Terns which occur in North America. According to Mr. Saunders's determinations, our *Sterninæ* stand as follows:

1. *Hydrochelidon leucoptera* (Meisn. and Schinz).

SS. fissipes and *nævia*, Pall. — *Hyd. leucoptera*, Boie. — *Viralva leucoptera*, Steph. — *Hyd. nigra*, Gray. — *S. nigra*, Schleg. — *Hyd. subleucoptera*, C. L. Brehm. — *Hyd. javanica*, Swinhoe nec Horsf.

This is the Old World species that I recently recorded as *H. nigra* from Wisconsin (B. N. W. 1874, 709). It seems that Gray, and those of us who have followed him, were wrong in identifying it with *S. nigra*, Linn., the latter being = *fissipes* = *nævia*, L. 1766 = *lariformis*, L. 1758, "as any one who is willing to take the trouble of examining the matter for himself will" find out, says the author.

2. *Hydrochelidon nigra* (L.).

SS. nigra (p. 227), *nævia*, *fissipes* (p. 228, 1766), L. — *Viralva nigra*, Steph. — *Larus merulinus*, Scop. — *S. surinamensis*, Gm. — *S. plumbea*, Wils. — *Hyd. nigra*, Boie. — *Hyd. fissipes*, Gray. — *Anous plumbea*, Steph. — *Hyd. plumbea*, Lawr. — *Pelodes surinamensis*, Gray. — *Hyd. lariformis*, Coues [from *S. lariformis*, L. 1758].

I am glad to find my union of the American bird with the European indorsed by such well-versed authority; though as to the name, I prefer to take Linnæus at 1758, as the custom now is this side of the water.

3. *Sterna anglica*, Mont.

S. nilotica, Hasselq. ? (pre-Linnæan). — *Gelochelidon nilotica*, Gray. — *Thalassus anglicus*, Boie. — *Viralva anglica*, Steph. — *Laropsis anglica*, Wagler. — *Gelochelidon anglica*, Coues. — *S. aranea*, Wils. — *Gelochelidon aranea*, Gray. *S. affinis*, Horsf. (type examined, H. S.). — *Gelochelidon halthica*, *G. meridionalis*, Brehm. — *S. macrotarsa*, Gould. — *Gelochelidon macrotarsa*, Gould.

Since I joined *aranea* to *anglica*, it has become generally admitted that

it is identical, and Mr. Saunders now unites *macrotarsa*, reducing all the "Gull-billed" Terns to one.

4. *Sterna fluviatilis*, Naum.

S. hirundo, L. in part, and of most authors. — *Larus bicolor*, L. *sterna*, L. *columbinus*, Scop. — *S. fluviatilis*, Naum. — *S. senegalensis*, Sw. — *S. wilsoni*, Bp. — *S.S. macroductyla*, *macroptera*, Blas. — *S. dougalli*, Layard *nee auct.*

Probably no one thinks of separating the American bird now; but it was otherwise then.

5. *Sterna macrura*, Naum.

S. hirundo, L. in part. — *S. paradisica*, Brünn (*nee auct.*). — *S. macrura*, Naum. — *S. arctica*, Temm. — *S. brachyppus*, Sw. — *S. pikei*, Lawr. [*pykii*, Bp.]. — *S. portlandica*, Ridgw.

The general impression seems to be that *S. hirundo*, L., is a composite species with which it is best to have nothing to do.

6. *Sterna forsteri*, Nutt.

S. hirundo, Sw. & Rich. *nee auct.* — *S. havelli*, Aud. (*fide* Coues).

7. *Sterna dougalli*, Mont.

S. paradisica, Keys. & Blas. and authors, *nee* Brünn.; *macdougalli*, *douglasi*, of some. — *S. gracilis*, Goubl. — ? *Larus polo-candor*, Sparrm.

This name must stand in place of the more usual *paradisica*; for Brünnich's bird was an Arctic Tern; the Roseate is not a boreal bird.

8. *Sterna cantiaca*, Gm.

S. africana, Gm. — *S. boysii*, Lath. — *S. canescens*, Mey. & Wolf. — *S. acufarida*, Cabot. — *Thalassus cantiacus*, Boie. — *Actochelidon cantiacus*, Kaup. — *Thalassus canescens*, *Th. candicans*, Brehm. — *Thal. acufaridus*, Coues.

I long since relinquished my early attempt to separate *acufaridus*.

9. *Sterna elegans*, Gamb.

Thalassus elegans, Gamb. — *Sterna comata*, Phil. & Landb. — *S. galericulata*, Sel. & Salv., Coues, partly, *nee* Licht.

I am glad to find that we may after all revert to Gambel's name, by which the species was long known. I followed S. & S. in changing to *galericulata* in 1872-74; but according to Saunders, from examination of the type, the latter is a synonym of *maxima* (= *regia*, Gamb.).

10. *Sterna maxima*, Bodd.

S. maxima, Bodd. — P. E. 988. — *S. cayennensis*, Gm. — *S. cayana*, Lath. — *S. galericulata*, Licht. (type examined, H. S.). — *S. erythrorhynchos*, Wied. — *S. cristata*, Sws. (type examined, H. S.). — *S. regius*, Gamb. — *S. bergii*, Irby, *nee auct.* — *Thalassus cayanus*, Bp. — *Thal. regius*, Gamb. — *Phaetusa regia*, Bp. — *Thal. galericulatus*, Blas. — *Thal. cayennensis*, Gray.

This large Tern, which proves to inhabit Africa as well as the warmer parts of America, has given much trouble. In 1872-74, I declined to follow S. & S., 1871, in identifying *regia*, Gamb., with Buffon's bird, considering that *caspia* might be in question, but I was apparently at fault

here. Saunders makes a gratifying identification in the case of the troublesome *galericulata*, Licht., and it is to be hoped that his examination of the type has settled that species.

11. *Sterna caspia*, Pall.

S. tschegrava, Lepech. — *S. caspica*, Sparrm. — *S. megarhynchos*, Meyer u. Wolf. — *S. melanotis*, Hartl. — *S. major*, Ellman. — *Thalasseus caspius*, Boie. — *Hydroprogne caspica*, Kaup. — *Sylochelidon caspia*, *Syl. bathica*, *Syl. schillingii*, Brehm. — *Syl. strenuus*, Gould. — *Helopus caspius*, Wagl. — *Thalassites melanotis*, Sw. (type examined, H. S.). — *Syl. melanotis*, Bp.

12. *Sterna trudeaui*, Aud.

Phætusa trudeauii, Blas. — *Sterna frobcenii*, Phil. & Landb.

A remarkably good species, but as doubtful as ever as a North American one.

13. *Sterna antillarum*, Less.

S. argentea, Nutt. — *S. frenata*, Gamb. — *S. superciliaris*, Cab., Coues, 1872, nec V. — *S. Superciliaris* var. *antillarum*, Coues, 1874.

I was doubtless hasty in identifying our bird positively with Vieillot's, but I am not prepared, without further showing than is in this paper, to admit specific distinction in this case. *S. minuta* has a white rump and tail; in *SS. superciliaris* and *antillarum* the pearly color of the mantle extends on these parts. But I was not aware of, or at least did not consider, the difference in the color of the feet, as described by Mr. Saunders.

14. *Sterna aleutica*, Baird.

Sp. optima! as the author agrees, differing from Dr. Finsch; whatever *S. camtschatica*, Pall., may be, it is not this.

15. *Sterna anæsthesa*, Scop.

S. anæsthesus (sic), Scop. — *Haliplana anosthætus* (sic), Gray. — *S. panayensis*, Gm. — *S. panaya*, Lath. — *Haliplana panayensis*, Wagl. — *Onychoprion panayensis*, S. & S. — *Onychoprion panaya*, Gould. — *S. oahuensis*, Bloxh. — *S. "antarctica*, Cuv." — *S. melanopectera*, Sw. (type examined, H. S.) — *S. infusata*, Hengl. — *Haliplana discolor*, Coues. — ? *Hydrochelidon somalensis*, Hengl.

16. *Sterna fuliginosa*, Gm.

Haliplana fuliginosa, and *Onychoprion fuliginosa*, Wagl. — *Planctis guttatus*, Wagl. — *Sterna infusata*, Licht. ! (type examined, H. S.). — *Thalassiporu infusata*, Gray. — *Anous l'herminieri*, Less. — *S. gouldii*, Reich. — *S. luctuosa*, Phil. & Landb. — *Halip. fuliginosa* var. *crissalis*, Bd.

17. *Anous stolidus*, (L.).

S. stolidus, *S. fuscata*, L. — *S. pileata*, Scop. — *S. senex*, Leach. — *S. unicolor*, Nordm. — *Anous stolidus*, Gray. — *Megalopterus stolidus*, Boie. — *A. niger*, *A. fuscatus*, *A. spadicea*, Steph. — *A. rousscaui*, Hartl. — [*A. stolidus* var. *frater*, Coues, pessimè.]

It is to be hoped that in his final monograph the author, who has thus handled the subject so ably, will synonymize the genera in the same way

he has here worked up the synonymy of the species, and that he will spare no printer's ink which may be wanted for the full exposition and discussion of synonymatic matters, giving us his processes as well as his results; so that, being once done, the matter may be done for once and all. The present writer's interest in the subject yields only to the cordiality of his wishes for the most successful accomplishment of the author's work. — ELLIOTT COUES.

SENNETT'S NOTES ON THE ORNITHOLOGY OF THE LOWER RIO GRANDE, TEXAS. — Mr. Sennett's contribution on one hundred and fifty-one species of birds observed on the southern border of Texas* is a paper of more than ordinary interest for one of its kind, the descriptions in many cases being almost a biography of the species, a number being those of which we have had but little or no previous information, and it covers ground quite new ornithologically, or at least not recently worked over. The main collecting field extended from a short distance above Hidalgo, on the Rio Grande, to Point Isabel on the coast, near the mouth of the river, a distance of three hundred miles by water and one hundred by road. The period covered was from the latter part of March to the middle of May, or just about two months. Mr. Sennett certainly collected under many annoyances, but intensely hot days, and numbers of centipedes, rattlesnakes, tarantulas, fleas, woodticks, and red bugs did not prevent his securing some five hundred birds, one of which is new to science, namely, Sennett's Warbler (*Parula nigrilora*).

The paper is most carefully commented by Dr. Coues, who gives detailed descriptions of the plumages, with pertinent remarks respecting the above-named Warbler, *Molothrus aeneus* (our new Cowbird, with a red eye), *Myiarchus crinitus erythrocerus* (which is the variety of the Great-crested Flycatcher occurring, and not *cooperi* or *cinerascens*), *Amazilia cerviniventris* (the Rufous-bellied Hummer), *Glaucidium ferrugineum* (both the second examples taken within our limits), and *Achmoptila albifrons* (the White-fronted Pigeon), as also the characters of this genus, which the doctor proposes for the group of Pigeons to which *albifrons* belongs.

The Yellow-throated Warbler obtained is typical *Dendroica dominica albiflora*, which, Dr. Coues remarks, "seems to prevail, if it be not the only form, in the Mississippi Basin and Texas." Mr. Sennett got a single specimen of the Missouri Skylark, and saw others; interesting, as Coues says, "on account of the locality, which is the southernmost on record." The Quails are true subspecies *texana*. The skins of *Peuceea cassini* are valuable as proving by their plumage that the species is a good one. A specimen of the Painted Finch or Nonpareil was shot, which, though in

* Notes on the Ornithology of the Lower Rio Grande, Texas, from Observations made during the Season of 1877. By George B. Sennett. Edited, with Annotations, by Dr. Elliott Coues, U. S. A. Bull. U. S. Geol. and Geograph. Survey, Vol. IV, pp. 1-66, February 5, 1878.

the plumage of the adult female, dissection proved to be a male bird. Mr. Sennett is confident that the Turnstone (*Streptilas interpres*) breeds along the entire coast of Texas, — certainly an interesting fact, if so.

The beautiful Ibises obtained, and to which the writer justly gives two pages of text, are the white-faced bird, *Falcinellus* (late *Ibis guarauina*; and two young birds, entirely green-feathered, place *thalassina* among the synonyms. Is not this species now entitled to be called the ordinary North American bird rather than *igneus* (late *ordii*? of modern writers)?

The nomenclature of the *Ardeide*, or Herons, is based on Mr. Ridgway's late investigations, and we again have for *Ardea egretta*, *candidissima*, and *carulea* the genera, respectively, *Herodias*, *Garzetta*, and *Florida*; also *Hydranassa tricolor* for late *Ardea leucogastra* var. *leucophrymna*; *Dichromanassa rufa* for *Ardea rufa*, and *Nyctherodius* for *Nyctiadea violaceus*. The whole makes very interesting reading, and is a valuable and welcome addition to our increasing file of local list. — H. A. P.

MAYNARD'S BIRDS OF FLORIDA. — Part IV of this long-delayed and important work,* which has recently appeared, is wholly devoted to the family *Fringillidæ*, of which fourteen species are described, carrying the group from *Chrysomitris* to *Pipilo*. It is illustrated with a fine colored plate of the Ipswich or Pallid Sparrow (*Passerculus princeps*), representing the adult in spring. To original, somewhat detailed descriptions of the different phases of plumage of the various species treated the author adds short, very pleasantly written descriptions of their habits. The biographical portions generally relate more especially to their life in Florida, as observed by the author during many seasons of exploration, covering nearly all parts of the State. Mr. Maynard's long experience as a field ornithologist in the "Land of Flowers," and his well-known attainments as a naturalist, render him eminently fitted for the work he has here undertaken. Although the fascicles of the work have thus far appeared at rather long intervals (the first part having been issued in 1872), we are assured that it will now be rapidly pushed forward to completion. — J. A. A.

JORDAN'S MANUAL OF VERTEBRATED ANIMALS. — We are glad to see that the demand for Professor Jordan's excellent Manual of the Vertebrates of the Northern States has so soon rendered necessary a new edition † of this important work, and that the second edition has not only been to

* The Birds of Florida, with the Water and Game Birds of Eastern North America. By C. J. Maynard. Illustrated. 4to. Part IV, pp. 89-112, and one Plate. C. J. Maynard & Co., Newtonville, Mass., 1878.

† Manual of the Vertebrates of the 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., etc. Second Edition, revised and enlarged. Chicago: McClurg & Co., 1878. 12mo. pp. 407. Price, \$2.50.

some extent "revised," but enlarged by the addition of upward of fifty pages of new matter. The former accounts of the mammals, birds, and reptiles remain unchanged, with the exception of a few verbal changes in respect to nomenclature, but several pages of new matter are added in the "Addenda," in which are included fifteen species of mammals and seven of birds not contained in the former edition. The account of the fishes has been entirely rewritten; generic diagnoses have been substituted for the "artificial keys" of the former edition; and the latest results of this author's recent investigations of this class have been incorporated. The high praise we felt justified in bestowing upon the first edition (see this Bulletin, Vol. I, p. 93) consequently applies with a still greater force to the present one. We hope that at no distant day the author will feel justified in so far enlarging the scope of his work as to include all the Vertebrates of North America, or, at least, of that portion north of Mexico. — J. A. A.

General Notes.

CAPTURE OF THE YELLOW-THROATED WARBLER IN MASSACHUSETTS, AND NOTES ON OTHER RARE MASSACHUSETTS BIRDS. — In the collection of Mr. George E. Browne of Dedham I saw, a few days since, a Yellow-throated Warbler (*Dendroca dominica*) that was shot by him on the banks of Charles River in that town nine or ten years ago. This is a new bird to the State and the second New England record. Mr. Browne also had a specimen each of the King Rail (*Rallus ibegans*) and the Snow Goose (*Anser hyperboreus*). The former was got on the Sudbury Meadows some years since, the latter off Scituate in November, 1877. This occurrence of the Rail is the second instance known for Massachusetts, and the Goose is perhaps worth noting. — H. A. PURDIE, *Newton, Mass.*

CAPTURE OF TWO RARE BIRDS IN THE HUDSON RIVER VALLEY. — 1. **Centurus carolinus** (Linné) Swainson. RED-BELLIED WOODPECKER. — I recently examined a handsomely mounted Woodpecker of this species in the possession of Mr. Jas. S. Buchanan, of Newburgh, which was taken at Cornwall, on the Hudson, in September, 1870.

2. **Colymbus septentrionalis** (Linné). RED-THROATED DIVER. — After ineffectual efforts to trace supposed specimens of this species, I was agreeably surprised to find a fine immature example in the collection of Mr. Peter de Nottbeck, Esq., taken (near his residence) November 14, 1876, on the Hudson River, at Low Point, sixty-one miles from New York. — EDGAR A. MEARNs, *Highland Falls, N. Y.*

THE BLUE-GRAY GNATCATCHER (*Poliophtila carulea*) IN MASSACHUSETTS. — Among a number of mounted birds presented to the New England col-

lection of the Boston Society of Natural History by Mr. F. I. C. Swift of Falmouth, Mass., is an adult male specimen of the Blue-gray Gnatcatcher. This is the second record of its occurrence, the first specimen having been taken at Chatham, November, 1877 (Nutt. Bull., III, p. 45). It appears, by the letter of Mr. Swift, that his specimen was taken in the same part of the State one month later. In answer to my letter of inquiry, Mr. Swift writes: "I shot it on the 18th day of December last, in a line of low bushes skirting a fresh-water pond (in Falmouth) which separated the same from an old field thickly studded with pines of several varieties and about ten years' growth. The locality was in a southern exposure, and I think there was no ice at that time on the pond." — T. M. BREWER, *Boston, Mass.*

THE GROUND DOVE (*Chamæpeleia passerina*) IN NEW YORK. — In the month of October, 1862, while shooting Robins and Golden-winged Woodpeckers near 158th Street and 12th Avenue, New York City, I killed a bird of this species. It was one of a flock of seven which were sitting in a tall tulip-tree near the road. At that time, being but a young boy, the only interest attaching to the specimen arose from the fact that it was the first "Pigeon" that I had ever shot, but as I was somewhat familiar with the plates of Audubon's Birds of America (the original edition, folio) I recognized the bird as one that I had seen, and, on comparison with the plate (CLXXXII), I decided that it was a young Ground Dove. I subsequently took the specimen to the late John Woodhouse Audubon, who, after examination, confirmed my previous conclusion, and told me that it was a southern bird which he had never seen so far north before. The specimen was not preserved, nor can I give, more exactly than I have already done, the date of its capture. — GEORGE BIRD GRINNELL, *New Haven, Ct.*

SWALLOW-TAILED KITE IN DAKOTA IN WINTER. — I am informed by my valued correspondent, Dr. C. E. McChesney, U. S. A., of the occurrence of *Elanoides forficatus* at Fort Sisseton, Dakota, during nearly the whole of last winter. The Indians also informed Dr. McChesney of the residence of the bird along the James River in the winter and early spring months, and of its giving them some trouble by springing their traps, occasionally, however, getting caught itself. This account tallies with Trippe's Minnesota record (north of Mille Lac, lat. 47°). While at Pembina, Dakota, lat. 49°, I was assured by an officer of the occasional appearance of the bird there. — ELLIOTT COUES, *Washington, D. C.*

APOLOGETIC. — I sincerely regret that my hasty and inaccurate reference to Mr. N. C. Brown's brief mention of the occurrence, near Portland, of the Sharp-tailed Finch should have given to that gentleman even a moment's annoyance. Nothing could have been farther from my intention than to "misquote" him. Indeed, had I *quoted* him the mistake could

not have been made. My point of interest was the *locality*, the number seen was to me of no moment. Remembering that he had spoken of the "bird" in the singular number, I had a mistaken impression that he had seen but one. Certainly the readers of the Bulletin have no occasion to regret my careless mistake, since it has been the means of eliciting an interesting and more full account of the occurrence of this species in a before unknown and unusual locality.

My statement that not a specimen of the *Micropalama* was then known to have been taken along the entire coast of Maine may have been "sweeping." It was so intended to be. At the time it was made it was literally and exactly true. Of the occasional and irregular occurrence of this bird in the vicinity of Portland I am well aware (see Proc. Boston Soc. Nat. Hist., Oct. 3, 1877). Its presence at a single point on the western portion of the coast of Maine, so long as all the rest of the coast is destitute, does not prove either that it is regular in its migrations, or that these extend along the whole New England coast. — T. M. BREWER, *Boston, Mass.*

THE STILT SANDPIPER (*Micropalama himantopus*). — In a late paper read before the Linnean Society of New York, Mr. N. T. Lawrence speaks of this species as being common on the south side of Long Island (N. Y.). He has quite often, while Bay-Snipe shooting, had parties of from three to five, and very frequently a single bird or a pair, come to his decoys. And, of the four specimens in his collection, two, in adult breeding plumage, were taken in July, the others, in fall plumage, in September. This note is interesting as presenting different conditions from any recorded in New England. But one occurrence of this species is known in July, and that in the last part of the month and fifteen miles from the sea. Mr. Geo. N. Lawrence writes me, in reference to this same species, that he lived at Rock-away for five summers, and on one occasion, when he was there, there was a flight of this species and *Gambetta flavipes*, the latter the most abundant, and of the two species there were killed over one hundred and twenty individuals. He remembers killing six of *M. himantopus* at one shot. He never saw so many together as on that day, but all through the season scattering ones were shot. — T. M. BREWER, *Boston, Mass.*

OCCURRENCE OF THREE SPECIES OF SEA-DUCKS AT ST. LOUIS, MISSOURI. — Mr. Julius HURTUR, of St. Louis, Mo., informs me in a recent letter that he has taken the following-named species of "maritime" Ducks in the neighborhood of that city. They were captured in the so-called "American Bottom," on the Illinois side of the Mississippi River. The record is of special interest as indicating how widely these birds wander beyond their supposed usual range.

1. *Ædemia americana*, Swain. AMERICAN BLACK SCOTER. "A single immature bird, shot November 24, 1875."

2. *Ædemia fusca*, Swain. VELVET SCOTER. "Two specimens, both immature, taken November 24, 1877."

3. *Ædemia perspicillata*, Fleming. SURF-DUCK. "One specimen, immature, procured May 3, 1876. It was observed in company with 'Black Jacks' (*Fuligula affinis*)".

Mr. Hurler also writes that he took a fine specimen of the Purple Gallinule (*Porphyrio martinica*) at the same locality, April 18, 1877. These birds are now all preserved in Mr. Hurler's collection, which embraces nearly all the species common to the vicinity of St. Louis. — J. A. ALLEN, *Cambridge, Mass.*

THE CAROLINIAN FAUNA. — In Mr. E. P. Bicknell's excellent paper on southern birds occurring at Riverdale, N. Y. (see this number of the Bulletin, pp. 128 - 132), I am pleased to find so strong a confirmation of what I ventured to write in 1871 (when the accessible data bearing on the subject of the northern boundary of the Carolinian Fauna were much fewer than now), namely: "On the Atlantic coast this fauna [Carolinian] includes Long Island and a small portion of Southeastern New York, which form its northern limit." I also enumerated thirty-two species as being in a general way "limited in their northward range" by this fauna, adding that a few of them occur also "as stragglers in the Alleghanian Fauna."* These thirty-three species include not only those enumerated by Mr. Bicknell, but also many others equally characteristic of the Carolinian Fauna.

Boundaries between faunæ cannot of course be drawn trenchantly; there must be a slight overlapping of northern and southern species, resulting in a debatable or transitional narrow belt between two contiguous faunæ where neither are typically developed. As Mr. H. A. Purdie stated in 1873, "no part of New England has been embraced within the Carolinian Fauna, and properly so, but that its southern border has a tinge of it is quite evident."† While no part of Connecticut is perhaps *typically* Carolinian, its southern border, especially about the mouth of the Connecticut River, is so strongly tinged with it that it may be regarded as doubtful whether it is not as much Carolinian as Alleghanian.‡ Several of the Carolinian birds, in certain years at least, straggle northward, especially in the valley of the Connecticut, to Massachusetts, while some are of quite regular appearance, in very small numbers, as far northward and eastward as Essex County. Yet they are too few in number and too uncertain in their occurrence to form a characteristic element of the fauna.

In the opening paragraph of Mr. Bicknell's paper he refers to the limitation of faunæ and floræ as being "to a certain extent uncomfortable

* Bull. Mus. Comp. Zool., Vol II, pp. 393, 394, April, 1871.

† Amer. Nat., Vol. VII, p. 693, November, 1873.

‡ This "tinge" in Southern Connecticut, and in fact in the extreme southeastern (maritime) portions of New England generally, is especially shown by the distribution of reptiles, where several southern species are sparingly represented which do not occur at all at more northerly localities.

with isothermal lines." As regards local details this is doubtless in some measure true, but, considering the subject broadly, it may be safely asserted that if there is any principle in ontological geography about which students of the subject generally agree, it is that temperature exerts a direct and controlling influence upon the distribution of life over the surface of the globe. As regards birds, and probably plants and marine life, if not animal and vegetable life in general, the phrase "isothermal lines" should not be taken as meaning lines of mean *annual* temperature, but lines of equal temperature for particular seasons of the year, since in different groups it has been found that the isochrymal or isothermal lines are more strictly the boundary-lines for species and faunæ and floræ than the mean annual lines. Professor A. E. Verrill* long since pointed out that the mean temperature of the breeding season is of more importance as regards the limitation of birds than that of the whole year,—a suggestion well supported by later investigations.† It is to be borne in mind, however, in this connection, that the lines of mean temperature *as laid down on charts* are only approximate, and do not follow in detail all the minor curves, as becomes apparent at once on a detailed study of any limited region of diversified area. Hence we cannot expect to find the limits of species agreeing in detail with any of the lines as represented on our best meteorological charts. Again, the boundary-lines of species are not constant, and the same is also true of lines of mean temperature, varying as they do more or less in different years. These facts obviously show that we need never expect to be able to lay down an absolute or rigid line of demarcation for either species or faunæ, but that such boundaries must ever be provisional and approximate, and hence somewhat open to differences of interpretation. — J. A. ALLEN, *Cambridge, Mass.*

PHALAROPE, — AN ETYMOLOGICAL BLUNDER.—Happening, not long ago, to be a little curious about the exact meaning of the word Phalarope or *Phalaropus*, I took occasion to consult a Greek dictionary on the question, and by so doing unearthed a somewhat curious etymological blunder. Brisson, who was the first to give the name to the genus, ‡ explains it as follows: "Phalarope, a name that I have given to the birds of this genus, because of the resemblance of their feet to those of the Coot, called, in Greek, *φαλαρίς*." Now, *Phalaropus*, according to all rules for the composition of Greek and Latin words, does not mean "coot-foot" at all, as Brisson intended it should, but "white-patched-foot" (from *phalaros*, "patched with white," and *pous*, "foot"), which is a manifestly inapplicable name, since the Phalaropes all have black or green feet. *Phalaridopus* (from *phalaris*, genitive *phalaridos*, "coot," and *pous*) would mean "coot-foot,"

* Amer. Journ. Sci. and Arts, 2d Ser., V l. XLI, 1866, p. 249.

† See Bull. Mus. Comp. Zool., Vol. II, 1871, p. 390. Merriam, Rev. Birds of Conn., 1877, p. 2, etc.

‡ Ornithologie, VI, p. 12, 1760.

and this is what Brisson should have written. Nevertheless, the name has served so long as a distinguishing mark of the genus, that it would be by no means advisable to attempt to make an exchange for the etymologically correct form. It is, however, an interesting example of the necessity of a little care in compounding scientific names, if we wish to have them retain any meaning.—JOHN MURDOCH, *Roxbury, Mass.*

BREEDING OF THE WOODCOCK IN GEORGIA.—Mr. A. T. Cunningham of Atlanta—an enthusiastic sportsman and competent observer—informs me that one of a party consisting of his brother Mr. C. M. Cunningham, Mr. Martin Tufts, Mr. Russell (all of Savannah), and himself, while woodcock-shooting on February 17, 1878, at Winkler's and Read's rice-plantations on the Savannah River about twelve miles from that city, in the swamp through which runs the trestle-work of the Charleston and Savannah Railroad, flushed a female Woodcock from a nest containing four eggs. The nest was found after the bird had been shot. Upon this discovery the party gave up shooting. From the actions of other birds of the same species seen on that day, showing an unwillingness to go far from the spots whence they were first flushed, Mr. Cunningham is of the opinion that they were laying. He states that he has frequently seen Woodcock—single birds—at various times throughout the summer, in the swamps near Savannah. The inference is that they breed there.—J. F. HEAD, *Atlanta, Ga.* (*Communicated by E. C.*)

[The Woodcock has been found breeding as far south as Jacksonville, Florida (*Boardman*, *Forest and Stream*, VIII, 82). While in Jacksonville I had the pleasure of examining the young birds spoken of by Mr. Boardman, and also four chicks of another brood taken near the city on March 10, 1877; all were of about the same size, perhaps a week old. Old hunters at Saint Mary's, Camden County, Georgia, have also assured me that the Woodcock remains in that neighborhood throughout the year.—WILLIAM BREWSTER.]

INTERESTING CAPTURES.—My near neighbors, the brothers E. O. and Outram Bangs, have received during the past week two species whose undoubted occurrence in Massachusetts is worthy of mention:—

Ibis falcinellus. GLOSSY IBIS.—A specimen of this species, now conceded to be identical with *Ibis ordi* of Bonaparte, was purchased in the Boston market. It was a fine adult specimen, and had been secured at Orleans, Cape Cod, May 5. Its previous capture here has been recorded by Emmons, Cabot, Nuttall, and others, most recently by Mr. J. A. Allen, from Nantucket (*Am. Nat.*, III, 637), and by Dr. Palmer, from Alton, N. H. (*Am. Nat.*, V, p. 120).

Phalaropus hyperboreus, TENNIS.—NORTHERN PHALAROPE.—A single specimen, not in full plumage, was shot at the same place, and found in the market May 10. It had been dead several days, and the exact date of its capture cannot be given, but probably about May 5.—T. M. BREWER, *Boston, Mass.*

[I have found *Phalaropus hyperboreus* to be of by no means rare occurrence in Boston market, from Cape Cod and elsewhere along the Massachusetts coast, and remember upon one occasion purchasing four specimens there. It is, however, like several other off-coast species, not commonly found near the land unless forced to take shelter from severe storms.—WILLIAM BREWSTER.]

THE GLOSSY IBIS IN MASSACHUSETTS.—I have had the pleasure of examining a fresh specimen of the Glossy Ibis (*Ibis falcinellus*), which was taken, May 4, 1878, on Cape Cod, Mass.—CHARLES B. CORY, *Boston, Mass.*

A note from Mr. Ruthven Deane, respecting the above-mentioned specimen, states that it was shot at Eastham, Mass., by Mr. Augustus Denton.

Mr. N. Vickary, of Lynn, Mass., writes me that he has in his possession also a specimen of this species (*Plegadis falcinellus*, Kaup, the *Falcinellus igneus* of recent writers, the *Ibis ordi* of most American writers*) taken at East Orleans, May 5, 1878. This, with the specimens above recorded by Dr. Brewer and Mr. Cory, makes three that were taken at nearly the same date and near the same locality on Cape Cod, during the first week of May, the present year.—J. A. ALLEN, *Cambridge, Mass.*

TWO MORE BIRDS NEW TO THE FAUNA OF NORTH AMERICA.—Professor Baird writes me that among some birds recently taken by Dr. James C. Merrill near Fort Brown, Texas, and forwarded to the Smithsonian Institution, are examples of *Vireo flavo-iridis* and *Sturnella mexicana*. Both of these species are new to our fauna.—T. M. BREWER, *Boston, Mass.*

* Opinion varies much among recent writers respecting the proper generic and specific names of this species. Nearly all late writers have adopted *Falcinellus* ("Bechstein, 1803") for the generic name, and *igneus* (Gmelin, 1771) for the specific name. Reichenow, however, employs *rufus* (Scopoli, 1769). Salvin and Selater have recently claimed *Plegadis* (Kaup, 1829) for the generic name, thereby rendering *falcinellus* (Linné, 1766) available for the specific designation. On this point these authors write as follows: "A reference to Bechstein's work shows that that author called the Glossy Ibis *Numenius falcinellus*, and in no way employed the latter title in a generic sense. Failing *Falcinellus*, *Plegadis*, Kaup (Skizz. Entw. Gesch., p. 82, 1829), appears to stand next in order of date; and thus *Plegadis falcinellus* (L.) would be the correct name for the Glossy Ibis."—*Ibis*, 4th Ser., Vol. II, January, 1878, p. 112.

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THE PROTHONOTARY WARBLER (*PROTONOTARIA CITREA*).

BY WILLIAM BREWSTER.

It is not so much my present purpose to go over what has been already written concerning this beautiful and striking Warbler, as to present the result of some original observations, made under very favorable circumstances, in Wabash County, Illinois, and Gibson and Knox Counties, Indiana. Nevertheless, a brief preliminary reference to its past biography may not be out of place here.

The species was first described by Boddaert in 1783. Very little concerning its life history has been put on record by our earlier ornithological writers. Audubon's account is decidedly the best, though it is somewhat brief, and in some respects probably erroneous. Recently more light has been thrown upon the subject, especially in regard to its geographical range and nesting. Judging from the evidence recorded, its distribution is somewhat irregular and erratic, though future investigation may probably be relied upon to fill many apparent gaps. Along the Atlantic coast it occurs more or less regularly — but nowhere, so far as known, numerously — as far north as Charleston, S. C., and as a straggler to Washington, D. C. (Coues and Prentiss); Pennsylvania (Turnbull); and even, as a purely accidental wanderer, to Calais, Me. (Boardman). Westward it is found more abundantly throughout the Gulf States, and extends its migrations north to Kansas, Missouri, and Southern Illinois and Indiana. Indeed, it is probable that its maximum abundance during the breeding season is reached in the States lying about the junction of the Ohio and Mississippi Rivers.

The middle of April, 1878, found me at Mount Carmel, Ill., in

the pleasant company of Mr. Robert Ridgway, with the delightful anticipation of a prospective four weeks among the birds of a, to me, new region. What ornithologist but has felt the sensations arising at such times, — the pleasing certainty of meeting many species that are known to occur; the stimulating hope of detecting others that may, nay, probably will, be found; and the vague dream of securing some rare prize that shall excite the interest of the whole ornithological world? But most potent of all to encourage and sustain are the possibilities, without which the toils and hardships of field collecting would be but sad drudgery. A person of prosaic temperament can rarely if ever make a good field-worker. Enthusiasm must be the spur to success. At the time of our arrival there was a temporary lull in the development of the season. March and early April had been unusually warm and pleasant, and vegetation had far advanced. Many of the forest trees were already green with young foliage, and the leaves of others were beginning to unfold. But a period of cold rainy weather succeeded, and everything for a time was at a stand-still. On April 19 the first Prothonotary Warblers were seen. They seemed to be new arrivals, forerunners of the general migration; shy, comparatively silent, and with that peculiar restraint of manner observable in the first comers of most migratory birds, — a restraint not so much to be wondered at, for a subtle chill and gloom still brooded over the budding forest. Nature seemed to hold her breath in expectancy, and the birds, as well as all wild creatures, are her children, and sympathize in all her varying moods. What lover of the woods has not observed the effect produced upon them by a sudden undefinable something that comes at times over the face of everything, — a slight imperceptible chill, perhaps, or a brief period of cloudiness; where a moment before all was life, bustle, and joyous activity, there is now brooding depression and almost death-like silence. Oftentimes the effect is but transient, and the former state of things soon resumes.

With a few warm days the change came, and Nature entered upon her gala-day. The tree-tops became canopies of dense foliage; from the starlit heavens at night came the mysterious lispings of numberless little feathered wanderers pushing their way northward amid the darkness, guided by some faculty which must ever remain hidden from mortals. Each succeeding morning found new-comers taking their places in the woodland choir, and every thicket was enlivened by glancing wings and merry bird voices. The spell was

broken, and among all the gay revellers none were more conspicuous than the beautiful Prothonotaries. Day by day their numbers rapidly increased, until by April 27 all had apparently arrived. We now found the Prothonotary Warbler to be, in all suitable localities, one of the most abundant and characteristic species. Along the shores of the rivers and creeks generally, wherever the black willow (*Salix niger*) grew, a few pairs were sure to be found. Among the button-bushes (*Cephalanthus occidentalis*) that fringed the margin of the peculiar long narrow ponds scattered at frequent intervals over the heavily timbered bottoms of the Wabash and White Rivers, they also occurred more or less numerously. Potoka Creek, a winding, sluggish stream, thickly fringed with willows, was also a favorite resort; but the grand rendezvous of the species seemed to be about the shores of certain secluded ponds lying in what is known as the Little Cypress Swamp. Here they congregated in astonishing numbers, and early in May were breeding almost in colonies. In the region above indicated two things were found to be essential to their presence, namely, an abundance of willows and the immediate proximity of water. Thickets of button-bushes did indeed satisfy a few scattered and perhaps not over particular individuals and pairs, but away from water they were almost never seen. So marked was this preference, that the song of the male heard from the woods indicated to us as surely the proximity of some river, pond, or flooded swamp, as did the croaking of frogs or the peep of the Hylas. In rare instances, it is true, nests were found several hundred yards away from any water; but such apparent exceptions were in nearly every case explained by unmistakable indications that the place, or its immediate vicinity, had been flooded earlier in the season, probably at the time when the site was selected and the nest built. Owing to the exceeding variability of the water-level in the Western rivers, it is not at all improbable that whole tracts of country where these birds breed may be sometimes left high and dry by the receding element before the eggs are hatched.

Everywhere now, from the willow thickets along the streams and the button-bushes on the pond edges came the songs of numerous males, and occasionally one would appear among the foliage or glance across the open water like a ray of golden light. Little idea can be had from preserved specimens of the wonderful beauty and brilliancy of this bird's plumage when alive. Although at times somewhat hard to discover among the yellowish green of their favor-

ite willows, at others, when clinging against the side of an old log or tree-trunk, the yellow head and breast, turned outward to the light, seemed fairly to glow with color, in contrast with the green moss or dusky wood. On cloudy, lowering days I have been surprised at the effect produced by a male flying across an open space close to the dark water. It was as if a sunbeam had glanced athwart the spot, lighting up everything for a moment, and leaving greater gloom from the contrast after it had disappeared. Again and again have I been tempted into shooting one, which I did not really want, but which seemed far brighter than any I had previously taken; upon picking him up, however, I would find him perhaps no more beautiful than many already preserved.

Mating began almost immediately after the arrival of the females, and the "old, old story" was told in many a willow thicket by little golden-breasted lovers. The scene enacted upon such occasions was not strikingly different from that usual among the smaller birds: retiring and somewhat indifferent coyness on the part of the female; violent protestations and demonstrations from the male, who swelled his plumage, spread his wings and tail, and fairly danced round the object of his affections. Sometimes at this juncture another male appeared, and then a fierce conflict was sure to ensue. The combatants would struggle together most furiously until the weaker was forced to give way and take to flight. On several occasions I have seen two males, after fighting among the branches for a long time, clinch and come fluttering together to the water beneath, where for several minutes the contest continued upon the surface until both were fairly drenched. The males rarely meet in the mating season without fighting, even though no female may be near. Sometimes one of them turns tail at the outset; and the other at once giving chase, the pursuer and pursued, separated by a few inches only, go darting through the woods, winding, doubling, now careering away up among the tree-tops, now down over the water, sweeping close to the surface until the eye becomes weary with following their mad flight. During all this time the female usually busies herself with feeding, apparently entirely unconcerned as to the issue. Upon the return of the conqueror her indifference, real or assumed, vanishes, he receives a warm welcome, and matters are soon arranged between them.

The usual song of the *Prothonotary Warbler* sounds at a distance like the call of the *Solitary Sandpiper*, with a syllable or two added, —

a simple *peet, tweet, tweet, tweet*, given on the same key throughout. Often when the notes came from the farther shore of a river or pond we were completely deceived. On more than one occasion, when a good opportunity for comparison was offered by the actual presence of both birds at the same time, we found that at the distance of several hundred yards their notes were absolutely undistinguishable; nearer at hand, however, the resemblance is lost, and a ringing, penetrating quality becomes apparent in the Warbler's song. It now sounds like *peet, tsweet, tsweet, tsweet*, or sometimes *tweet, tr-sweet, tr-sweet, tr-sweet*. When the bird sings within a few yards the sound is almost startling in its intensity, and the listener feels inclined to stop his ears. The male is a fitful singer, and is quite as apt to be heard in the hot noontide or on cloudy days, when other birds are silent, as during the cool morning and evening hours. The ordinary note of alarm or distress is a sharp one, so nearly like that of the Large-billed Water Thrush (*Siurus motacilla*) that the slight difference can only be detected by a critical ear. When the sexes meet a soft *tchip* of recognition common to nearly all the Warblers is used. In addition to the song above described the male has a different and far sweeter one, which is reserved for select occasions,—an outpouring of the bird's most tender feelings, intended for the ears of his mate alone, like the rare evening warble of the Oven-Bird (*Siurus auricapillus*). It is apparently uttered only while on the wing. Although so low and feeble as to be inaudible many rods away, it is very sweet, resembling somewhat the song of the Canary, given in an undertone, with trills or "water-notes" interspersed. The flight during its delivery is very different from that at all other times. The bird progresses slowly, with a trembling, fluttering motion, its head raised and tail expanded. This song was heard most frequently after incubation had begun.

In general activity and restlessness few birds equal the species under consideration. Not a nook or corner of his domain but is repeatedly visited through the day. Now he sings a few times from the top of some tall willow that leans out over the stream, sitting motionless among the yellowish foliage, fully aware, perhaps, of the protection afforded by its harmonizing tints. The next moment he descends to the cool shades beneath, where dark, coffee-colored water, the overflow of the pond or river, stretches back among the trees. Here he loves to hop about on floating drift-wood, wet by the lapping of pulsating wavelets; now following up some

long, inclining, half-submerged log, peeping into every crevice and occasionally dragging forth from its concealment a spider or small beetle, turning alternately his bright yellow breast and olive back towards the light ; now jetting his beautiful tail or quivering his wings tremulously, he darts off into some thicket in response to a call from his mate ; or, flying to a neighboring tree-trunk, clings for a moment against the mossy bole to pipe his little strain or look up the exact whereabouts of some suspected insect prize.

This Warbler usually seeks its food low down among thickets, moss-grown logs, or floating débris, and always about water. Sometimes it ascends tree-trunks for a little way like the Black-and-white Creeper, winding about with the same peculiar motion. When seen among the upper branches, where it often goes to plume its feathers and sing in the warm sunshine, it almost invariably sits nearly motionless. Its flight is much like that of the Water-Thrush (either species), and is remarkably swift, firm, and decided. When crossing a broad stream it is slightly undulating, though always direct. Its food consists of insects, generally of such spiders and beetles as are found about water. Audubon positively asserts that he has discovered minute molluscous animals and small land-snails in their stomachs.

The nesting of the Prothonotary Warbler affords the most interesting phase of its life history. Audubon's account of its nest, "fixed in the fork of a small twig bending over the water," seems in the light of our present knowledge open to serious doubts. At least, it is not the mode of nidification used in the places where it is best known at the present day. Mr. B. F. Goss of Neosho Falls, Kansas, first brought to light the fact that in that locality the bird invariably nested in holes of trees or buildings. Since his discovery of the first nest in 1863, others similarly situated have been found by Dr. Palmer and Mr. Robert Ridgway, at the Kiowa Agency, Indian Territory, and at Mount Carmel, Ill. The first nest collected the past season was found by Mr. Ridgway on April 27. It contained four fresh eggs. This was probably an exceptionally early date, as nearly a week elapsed before any other eggs were taken ; and, indeed, the greater proportion of a large number collected between May 8 and May 12 were freshly laid. At least forty nests were examined altogether, about one half of which contained eggs. To give an account of all the various situations in which these nests were placed, would entail a

description of nearly every conceivable kind of hole or cavity that can be found in tree-trunks. The typical nesting-site, however, was the deserted hole of the Downy Woodpecker or Carolina Chickadee. The height varied from two to fifteen feet, though the usual elevation was about four. If the cavity was old and broken out, or otherwise enlarged, it was far more apt to be chosen than a neater and newer one close at hand. The stump selected almost invariably stood in or projected over water, although, as above stated, it was oftentimes left high and dry after the eggs were laid.

Of the many exceptions to the above-described typical site, I will here notice only two of the most marked. A nest discovered May 8 was built in a sort of pocket-shaped cavity in the side of a large cypress stump. The hole descended vertically in the inside of the shell-like wall, the central heart of which had crumbled away. Another, found by Mr. Ridgway, was built in an extremely rotten snag which stood on the edge of a road; the eggs or sitting parent could easily be seen by any one riding by. This nest was several hundred yards away from water.

In the construction of the nest the female labors somewhat desultorily. Fresh green moss enters largely into its composition, and although this substance is readily obtained, a week is sometimes consumed in building the simple little affair. Most of the materials are gathered in the immediate vicinity from half-submerged logs or the nearest dry ground. The male almost always accompanies his partner on her trips to and from the nest, making a great show of hunting up choice bits of material, but apparently never succeeding in finding any to his mind. He usually precedes her on her return, enters the hole to investigate the condition of affairs, pops out his golden head to assure her with a soft chirp that all is well within, and then gives way to allow her to enter, clinging against the bark outside to cheer her labors with his song and await her reappearance. Sometimes, however, both birds remain inside together, although how much assistance the male renders in house furnishing I cannot say. Probably his presence is only tolerated, and he is perhaps often accused of being a nuisance.

The shape and size of the nest vary with that of the cavity in which it is placed. When the hole is deep, it is usually filled up to within four or five inches of the entrance. Thus the nest when removed presents the appearance of a compact mass of moss five

or six inches in height by three or four in diameter. When the cavity is shallow, it is often only scantily lined with moss and a few fine roots. The deeper nests are of course the more elaborate ones. One of the finest specimens before me is composed of moss, dry leaves, and cypress-twigs. The cavity for the eggs is a neatly rounded, cup-shaped hollow, two inches in diameter by one and a half in depth, smoothly lined with fine roots and a few wing-feathers of some small bird.

The number of eggs constituting a full set varies to an unusual degree; two nests were found, each of which contained seven eggs, while in another instance a nest, which from its position could not possibly have been molested, had only one, nearly ready to be hatched. Out of fifteen sets of eggs taken, two included seven eggs; three, six; three, five; four, four; two, three; and one, one egg. The average number is probably five or six. Seventeen specimens before me agree pretty well in size and general shape, nearly all being noticeably blunted at the smaller end. Two selected as extreme examples measure respectively $.73 \times .59$ and $.67 \times .58$. The ground-color is clear, lustrous white, with a high polish. Eggs from different sets vary considerably in markings, but two types of coloration seem to prevail. In one, spots and dottings of dull brown with faint submarkings of pale lavender are generally and evenly distributed over the entire surface. In the other, bold blotches of bright reddish brown are so thickly laid on, especially about the larger ends, that the ground-color is in some instances almost entirely obscured.

In the hope of presenting to the reader's mind some slight idea of the general character and surroundings of the locality where the Prothonotary Warblers were found breeding in the greatest abundance, I close with a brief description of a visit, on May 11, to the Cypress Swamp. Towards the middle of the afternoon we reached Beaver Dam Pond, and embarked in an old weather-beaten dugout. Our guide, a half-breed Indian and a most accomplished woodsman, took his station in the stern, and with a vigorous shove upon his long push-pole sent the frail craft well out into the pond. Before us stretched a long, narrow sheet of water hemmed in on every side by an unbroken wall of forest trees. Around the margin grew a fringe of button-bushes, with a sprinkling of tall slender willows, while behind and above them towered the light-green feathery crests of numerous cypresses. The low shores were

in many places flooded with water for a considerable distance back into the woods, to where the land rose in broken ridges and the cypresses gave way to a growth of oaks, black-walnuts, lindens, and numerous other forest trees. The depth of the water, even in the centre of the pond, did not exceed five feet, and over the greater part of its extent rank grasses, yellow water-lilies, and other aquatic plants reared their tall stalks or broad leaves in such profusion, that everywhere, except immediately around the canoe, the eye rested upon what seemed a meadow of waving green. The few acres of comparatively open water were sprinkled with water-lilies (*Nymphaea odorata*) or thickly studded with the delicate, star-shaped blossoms of the *Cabomba caroliniana*, the moss-like stems of which extended in a perfect labyrinth beneath the surface. As we pushed our way through the denser growths, the stems yielded before the bow with a slight rustling sound. Wood Ducks and Hooded Mergansers rose on every side, while their broods of downy ducklings scuttled off among the water-plants, sometimes huddling close together, a dusky mass of bobbing little forms, at others, when closely pressed, separating and diving like water-sprites. Overhead, Buzzards were wheeling in graceful, interminable circlings, while in their nests upon the tops of some gigantic sycamores, a little back from the shore, stood a number of Great Blue Herons, their tall graceful forms boldly outlined against the sky. From the lower depths of the forest came innumerable bird voices,— the slow, solemn chant of the Wood Thrush, the clear, whistled challenge of the Cardinal, the sweet wild notes of the Louisiana Water Thrush, the measured *pter-dle, pter-dle, pter-dle* of the Kentucky Warbler, and the emphatic song of the Hooded Flycatcher. Higher up among the trees Woodpeckers rattled upon dead limbs, a Tanager sang at intervals, the Tufted Titmouse reiterated its monotonous *peto, peto*, and numerous Blue Warblers added their guttural little trills to the general chorus. From all along the pond edges came the Sandpiper-like song of the Prothonotary Warblers. As we advanced, the button-bushes gave way to stretches of black willows, which at the head of the pond formed the exclusive growth over an area of perhaps six acres. This tract had at one time evidently formed part of the pond, for as we pushed our canoe in among the trees we found the water scarcely shallower than in the open portions.

Although the willows grew rather thinly, the spaces between the

living stems were filled with stubs in every stage of decay, and perforated with countless Woodpecker-holes, most of them old, and long since given up by their original tenants. That a locality so favorable in every way had not been overlooked by the Prothonotary Warblers was soon evinced by the presence of the birds on all sides in numbers that far exceeded anything which we had previously seen, and careful search soon revealed a number of nests. Probably not less than twenty pairs were here breeding in close proximity. In the larger holes and among the branches were the nests of a colony of Grackles (*Quiscalus purpureus*), and a few Woodpeckers and Carolina Titmice were also nesting somewhere in the vicinity. As we returned down the pond late in the afternoon the sun was sinking behind the tree-tops. The dying breeze still agitated the crest of the forest, but not a breath rippled the still water beneath. The lonely pool rested in deep shadow, save at its upper end, where the slanting sunbeams still lighted up the group of willows, bringing out their yellowish foliage in strong relief against the darker mass behind. The arches of the grand old woods were filled with a softened, mysterious light, and a solemn hush and silence prevailed, broken only by the occasional hooting of a Barred Owl or the song of some small bird among the upper branches, where the rays of the setting sun still lingered. High in air, over the open space the Buzzards still wheeled and soared on easy wing. Ducks were scurrying about in all directions or plashing down among the lily leaves, and a heavy plunge in shore told where a startled otter had risen and disappeared. As the last rays of sunlight touched the top of a mighty sycamore that raised its towering head above its fellows, the Herons left their rookery and laboriously winged their way overhead to some distant feeding-ground. Long in the writer's memory will linger that last glimpse of beautiful Beaver Dam Pond.

NOTES ON BIRDS OBSERVED AT MOUNT CARMEL, SOUTHERN ILLINOIS, IN THE SPRING OF 1878.

BY ROBERT RIDGWAY.

ALTHOUGH the spring seemed to have opened earlier than usual, the birds were, strangely enough, behindhand in their northward

migration, few of the truly migratory species being there on our arrival,—the 17th of April. At that date the woods were in nearly full leaf, the fruit-trees were nearly done blossoming (several kinds entirely so), and the wheat waist-high. Still there were no Catbirds, Orioles, Kingbirds, nor Tanagers, all of which ordinarily reach Mount Carmel by that time. It was nearly a week before these birds made their appearance; but after the full tide of migration set in there was little difference from other seasons, except the great dearth of transient Warblers, all of which were more or less rare, while many kinds, usually common, or even abundant, were not to be seen at all. Thus, there were no Black-throated Blue, Black-poll, Bay-breasted, Black-capped Green, nor Orange-crowned Warblers; only a single individual each of the Golden-winged, Cape May, Black-throated Green, Chestnut-sided, and Worm-eating Warblers was noticed, while other migratory species were unusually rare. No specimens of the Black-and-yellow Warbler were detected until the 25th of May, when a pair were shot in the Cypress Swamp. The following were the most abundant species of this family, named, approximately, in the order of their numbers: *Dendroeca cærulea*, *Setophaga ruticilla*, *Oporornis formosus*, *Protonotaria citrea*, *Siurus auricapillus*, *Myiodioctes mitratus*, *Helminthophaga pinus*, *H. peregrina* (migratory), *Siurus motacilla*, *Dendroeca dominica albilora*, *D. æstiva*, and *Geothlypis trichas*.

Thryomanes bewicki. BEWICK'S WREN.—Very abundant, but confined entirely to dooryards. It was estimated by Mr. Brewster and myself that in Mount Carmel there was one pair of this Wren to about every two dwellings! The House Wren (*Troglodytes ædon*) is entirely unknown there, the present species wholly replacing it.

?? **Helinaia swainsoni.** SWAINSON'S WARBLER.—In the Cypress Swamp a bird was several times noticed by Mr. Brewster and myself, which we both agreed must be this species. It was well seen on several occasions, and its song heard, while one specimen was shot, but, unfortunately, could not be found. It appeared to have habits somewhat similar to those of the Prothonotary Warbler, with a song more like that of a Water Thrush (*Siurus motacilla*), but weaker, more sprightly, and more varied.

Helminthophaga pinus. BLUE-WINGED YELLOW WARBLER.—Very abundant in old clearings in the bottom-lands.

Dendroeca dominica albilora. YELLOW-THROATED WARBLER.—Common enough, but the most difficult to collect of all the Warblers, on account of its partiality to the tops of the tallest sycamore-trees, practically beyond the reach of small shot. The song strikingly resembles that

of the Indigo Bird in its tone, but is easily recognized from its peculiar modulation.

Oporornis formosus. KENTUCKY WARBLER. — One of the most abundant of the smaller birds, far exceeding even the Golden-crowned Thrush in numbers. In its general habits and manners it is much like the latter species, keeping on or near the ground. The nest is exceedingly difficult to find, since it is almost impossible to flush the female directly from it.

Myiodiocytes mitratus. HOODED WARBLER. — Also an abundant species in certain parts of the bottoms, but only noticed in those localities where the switch cane (*Arundinaria tecta*) forms more or less of the undergrowth, over which trails the rough, bright green stems and foliage of a species of *Galium*, and, but less frequently, a low-growing or trailing *Smilax* (probably *S. walteri*). The nest is built with scarcely any attempt at concealment, in a low bush, from one to two feet from the ground.

Stelgidopteryx serripennis. ROUGH-WINGED SWALLOW. — More abundant than *Cotyle riparia*, but, so far as this locality is concerned, of entirely similar nesting habits. Each, however, generally breeds in colonies by itself.

Collurio ludovicianus. LOGGERHEAD SHRIKE. — Common. Although in previous papers I have given the white-rumped form (*excubitoroides*) as the Shrike of this portion of the country, all the specimens obtained during my recent visit were perfectly typical of the Southern race.

Pyrranga æstiva. SUMMER REDBIRD. — Abundant, but almost entirely confined to the more open and dry woods of the uplands, where very common along the roadsides or among the oak or hickory trees standing in immediate proximity to farm-houses. Quite similar to *P. rubra* in general manners, but notes much stronger and more emphatic, the song far finer.

Poœcetes gramineus. GRASS FINCH. — Breeds, but is rather uncommon.

Chondestes grammaca. LARK FINCH. — Common summer resident, partial to roadsides and fallow fields.

Peucœa æstivalis. BACHMAN'S FINCH. — Extremely local, and quite rare. Confined to old fields where dead trees are left standing.

Euspiza americana. BLACK-THROATED BUNTING. — Probably the most abundant of the *Fringillide*, every meadow and grain-field being inhabited by a number of pairs. Most partial to clover-fields. Known usually as the "Little Field Lark," but, on account of its peculiar songs, sometimes as the "Dick-cissel."

Pipilo erythrophthalmus. TOWHEE; CHEWINK. — Abundant. Specimens obtained are absolutely typical of the species, none showing the least approach to *P. arcticus*.

Sturnella magna. MEADOW LARK. — Very abundant. The Larks of this district do not tend in any of their characters toward *S. neglecta*.

Eremophila alpestris. HORNED LARK. — Abundant in suitable localities. Found mostly on commons and about fallow fields.

Cyanocitta cristata. BLUE JAY. — One of the most numerous and generally distributed of all birds; also probably the least wary. As an evidence of these facts, it may be mentioned that the writer killed five Blue Jays in two successive shots, without the expectation of killing more than one at either time.

Myiarchus crinitus. GREAT-CRESTED FLYCATCHER. — The most abundant of the Flycatchers, and quite familiar, often breeding in boxes put up for the Martins and Bluebirds.

Antrostomus carolinensis. CHUCK-WILL'S-WIDOW. — A single specimen seen flying with some Night Hawks (*Chordeiles popetue*) late one evening, about the 20th of April. It is not an uncommon species, its notes being frequently heard. Strange to say, however, neither this species nor the Whippoorwill was once heard during our visit of six weeks' duration.

Coccyzus americanus. YELLOW-BILLED CUCKOO. — Extremely abundant, it being not unusual to hear the notes of half a dozen or more at the same time. Outnumbers *C. erythrophthalmus* in the proportion of about ten to one. Eggs of both species were found in the same nest!

Melanerpes erythrocephalus. RED-HEADED WOODPECKER. — Exceedingly abundant and very tame. By far the most numerous species of the family.

Falco communis nœvius. DUCK HAWK. — This is by no means a rare bird in the heavy timber of the river bottoms. Three nests were found in the immediate vicinity of the town, and no doubt more could have been found in localities not explored. All were placed in cavities in the top of very large sycamore-trees, and were inaccessible. One of these trees was felled, however, the peculiar character of the base and decided inclination of the trunk from the perpendicular rendering this a comparatively easy matter. The swollen base of this tree was twenty-six feet in circumference, the cylindrical portion of the trunk itself, some seven feet above, being sixteen and one half feet around. The base was hollow, and had been reduced by fire to an average thickness of less than a foot, while the axis of the tree leaned some thirty degrees from the perpendicular. It therefore required only the severing of the wall on the side of tension, for a distance of four or five feet, to destroy the equilibrium of the tree, which soon came down with a terrific crash. Measurements with a tape-line showed the nest to have been eighty-nine feet from the ground, its location being a shallow cavity, caused by the breaking off of the main limb, the upper part of which projected over sufficiently to form a protection from the sun and rain. This limb was four feet in diameter; the total height of the tree, although the whole top had been blasted by storms, was one hundred and fifteen feet, so that its original height must

have been not less than one hundred and fifty feet. Four full-feathered young were taken from the nest, only one of them being killed by the fall, while one was entirely uninjured. The female parent had been shot a few days before.

Ictinia mississippiensis. MISSISSIPPI KITE. — This species is much less common in the vicinity of Mount Carmel than in the prairie districts. Several were seen about the river, however, as well as on the border of Washburne Pond, in the Cypress Swamp.

Catharistes atratus. BLACK VULTURE. — Several solitary specimens were seen in the Cypress Swamp, where it was evident from their actions they were breeding.

Ibis alba. WHITE IBIS. — An addition to the fauna of the State. A flock of seven or eight individuals, all in the gray plumage of the young, seen flying along the river about the 8th of May.

THE NEST AND EGGS OF THE YELLOW-BELLIED FLYCATCHER (*EMPIDONAX FLAVIVENTRIS*).

BY H. A. PURDIE.

OF the breeding habits of this bird published accounts are somewhat meagre and unsatisfactory. In Baird, Brewer, and Ridgway's "History of North American Birds," Dr. T. M. Brewer states that he found a nest of this species at Grand Menan placed in the fork of a low alder-bush. It was built loosely of soft bark-strips, lined with light-colored grass, and much resembled the nest of the common Indigo Bird. Other nests collected at Halifax were in low bushes and composed of "stubble." The eggs were chalky-white, unspotted, and more oblong than those of the Least Flycatcher (*Empidonax minimus*). Eggs, however, found by Mr. G. A. Boardman at Calais, Me., were dotted with reddish-brown. Dr. Coles, in "Birds of the Northwest," simply says: "The egg of *flaviventris* is pure white, unmarked, and not distinguishable from that of *E. minimus*." But he writes me, "I know nothing of the nest and eggs of *E. flaviventris*, but what I have read." In "Ornithology of the Clarence King Survey" (Vol. IV, p. 544) Mr. Ridgway, in a foot-note to the Western Yellow-bellied Flycatcher (*E. difficilis*), remarks: "It is with little hesitation that we consider this bird as distinct specifically from *E. flaviventris*. Not only are there very conspicuous and constant differences in proportions and colors (especially the

former), but numerous observers have noticed remarkable and important peculiarities in the nesting habits, the present species almost invariably building its nest in cavities, either of stumps, trees, or rocks, or on beams inside of buildings, — a habit not yet noticed in *E. flaviventris*, nor, indeed, in any other species of the genus." That at least the nesting habits of the two are not always different, I think the following will show.

On a collecting trip made by Mr. Ruthven Deane and myself to Houlton, Aroostook County, Me., during the second and third weeks in June of this year, we were fortunate enough to secure the much-desired nest and eggs of the Yellow-bellied Flycatcher. For its possession we are under obligations to Robert R. McLeod, Esq., and to one of his collectors, Mr. James Bradbury, who discovered the nest, both surrendering all claim to the prize, but desirous that a description should be given for the benefit of all interested.

Mr. Bradbury informed us that he had found, on June 15, a nest unknown to him with one egg. On the 18th he conducted us to the edge of a wooded swamp, and, pointing to the roots of an up-turned tree, said the nest was there. We approached cautiously, and soon saw the structure and then the sitting bird, which appeared to be sunken in a ball of green moss. Our eager eyes were within two feet of her, thus easily identifying the species, when she darted off; but, to make doubly sure, Mr. Deane shot her. There was no mistake; we at last had a genuine nest and eggs of the Yellow-bellied Flycatcher. A large dwelling it was for so small and trim a bird. Built in and on to the black mud clinging to the roots, but two feet from the ground, the bulk of the nest was composed of dry moss, while the outside was faced with beautiful fresh green mosses, thickest around the rim or parapet. The home of the Bridge Pewee (*Sayornis fuscus*) was at once suggested. But no mud entered into the actual composition of the nest, though at first we thought so, so much was clinging to it when removed.* The lining was mainly of fine black rootlets, with a few pine-needles and grass-stems. The nest gives the following measurements: depth inside, one and one half inches; depth outside, four and a quarter inches; circumference inside, seven and a quarter inches.

The eggs, four in number, were perfectly fresh, rounded oval in

* Dr. J. G. Cooper has said that the Western bird uses mud for the shell of its nest. He has, however, written me that he was mistaken, and that earth is not employed.

shape, and of a beautiful rosy-white tint, well spotted with a light reddish shade of brown. They closely resemble the eggs of *E. difficilis* I have from California, and other sets of eggs of that bird I have lately seen. The nest and contents are now in Mr. Deane's collection. It will be seen that the whole affair was not unlike the descriptions given of the nest and eggs of *E. difficilis* by Dr. J. G. Cooper of Haywood, Cal.

The nests and eggs mentioned by Dr. Brewer differ so much from those here described that it seems reasonable to suppose that there was some error of identification in the nests found by him as cited above, so great is the variation presented between his nests and eggs and ours; for it seems hardly probable that this Flycatcher should be so very inconstant, both as to the materials and situation of the nest, and as to whether it lays spotted or unspotted eggs. In the National Museum at Washington there are three sets of eggs accredited to *E. flaviventris*. The eggs of one of these sets are spotted, those of the other two are not, and these latter are strongly suggestive of those of the Least Flycatcher; so write me Messrs. Robert Ridgway and H. W. Henshaw.

As no accounts of the breeding of *E. difficilis* have yet appeared in any ornithological works, the following references to the nesting habits may be useful: Proc. Cal. Acad. Sci., Vol. VI, p. 199, Dec., 1875; Am. Nat., Vol. X, p. 93, Feb., 1876; The Naturalist and Fancier, Grand Rapids, Mich., Vol. I, p. 43, Nov., 1877.

A LIST OF BIRDS OBSERVED AT COOSADA, CENTRAL ALABAMA.

BY NATHAN CLIFFORD BROWN.

COOSADA is a little station on the North and South Alabama Railroad, ten miles north of Montgomery. The population, consisting of planters and their attendant negroes, is sparse, and nowhere attains sufficient density to produce a regular village. The country is rather flat, occasionally rolling slightly, and in its uncultivated portions is mostly covered with a dense growth of pines of various species. There are a few dry groves of oak and "black jack," but the hard-wood trees are principally confined to the creek bottoms and margins of swamps, where they flourish in the typical Southern luxuriance and variety, interspersed with cane and overrun by

numerous parasitical vines. Within two miles of the railway station runs the Alabama River, affording, with its parent streams, the Coosa and Tallapoosa, and its tributary creeks and "branches," the most productive country for the ornithologist.

The following list embodies the results of my observations at Coosada, between the dates of January 21 and April 30, 1878, with the hearty and efficient co-operation of Mr. J. H. Bond, of Portland, during the first nine weeks of my stay. It has not been prepared with a view to presenting a complete catalogue of the birds inhabiting even the limited extent of country under consideration. Such was the remarkable lateness of the migration, that additional species were detected up to the very day of my departure, and I have no doubt that others subsequently made their appearance. Whether further investigations in the locality would prove the occurrence there of such missing members of the suppositive local fauna as *Cyanospiza ciris*, *Helminthorus vermivorus*, *Helminthophaga pinus*, etc., is, therefore, to some extent a matter of doubt.

1. **Turdus migratorius**, L. ROBIN. — An abundant winter visitor, becoming uncommon towards the middle of April, and disappearing before the end of that month. The males were songless during their stay.

2. **Turdus mustelinus**, Gm. WOOD THRUSH. — Arrived April 13 in full song. They were never very common, inhabited only swampy thickets and hard-wood groves, and were extremely shy.

3. **Turdus pallasi**, Cab. HERMIT THRUSH. — Common and generally distributed up to within a few days of my departure. I was surprised, in this southern latitude, to find that the males became musical as spring advanced. On March 16 I heard the first song, and during the following three weeks it was one of the commonest wood sounds.

4. **Mimus polyglottus**, (L.) Boie. MOCKING-BIRD. — Abundant resident. I heard the first song February 25, — a week after the birds began to sing in Montgomery. Two weeks later I observed several pairs desultorily at work on their nests, but, with the exception of a single complement found on the 12th of April, discovered no eggs until about April 21.

After a brief sojourn at Coosada, I came to regard this bird with intense dislike, on account of its extreme quarrelsomeness. Those in the immediate vicinity of my lodgings were almost constantly employed in driving other birds from the neighborhood. Upon one occasion, a Robin sitting quietly in a tree over my head was so fiercely attacked by a Mocking-bird that he fell almost lifeless at my feet. A friend rescued him from further injury, and after the bird revived gave him his liberty; he had scarcely flown a dozen yards, however, before he was again savagely set upon by a Mocking-bird, and escaped only through his greater power of wing.

5. **Mimus carolinensis**, (L.) Gray. CATBIRD. — Arrived April 13. Did not become common, and was not heard to sing.

6. **Harporhynchus rufus**, (L.) Cab. BROWN THRUSH. — A common resident, well known by its *alias* "Thrasher." The males began to sing about the 1st of April, and by the 25th of that month the females had deposited their eggs.

7. **Sialia sialis**, (L.) Haldeman. BLUEBIRD. — Common resident. During the winter they were particularly abundant, sometimes associating with the various small Finches and Warblers, sometimes forming small flocks by themselves. There was no regularity in the breeding of different pairs: two nests examined on April 22 contained respectively four fresh eggs and a brood of young several days old.

8. **Regulus calendula**, (L.) Licht. RUBY-CROWNED KINGLET. — Numerous during the entire extent of my stay. I first heard their song on the 8th of March, but after that date the sweet, fervid little strain filled the woods everywhere.

9. **Regulus satrapa**, Licht. GOLDEN-CRESTED KINGLET. — Common winter visitant. Unlike the preceding species, which was often met with singly, this bird was invariably found associating with others of its kind, and with Creepers, Titmice, and Nuthatches. Disappeared about the first week in April.

10. **Poliophtila cærulea**, (L.) Sel. BLUE-GRAY GNATCATCHER. — Arrived March 25, and soon became very common. They seemed to affect no particular kind of growth, but were everywhere equally abundant. They are most earnest and persevering songsters: in their frequent practice of singing on the wing, they fairly rival the Bobolink's ardor, and had their melodious, "mocking little strain" (as Mr. Brewster has called it) somewhat more volume, it would certainly be an unusually fine performance.

11. **Lophophanes bicolor**, (L.) Bp. TUFTED TITMOUSE. — A common resident, but of quite irregular occurrence during the winter. At times, during that season, none were to be found for several days, after which they would again make their appearance, generally in company with the social Chickadees, Nuthatches, etc. About February 20 they became less numerous, and were soon met with only in pairs. I did not succeed in finding a nest.

12. **Parus carolinensis**, Aud. CAROLINA TITMOUSE. — Not a very common resident. Instead of the tame, unsuspecting bird I had been led to expect, they generally proved very shy indeed. More than once they completely baffled all my attempts at capture. The notes of this species have generally been described as less powerful than those of its Northern prototype. According to my experience, this is true only to a certain extent; certainly not so of the familiar *chick-a-dee-dee*, which was invariably uttered by the Southern bird as loudly and emphatically as I have ever heard it at the North. I failed to find a nest, although the birds appeared to be engaged in building about the second week in April.

13. *Sitta carolinensis*, (Gm.) Lath. WHITE-BELLIED NUTHATCH. — Rather uncommon during the winter, and occasionally seen or heard up to the time of my departure. They exhibited a preference for the pine woods. The peculiar song of the male I first heard about the middle of March.

14. *Sitta pusilla*, Lath. BROWN-HEADED NUTHATCH. — An abundant resident. In the winter, when they were particularly numerous, they associated in bands of from six to twenty individuals, and were found everywhere, — in the tops of the tallest forest trees and amongst the scattered pine saplings which have sprung up in once cultivated fields. They were always full of life and activity, not only destroying their insect prey with great industry, but frequently chasing each other about in pure excess of vitality. I do not think I ever saw one employed in silence for a minute at a time. While busily in search of food they have a subdued, conversational chatter which almost exactly resembles the notes usually uttered by the Goldfinch when similarly employed. Rather curiously, the two species have another call in common: the most frequent cry of the Nuthatch is remarkably like the Goldfinch's meditative *béyrbéh*, — indeed, I have sometimes mistaken one for the other. Both sexes of the present bird have several other call-notes, all of which are characterized by a certain reedy harshness rendering them quite unlike the usual utterances of the two Northern species of the genus.

About the beginning of March the birds began to separate into pairs, and by the middle of that month had generally selected their nesting sites and commenced the work of excavating. Rotten pine stubs afforded the favorite situations, and nine tenths of the nests I found were within six feet of the ground. I opened nests at intervals up to the time of my departure, and found them occupied by one, sometimes by both of the owners, but met with no eggs until April 22; these (four in number) were placed in a natural cavity in a telegraph-pole. Another nest examined on the same day was not quite ready for the eggs.

15. *Certhia familiaris*, L. BROWN CREEPER. — Rather common during the winter, associating with other small birds of similar habits. They were most numerous about the third week in March, and at this time sometimes went in flocks by themselves, occasionally as many as a dozen together. On the advent of warm weather, in April, they gradually disappeared.

16. *Thryothorus ludovicianus*, (Lath.) Bp. GREAT CAROLINA WREN. — Common resident, inhabiting only the tangled growth of swamps and water-courses. Generally found in small flocks during the winter. They were mated by the last of February, but, apparently, were not engaged in nest-building until at least a month later. The males sang through the winter, but not so frequently as after mating.

17. *Thryothorus bewicki*, (Aud.) Bp. BEWICK'S WREN. — Only two specimens taken: one by myself, February 7, amongst the débris of

fallen trees, in a partially cleared field ; one by Mr. J. H. Bond, February 16, by the roadside, in piny woods ; both silent, and much less active than the preceding species.

18. *Anorthura troglodytes* var. *hyemalis*, (Vieill.) Coues. WINTER WREN. — Not very common winter visitant, and almost invariably seen in company with the Carolina Wrens. It was the first of the winter birds to disappear. None were met with after about February 20.

19. *Cistothorus stellaris*, (Licht.) Cab. SHORT-BILLED MARSH WREN. — I captured a single pair in an old rice-field, March 21.

20. *Anthus ludovicianus*, (Gm.) Licht. TITLARK. — Common during the winter. Stragglers remained till the last of March.

21. *Mniotilta varia*, (L.) Vieill. BLACK-AND-WHITE CREEPER. — First seen on March 13 ; soon became common and generally distributed. The males sang from the time of their arrival.

22. *Parula americana*, (L.) Bp. BLUE YELLOW-BACKED WARBLER. — Half a dozen shy individuals met with, the first on March 25.

23. *Protonotaria citrea*, (Bodd.) Bd. PROTHONOTARY WARBLER. — Arrived April 12, in full song. After April 20, specimens were seen almost every day, but they never became common. Their haunts were exclusively swamps and the dense hard-wood growths of the water-courses. I found them always active, restless, and noisy. The song is stridulous and piercing, and suggests that of the Black-and-white Creeper, but is more detached and much more strongly accented ; it is indicated very well by the syllables, *ch-wiss!*, *ch-wiss!*, *ch-wiss!*, *ch-wiss!*, *ch-wiss!*, *ch-wiss!*, *ch-wiss!*. A female dissected April 23 contained eggs almost ready for deposition ; no nests, however, were found.

24. *Helminthorus swainsoni*, (Aud.) Bp. SWAINSON'S WARBLER. — 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 immediately 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 favor-

able, 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.

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.

25. *Helminthophaga celata*, (Say) Bd. ORANGE-CROWNED WARBLER. — Only two specimens noted. My attention was attracted to the first in a cluster of small oak-trees by the roadside, by his loud call-note, which, to my ear, was indistinguishable from that of the Cardinal Red-bird. This was on February 12. The second specimen I startled from a swampy thicket, April 15.

26. *Dendroeca aestiva*, (Gm.) Bd. YELLOW WARBLER. — Arrived April 26, in song. But few seen.

27. *Dendroeca caerulescens*, (L.) Bd. BLACK-THROATED BLUE WARBLER. — A single male found singing in thick, swampy woods, April 26.

28. *Dendroeca coronata*, (L.) Gr. YELLOW-RUMPED WARBLER. — Very numerous up to about the middle of April. Stragglers were occasionally seen towards the end of the month. The males began to sing on April 12.

29. *Dendroeca discolor*, (Vieill.) Bd. PRAIRIE WARBLER. — Rather common after March 27, frequenting the edges of swampy woods. The ovary of a female dissected about the middle of April was but slightly developed, and I observed no signs of nest-building during my stay.

30. *Dendroeca dominica*, (L.) Bd. YELLOW-THROATED WARBLER. — A single male observed March 13; no more seen until after March 22, after which they were not uncommon up to April 4. At this date all disappeared, and for nearly three weeks none were to be found. During the week before my departure I met with two or three solitary males. I saw no females. Although generally frequenting the dry pine woods, this bird occasionally visits swampy growths of deciduous trees.

31. *Dendroeca palmarum*, (Gm.) Bd. YELLOW RED-POLL WARBLER. — Of irregular occurrence during the entire extent of my stay. Specimens taken in the winter and early spring represent the newly separated form *hypochrysea*; those taken later, the variety *palmarum*. On April 13 the males began their simple song, and thereafter both sexes were more uniformly and abundantly distributed.

32. *Dendroeca pinus*, (Wils.) Bd. PINE-CREEPING WARBLER. — A very abundant resident. For the first three or four weeks of my stay I found them exclusively in the fields, forming large flocks with Bluebirds and several kinds of Sparrows; and it was not until the latter part of

February that they frequented the woods commonly. The females deposited their eggs about the last of March, judging from the appearance of specimens dissected at that time. Young were flying generally by April 27.

Throughout the six weeks of winter which I spent at Coosada the Pine Warblers were uninterruptedly tuneful. No other winter birds sang so continuously; even the Carolina Wrens and Tufted Titmice were often chilled into silence on raw, sunless days in February; but, however cold (and midwinter in Alabama is much less tropical than is popularly supposed, frost often crusting the ground, and ice skimming ponds and slngish streams), I never failed to hear the notes of these indefatigable little songsters.

33. **Siurus motacilla**, (Vieill.) Coues. LARGE-BILLED WATER THRUSH. — Abundant after March 13, in swampy localities.

34. **Oporornis formosus**, (Wils.) Bd. KENTUCKY WARBLER. — Arrived April 9, and soon became common, frequenting the same places as the preceding species. I did not find them the active bird they have generally been described, but rather leisurely in their movements. Nor do they, as has been asserted, always *walk* when upon the ground, but frequently move about by the hopping, or rather jumping, motion common to most small birds. They were apparently not breeding at the time of my departure.

35. **Geothlypis trichas**, (L.) Cab. MARYLAND YELLOW-THROAT. — On February 7, Mr. Bond reported having seen a solitary male in a dense swamp; but it was not until the 5th of March that the species appeared in numbers. Thereafter they were common during my stay.

36. **Icteria virens**, (L.) Bd. YELLOW-BREADED CHAT. — Arrived April 20; became common a week later.

37. **Myiodioides mitratus**, (Gm.) Aud. HOODED WARBLER. — Rather the most numerous summer resident of this family. The males arrived March 28; the females, about two weeks later. A female taken April 22 was on the point of laying.

38. **Setophaga ruticilla**, (L.) Sw. REDSTART. — First seen April 19. Not very common. No females observed.

39. **Pyranga rubra**, (L.) Vieill. SCARLET TANAGER. — But one specimen observed; a female, in swampy woods, April 25.

40. **Pyranga æstiva**, (L.) Vieill. SUMMER REDBIRD. — First specimen noted March 31; became common April 8. Apparently not breeding at the time of my departure. Found almost exclusively in pine woods.

(To be continued.)

DESCRIPTIONS OF THE FIRST PLUMAGE IN VARIOUS SPECIES OF NORTH AMERICAN BIRDS.

BY WILLIAM BREWSTER.

IV.*

78. *Agelæus phœniceus.*

First plumage: female. Above dark seal-brown: every feather of the crown, nape, and interscapular region, with the greater and middle wing-coverts, primaries, secondaries, and tertiaries, edged and tipped with brownish-fulvous. Beneath light yellowish-brown, thickly and broadly streaked everywhere with dull black. Sides of throat and head, including a considerable space around the eye, bare skin (of a brownish orange-color in the dried specimen), with a few scattering pin-feathers. From a specimen in my collection obtained at Cambridge, Mass., June 24, 1872. Males in first plumage before me differ but little from the individual above described. All have the bare spaces on the sides of the throat, although these are probably feathered before the first moult is begun. A male in transitional dress (collected at Ipswich, Mass., July 15, 1874), with the head fully feathered, has the throat dull brownish-yellow, with a strong tinge of the same color on the breast. The wing and tail feathers are renewed during the first moult.

Autumnal plumage: young male. Crown dark brown, with a faint rusty edging upon each feather; nape brownish-yellow, with a rusty tinge, finely spotted with dark brown; interscapular region, and a broad outer edging upon the secondaries and tertiaries, deep dull reddish-brown, each feather having a broad V-shaped mark of dull black. Rump glossy black, every feather edged with fulvous ashy; shoulder dull red with black spotting; middle coverts fulvous; greater coverts tipped with the same color. Superciliary stripe brownish-yellow. A space anterior to and beneath the eye dusky black. Entire under parts black, each feather upon the abdomen edged broadly with pale ashy, elsewhere with yellowish-brown. The light edging of the feathers gives the under parts a conspicuously scutellate appearance. From a specimen in my collection taken at Cambridge, Mass., October 6, 1876. This plumage (although not to my knowledge previously described by writers) is the characteristic one of the young in autumn. I am unable to state if the adult male retains his uniform black coloring at all seasons. A remarkable variation from the typical plumage is afforded by a fine adult male in my cabinet, which has a broad

* For Parts I, II, and III, see this volume, pp. 15-23, 56-64, 115-123.

cresecentic patch of pale yellow tinged with rose-color upon the breast. Nor is this specimen unique, for I have seen several others with a similar but less conspicuous mark. It probably represents an exceptionally high condition or phase of ornamentation, like the commoner one of scarlet or yellow wing-markings, in the Scarlet Tanager (*Pyrranga rubra*). Very old females of *A. phoeniceus* have the throat a delicate peach-color; illustrated by several specimens in my cabinet from Nantucket and Ipswich, Mass.

79. *Icterus baltimore.*

First plumage: Top of head, nape, and interscapular region brownish-olive; wing-bands pale fulvous; rump, breast, anal region, and crissum olivaceous-yellow; throat dull yellow; abdomen pale buffy-yellow; patches of ash on the sides. From a specimen in my collection shot in Cambridge, Mass., July 18, 1874. Autumnal adults have the orange-red richer and clearer than in spring, and the wing-quills much more broadly and conspicuously edged with white. Neither wing nor tail feathers are changed during the first moult.

80. *Scolecophagus ferrugineus.*

Several young birds of both sexes shot at Upton, Me., August 5, 1873, have apparently nearly completed the first moult; but one, a male, has the head still covered with the feathers of the first plumage, which are of a uniform plumbeous color. All are moulting the wing and tail feathers. In each specimen a worn central pair of rectrices projects about three inches beyond the others, which are of a uniform length, and evidently just sprouting. Other individuals seen at the same time were conspicuously characterized in the same way, all presenting, when flying, the appearance of birds with long forked tails, the elongated central feathers being slightly spread apart.

81. *Quiscalus purpureus.*

First plumage: male. Uniform dark plumbeous, darker above, lighter and with a faint brownish edging on the feathers beneath. Sides of throat and a large space around the eyes completely bare of feathers. From a specimen in my collection obtained at Upton, Me., June 22, 1873. Both wing and tail feathers are replaced during the first moult.

82. *Tyrannus carolinensis.*

First plumage: male. Above uniform dark sooty-brown, with a scarcely appreciable lighter edging on the feathers of the nape. No concealed red on the crown. Wing-bands yellowish-white. Breast soiled white, with a band of ashy-white across the breast. From a specimen in my collection shot at Upton, Me., July 24, 1872.

83. *Sayornis fuscus.*

First plumage: female. Crown and nape dark sooty-brown. Rest of

upper parts brownish-olive, shading into reddish-olive on the rump. Wing-bands and tips of rectrices ferruginous; secondaries edged with yellowish-olive. Throat, breast, and sides olivaceous-drab, darkest on sides of breast. Abdominal and anal regions soiled white, with a yellowish tinge. From a specimen in my collection taken at Cambridge, Mass., July 13, 1874.

84. *Contopus borealis.*

First plumage: male. Above olivaceous-plumbeous, darkest upon the crown; wing-bands ferruginous; secondaries edged with pale fulvous. Sides of throat, breast, and body dark plumbeous, with a brownish tinge; central line from base of bill to crissum — partly interrupted upon the breast by the encroachment of the darker color of the sides — strong creamy-buff. Lower mandible *black*, with a limited area of brownish-orange at the base. From a specimen in my collection shot at Rye Beach, N. H., July 24, 1872. Autumnal specimens in my collection have the lower mandible black, the under parts much more strongly tinged with yellow than the adult, and the wing-coverts faintly tipped with ferruginous.

85. *Contopus virens.*

First plumage: male. Above olive, with a brownish cast, the feathers of the crown and interscapular region with a faint edging of pale fulvous, those upon the nape having a much broader one of dull ash, producing a well-defined band or collar. Wing-bands light reddish-brown. Beneath, with sides of throat, breast, and body, light olivaceous-ash; rest of under parts pale sulphur-yellow. From a specimen in my collection taken at Upton, Me., August 8, 1874. The young in autumnal plumage differ from adults in having the wing-bands pale fulvous, the under parts of a slightly deeper yellow.

86. *Empidonax acadicus.*

First plumage. Above nearly pure olive, with indistinct narrow transverse bands of darker. Wing-bands pale reddish-brown. Under parts soiled yellowish-white, with an olivaceous cast on the sides of the breast. From a specimen in my collection shot by Dr. J. M. Wheaton, at Columbus, Ohio, June, 1876.

87. *Empidonax pusillus trailli.*

First plumage: male. Above olive-brown, the feathers of the crown with darker centres. Wing-bands light reddish-brown. Throat, breast, and sides ashy, tinged with olive upon the breast and sides. Abdomen, anal region, and crissum pale sulphur-yellow. Distinguishable from *E. acadicus* in first plumage by the darker color of the upper parts, especially of the crown, and by the entire absence of the narrow transverse bands upon the back. From a specimen in my collection shot at Upton, Me., July 21, 1874.

88. Empidonax minimus.

First plumage: male. Similar to the adult, but with a stronger olive cast, and a faintly indicated collar of ashy-brown across the nape. Wing-bands light reddish-brown. Beneath almost precisely similar to the adult, with perhaps a slightly stronger yellowish cast upon the abdomen and crissum. Distinguishable from *E. trailli* and *E. acadicus* in corresponding stages by the decidedly paler and less yellowish under parts; especially by the nearly clear ashy on the sides of the breast. From a specimen in my collection taken at Cambridge, Mass., July 2, 1872. Other specimens in first plumage before me differ little from the one above described, but *autumnal specimens*, singularly enough, are much yellower below and more olivaceous above.

89. Empidonax flaviventris.

First plumage: male. Above uniform yellowish-olive. Beneath dull yellow, with a brownish cast, tinged strongly with olive upon the throat, breast, and sides. Wing-bands brownish-yellow. Altogether very similar in general appearance to the adult. From a specimen in my collection shot at Upton, Me., August 4, 1874.

90. Chordeiles virginianus.

First plumage. Above dull black, irregularly marbled everywhere with reddish fawn-color and pale rusty. All the feathers are tipped, edged, and barred with the lighter colors, the black appearing for the most part in subterminal spots or blotches. The primaries (which are but just sprouting) are black, broadly tipped with pale rusty. Under parts clothed thickly with fluffy whitish down, beneath which, on the breast and sides, true feathers of a dull white barred with dark brown are beginning to appear. From a specimen in the cabinet of Mr. N. C. Brown, taken at Deering, Me., June 29, 1875. It seems probable that young of this species — and perhaps of the whole family, like those of the *Tetraonidae* and some others — pass through a stage of plumage previous to the usual primal one. The specimen above described is, strictly speaking, in process of transition between the two, and still retains patches of the soft whitish down which must have constituted its entire covering at an earlier period.

91. Coccyzus erythrophthalmus.

First plumage: female. Above lustrous plumbeous-ashy, feathers upon the crown, nape, and anterior part of the back, narrowly tipped with pale ashy; those of the interscapular region and rump, together with the scapulars and upper tail-coverts, more broadly so with ashy-white. Outer edges of quills light rufous. Beneath delicate pearl-gray, lightest on the abdomen, slightly tinged with pale brownish-yellow on the throat and breast. From a specimen in my collection shot in Lincoln, Mass., June 17, 1871. Autumnal specimens (probably only the young birds) differ from spring adults in having the naked skin around the eye yellow instead of red.

92. *Picus villosus*.*

First plumage: male. Forehead spotted thickly with white; crown dull scarlet, each feather subterminally spotted with white; nuchal crescent entirely wanting. Rest of upper parts dull dead black, marked and spotted with white as in the adult. Lores yellowish-white, maxillary line very faintly indicated. Beneath soiled yellowish-white. From a specimen in my collection shot at Upton, Me., August 1, 1874. The first plumage of this species is exceedingly evanescent. The scarlet patch upon the crown is soon lost, the feathers dropping out one by one; a few scattered ones, however, usually remain until the feathers of the nuchal crescent have begun to appear.

A female in first plumage (Upton, Me., August 20, 1874) differs so little from adults as scarcely to require a detailed description. The black of the upper parts, as in the male just described, is of a dead or plumbeous cast. The crown is entirely unspotted. I have, however, seen specimens which had the forehead spotted with white.

93. *Picus villosus harrisi*.

First plumage: male. Differs from the adult only in having the forehead spotted with white, and a patch of scarlet covering the crown. From a specimen in my cabinet collected by Mr. C. A. Allen at Nicasio, Cal., June 8, 1875.

94. *Picus pubescens*.

First plumage: male. Forehead and nape thickly spotted with white. Crown deep scarlet; no red on nape; rest of upper parts marked as in the adult, but the black duller. Beneath ashy-white, thickly streaked on the sides of the breast and body with dusky; on the sides of the abdomen these dusky markings assume the character of broad though poorly defined transverse bars. From a specimen in my cabinet collected at Upton, Me., August 14, 1874. Several other young males show a considerable amount of variation in the character and extent of the dusky markings beneath. In one or two the streaks are nearly continuous across the breast and abdomen. A very young male (Upton, August 1, 1874) has the forehead and

* As stated elsewhere, the young of most, if not all of the Woodpeckers, regularly moult the wing and tail feathers with the rest of the first plumage. No exceptions to this rule occur among large series of the common North American species examined, and it may probably be found to hold good among all excepting, perhaps, some highly specialized groups. Another peculiar feature in the early development of the species most thoroughly investigated, and one which is perhaps common to all the members of this family, is the fact that a certain proportion of the females in first plumage possess to a greater or less degree the adornments which in more advanced stages are peculiar to the males alone, and which are lost with the first moult. Marked examples of this are afforded by young females of *Colaptes auratus*, *Picus pubescens*, and others, of which detailed descriptions are given in the text.

nape dull, unspotted black, and a decided greenish-yellow tinge to the white both above and below.

First plumage: female. Forehead slightly spotted with white; *crown-patch scarlet*, exactly as in the male. Nape unspotted. Beneath brownish-white, barred obscurely upon the flanks and spotted continuously across the breast with dusky. From a specimen in my collection obtained by Mr. W. D. Scott, at Coalburgh, W. Va., July 25, 1872. Another specimen before me (Upton, Me., August 13, 1874) has the forehead and occiput, with a narrow median line connecting them, thickly spotted with white, but no scarlet. Still a third, in the collection of Mr. C. J. Maynard, has the crown irregularly patched with scarlet feathers. The sex of all these specimens was determined by the most careful dissection.

95. *Picoides arcticus*.

First plumage: male. Similar to the adult, but with the yellow crown-patch rather more restricted; the black of the upper parts duller; the white beneath tinged with brownish, and the bars upon the sides dusky instead of black. A few feathers upon the lower interscapular region are spotted with white. From a specimen in my collection shot at Upton, Me., July 31, 1874. Unfortunately no females in strictly first plumage are available for comparison. A moulting specimen, however, which has acquired most of the second or autumnal plumage (Upton, Me., August 10, 1874), shows a patch of thickly sprinkled yellow feathers upon the crown, while another, taken as late as September 5, still retains several similar feathers. There can be little doubt but that among a good series of young females in first plumage many would be found to occur with yellow crown-patches quite conspicuously developed. All among a large number of adult females examined have the crown entirely plain.

96. *Sphyrapicus varius*.

First plumage: male. Crown dull yellowish-green obscurely tinged in places with dusky-red; nape and a broad stripe extending through and behind the eye dull plumbeous-ash spotted with brownish-white; rest of upper parts like the adults, the white spots, however, tinged with pale greenish-yellow. Throat dull yellowish-scarlet. Malar stripes meeting below the throat-patch, mottled with dusky. Central line of abdomen greenish-yellow; rest of under parts dull greenish and olive, barred everywhere with dusky or dull black. From a specimen in my collection shot at Upton, Me., August 10, 1874. The amount of variation exhibited by a large series of males in first plumage is considerable. In one or two there is no red upon the throat; in others that part is brownish-white with a few scattered red feathers; many have the crown dull-brown, thickly spotted with brownish-white.

First plumage: female. Crown very pale greenish-buff, each feather narrowly tipped with brown; feathers of interscapular region dusky, with

transverse bands of yellowish-white ; rest of upper parts like the adult. Throat brownish-white ; abdomen pale brownish-yellow ; breast and sides dull brownish-olive, thickly barred with dusky. From a specimen in my collection shot at Upton, Me., August 6, 1873.

The first plumage of this species is worn for a longer period than that of any other bird with which I am acquainted. Some specimens taken as late as October and November seem not to have fully perfected their first moult, many of the earlier feathers being still retained. In this condition they present a curiously patched appearance, and scarcely any two are alike. Full justice has hardly been done by writers to the adult plumage of this species. Among the males, it is true, only a comparatively small amount of variation obtains, and the full dress is always acquired the first spring. But the females in spring plumage differ to a degree which seems almost endless. This mutation is, however, chiefly in relation to the color and markings of the crown. Thus, out of thirteen females before me, all collected in the breeding season, only six have the full patch of crimson upon the crown. In one specimen the whole top of the head is spotted thickly and evenly with brownish-white. Another exhibits two lateral patches of brownish-orange which extend nearly to the occiput, while a third has a few scarlet feathers upon the forehead. The remainder are variously marked over the crown with mixed yellow and crimson. This excessive variability is probably a purely individual tendency to aberration from a given type, as several spring females not as yet through the moult, and plainly shown by the remains of the previous plumage to be birds entering upon their first breeding season, have fully developed crown-patches of pure crimson.

97. *Centurus carolinus.*

First plumage: female. Crown dull ashy, each feather tipped broadly with plumbeous ; nape with a narrow, inconspicuous collar of pale dull brick-red. Rest of upper parts marked as in the adult, with, however, a brownish tinge in the transverse white bands. Abdomen dull saffron ; rest of under parts brownish-ashy, nearly every feather in a broad band across the breast with a narrow, obscure shaft-streak* of purplish-brown. From a specimen in my collection obtained by Mr. W. D. Scott, at Coalburgh, W. Va., July 23, 1872.

98. *Colaptes auratus.*

First plumage: male. Crown washed with dull red ; nuchal band dull scarlet. Otherwise similar to the adult, but with the throat tinged with ash and the spots upon the under parts dusky instead of black. From a specimen in my collection taken at Cambridge, Mass., July 6, 1873.

* Several Woodpeckers, unmarked beneath in maturer stages, show a tendency to spots or streaks upon the sides and breast when in first plumage.

The female in first plumage I have not seen, but two young females before me, which have nearly perfected their autumnal plumage, have each a *well-defined mustache*, — not black, however, as in the male of any age, but of a dark plumbeous color. Upon raising the feathers, many of them are found to be nearly black at their bases, and a few entirely black ones appear. I have seen two other females, both young birds in imperfect autumnal dress, which had similar dark mustaches. It seems not unlikely that many females of this species may in first plumage be marked nearly like the males.

Recent Literature.

ELLIOT'S REVIEW OF THE IBIDINÆ, OR IBISES. — During the past year three important papers have appeared relating to different groups of the *Herodiones*. In June, 1877, Mr. D. G. Elliot published a paper on the Ibises,* Dr. Ant. Reichenow has reviewed the whole group of *Herodiones*, and later Mr. Ridgway has written about some of the American species. Mr. Elliot treats the Ibises and Spoonbills as subfamilies of one family, for which he adopts the name *Ibidide*. After a short *résumé* of the literature of the subject he gives a key to the nineteen genera (three being new), among which he distributes his twenty-five species. Then follows a systematic review of the species, with their principal synonymy, and various critical and descriptive remarks, with generally a short account of their habits and geographical distribution. The genus *Ibis* is very properly restricted to embrace only the Sacred Ibis of the Egyptians and a few other allied species. *Falcinellus* is employed as the generic designation for the Glossy Ibis and its allies. Of this group four species are recognized, three of which (*F. guttaurum*, *F. ridgwayi*, and *F. thalassinus*) are exclusively American, the other (*F. igneus*) being "cosmopolitan," and represented with us by the "*Ibis ordii*" of Bonaparte and most American writers. The generic name *Ibis* being untenable for any of the New World species, *Eudocimus* (Wagler, 1832) is taken as the only generic name applicable to our White and Scarlet Ibises. — J. A. A.

RIDGWAY'S STUDIES OF THE AMERICAN HERODIONES. — The first † of the series of papers here begun deals mainly with the *Ardeide* and *Cico-*

* Review of the Ibidineæ, or Subfamily of the Ibises. By D. G. Elliot, F. R. S. E., F. L. S., etc. etc. Proc. Zool. Soc. London, 1877, pp. 477 - 510, Pl. LI.

† Studies of the American Herodiones. Part I. — Synopsis of the American genera of *Ardeide* and *Ciconiide*; including descriptions of three new genera, and a monograph of the American species of the genus *Ardea*. By Robert Ridgway. Bull. U. S. Geol. and Geogr. Survey, Vol. IV, pp. 219-251, February 5, 1878.

nidae. Five families of American *Herodiones* are recognized, namely, *Cancromidae*, *Ardeidae*, *Ciconiidae*, *Ibididae*, and *Plataleidae*, of each of which a concise diagnosis is given. The *Ardeidae* are treated so far in detail as to give the characters of the genera, and a monograph of the American species of the genus *Ardea*. These are four in number, *Ardea occidentalis*, *A. herodias*, *A. cinerea* ("accidental in Greenland"), and *A. cocoi* (South American). Of these four species detailed descriptions of the different phases of plumage are given, with copious tables of bibliographical references. The *A. würdemanni* of Baird, which has been a puzzle to ornithologists for twenty years, is considered to be the "blue phase" of *A. occidentalis*, nearly ten pages (nearly one third of the paper) being devoted to a discussion bearing upon the character of *A. "würdemanni."* *A. occidentalis* is thus added to the series of "dichromatic" species of *Ardeidae*. This conclusion rests at present mainly on theoretical grounds. After referring to dichromatism as exhibited in several other species of Herons, and in some Hawks and Owls, Mr. Ridgway says, "Who then, in view of these facts, can offer reasonable objection to the theory that *Ardea occidentalis* is likewise represented by two distinct phases of plumage, of which the white is by far the more common, the normal or colored phase (*würdemanni*) being very rare — perhaps becoming extinct?"

As shown by the species already cited as composing the genus *Ardea*, this genus is again restricted to rather narrow limits, the American species of the subfamily *Ardeinae* alone being distributed into fourteen genera, of which two are new. Among the North American we have *Herodias*, *Garzetta*, *Florida*, and *Butorides* again reinstated, while the *Demicregretta* of Baird is divided into *Hybranassa* and *Dichromanassa*, the last a new genus with the *Ardea rufa* of authors as type. The other new genus is *Syrigma* (= *Buphus*, Bon. 1855, nec Boie, 1826), with the South American *Ardea sibillatrix* as type.

The *Ciconiidae* (of which the Wood Ibis is the only North American representative) is treated more briefly. A new genus (*Euxenura*), however, is instituted for the *Ciconia maguari* (Auct.) or the South American Stork, based chiefly on the remarkable characters of the tail (illustrated by an excellent figure), in which the lower coverts are elongated and stiffened, so as to resemble rectrices, the tail proper being short and deeply forked. — J. A. A.

REICHENOW'S REVIEW OF THE HERONS AND THEIR ALLIES. — Dr. Reichenow's order, "*Streitvögel*," or "*Gressores*,"* embraces the ordinary

* Systematische Uebersicht der Schreitvögel (*Gressores*), einer natürlichen, die *Ibidae*, *Ciconiidae*, *Phaenicopteridae*, *Scopidae*, *Balaenicipidae*, und *Ardeidae* umfassenden Ordnung. Von Dr. Ant. Reichenow, Assistent am kgl. zoolog. Museum in Berlin. Journal für Ornithologie, XXV Jahrgang, pp. 113–171, 225–278, pl. I, II. April and July, 1877.

Herodiones of authors, with the addition of the Flamingoes (*Phanicopteri-
de*). He discusses at some length the affinities of this group, but we fail to be convinced of the propriety of its removal from the Anserine series, where of late it has been pretty generally placed, to its present association. In his introductory remarks Dr. Reichenow discusses the object of classification, the questions of "subspecies" and "varieties," and rules of nomenclature. He adopts the tenth edition (1758) of the "Systema Nature" as the starting-point of binomial nomenclature in zoölogy, and accepts, very properly, no specific names of an earlier date, while the first edition (1735) of the same work is taken as the earliest point of departure for generic nomenclature. He also throws over all "barbarous" names, whether specific or generic, all names of erroneous signification, and all classical names improperly constructed. Under these restrictions many long-established and familiar designations fall, to be replaced by the next (in Dr. Reichenow's view) unobjectionable name. In default of any such our author proceeds to supply the deficiency. In this way, to cite a few examples, *Platalea ajaja* becomes *P. rosea*; *Ciconia maguari* becomes *C. dicrura*, Reichenow; *Ardea herodias* becomes *A. lessoni*, etc.; the generic name (subgeneric in Reichenow's system) *Grosarchius* is replaced by *Butio*, Reichenow, *Zebriulus* by *Microceus*, Reichenow, *Agamia* by *Doryphorus*, Reichenow (a name essentially preoccupied in entomology by *Doryphora*), *Garzetta* and *Egretta* by *Erodius*, etc., the earlier names being in each case supplanted because "barbarous." The specific names *major*, *fuscus*, *purpureus*, etc., when erroneous in signification, are replaced by later ones. These are innovations which we think stand small chance of general acceptance, and admit of no adequate defence, however advisable it may be to discard the practice of adding such names in future.

After discussing at some length the characters and classification of the order "*Gressores*," the author passes to a synopsis of the group, giving briefly the characters of the families, genera, and subgenera, short Latin diagnoses of the species, and the more important synonyms. Under the head of each family are general remarks upon the number of species, their distribution and habits. The whole number of species recognized is one hundred and twenty-three, with, in addition, quite a number of "subspecies" and "varieties." These are arranged in six families ("*Ibida*," twenty-seven species; *Ciconiida*, nineteen species; *Phanicopteri-
de*, five species; *Scopide* and *Balonicipide*, each one species; *Ardeida*, sixty-seven species), fourteen genera, and twenty-two subgenera.

In respect to the matter of genera, Dr. Reichenow displays extreme conservatism, his genera having in most instances a value most writers regard as supergeneric. His subgenera even are more comprehensive than are the genera of the ultra-divisionists, but in the main are such groups as we should consider as properly constituted genera. The contrast in respect to genera is rarely greater, among contemporary writers working in the same field, than is that presented by Dr. Reichenow on the one

hand and Messrs. Ridgway and Elliot on the other, the fourteen genera of Ibises recognized by Elliot forming only two in Reichenow's system, while the contrast is perhaps greater between the work of the latter and Mr. Ridgway's, so far as they cover common ground.

While differing from Dr. Reichenow respecting important principles of nomenclature, and on various points of classification, we can but accord to his paper a high importance, as it evinces laborious and careful research, and embraces a vast amount of information, succinctly and lucidly presented, that will be of great service to future workers in the same field. — J. A. A.

BREWER'S SUPPLEMENT TO HIS CATALOGUE OF NEW ENGLAND BIRDS. — This paper* adds twenty-one species to the "Catalogue of the Birds of New England," published by this author in 1875, and contains notes on twenty-seven other species of rare occurrence in New England. The record of rare captures and of additions to the New England avian fauna is faithfully brought down to date, this brochure forming a most valuable appendix to his former "Catalogue." The whole number of "recognized forms" now admitted by him as having been taken in New England is three hundred and fifty-six. "To show," says our author, "the zeal and industry with which the knowledge of our fauna has been studied and extended, it needs only to be mentioned that the list now contains the names of not less than forty species not positively known to occur in New England prior to 1874, although the occasional appearance of some five or six had been looked for by several prophetic observers. This does not include seven species whose names had been borne on previous lists, but without any recorded evidence of their right to be there. It moreover includes two or three forms that some do not recognize as of specific value, and one whose very existence as a species appears to call for more evidence before its reality can be fully admitted." — J. A. A.

SAUNDERS ON THE LARINÆ. — The writer is indebted to the author for the early sheets of this very interesting, thorough, and discriminating review † of the family of Gulls, and although there is much in this paper throwing a welcome and greatly needed light upon several other than North American species, only the latter will be here considered. The whole number of species recognized in this paper is forty-nine, of which number twenty may be counted as North American, in which are included two, *Larus canus* and *L. affinis*, of purely accidental occurrence. It is not a little remarkable that *Larus affinis*, now recognized as a well-marked species, should have been first described by Professor Reinhardt from an individual that had straggled to Greenland. The investigations of See-

* Notes on certain Species of New England Birds, with Additions to his Catalogue of the Birds of New England. By T. M. Brewer. Proc. Boston Soc. Nat. Hist., Vol. XIX, pp. 301–309, April, 1878.

† From the Proceedings of the Zoölogical Society of London [pp. 155–212], February 5, 1878.

bohm and Harvie Brown now show that its true habitat, in the breeding season, is in Northeastern Europe, on the Petchora. Specimens in an immature plumage had previously been taken on the Red Sea and in India, and also one from Novaya Zemlia. It is known only as a straggler to North America.

The only generic names retained by Mr. Saunders are *Larus*, *Xema*, *Rissa*, *Pagophila*, and *Rhodostethia*. To *Pagophila* he assigns but a single species, regarding *brachytarsus* as only a synonym; to *Rissa* two, treating *kotzebui* as only a form of *tridactyla*; to *Larus* forty-three species; to *Xema* two, *sabini* and *furcatum*; and to *Rhodostethia* one. Although the absence of a hind toe has been regarded as the principal characteristic of the genus *Rissa*, and this feature is now known not to be a constant peculiarity, Mr. Saunders retains it as valid on account of other structural characteristics: these are the remarkably short tarsus, its forked tail, and the peculiar livery of the immature bird, besides its exclusively crag-nesting habits.

Larus hutchinsii Mr. Saunders considers to be an immature *L. glaucus* in that very brief stage where the mottled brown of the immature plumage has passed away and the pearl-gray mantle has not begun to appear,—a stage so short that but few specimens are recorded in this condition, though it is not uncommon in captivity.

Larus glaucescens is treated as a valid species, synonymous with *glaucop-terus* of Kittlitz and with *chalconotus* of Lawrence. Its relationship to *glaucus* is shown by its changes of plumage to be closer than to *argentatus*.

Larus occidentalis is regarded as "a very recognizable form and fully deserving of consideration as a species," *L. affinis* being its nearest ally. Although compared with *L. fuscus*, it is more closely related to the Herring-Gull group in its larger size, stout bill, and large feet.

Larus californicus of Lawrence was first described by Pallas as *Larus niveus*, but the latter name "is not available, having been previously employed by Boddart for *P. burnea*." This species occurs on the Japan coast, crossing the North Pacific, corresponds with the *niveus* of Pallas, and there is little doubt of its identity. The figure given by Pallas is said to be a perfect portrait of a specimen recently sent from the Smithsonian to Mr. Saunders. Mr. Saunders also shows conclusively that this species cannot be the *L. argentatoides* of Bonaparte's "Synopsis," for that is spoken of as "common near New York and Philadelphia," and as occurring "on the southern coasts of England," while the description and measurements suit *delawarensis*. Neither can *L. argentatoides* of Richardson be identical with *L. californicus*, for reasons equally conclusive.

Larus delawarensis is held to be the *argentatoides* of Bonaparte (*nee* Brehm). An immature specimen of this bird is recorded as from Hakodadi, Japan.

Larus brachyrhynchus, synonymous with *suckleyi* and *septentrionalis*, is regarded as an entirely distinct species from *canus*. In all the specimens

seen by Mr. Saunders the color of the mantle of this species is darker than in the darkest *L. canus*. From the latter its general appearance is so different that they are distinguishable at a glance.

Among the synonyms of *Larus franklini* are given *cueullatus* of Bruch, Lawrence, and Cones, *kittlitzii* and *schimperi*, both of Bruch. On the Pacific coast this species goes down as far as Chili, fully adult examples having been taken as far south as Santiago.

Rhodostethia rosea, the rarest of this family, is known by some thirteen examples. With two, perhaps three, exceptions these have all been taken in Arctic America. The one said to have been taken in England rests on very questionable authority. Sabine's Gull, on the Pacific coast, on the authority of Professor Steere of the University of Michigan, has been taken on Macebi Island, on the coast of Peru, in latitude 8° south. The example was in the adult plumage.

Mr. Saunders's paper evinces a remarkable success in disentangling the complicated web of European Gulls; but to explain the great service thus rendered would take too much space, and would not interest most of the readers of the Bulletin. This is especially true of the synonymy of *leucop-terus*, *argentatus*, *cachinnans*, — which at last takes its place as a good species, a synonym not of *argentatus*, but of *leucophæus* and *michahellesii*, — *affinis*, *ridibundus*, and *ichthyætus*. A more complicated tangle than these six species presented, thanks to such splitters as Boie, Brehm, Bruch, and Bonaparte, it would be hard to imagine, and the service rendered by Mr. Saunders cannot fail to be appreciated by all who have experienced its need. — T. M. B.

General Notes.

THE NESTING OF THE YELLOW-BELLIED FLYCATCHER (*Empidonax flaviventris*). — On Monday, June 10, 1878, while collecting in company with Mr. R. F. Pearsall on the island of Grand Menan, I flushed a Yellow-bellied Flycatcher, which seemed to come from directly under my feet. The locality was a good-sized hummock of moss, in swampy ground at the edge of some low woods. For some time I was unable to find any signs of a nest, but finally I discovered a small hole one and a half inches in diameter in the side of the hummock, and on enlarging this opening the nest, with four eggs, lay before me. The bird, which had all the time been hopping around within a few feet of our heads, was at once shot. The cavity extended in about two inches, was about four inches in depth, and was lined with a very few grasses, black hair-like roots, and skins of berries. The eggs, four in number, are white, with a very delicate creamy tint, which differs in its intensity in the different specimens, and are spotted, mostly at the larger end, with a few dots and blotches of a light reddish shade.

As far as I can learn, there are several nests of this bird in different collections, the identities of most if not all of which are disputed. The description in Baird, Brewer, and Ridgway's work agrees very well with nests of the Trails' Flycatcher which I have seen, but is totally different from that of the nest now before me, and so much so that, although I am well aware of the great differences existing in the nesting habits of birds of the same species, yet I cannot believe them to extend as far as this.

As we were leaving Grand Menan, a nest was brought to us which I have no doubt is of the same species, as the position and construction, which are, to say the least, peculiar, as well as the eggs, correspond exactly; also the finder's description of the bird. — S. D. OSBORNE, *Brooklyn, N. Y.*

THE BLUE-WINGED YELLOW WARBLER (*Helminthophaga pinus*) IN MASSACHUSETTS. — Although this species has been recorded* as a bird of the State, and the specimen cited is in the collection of the Boston Society of Natural History (the specimen was captured in Dedham by Mr. Emanuel Samuels and presented to the society by Dr. Cabot), recent writers on Massachusetts birds have seen fit to exclude it from their lists. I have just examined a fine male specimen of this species which was captured in West Roxbury, Mass., on May 17, 1878, by Mr. C. N. Hammond. It is now in the collection of Mr. John Fottler, Jr., of Boston. This makes the second recorded instance of its capture in the State. — RUTHVEN DEANE, *Cambridge, Mass.*

THE SKUA GULL (*Stercorarius catarractes*) ON THE COAST OF MASSACHUSETTS. — Professor Baird has recently informed me that one of his party found, on the 18th of July, at the Fort Wharf, Gloucester, the dead body of a bird that proved upon examination to be an example of the common large Skua. The bird showed marks of having been recently kept in confinement, and a little inquiry elicited the information that it had been captured alive by means of a hook on the Georges, and had been kept alive on one of the fishing vessels. This is the first instance on record in which one of this species has been taken on any part of North America other than Greenland; and as the Georges geologically and practically belong to our coast water, this bird may now be classed not only as of North America proper, but also of New England and Massachusetts. — T. M. BREWER, *Boston, Mass.*

RUFOUS-HEADED SPARROW (*Peucaea ruficeps*) IN TEXAS. — On April 24, 1878, Mr. George H. Ragsdale, of Gainesville, Texas, shot a male and female of this species in Gillespie County, Texas, about one hundred miles west of Austin. The species was first described from specimens taken in California. In 1873 it was found in Arizona by Mr. H. W. Henshaw, and also at Fort Bayard, N. M. He speaks of finding it numer-

* Proc. Bost. Soc. Nat. Hist., Vol. VI, p. 386.

ous south of Camp Grant in Arizona, and says that in its notes and habits it bears a close resemblance to the Song Sparrows. This appears to be its first known occurrence east of Southwestern New Mexico. For an opportunity of examining one of the above-mentioned Texas specimens, and for the data respecting their capture, I am indebted to Mr. Ragsdale.—
J. A. ALLEN, Cambridge, Mass.

EARLY NESTING OF THE SHORE LARK NEAR INDIANAPOLIS, IND.—The Shore Lark is well known as being a bird that rears its first brood of young very early in the season, but the following places the record nearly a month earlier than any before known to me. Professor David S. Jordan writes, under date of April 24, 1878: "Professor Brayton shot here (near Indianapolis, Ind.) this morning a number of Shore Larks (*Eremophila alpestris*), and among them were two young birds, about grown. The bird usually remains here most or all of the summer, but I never knew of their breeding so early."—**J. A. ALLEN, Cambridge, Mass.**

BREEDING OF THE SHORE LARK IN WESTERN NEW YORK.—My attention has been drawn to John M. Howey's note in the January number of the Bulletin (Vol. III, p. 40), on the breeding of the Shore Lark (*Eremophila alpestris*) in Western New York. For the past two years this bird has been quite common in our locality, and on June 6, 1876, it was my good fortune to find a nest and eggs of this species. The nest was placed on the ground in nursery rows of young apple-trees, and was composed of dried grasses very loosely put together. It contained four eggs, which were blown with difficulty, the embryo being about one third developed. During the past season several pairs remained with us all summer, but I was unable to find their nests.—**H. T. JONES, Rochester, N. Y.**

RED-HEADED WOODPECKER EATING GRASSHOPPERS.—Much has been said in relation to the change in the habits of the Red-headed Woodpecker, and the fact that he has been compelled, by the intrusion of other birds, to such ordinary insects, instead of those which inhabit the outside and inside of trees, has been noted by many observers. During the summer of 1877 I saw one on the prairie, half a mile from the timber, very intently bent upon catching grasshoppers (*Caloptenus spretus*). The bird made a fence-post his point of departure and return, flying off a few rods and capturing his game, and then alighting on the post to devour it more at leisure. These birds are apparently much less numerous in this region than they were ten or twelve years ago.—**CHARLES ALDRICH, Webster City, Iowa. (Communicated by E. C.)**

SONG OF HEPBURN'S FINCH (*Leucosticte littoralis*, BAIRD).—In a recent letter (February 25, 1878) from Captain Bendire is the following interesting note on the song of Hepburn's Finch. As no writer has made any mention of the song of this species, I deem the Captain's account well worthy of a place in the Bulletin. "Yesterday evening," he writes, "on my way to the stable, I saw a solitary *Leucosticte* on the eave of the roof

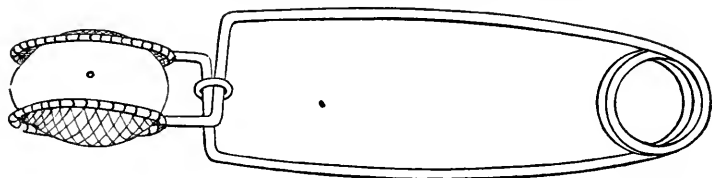
of Captain McGregor's quarters. He is quite a lover of birds, and has three canaries, their cages hanging against one of the side windows. The little Finch on the roof evidently had heard them singing, and was, at the moment when I noticed him, showing what he could do in that line. He evidently saw the birds in their cage, as every once in a while he stretched his neck and looked down in the direction of the window. Its song was quite varied, low, and sweet, but feeble and without much volume. It was still quite a fair and very pleasant song. I was quite surprised, and listened to him for full five minutes. This was the first time I have heard any making an attempt to sing." — T. M. BREWER, *Boston, Mass.*

THE SHORT-TAILED TERN (*Hydrochelidon fissipes*) IN MASSACHUSETTS. — In view of the fact that the Short-tailed Tern has been heretofore considered a rare visitor to Massachusetts, it may be of interest to state that during a week spent on the island of Nantucket in August, 1878, a large number of specimens were observed by the writer. On August 16 no less than eight individuals were seen in the harbor near the town, and several were shot and examined. On every subsequent occasion when the shores of the island were visited small companies of these Terns were seen, sitting on the sand-bars, or fishing among the other and commoner species. They associated most commonly with the Wilson's and Roseate Terns, and procured their food in the same way, hovering over the "schools" of bluefish and pouncing upon the small fry which these voracious creatures drove to the surface. The stomachs of all the specimens which were dissected contained the macerated remains of small fishes only. In no case were any insects detected. — WILLIAM BREWSTER, *Cambridge, Mass.*

THE BLACK-THROATED BUNTING (*Euspiza americana*). — On page 45 of the present volume of the Bulletin reference is had to the finding the nest and eggs of this bird in Medford, in June, 1877, and the remark is made that but few instances are known of this bird nesting in Massachusetts. Without disputing this statement, I would mention that in 1833 and 1834 this bird was by no means uncommon in Cambridge, in all the (then unoccupied) region around the Botanical Garden and thence to West Cambridge and Charlestown. It may be found now every summer on the high promontory making the northeast corner of Hingham, known as Planter's Hill and World's-End, lying between Weir River and the harbor. Mention is made of its breeding in that locality in "North American Birds" (Vol. II, page 67, lines 2 and 3), and since then its presence has been noted every season when search has been made. In order to verify its presence in this its favorite locality, this summer I made a successful exploration, June 30, in company with my nephew, Willard S. Brewer. We found one pair, with young, which the female was busily engaged in feeding with small grasshoppers, while the male was intent upon his quaint serenade on a near heap of stones. They were quite tame and unsuspecting, and permitted a very close approach. We saw two other males,

evidently in the neighborhood of their respective families, but the heat compelled us to desist from further investigations. In the same locality we found *Spizella pusilla*, *Poocetes gramineus*, and *Melospiza melodia*, but the Buntings were present in at least equal numbers, as we heard the notes of other males besides the three we fully identified. But a fierce sun, with the glass at 90° in the shade, was not favorable to a full census of all the pairs inhabiting this remote region. We saw enough to satisfy us of its actual presence in considerable numbers. — T. M. BREWER, *Boston, Mass.*

A HINT TO EGG-COLLECTORS. — The usual method of emptying eggs through one small hole with a bent blow-pipe is doubtless supposed to be a very modern trick ; but it dates back to 1828, when M. Danger* pro-



posed “a new method of preparing and preserving eggs for the cabinet,” which is substantially identical with the operation as now universally practised, though he used a three-edged needle to punch the hole, instead of our modern drill, and did not refer to some of our late ways of managing the embryos. I refer to the paper less as a matter of history than for the purpose of bringing to notice one of the tools which M. Danger recommends, and which I think would prove very useful indeed. In fact, I am rather surprised that it has been so long neglected, and strongly advise a trial of the instrument, as something better than fingers for *holding* the egg during drilling and blowing. The instrument is so simple, that it will be understood without description by a glance at the accompanying figure. The oval rings are covered with some light fabric, like mosquito netting, and do not touch the egg, which is held lightly but securely in the netting. Such an instrument would cost but a trifle, and it seems worth ascertaining whether we may not avoid danger by Danger’s own method. — ELLIOTT COUES, *Washington, D. C.*

THE KENTUCKY WARBLER (*Oporornis formosus*) AT SING SING, N. Y. — At this place, in June, 1875, I found the nest, containing three fresh eggs, and secured the two old birds of this species.† The woods where they were found is a long belt, which lies on both sides of a stream which

* Mémoire sur une nouvelle méthode de préparer et de rendre durables les collections d’œufs destinés aux cabinets d’histoire naturelle ; par M. F. P. Danger. *Annales des Sciences Naturelles*, 1^{ère} sér. V, 1828, pp. 338 – 348, pl. 10.

† *Am. Nat.*, Vol. IX, No. 10, October, 1875, p. 573.

originally must have been much larger. It has worn away ravines some thirty or forty feet deep; in other places it has expanded into shallow flats. The length of the stream is about three miles, and it runs in a ravine through the very heart of our village, and empties into the Hudson. The stream now is quite small, and the level places along the banks of the upper portion are covered by weeds, ferns, and scanty undergrowth. The woods which overhang the stream along its course, only broken now and then by a field or pasture, are composed of large hemlock, oak, and chestnut trees, under which there is little undergrowth, and the rays of the sun hardly penetrate their thick foliage, making a cool and shady retreat. Here, this spring and summer, seemed the very paradise for the Kentucky Warbler. While collecting, May 21, I saw four flitting here and there among the small plants, and secured two; May 22 I collected four more; the 24th, four were seen, and I shot three; the 27th, I saw two; on the 29th, a mile up the stream, I saw another, and my friend, Mr. George Hyles, shot one still higher up. June 1 and 4 I saw a pair near where the first ones were seen, and on the 20th of June found their nest containing five young, which left it June 29. June 9, in a woods some miles distant, I saw a male. June 26 I saw still another, and from its actions it must have had a nest or young near, but from want of time I did not look for it. July 5 a male came under my window, and, perching on a shrub, warbled out his short but lovely song. The same day Mr. Hyles saw a male four miles south of this place. Allowing the same ones were sometimes seen twice, there have been at least sixteen individuals here, and undoubtedly four nests. — A. K. FISHER, *Sing Sing, N. Y.*

THE SNOW-BIRD IN SUMMER ON MOUNT WACHUSETT. — Mr. Bradford Torrey writes: "On the 8th of July (1878) I saw a pair of Snow-Birds (*Junco hyemalis*) on the summit of Mount Wachusett, and, as I do not find any mention of their breeding there either in the 'History of North American Birds' or in Mr. Allen's 'Catalogue of the Birds of Massachusetts,' I venture to send you this item, trusting that you will overlook the seeming presumption if the fact is one well known." Although there is, I think, no record of the presence in the breeding season of the Snow-Bird on Mount Wachusett, it is well known to occur there at that season, where it has been met with by Mr. Brewster and other observers repeatedly during the last few years. The occurrence of an isolated colony of these birds on Mount Wachusett seems well worthy of record. — J. A. ALLEN, *Cambridge, Mass.*

AN ALBINO ANNA HUMMING-BIRD. — I had sent to me, July 10, 1878, a fine specimen of an albino Hummer of the species *Calypte anna*. It was taken in San Rafael, Marin Co., Cal., by parties unknown to me. The bird has the head, neck, and under parts bluish-white; back and tail with a pale creamy tint; three longest feathers in upper tail-coverts pale cinnamon; bill and feet flesh-color; eyes pinkish; primaries and secondaries pure white; eyelids with a creamy tinge. The bird was a young

one, and the sex could not be readily determined. — C. A. ALLEN, *Nicasio, Marin Co., Cal.*

WILSON'S THRUSH, WITH SPOTTED EGGS AND NESTING ON A TREE. — In a collection of nests and eggs received from Vermont this season was the nest of this species built upon a horizontal limb of a tree, fifteen feet from the ground, and containing four spotted eggs. This is the only instance I have ever known either of the nest being much above the ground or of the eggs being other than immaculate. But I find it is not without precedent. Mr. George O. Welch several years since found a nest of this Thrush in Lynn at a height of twenty-five feet above the ground, and Mr. Allen has recorded (*Proc. Bost. Soc. Nat. Hist.*, XVII, 48) an instance of its having spotted eggs. This case combines both. The nest is large and bulky, was saddled over quite a large limb, the impress of which is shown in the base. The ground-color of one egg is unusually deep, as deep as that of a Catbird, but of a different shade. The spots are of a bright golden-brown, in one egg very strongly marked, in the other three not so much so. The parent was sent with the nest, and before I received it its identity had been carefully verified by that veteran ornithologist, Charles S. Paine, Esq., of Randolph, Vt. — T. M. BREWER, *Boston, Mass.*

THE PYGMY OWL (*Glaucidium californicum*). — On the 13th of August, 1877, about dusk, I heard near the house a great fuss among a lot of Brewer's Blackbirds, which had nested in a small clump of red-woods near by. On approaching the spot, out went a bird, to which all the Blackbirds gave chase. When all had settled in a red-wood tree near by, I saw a Pygmy Owl sitting on a limb,—the cause of all the noise. I had my gun brought to me, when I shot the Owl, which proved to be a female. Again on July 8, 1878, at nine o'clock A. M., I heard a disturbance among the Blackbirds in the same clump of trees, and, suspecting the cause, took my gun and went to see what was the matter. On approaching the spot, out flew a lot of birds of different species, and among them a *G. californicum*, which, after much trouble, I shot as it was flying over some low bushes; this one was a male. There were fighting the Owl one pair of *Tyrannus verticalis*, one pair of Bullock's Orioles, one pair of Bewick's Wrens, three Banded Tits (*Chamaea fasciata*), one pair of *Pipilo oregonus*, one pair of *P. crissalis*, and about twenty Blackbirds (*Scolecophagus cyanocephalus*). The bravest birds of the troop were Bewick's Wren and Bullock's Oriole, which kept darting at the Owl's head as it sat on the ground devouring a young Blackbird. I have seen a Pygmy Owl dart down and lift a Chipmunk with ease and carry it off. — C. A. ALLEN, *Nicasio, Cal.*

THE CAROLINA WREN IN MASSACHUSETTS. — My friend, Mr. Geo. O. Welch, secured a fine specimen of the *Thryothorus ludovicianus* in Lynn, on the 6th of July. The imprudent stranger ventured within an easy range of his work-room window, in the very heart of the city, and now remains as tangible evidence of its right to a place on the list of the birds of this State as well as New England. — T. M. BREWER, *Boston, Mass.*

THE TITLARK (*Anthus ludovicianus*) IN MASSACHUSETTS IN JUNE. — The occurrence of the Titlark on the coast of Massachusetts so late as the 8th of June, with just the possible suspicion that it was about to breed there, is a very interesting and characteristic fact in the history of the eccentric and abnormal habits of this species. It has been claimed to breed regularly in Central New York, though its presence there in mid-summer would seem, of itself, so improbable as to require confirmation. The example now referred to as taken on our coast was shot by Mr. Wm. A. Jeffries, on a small island off the shore, at Swampscott, on Saturday, June 8. Its mate, if it had one, could not then be found, nor any trace of a nest. We cannot be certain of its having been a mated bird, but the condition of its reproductive organs renders this supposition probable. The occurrence of this species on our coast, in the height of the breeding season, while it does not necessarily confirm that of Mr. Gilbert of Penn Yan (see Bull., III, p. 35), goes a good way to establish its eccentric and nomadic habits, and prepare us to accept as possible, irregularities that would be improbable in almost any other species. — T. M. BREWER, *Boston, Mass.*

NESTS AND EGGS OF HELMINTHOPHAGA PINUS. — Mr. S. N. Roads, of West Chester, Pa., writes respecting two nests of this bird, the nidification of which is as yet none too well known. On the 12th of June, 1878, he found a pair of these Warblers showing unmistakable signs of having a nest, which latter he soon discovered, as he saw the male fly to it with a worm in his bill. It was built in the midst of a clump of tall swamp-grass, on the outskirts of a forest where there was a good deal of weedy undergrowth not over two feet high. The nest rested slightly on the ground, and was quite bulky for the size of the bird; the cavity was nearly three inches deep by two inches in width. The structure was composed externally of beech and oak leaves of the preceding year, which "seemed to have been carelessly strewn and stuck in as if to form a barricade around the brim." The lining consisted of fine strips of grape-vine and inner bark of the oak, together with some straws. This nest contained four young birds about two days old.

Mr. Roads shortly afterward procured two eggs from another nest which he found about a quarter of a mile from the same spot. These were pure white, dotted with red at the greater end, and were of just the size of those of *Chrysomitris tristis*, but less pointed. He also examined another set of eggs procured by a friend in the same vicinity. — ELLIOTT COUES, *Washington, D. C.*

THE WINTER WREN BREEDING IN SOUTHERN NEW YORK. — Six miles south of Ithaca, N. Y., and leading eastward from Enfield Falls into the Cayuga Valley, is a beautiful glen. It is long, deep, and narrow, with steeply diverging walls rising, on either side, some three hundred feet above the bed of the stream. Large hemlock, pine, and beech trees are so closely crowded together in it as to preclude effectually the sun's rays,

and, with the stream running below them, to secure for the glen a temperature and humidity not unlike what is to be found in the forests of Northern Wisconsin.

In company with my friends, F. H. Severance and W. Trelease, I paid a visit to this glen June 21, 1878. Just below the Falls, where the glen widens, a group of five Winter Wrens (*Anorthura troglodytes* var. *hyemalis*) were discovered darting in and out of a brush-pile which lay a short distance back from the stream. On securing one of these, it was found to be a fully fledged young bird, but so immature as to leave no doubt that it was one of a brood which had been reared in the glen.

It may be added that two Winter Snow-Birds were observed in this glen on the same date, and that an Acadian Flycatcher was obtained there.— F. H. KING, *Ithaca, N. Y.*

THE SOOTY TERN IN NEW HAMPSHIRE.—Up to the present time record has been made of the capture of nine specimens of this Tern in New England,* all these examples having been taken in Massachusetts, Rhode Island, and Connecticut, since September, 1876. I now record the tenth and most northern specimen, a fine adult male, taken at Newmarket, N. H., about September 14, 1878, by Mr. D. C. Wiggin. I am indebted to Mr. Charles I. Goodale, who has preserved the specimen, for the above facts.— RUTHVEN DEANE, *Cambridge, Mass.*

SABINE'S GULL IN MAINE.—Mr. G. A. Boardman writes that among the rare birds taken by him last spring (1878) near Calais, Me., is a Sabine's Gull (*Xema sabinei*), in very nearly full plumage. I am also informed that a specimen of the same species was taken not long since at Portland, Me. The only other New England record for the species is Boston Harbor, Mass., September 27, 1874 (*Brewster*, Amer. Sportsman, V, 1875, 370; *Brewer*, Proc. Bost. Soc. Nat. Hist., XVII, 1875, 449).— J. A. ALLEN, *Cambridge, Mass.*

THE WHITE-CROWNED SPARROW BREEDING IN VERMONT.—One of my correspondents, Mr. H. E. Boughton, of Rutland, Vt., writes me that he has, the present summer, found a pair of *Zonotrichia leucophrys* breeding in that locality. As I know of no other record of this bird breeding in New England, I send the item, with all he writes me in regard to it. "The nest," he says, "was taken by myself, and was situated in a clump of blackberry and maple bushes, and was about three and one half feet from the ground. It is composed entirely of straw and grass, is very bulky, being almost as large as the nest of a Robin on the outside, and about one and one half inches in diameter on the inside. When the nest was approached the bird, which was very shy, would dart off from it and into the bushes like a shot; but by concealing myself I obtained a good view of her when she returned."— T. M. BREWER, *Boston, Mass.*

* Merriam's Review of the Birds of Connecticut, pp. 134, 135; Bull. Nutt. Ornith. Club, Vol. 11, pp. 22, 27, January, 1877.

NESTING HABITS OF THE RED-BELLIED NUTHATCH.—Having been observing the nesting habits of the Red-bellied Nuthatch (*Sitta canadensis*), I will give the readers of the Bulletin the results of my observations. June 2, I found a nest on Little Deer Isle, Penobscot Bay. It was in a white-birch stub some ten feet from the ground; the entrance was one and one half inches wide by one and one fourth deep. The hole ran slanting for three inches, and then straight down for four inches more. It contained six eggs, which were white, with small specks of reddish-brown on the small end, and heavily spotted with the same on the larger end, a great deal more brown than the eggs of the White-bellied Nuthatch. Incubation had not commenced. For two inches below the centre of the hole, and for half an inch on either side, the birch bark was coated with fir balsam. June 20, I found another in Holden, Me., which the young had just left. It was in a poplar stub some twelve feet from the ground. Hole one and one half inches by one inch, slanting down four inches, and then four inches straight down. This hole had fir balsam one fourth of an inch thick for two inches below the hole, and then thinner, and running down in large drops for twenty-one inches below the hole. The pitch extended an inch on either side, and more than three inches above the hole, in all more than could be heaped upon a large tablespoon. It was stuck full of the red breast-feathers of the bird, but there were no signs of any insects having been fastened by it. This nest had been occupied two years. Near both the nests were other holes not so deep, probably used for one of the birds to occupy while the other is sitting, as is the case with most Woodpeckers. Both nests were composed of fine short grasses and roots. I notice that in making the hole the bird makes a circle of holes round a piece about as large as a ten-cent-piece, and then takes out the piece of bark entire. I have one nest which has near it a piece circled in this manner, but not removed. My friend, Mr. Harry Merrill of Bangor, found a nest last year surrounded by pitch just as in those found by me. So that it seems certain that in most cases they do this, though for what purpose I am as yet unable to determine. The pitch certainly was placed there by the birds, as neither birch nor poplar contains pitch, and there were no overhanging trees from which a drop could come. I think it would take the bird several days of steady work to obtain what was around the nest in the poplar. I think that more nests would be found if people did not mistake them for holes of the Downy Woodpecker, which are of the same size, though rounder. Audubon speaks of their being placed four feet from the ground; but while this is sometimes the case, they are oftener ten to fifteen feet from the ground. It is easy to tell even an old nest from that of either a Downy Woodpecker or Black-capped Titmouse, as the Woodpecker lays directly upon fine chips, without any nest, and the Titmouse makes a nice nest of fur and feathers, and neither place any pitch round the holes, while the Nuthatch makes its nest of short fine grass and protects with pitch outside the hole.—MANLY HARDY, *Brewer, Me.*

TRAGIC FATE OF A SUMMER WARBLER. — A pair of *Dendroica aestiva* built for their second brood in a bush in the garden. Being interested to learn the progress of their domestic lives, I visited the spot frequently. On the fifth day I found the poor mother-bird hanging dead from the half-finished nest by a piece of cord which was twisted tightly around her neck. — W. L. COLLINS, *Frankfort P. O., Pa.* (Communicated by E. C.)

EGGS OF THE SOLITARY SANDPIPER (*Rhyacophilus solitarius*, Bp.). — The egg of this species has remained, to the present time, an unknown and much-desired addition to our cabinets. From time to time eggs claimed to be of this bird have been described, or have had a nominal existence in collections. But these claims have always been open to suspicion and doubt. The eggs have all either had so strong a resemblance to either the egg of the Spotted Tatler (*Tringoides macularius*) or to that of the Killdeer (*Ægialitis vociferus*) as to cause the belief that their identification could not have been correctly made. During the last year eggs were sent to me for verification from five different parties, and all were deemed not worthy of credence. A few days ago, hearing of a Solitary Tatler having been shot near her nest, and an egg obtained, in Castleton, Vt., I at once wrote to the party, and have obtained from him a temporary loan of both parent and egg, with permission to describe the same in the Bulletin.

The bird and egg were taken by Mr. Jenness Richardson about the middle of May, — I have not the exact date, — 1878, at Lake Bomaseen, on the ground, in a pasture bordering on a swamp. The bird was on her nest when first discovered, but fluttered off when approached, ran a short distance, then stood still, watching him until she was secured. There was no actual nest, only a small depression in the ground. I am informed by Mr. Richardson that the bird is quite common in that locality, but very shy. This egg resembles no egg in my possession, and in its appearance there is something suggestive of an egg prematurely cut from its parent. It is smaller than I anticipated, measuring only $1.37 \times .95$, while the egg of *Totanus ochropus*, which bird closely corresponds in size and appearance with our Solitary, measures 1.50×1.10 . The ground-color is a light drab, similar to that of the egg of *Ægialitis melodus*. Over this are scattered small rounded markings of brown, some of these quite dark, nowhere confluent, and never large enough to be called blotches. At the larger end there are a few faint purplish or lilac discolorations or shell-marks. In shape it is an elongated pyriform. — T. M. BREWER, *Boston, Mass.*

LINCOLN'S FINCH (*Melospiza lincolni*) BREEDING IN HAMILTON COUNTY, N. Y. — On the 13th of June, 1878, while on a fishing trip in the wilderness of New York, my companions and myself were skirting (two on one side and two on the other) a beautiful little pond in Hamilton County, N. Y., which is dignified with the name of "Moose Lake," when one of the party from the opposite side called across to me, "Do you want a bird's nest?" On my expressing surprise at such an unnecessary question, he shouted

back as his excuse, "O, it is nothing but a little brown bird." Such is the deplorable ignorance of the majority of mankind. The little brown bird turned out to be *Melospiza lincolni*.

On arriving on the opposite side of the pond, I found the bird, driven from her nest by my friend, had not returned; we therefore retired a little, and in a few minutes she came back to her treasures and was sacrificed to science. The nest was placed on the ground, where it was almost spongy with water, within about two rods of the pond, and about the same distance from the edge of the forest. It was not under the protection of any bush or stone, but was quite well concealed in some last year's tail grass. It was composed entirely of dried grasses both inside and out, the lining being neatly made of the finer spears, and contained three eggs, a few days advanced in incubation. These measured $.74 \times .56$. The ground was a pale greenish, covered with spots and blotches of different shades of reddish-brown. On one of them the spots were so numerous as to become confluent and almost conceal the ground-color, while on another they were much smaller, so that the greenish-white of the ground-color was the predominant tint, except at the large end, where the spots became larger and more confluent, as indeed they did on all three.

This Moose Lake is a small body of water situated about fifteen miles northeast of Wilmurt P. O., Herkimer County, and must not be confounded with its larger namesakes, which are situated farther north, — Moose in Herkimer County, Big Moose on the line, and North Moose in Hamilton County. The outlets of these three all empty into the Moose River, while that of the one here referred to runs into the West Canada Creek. This I think is farther south than the Lincoln's Finch has been found breeding east of the Great Lakes, and, in fact, is but little north of Racine, which is the southern limit of its breeding, according to Baird, Brewer, and Ridgway's "History of North American Birds." Nor can I, with the limited number of books at my command, find any record of the bird having been taken in this part of the State. — EGBERT BAGG, JR., *Utica, N. Y.*

OCURRENCE OF THE WHISTLING SWAN (*Cygnus americanus*) IN MASSACHUSETTS. — During a recent visit to Nantucket I had the pleasure of examining a fine specimen of the Whistling or American Swan in the possession of Mr. H. S. Sweet of that place. Through Mr. Sweet's kindness I am enabled to give the full particulars attending its capture. It was first seen about December 27, 1877, on Sacacha Pond, at the east end of Nantucket, in company with five Canada Geese. The latter were all killed in the course of a few days, but the Swan, though repeatedly fired at, seemed to bear a charmed life, and for a long time evaded all attempts at its capture. Through the succeeding two months it was frequently seen either in Sacacha Pond or Polpis Harbor, between which points it appeared to confine its wanderings. The winter was a very mild one on the island, and it accordingly had little difficulty in obtaining food. It

was finally shot, March 4, 1878, on Coskata Pond, by Mr. F. P. Chadwick, and by him presented to Mr. Sweet. The bird is apparently in nearly perfect plumage, with the otherwise pure white only partially obscured by a plumbeous wash upon the top and sides of the head, and for a short space on the neck behind. Its weight was sixteen pounds. The sex was not ascertained. Although this species is given in many of the local lists as of occasional occurrence during the migrations, there seems to be no previous record of its actual capture in Massachusetts.

At the time of the first settlement of the country, according to various early writers, a Swan — presumably *C. americanus* — was common along the Merrimack River and in some other parts of the State. — WILLIAM BREWSTER, *Cambridge, Mass.*

CAPTURE OF A FIFTH SPECIMEN OF THE WHITE-THROATED WARBLER (*Helminthophaga leucobronchialis*). — I am indebted to Mr. E. I. Shores for the opportunity of examining a specimen of the White-throated Warbler, which was taken by him at Suffield, Conn., July 3, 1875. It is an adult male in very worn plumage. In every essential particular it agrees well with my type of the species, though exhibiting certain peculiarities of coloration not found in any of the three specimens which I have previously examined. These differences are such as might be expected to occur in a series sufficiently large to present the range of individual variation, and do not tend to establish any closer connection with either of the allied species. The most marked departure from the type is presented by the coloration of the under parts. The entire pectoral region is washed with pale yellow, which extends down along the sides of the abdomen nearly to the tail. This coloring proves upon examination to be a merely superficial tipping to the feathers. In a good series of *H. chrysoptera* before me several specimens occur which are marked in a nearly similar manner, though in none of them does the yellow wash extend so far down upon the sides. With this latter species it seems to be a purely individual phase of coloration, dependent neither upon age nor season. Several young males in newly completed autumnal dress do not show the slightest trace of its presence, while a young female in fall plumage is quite distinctly tinged across the breast. The spring specimens most strongly marked are all apparently very adult birds.

Another point of difference, scarcely to be expected when the unusual amount of yellow beneath is taken in consideration, is found in the restricted area of the yellow marking upon the wing-coverts. In the type specimen the wing-bands are nearly confluent, and present the appearance of a single broad yellow band upon the wing, while in Mr. Shores's specimen they are widely separated. This, however, seems to be mainly due to the imperfect condition of the plumage, whereby the darker bases of many of the greater coverts are exposed. No further differences worthy of note occur, and the salient characters of white cheeks and eyelids, narrow restricted black line through the eye, etc., are all strongly

presented. Mr. Shores's specimen makes the fifth that has already been brought to light, and is the second reported from Connecticut. — WILLIAM BREWSTER, *Cambridge, Mass.*

NESTING OF THE BANDED THREE-TOED WOODPECKER (*Picoides americanus*) IN NORTHERN NEW YORK. — Since the eggs of this species have never been described, and do not exist, to my knowledge, in the cabinet of any of our ornithologists, it is with no ordinary degree of pleasure that I am enabled to make the following extract from my journal.

“June 4, 1878. — Shortly after crossing Moose River this morning, *en route* for the Fulton chain of lakes, Mr. C. L. Bagg and I were so fortunate as to secure a set of the eggs, with both parent birds, of *Picoides americanus* (old *hirsutus*). We had just crossed the boundary line between Lewis and Herkimer Counties, when Mr. Bagg called my attention to a ‘fresh hole,’ about eight feet from the ground, in a spruce-tree near by. On approaching the tree a yellow crown appeared in the hole, showing us that the nest belonged to one of the Three-toed Woodpeckers, and that the male bird was ‘at home.’ To prevent his escape I jumped toward the tree and introduced three fingers, which were immediately punctured in a manner so distasteful to their proprietor as to necessitate an immediate withdrawal and exchange for the muzzle of my friend’s gun. A handkerchief was next crowded into the hole, but was instantly riddled and driven out by a few blows from his terrible bill. It was then held loosely over the hole, and as the bird emerged I secured and killed him. Through the kindness of a friend my pocket contained one of those happy combinations of knives, saws, and button-hooks, — a sort of tool-chest in miniature, — which one sometimes sees in the shop windows, and is apt to regard with awe rather than admiration, but which constitutes, nevertheless, one of the most useful articles in a naturalist’s outfit. With this instrument we were enabled to saw a block from the face of the nest, and to secure, uninjured, the four nearly fresh eggs which it contained. While wrapping up the eggs the female bird returned, and as she alighted on the side of the tree was killed by Mr. Bagg. The orifice of the hole was about eight feet high and an inch and a half in diameter, and the cavity was about ten inches deep.”

The eggs are cream-white, and of a texture like those of other Woodpeckers. They are strongly ovate in outline (the largest diameter being near the large end), and measure respectively 23.8×17.2 mm., 23.6×17.8 mm., 23.8×17.9 mm., and 23×17.8 mm.

So far as I am aware this rare Woodpecker is only found along the eastern border of Lewis County, in the Adirondack region, where it is a resident species; and even here it is much less common than its congener, the Black-backed Woodpecker. — C. HART MERRIAM, *Locust Grove, Lewis Co., N. Y.*

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No. I.

REMARKS ON SOME OF THE BIRDS OF LEWIS COUNTY,
NORTHERN NEW YORK.

BY C. HART MERRIAM.

(Continued from p. 128, Vol. III.)

Sphyrapicus varius. YELLOW-BELLIED WOODPECKER.—This elegant species, second only to the Red-headed Woodpecker in point of beauty, is a common summer resident in Lewis County, frequenting alike the orchards and hard-wood groves of the central district, and the dense evergreen forests, Canadian in Fauna, of the Adirondack region in the eastern, and the Tug Hill range in the western, portion of the county.

The males reach us about the middle of April (April 13, 1878), and are followed by their partners about a week afterwards. They depart during the latter part of August, though a few scattering individuals, chiefly young, may be seen throughout September and even into October. These individuals I believe to be migrants who breed farther north and tarry with us but a day or two during their journey southward. Still it is true that they are most frequently seen about the "food-trees" (to be mentioned farther on), and it may be that a few inexperienced young of our own summer residents remain, reluctant to leave these favorite provision stores, after their parents and brothers are already well on the way to their winter-quarters.

Their breeding habits have been so fully and graphically portrayed (in an early number of this Bulletin*) by the able pen of

* Bull. Nutt. Ornith. Club, Vol. I, No. 3, pp. 63 - 70, September, 1876.

Mr. William Brewster, that I omit all reference to their nidification, and will only mention such peculiarities of habit as have escaped the observation of others, or which, by their oddity, merit further notice.

In few species can the date of arrival, in spring, be ascertained with such precision as in the bird now under consideration; for, no sooner are they here, and recovered from the fatigue of their northward journey, than the country fairly resounds with their cries and drumming. For two or three weeks after reaching us, and before the migrants have passed farther north, they are extremely abundant, and during this period behave in a very un-Woodpecker-like manner; for, though less conspicuous in plumage, they are even more clamorous and more often seen than their Red-headed cousins. Noisy, rollicking fellows, they are always chasing one another among the trees, screaming meanwhile at the tops of their voices, and when three or four vociferous males alight on the same tree, as often happens, their boisterous cries are truly astonishing. But, not satisfied with these vocal manifestations of their din-making proclivities, and ever desirous of demonstrating their weakness in this direction, these indefatigable creatures take special delight in pounding upon any hard resonant substance which chance may have thrown in their way, and are never more happy than when they discover some tin-roofed dwelling on which to drum. At this season scarcely an hour passes, from daylight till sunset, that one or more cannot be heard drumming with commendable perseverance upon the tin roofs, eave-troughs, or escape-pipes of our house or some of the out-buildings. They strike the tin violently half a dozen or more times, evidently enjoying the sound thus produced, and then rest a few minutes before repeating the performance. Each Woodpecker usually returns to the same spot, and on our roof are several patches, the size of one's hand, from which the paint has been entirely drummed off. On the escape-pipe they sometimes follow around a joint, and by constant and long-continued pounding so loosen the solder that the dependent portion of the pipe falls down. How they manage to cling to these vertical pipes and the nearly perpendicular portions of the roof is a mystery to me. I have seen both sexes at work on our roof, but the female does not often indulge in this pastime, and is rarely observed to take part in the boisterous gambols of the males. In the groves and forests, where tin-roofed buildings do not abound, the Yellow-bellied

Woodpeckers amuse themselves by pounding upon such dry hollow trees and hard resonant limbs as multiply the sound tenfold, so that one can, at a distance, readily distinguish them from other members of the family. Before they have been with us three weeks, however, an inward change takes place, and by the middle of May their manners are so different that one would scarcely recognize the species. The migrants have passed on, and those which remain to breed have already given up their idle frolics, and in comparative silence are preparing for the graver task of rearing offspring.

In the Adirondack region, during the migrations, they outnumber all the other species of the family together, and throughout the entire summer are second in numbers only to the Hairy Woodpecker (*Picus villosus*). Here they often, in search for insects, strip off the "shag-bark" from the spruce, and it is no uncommon thing, in passing through these primeval forests, to meet with many large trees thus almost completely denuded of their outer bark for nearly the entire length of the trunk. These trees are very conspicuous objects, and never fail to excite the curiosity of strangers, who are much more willing to believe the existing condition "due to the ravages of the Black Cock of the Woods [*Hylatomus pileatus*] or Poreupine" (*Erethizon dorsatus*) than to the present innocent-looking species.

In the central district they really do considerable mischief by drilling holes in the bark of apple, thorn-apple, and mountain-ash trees in such a way as to form girdles of punctures, sometimes two feet or more in breadth (up and down), about the trunks and branches. Whether in like manner they affect trees (excepting occasionally a young elm) pertaining to other genera than the one (*Pyrus*) to which the above belong, I am unable to say; but the fact of their destroying some of these, notably the apple, and especially in the West, has often been recorded. The holes, which are sometimes merely single punctures, and sometimes squarish spaces (multiple punctures) nearly half an inch across, are placed so near together that, not unfrequently, they cover more of the tree than the remaining bark. Hence, more than half of the bark is sometimes removed from the girdled portions, and the balance often dries up and comes off. Therefore it is not surprising that trees which have been extensively girdled generally die, and mountain ash are much more prone to do so than either apple or thorn-apple trees, due, very likely, to their more slender stems.

The motive which induces this species to operate thus upon

young and healthy trees is, I think, but partly understood. It is unquestionably true that they feed, to a certain extent, both upon the inner bark and the fresh sap from these trees, but that the procurement of these two elements of sustenance, gratifying as they doubtless are, is their chief aim in making the punctures I am inclined to dispute. As the sap exudes from the newly made punctures, thousands of flies, "yellow-jackets," and other insects congregate about the place, till the hum of their wings suggests a swarm of bees. If, now, the tree be watched, the Woodpecker will soon be seen to return and alight over that part of the girdle which he has most recently punctured. Here he remains, with motionless body, and feasts upon the choicest species from the host of insects within easy reach. Therefore it is my firm belief that their chief object in making these holes is to secure the insects which gather about them.

Some time ago Mr. C. L. Bagg called my attention to a clump of mountain-ash whose leaves had turned yellow and were fast falling off. Here a pair of these birds, with their young, had established an unfailing food supply, and at almost any time of day several of their dark motionless forms might be seen adhering to the trunks and branches of the young trees. Evidently this had been their headquarters for several seasons, for all the main stems in the cluster were girdled for at least five feet (commencing two or three feet from the ground), and most of the branches of any size were likewise punctured. In making each girdle they work around the trunk, and from below upwards, but they may begin a new girdle below an old one. They make but few holes each day, and after completing two or three remain over the spot for some little time, and as the clear fresh sap exudes and trickles down the bark they place their bill against the dependent drop and suck it in with evident relish,—a habit which has doubtless given rise to the more appropriate than elegant term, "Sap-Sucker," by which they are commonly known in some parts of the country. I have several times watched this performance at a distance of less than ten feet, and all the details of the process were distinctly seen, the bird looking at me, meanwhile, "out of the corner of his eye." When his thirst is satisfied he silently disappears, and as silently returns again, after a few hours, to feast upon the insects that have been attracted to the spot by the escaping sap. This bird, then, by a few strokes of its bill, is enabled to secure both food (animal

and vegetable) and drink in abundance for an entire day; and a single tree, favorably situated, may suffice for a whole season!

To explain the origin of this habit, at first thought so wonderful, is not difficult when we bear in mind the fact that all Woodpeckers are "fitted by nature" for drilling holes in trees. Now let us suppose that one of the ancestors of this species, while pounding off a bit of dead bark from an apple-tree in search for the insects that might lurk beneath it, should, by chance, have struck his bill into an adjoining strip of sound bark. Seeing the crystal drops of sap slowly issuing from the wounded spot, he would naturally enough have tasted it, and, finding it agreeable to his palate, would be led to repeat the experiment. A little of the inner bark, partaking of the same flavor, might also be swallowed. Then, after the lapse of a few hours (during which digestion would be completed and the appetite again become manifest), is it strange that he should return to the spot where, a short time before, his hunger had been so easily satisfied? Here he would find himself surrounded by a swarm of insects, feeding upon the sap which had exuded during his absence, and from among their numbers an unexpected repast would be soon finished. Now, it is not at all likely that the bird would forget this day's experience, but, on the contrary, he would profit by it, and on the morrow, and day by day thereafter, would repeat the experiment, at first upon the same tree, and afterwards upon others of the same kind, till the habit would become firmly established.

Though the bird's attention was first attracted by the oozing sap, and his first return to the spot was doubtless due to his recollection of its agreeable flavor, yet I cannot but believe that the insects which he then found there served to keep up his interest in the place much more than the few drops of fluid swallowed beforehand, just to prepare the alimentary tract, as it were, for the solid food to come, — as we take a glass of Congress-water a half-hour before breakfast. Hence it is easy to see how a chance stroke of the bill sufficed to establish a habit by which the Yellow-bellied Woodpecker is always enabled, with a minimum amount of labor, to obtain an unlimited supply of the food most pleasing to its taste. And yet some people, who ought to know better, would still call this another example of "that curious instinct" which leads birds and other animals to do those things which are best adapted to their needs.

Before the commencement of the breeding-season they are pre-

eminently a noisy species, filling the woods with their discordant cries, while during and after incubation they are seldom heard, and in the vicinity of the food trees their silence is very remarkable, for never have I heard a note of any description uttered either while in the neighborhood of these trees or in flying to and fro between them and the forests.

Picoides arcticus. BLACK-BACKED THREE-TOED WOODPECKER. — This bird is not an uncommon resident in those portions of Lewis County which pertain to the Canadian Fauna; for they are found both in the Adirondack region and in the coniferous forests bordering Big Alder and Fish Creeks, in the Tug Hill range.

Picoides americanus. BANDED THREE-TOED WOODPECKER. — This is also a resident species, but is much less common than the foregoing. For an account of its nesting and a description of its eggs see the last Bulletin (Vol. III, No. 4, October, 1878, p. 200).

Hylatomus pileatus. PILEATED WOODPECKER; BLACK LOG COCK; COCK OF THE WOODS. — This splendid species, commonly known among our hunters as the "Black Cock of the Woods," and, once common, is now becoming rare in Lewis County, although it is still a resident of the deep Canadian forests along our eastern border. A few are killed each year in the Adirondack region, and Mr. Dayan informs me that scarcely a season passes but that two or three specimens are taken in the vicinity of Lyon's Falls, — so near do they approach civilization.

Centurus carolinus. RED-BELLIED WOODPECKER. — Mr. C. L. Bagg has a mounted specimen of this Woodpecker, which he shot here (Locust Grove, Lewis County) during the winter of 1871-2.

Melospiza lincolni. LINCOLN'S FINCH. — In my cabinet is a female specimen of Lincoln's Finch, which I shot here (Locust Grove) May 23, 1873. Mr. Egbert Bagg, Jr., of Utica, on the 13th of June last (1878), took its nest, containing three eggs, at Moose Pond, Hamilton Comty, N. Y.* (in the Adirondack region, and not many miles distant from Lewis County). As there is no question concerning the identity of this nest (the female parent having been shot and sent to Mr. Robert Ridgway for identification), and since my bird was taken so late as the 23d of May, I think there can be no reasonable doubt of its breeding in Lewis County.

Cistothorus stellaris. SHORT-BILLED MARSH WREN. — Mr. Romeyn B. Hough has, in his cabinet, two females of this Wren, which he killed near Lowville, in this county, October 27, 1877.

* Bull. Nutt. Ornith. Club, Vol. III, No. 4, pp. 197, 198, October, 1878.

Myiodioctes mitratus. HOODED WARBLER. — On the 9th of September last (1878), at Lowville, an adult male of this species was killed by a cat and brought, while still warm, to Mr. Romeyn B. Hough, who now has the specimen. So far north of its known range it can hardly be considered more than a straggler.

A LIST OF BIRDS OBSERVED AT COOSADA, CENTRAL ALABAMA.

BY NATHAN CLIFFORD BROWN.

(Concluded from p. 174, Vol. III.)

41. **Stelgidopteryx serripennis** (Aud.) *Bd.* ROUGH-WINGED SWALLOW. — Rather common summer resident. Arrived March 22; not generally distributed until the first week in April.

42. **Progne purpurea** (L.) *Boie.* PURPLE MARTIN. — Although abundant in Montgomery, this bird is seen at Coosada only as a "bird of passage." I saw the first specimen on March 13.

43. **Ampelis cedrorum** (L.) *ScL.* CEDAR-BIRD. — Of very irregular occurrence. Seen, at intervals, in flocks of from six to twenty individuals.

44. **Vireo olivaceus** (L.) *Vieill.* RED-EYED VIREO. — An uncommon summer resident, generally distributed. Arrived the last of March.

45. **Vireo solitarius** (Wils.) *Vieill.* SOLITARY VIREO. — An uncommon winter visitant. The males began their song on March 6. After this date they were somewhat more numerous, but all had disappeared by March 20.

46. **Vireo noveboracensis** (Gm.) *Bp.* WHITE-EYED VIREO. — Arrived March 27, and the following day both sexes were found in abundance, the males in full song. A nest containing four fresh eggs was taken, April 20, in a swampy wood by the roadside.

47. **Collurio ludovicianus** (L.) *Bd.* LOGGERHEAD SHRIKE. — Uncommon up to about April 1, after which none were seen. The song, which I heard but once, is very like that of the Northern Shrike. This bird is well known in Alabama as the "French Mocking-Bird."

48. **Carpodacus purpureus** (Gm.) *Gray.* PURPLE FINCH. — Rather uncommon during the winter; most numerous about the middle of March, when the males began to sing; stragglers seen a month later. They generally associated with Goldfinches.

49. **Chrysomitris tristis** (L.) *Bp.* GOLDFINCH. — Of irregular occurrence throughout my stay.

50. *Passerculus savanna* (Wils.) Bp. SAVANNAH SPARROW. — Very common during the winter and early spring. Last seen about the middle of April. None heard singing.

51. *Poœcetes gramineus* (Gm.) Bd. GRASS FINCH. — Common at the same time as the preceding.

52. *Coturniculus passerinus* (Wils.) Bp. YELLOW-WINGED SPARROW. — A single male was captured by Mr. Bond, in an open field bordering the Alabama River, late in the afternoon of March 19.

53. *Coturniculus henslowi* (Aud.) Bp. HENSLOW'S BUNTING. — Ten specimens were taken between the dates of February 18 and April 4, inclusive, in old fields of rice and broom-sedge.

In the course of a good deal of varied field experience I do not know that I ever met with a bird more difficult to procure, when found, than this one is. Wonderfully adapted as they are for running and dodging about upon the ground, they cannot be made to fly unless come upon abruptly and unexpectedly; and once under the protecting cover of a patch of bushes, no amount of shouting and thrashing about will avail to get them a-wing. On one occasion Mr. Bond actually trod upon one and caught it alive. Even when once made to fly, — and amongst the luxuriant, tangled grass which they most affect they may hardly be shot except on the wing, — their short, low flight is often scarcely more than a respectable jump over the grass-tops.

There is a general but mistaken supposition that this bird never alights in trees. It does so occasionally, even at quite a distance from the ground.

Neither song nor call-note was heard from any of the specimens taken by Mr. Bond and myself. The ovary of a female killed April 3 was found to be quite undeveloped.

54. *Coturniculus lecontei* (Aud.) Bp. LECONTE'S BUNTING. — This beautiful bird, which, if I am not mistaken, has never before been detected east of the Mississippi River, was found to be a rare winter visitant at Coosada. Seven specimens were taken, — three during the latter half of February, four during the first three weeks of March. In habits they were very like the preceding species, except that they intrusted themselves to longer flights and were found more regularly in and about brier-patches and clumps of low bushes.

55. *Melospiza palustris* (Wils.) Bd. SWAMP SPARROW. — First seen March 6. Soon became abundant in swampy woods and moist fields. Did not sing.

56. *Melospiza melodia* (Wils.) Bd. SONG SPARROW. — Rare during the winter. On February 27 I heard the first song, and within a few days the birds became quite common, but were not seen after the latter part of March.

57. *Peucaea æstivalis* (Licht.) Cab. BACHMAN'S FINCH. — Apparently resident, but very rare in the winter. Increased in numbers about the first week of March, and finally rather common. But one female was

taken (April 8), and I am confident the birds were not breeding at the time of my departure. Their haunts were exclusively scattering growths of pine. When upon the ground they lie very close, and often baffle all attempts at capture.

The song of the male (first heard March 8) is simple, but passionate and very sweet. It consists of a long-drawn initiatory note, followed by a leisurely trill four tones lower in the scale. A few embellishments are occasionally added, and the singer sometimes varies his strain by beginning upon a low note and rising to the trill. Shy and suspicious as this bird usually is, the singing male is apparently quite oblivious of danger. More than once I have approached an absorbed singer within five or six feet, without exciting the least alarm.

58. *Junco hyemalis* (L.) *Scl.* SNOW-BIRD. — Seen commonly up to about the middle of April.

59. *Spizella socialis* (Wils.) *Bp.* CHIPPING SPARROW. — Found in large flocks throughout my stay.

60. *Spizella pusilla* (Wils.) *Bp.* FIELD SPARROW. — Abundant during my stay. On April 24 I found a nest containing four fresh eggs. I am not aware that this bird has previously been known to breed south of Virginia.

61. *Zonotrichia albicollis* (Gm.) *Bp.* WHITE-THROATED SPARROW. — Rather common during my stay.

62. *Passerella iliaca* (Merrem) *Sw.* FOX-COLORED SPARROW. — Rather common winter visitant. Stragglers were seen in an old rice-field until the third week of March.

63. *Goniaphea cærulea* (L.) *Bp.* BLUE GROSBEAK. — A single female taken April 30, in a thicket bordering a brook.

64. *Cyanospiza cyanea* (L.) *Bd.* INDIGO-BIRD. — Common in swampy places, after April 6.

65. *Cardinalis virginianus* (Brisson) *Bp.* CARDINAL REDBIRD. — One of the commonest and most conspicuous winter birds, but seldom seen after mating, — about February 15. At this time the males began their song, but I did not detect the females singing till a fortnight later. Although the birds paired so early in the season, nearly two months passed before they began to work upon their nests. I found the first eggs on April 29.

66. *Pipilo erythrophthalmus* (L.) *Vieill.* TOWHEE. — Common; apparently resident. First song March 6. A single specimen of var. *alleni* was taken in a partial clearing, March 28.

67. *Agelæus phœniceus* (L.) *Vieill.* RED-WINGED BLACKBIRD. — A common resident; forming immense flocks in the winter, the sexes usually separated.

68. *Sturnella magna* (L.) *Bd.* MEADOW LARK. — Common during my stay. Not less shy than at the North. They began to sing about the 15th of February.

69. *Icterus spurius* (L.) Bp. ORCHARD ORIOLE. — Arrived April 8, and by the 13th of the month both sexes were found in abundance. I met with them almost everywhere except in the deep woods, but they were most numerous amongst the scattered pine saplings which have sprung up in once cultivated fields. There is a great variation in the musical abilities of different males. Immature birds sing a brief strain which can almost always be distinguished from the more elaborate song of their older brethren; but the most talented old males are by far the finest songsters that I heard in the South. Their melody is gushing and fervid, and often bears a remarkable resemblance to the inimitable outpourings of the Bobolink.

70. *Scolecophagus ferrugineus* (Gm.) Sw. RUSTY GRACKLE. — Not very common winter visitant. I was surprised to see them so late as about the middle of April.

71. *Quiscalus purpureus* var. *aglæus* (Bd.) Cs. FLORIDA GRACKLE. — Apparently not very common resident.

72. *Corvus americanus* var. *floridanus* (Aul.) Bd. FLORIDA CROW. — Not very common resident.

73. *Corvus ossifragus* Wils. FISH CROW. — Not uncommon, but apparently not resident, and seen only in their flights from one part of the country to another. They were most extraordinarily shy, and all attempts to secure specimens, either by direct approach or strategically, resulted in failure.

74. *Cyanurus cristatus* (L.) Sw. BLUE JAY. — Very common resident, and, to one who has known the species only at the North, remarkably tame. I observed them feeding in the streets of Montgomery, and unsuspectingly flying about much after the manner of the domestic pigeons of Northern cities. The obvious reason is, as Dr. Brewer has observed of their kind in the West, that they have not in Alabama been driven to shy and solitary habits by constant persecution and cruelty. I secured a nest with two fresh eggs on April 28.

75. *Tyrannus carolinensis* (L.) Temminck. KINGBIRD. — Arrived March 30. Not very common.

76. *Myiarchus crinitus* (L.) Cab. GREAT-CRESTED FLYCATCHER. — Common after April 8 in all localities.

77. *Sayornis fuscus* (Gm.) Bd. PEWEE. — Rather uncommon winter visitor, usually inhabiting deep pine woods.

78. *Contopus virens* (L.) Cab. WOOD PEWEE. — Arrived April 9; rather common thereafter.

79. *Empidonax acadicus* (Gm.) Bd. ACADIAN FLYCATCHER. — Common after April 20 in swampy woods. No females were taken. The cry of the male is very like that of Traill's Flycatcher.

80. *Antrostomus carolinensis* (Gm.) Gould. CHUCK-WILL'S-WIDOW. — Arrived April 10; became rather common. A fanciful imagination may detect in this bird's cry a resemblance to the syllables of its common name, but the resemblance is certainly very slight. Heard at a

distance the bird distinctly enunciates *chě qu'bro*, *chě qu'bro*, making a brief pause after the first three syllables.

81. *Chordeiles virginianus* (Bris.) Bp. NIGHT-HAWK. — Apparently common summer resident. First seen about the middle of April. On April 24 I found a deserted egg in a swampy pine grove.

82. *Chætura pelagica* (L.) Bd. CHIMNEY SWALLOW. — Arrived about the last of March. Few seen.

83. *Trochilus colubris*, L. RUBY-THROATED HUMMER. — Arrived March 30. Rare.

84. *Ceryle alcyon* (L.) Boie. KINGFISHER. — Uncommon resident.

85. *Coccyzus americanus* (L.) Bp. YELLOW-BILLED CUCKOO. — Common summer resident, well known in this locality as "Rain-Crow." Arrived the last week in April.

86. *Hylotomus pileatus* (L.) Bd. PILEATED WOODPECKER. — Rare resident.

87. *Picus borealis*, Vieill. RED-COCKADED WOODPECKER. — The commonest of its family at Coosada, and one of the most notable birds, being active, social, and always noisy. Its notes resemble those of the Hairy Woodpecker, with the addition of a rattling quality which at once identifies their author. I observed no signs of nest-building.

88. *Picus villosus*, L. HAIRY WOODPECKER. — Uncommon resident.

89. *Picus pubescens*, L. DOWNY WOODPECKER. — Rather rare during the winter; common after the first of March.

90. *Sphyrapicus varius* (L.) Bd. YELLOW-BELLIED WOODPECKER. — Seen rather uncommonly throughout my stay.

91. *Centurus carolinus* (L.) Sw. RED-BELLIED WOODPECKER. — Rather uncommon throughout my stay, and invariably quite shy. I found it with equal frequency in the pine woods and in the deep swamps. It has a croaking note like that of the following species.

92. *Melanerpes erythrocephalus* (L.) Sw. RED-HEADED WOODPECKER. — Arrived April 21, and became at once abundant.

93. *Colaptes auratus* (L.) Sw. GOLDEN-WINGED WOODPECKER. — Abundant resident.

NOTE. *Conurus carolinensis* (L.) Kuhl, the Carolina Parrakeet, is well known to most of the older local sportsmen, and is said to have once been common. None have been seen, however, for many years.

At least two species of Owls were resident at Coosada, one of them undoubtedly *Bubo virginianus* (Gm.) Bp., but I secured specimens of neither variety.

94. *Accipiter cooperi* (Bp.) Gray. COOPER'S HAWK. — Mr. Bond shot a superb male on March 5.

95. *Buteo lineatus* (Gm.) Jard. RED-SHOULDERED HAWK. — Common resident. Less shy than usual in New England.

96. *Cathartes aura* (L.) Illiger. TURKEY BUZZARD. — Abundant resident.

97. *Cathartes atratus* (Bart.) Less. BLACK VULTURE. — About equally common with the preceding. On March 22 I found a bird sitting upon two fresh eggs, in a tangled swamp. The eggs were placed on the ground in an upright, hollow stub. In front of the hole by which the parents had ingress were scattered about bits of broken crockery, bleached bones, etc.

98. *Ectopistes migratoria* (L.) Sw. WILD PIGEON. — Said by sportsmen to be occasionally common in autumn.

99. *Zenaidura carolinensis* (L.) Bp. CAROLINA DOVE. — An abundant resident; very shy until the time of mating, when they became remarkably tame. About the middle of April the large flocks in which they associated during the winter were broken up, and the birds, though still occurring in small flocks, appeared to be mated. The first set of eggs was brought me early on the morning of my departure for the North, — May 1.

100. *Chamæpelis passerina* (L.) Sw. GROUND DOVE. — None seen at Coosada. Dr. W. C. Jackson of Montgomery tells me that they are numerous immediately south of that city. I am indebted to him for a specimen in corroboration of his statement.

101. *Meleagris gallopavo* var. *americana* (Bart.) Cs. WILD TURKEY. — Once common, but fast becoming exterminated by pot-hunters.

102. *Ortyx virginianus* (L.) Bp. QUAIL. — Resident in great numbers. Seen in beves throughout my stay.

[Two Coosada specimens, both females, submitted to me for examination by Mr. Brown, differ very slightly from Massachusetts examples. The colors are absolutely identical. In size the Alabama birds are about intermediate between the Northern and Florida forms, but the bill agrees best with that of the former. Although Florida Quails from different localities vary considerably in coloring, the lightest in a large series before me is much darker than either of the Coosada specimens. Compared with var. *teximus*, Mr. Brown's birds differ as much as do typical northern specimens. In short, they seem to represent a slightly smaller but otherwise typical form of *Ortyx virginianus*. — W. BREWSTER.]

103. *Ægialitis vocifera* (L.) Bp. KILLDEER. — Of irregular occurrence up to about the first of April; always quite shy. One or two large flocks were seen; usually, however, the birds associated in parties of less than a dozen individuals.

104. *Philohela minor* (Gm.) Gr. WOODCOCK. — A single individual was seen by Mr. Bond about the first of March. Sportsmen consider it very rare.

105. *Gallinago wilsoni* (Temm.) Bp. AMERICAN SNIFE. — Abundant during winter and early spring.

106. *Totanus solitarius* (Wils.) Aud. SOLITARY SANDPIPER. — Common after March 28. At first they were rather shy, but subsequently became much tamer than I have ever found them elsewhere.

107. *Tringoides macularius* (L.) Gr. SPOTTED SANDPIPER. — One or two individuals seen on the banks of the Alabama River, in April.

108. *Actiturus bartramius* (Wils.) Bp. UPLAND PLOVER. — Several small flocks seen flying over, between March 22 and 28.

109. *Ardea herodias* L. GREAT BLUE HERON. — Apparently not common. I did not meet with it myself, but sportsmen brought me word of its occurrence at irregular intervals.

110. *Ardea candidissima* (Jacquin) Gm. LITTLE WHITE EGRET. — Several small White Herons seen at a distance, April 29, were probably of this species. It is said to be very common during summer.

111. *Ardea cærulea*, L. LITTLE BLUE HERON. — Another small Heron, of which I obtained no specimens, was quite common during the last two weeks of April. It was apparently this species.

112. *Fulica americana*, Gm. COOT. — One of a pair shot in the Alabama River, April 9.

113. *Branta canadensis* (L.) Gr. WILD GOOSE. — A large flock spent the winter in a cornfield, on the banks of the Coosa River, and left for the North about the second week in March.

114. *Anas boschas*, L. MALLARD. — Specimens seen in the Montgomery markets. Said to be a common migrant.

115. *Anas obscura*, Gm. BLACK DUCK. — Known to sportsmen, but considered very rare.

116. *Querquedula discors* (L.) Steph. BLUE-WINGED TEAL. — Common migrant; arrived about the last of March.

117. *Aix sponsa* (L.) Boie. WOOD DUCK. — Common resident.

118. *Plotus aninga*, L. WATER TURKEY. — Well known to sportsmen, by whom it is said to be common in summer.

119. *Colymbus torquatus*, Brünn. LOON. — A dozen or so seen flying north, in March.

THE TERNS OF THE NEW ENGLAND COAST.

BY WILLIAM BREWSTER.

AMONG all the sea-birds that with the changing seasons visit our New England shores there are none half so beautiful as the Terns, or Sea-Swallows. Family *Laridæ*, sub-family *Sterninæ*, genus *Sterna*, — thus they are classed in the books. What a pity their names could not have been more aptly chosen! There is much in a name, and *Sterna* sounds hard and cold. Nor is the English appellation, Tern, a whit more appropriate or beautiful. Why could not these birds of graceful motion and faultless coloring have borne the name

of Aphrodite? Perhaps like her they were evolved from the sea-foam. No sea-foam can be purer than their spotless breasts, and the softest tints of the summer sky are impressed upon their pearly mantles. If ever birds were born of the sea, surely they are these. The delicate rosy blush of at least one species must have been borrowed from some rare shell. But Science, plodding and realistic, frowns upon such imagery, and her solid columns of facts and figures are resistless.

Occurring more or less regularly along the coast of New England, we find eleven species of Terns, all of which, with one possible exception (*Sterna caspia*), are either summer residents or migratory during the spring or fall months. Of this number five species may be set down as accidental visitors, which are either blown from their course by adverse winds or wander beyond the usual range. The Royal Tern (*Sterna maxima*), the Marsh Tern (*S. anglica*), the Sandwich Tern (*S. cantiaca*), and the Sooty Tern (*S. fuliginosa*) are stragglers from the South, while the Forster's Tern (*S. forsteri*), breeding in the interior well up into the fur countries, probably strikes across to the coast and follows its indentations southward. The last-named species, though rare, is of perhaps too regular occurrence to be classed among the accidentals, for one or two specimens are reported nearly every season, usually during the month of September.

The Caspian Tern — all previous statements to the contrary notwithstanding — must be considered a regular visitor every season, and one by no means uncommon. They come down from their northern breeding-grounds during the latter part of September and for several weeks, at least, are to be found in moderate numbers all along our seaboard. I have observed them at various points from Ipswich to Nantucket. At the latter place, upon one occasion, six individuals were seen fishing in the harbor near the town. As to their wintering within New England limits, I can offer only negative evidence, but that points to the inference that they pass farther south with the approach of severe weather. During the first week of May, 1875, I found them quite numerous at Chatham, Mass. They frequented the sand-bars near the shore, and kept apart from the Herring and Black-backed Gulls, the only other species of *Laridae* present at the time. The Short-tailed Tern (*Hydrochelidon nigra*) can likewise no longer be regarded as a rare or accidental visitor. Their numbers vary considerably in different years, but

they are always to be found during the fall migration. At Nantucket they were fairly numerous in August and September of 1878. I know of but one instance of the capture of this Tern in spring.

Four species only out of the whole number accredited to New England are known to breed along its coast. They may be given in the order of their comparative abundance as follows: The Wilson's or Common Tern (*S. fluviatilis*); the Roseate Tern (*S. dougalli*); the Arctic Tern (*S. macrura*) (the choice of precedence between the last two species will vary as different localities are considered); and the Least Tern (*S. antillarum*). Of these the Roseate and Least Terns are for the most part confined to the waters south of Cape Cod, while the Arctic and Common Terns breed along the entire coast, and range northward to unknown latitudes. Formerly a small colony of Least Terns nested annually upon the Ipswich sand-hills, but they have been entirely driven away by persecution. This point was probably about the extreme limit of their northern range upon the Atlantic coast. I have also upon one occasion found the Roseate Tern as far north as Casco Bay, Maine, where a small flock was observed upon the Green Islands. They certainly were not nesting there, though the date, July 20, renders it not impossible that they had eggs or young on some of the neighboring islands.

Spring comes over the sea later than upon the land, and fewer tokens are given of its presence. There is no freshening grass; no budding foliage, nor springing up of green things in sheltered places. Summer may be close at hand, but as yet the sea gives no sign. When the wind is from the north, the waves in the bay have that steely glint that they have borne all winter. The sand drifts drearily over the wind-swept beach-ridges, and the marshes are bleak and brown, while in the interior Robins may be hopping about upon green lawns, and violets blooming in every woodland nook. The Ducks and Geese, it is true, are marshalling their cohorts and stretching out in long lines northward, but the breath of ocean is still chill and cold. Indeed, the season is commonly far advanced, and the apple-orchards in bloom inland, ere the winter Gulls are gone to their distant breeding-grounds. Scarcely has the rear-guard of their legions departed, when the Terns begin to appear. And what a fitness is there in the change with the changing season! The larger Gulls, that enliven our shores through the colder months, seem born to breast the fiercest gusts of winter and to wrest a living

from icy seas. Bold, hardy, vigorous, they delight in the cold, and their every motion bespeaks conscious power and strength. The Terns, on the other hand, are characterized by a delicate perfection of outline and a swift grace of movement, that seems ill-adapted to stern, pitiless surroundings. They are like swift yachts that winter in southern seas, and come back to us on the first warm breezes of summer. Yet the significance is perhaps only local, after all, for both Gulls and Terns herald the opening summer to the inhabitant of Labrador or Greenland.

The Least Terns, although the smallest and seemingly the most delicate of their tribe, arrive first. By the middle of May they appear in certain favored spots, — for they are not anywhere very numerous, — and small colonies of from ten to fifty pairs are soon formed at various points along the shores of Cape Cod and upon some of the more sandy islands in the Vineyard Sound.

A few days after the advent of the "Little Strikers," as the Least Terns are called by the 'longshoremen of Virginia, the Wilson's and Roseate Terns begin to appear. They are already paired, but, judging by the occasional bickerings and jealousies that arise, even the more sedate females are not above a little harmless flirtation. It is a pretty sight to see the mated birds sitting side by side upon some long sand-spit, all with their breasts turned to the soft morning breeze, and each little glossy black cap glistening in the sunlight. Forty or fifty there may be altogether, with others continually arriving from the distant fishing-grounds. As the incoming birds settle among their fellows, a low murmur of welcome runs through the assembled throng, and fifty pairs of wings are simultaneously raised above their owners' backs. It is like the greeting offered by men to one whom they delight to honor, save that among these simple sea-birds even the humblest are rarely neglected. Those individuals occupying the higher portion of the bar are squatted on the warm sand, or lying with wings partially extended to the grateful rays of the sun, while along the water's edge many are washing and pluming themselves, scattering the salt spray in every direction, or toying with the lapping waves. As the rising tide encroaches on their domain, numbers of the more careless are floated off their feet, when they take wing and alight again among the rest. In this way the area continually narrows, until the birds are massed in a compact body upon the highest point. When this at length becomes submerged they all take wing

and remove to some other spot. The same bar is apt to be resorted to daily, and if sufficiently elevated to be beyond the reach of the tides, it is all the more likely to be chosen.

About the middle of June—the time varying somewhat with different localities — the Terns repair to their breeding-grounds and begin to deposit their eggs. Muskegat, the outermost of a group of low, sandy islands that with Nantucket form the breakwater of the Vineyard Sound, is, and has been since time immemorial, the largest breeding station of the Terns on the New England coast. It is crescentic in shape, three miles long by one across at the broadest part, and uninhabited. The beach along the eastern shore is steep and bold, and in the calmest summer weather the heavy surges from the open ocean break upon the shifting sands with an incessant sullen roar. Upon the Sound side shallows and sand-bars extend for miles in every direction, and it is said that at low tide one may wade across to Tuckernuck, more than a mile distant. The interior of the island rises in rolling sand-hills, which are sparsely clothed with beach-grass and a stunted growth of poison ivy, while a few scattered clumps of bayberry-bushes afford the nearest approach to arboreal vegetation. Were it not for man, — who, alas! must be ranked as the greatest of all destroyers, — the Terns would here find an asylum sufficiently secure from all foes. But season after season the poor birds are daily robbed of their eggs by the fishermen, while frequent yachting parties invade their stronghold and shoot them by hundreds, either in wanton sport or for their wings, which are presented to fair companions. Then the graceful vessel spreads her snowy sails and glides blithely away through the summer seas. All is gayety and merriment on board, but among the barren sand-hills, fast fading in the distance, many a poor bird is seeking its missing mate ; many a downy little orphan is crying for the food its dead mother can no longer supply ; many a pretty speckled egg lies cold and deserted. Buzzing flies settle upon the bloody bodies, and the tender young pine away and die. A graceful pearl-tinted wing surmounts a jaunty hat for a brief season, and then is cast aside, and Muskegat lies forgotten, with the bones of the mother and her offspring bleaching on the white sand. This is no fancy sketch ; all over the world the sad destruction goes on. It is indeed the price of blood that is paid for nodding plumes. Science may be, nay, certainly is, cruel at times, but not one tithe of the suffering is caused by her disciples that the votaries of the fickle goddess Fashion yearly sanction.

My first visit to Muskegat was in 1870. It was about the 25th of June when we landed on the island, and three days were spent in investigating its fauna. Although the fishermen told us that the Terns had been diminishing for years, their numbers at that time, nevertheless, were astonishing. The Arctic Terns were breeding apart in a separate colony, on a long, narrow strip of sand, while the Common and Roseate Terns intermingled freely, oftentimes placing their nests side by side. Little preference seemed to be accorded by the last two species to any given locality. Their eggs were as often laid upon the windrows of sea-weed at high-water mark, as among the ivy-vines on the sand-hills. Indeed, they were scattered everywhere, and the birds that were breeding there must have been numbered by hundreds of thousands. The sight was a novel and impressive one. Overhead, at varying heights, swarms of Terns were passing and repassing, crossing each other's flight in mazy lines. From the birds just skimming the crests of the sand-hills to the white specks floating thousands of feet above the earth in the blue sky, the air was filled with their countless numbers. Hundreds were continually rising from their nests and making out to sea, or returning from the fishing-grounds, each with a small fish held crossways in its bill.

On one occasion that I remember, a black thunder-cloud rose out of the sea, in the north, and the white birds hovering over the island were brought out in striking contrast to the dark background. It was as if the air were filled with snowflakes. The noise was simply deafening, especially when the birds became aware of our presence. As we advanced, their sitting mates rose from the nests in clouds, swelling the throng of anxious parents over our heads, each bird adding its shrill voice to the general din. Yet amid all this confusion they took good care to keep beyond gun range. Occasionally, however, an exception to this occurred, and a daring bird darted down into our very faces. High overhead all the time a number of Black-headed Gulls (*Larus atricilla*) floated in graceful circles, adding their shrill demoniac laughter to the weird chorus.

If a Tern were shot, the effect was instantaneous and startling. Every voice was at once hushed, hundreds of long narrow wings were set, and troops of gliding arrowy forms swept down in silence to the fallen victim. From the sky above, from every nook and corner of the neighboring sand-hills, they came hurrying to the spot. Then, as if at a given signal, every bird burst out afresh in cries of

rage, protest, and despair. The effect was indescribable. As the graceful birds came whirling down in perfect silence, they seemed like dread avengers seeking to bear away their dead comrade and to overwhelm his destroyer. If another bird were killed, the tumult continued and the excitement became even more intense; but if no further molestation were offered, they gradually departed one by one. This habit of hovering over their slain companions, though undoubtedly prompted by sympathy and social affection, is a most unfortunate one, as it is constantly taken advantage of, and dozens are frequently killed at a time.

Upon Muskegat the Terns have, or had at the time of which I write, another enemy, which, though second in importance to man, nevertheless destroyed large numbers of these birds. This was the Short-eared Owl (*Brachyotus palustris*). A small colony of these birds had established itself upon a certain elevated part of the island, spending the day in a tract of densely matted grass. Scattered about in this retreat were the remains of at least a hundred Terns, that they had killed and eaten. Many of these were fresh, while others were in every stage of decomposition, or dried by the sun and wind. In each case the breast had been picked clean, but in no instance was any other portion disturbed. Every day, at a certain time, these Owls sallied forth in search of fresh prey. We used regularly to see them about sunset, sailing in circles over the island or beating along the crests of the sand-hills. They were invariably followed by vast mobs of enraged Terns, which dived angrily down over the spot where the Owl had alighted, or strung out in the wake of his flight like the tail of a comet. The Owl commonly paid little attention to this unbidden following, and apparently never tried to seize his persecutors while on the wing, but on several occasions we saw a sitting bird pounced upon and borne off. Sometimes in the middle of the night a great outcry among the Terns told where a tragedy was being enacted.

I found the Terns sadly diminished in numbers when I last visited Muskegat, in July, 1874. Their persecutors were ravishing their stronghold more relentlessly than ever, and nearly every day fishermen came from far and near to collect their eggs. So cleanly had they swept the island that we could find scarcely a nest with eggs, and at that comparatively late date not a single young bird was to be seen. In fact, the poor Terns were kept laying like hens through the whole summer. We were told by the fishermen that

quite as many eggs were obtained by them in August as in June. It is doubtful if one pair in a hundred succeeded in raising offspring that year. Under such conditions the result is inevitable. If prompt legislation be not brought to bear on the matter, the time is near at hand when the waters of the Vineyard Sound will no longer be enlivened by these innocent birds. The inconsiderable destruction of small fishes, a reason that has been given for withholding protection, is of little moment, and those barren sandy shores can ill afford to lose the presence of the graceful Sea-swallow.

Of the eggs of the three species of Terns which breed upon Muskeget, little need be said save that they vary to an almost endless degree, and cannot specifically be distinguished. The Wilson's and Roseate Terns usually build nests, some of which are quite bulky, with a lining of dry grasses, upon a foundation of coarse twigs or sea-weed. In many cases, however, the eggs were simply laid in a slight depression in the sand. We fancied that the Roseate Terns built more substantial domiciles than the other species, but the difficulty of satisfactorily identifying any considerable number of nests rendered a positive conclusion hopeless. The Arctic Terns, as before stated, bred apart from the others, and laid their eggs upon the bare sand.

The notes of the Wilson's and Arctic Terns vary, if at all, only slightly in modulation. The ordinary cry of anger or protest is a harsh vibrating *te-ar-r-r*, that of contentment or recognition a soft *chick*. They utter various other sounds, all more or less discordant. The usual note of the Roseate Tern is a soft mellow *hew-it*, repeated at frequent intervals. It has, in addition, when excited or angry, a cry which can be closely imitated by forcibly tearing a strong piece of cotton cloth.

One who has never held in his hand a freshly killed Tern can scarcely imagine its wonderful beauty. The delicate faultless outlines; the long, slender, graceful wings; the pearly blue-gray back; the soft tinting beneath, set off by the bright coral red of the feet and bill, all go to make up a whole that must satisfy the most æsthetic eye. The delicate blush that suffuses the breast of the Roseate Tern can only be seen in its perfection for a brief period after death, for either it fades altogether, or turns to a dull salmon tint before the bird becomes cold. Like an ethereal grace, it shrinks and perishes before the gaze of vulgar eyes.

When the cares of incubation are over, — and sad, unprofitable

cares they must be in most cases for these poor birds, — the Terns resort again to the sand-bars nearest their chosen fishing-grounds. The waters about Nantucket are a favorite haunt, and through the month of September they swarm about every bay and cove that indents the shore. Their movements, however, depend largely upon those of the blue-fish. These voracious creatures prey upon the smaller fishes, and, hunting always in schools, by their combined action drive the feeble fry to the surface, when they are seized by the Terns. The fishermen rely almost wholly upon the actions of the latter to discover the presence of fish in the Sound, and when a flock of Terns is seen hovering over a certain spot, a school of blue-fish is pretty sure to be at work beneath.

It is an interesting sight to watch the birds collect. A moment before, perhaps only a few were to be seen, leisurely winnowing their way along the shore; but in an incredibly short space of time the lucky discoverer of a school is surrounded by hundreds of his fellows, and a perfect swarm of eager, hungry birds poises over the spot. Dozens dash down at once, cleaving the water like darts, and, rising again into the air, shake the salt spray from their feathers by a single energetic movement, and make ready for a fresh plunge. Every bird among them is screaming his shrillest, and the excitement waxes fast and furious. Beneath, the blue-fish are making the water boil by their savage rushes, and there is fun and profit for all save the unfortunate prey. Their position is perhaps the best exemplification of the "frying-pan and the fire" that can be found in nature.

The descent of a Tern upon its victim is performed with inimitable ease and grace. The bird frequently disappears entirely beneath the surface, and occasionally even swims a short distance under water before reappearing. The flight of the Roseate Tern is especially dashing and beautiful, with the long cleft tail streaming out behind, or inclining, rudder-like, to either side, as the bird suddenly changes its course. I have seen the Wilson's Tern picking up floating garbage from the surface in the manner of a Gull, but the food is ordinarily small fishes, which are taken alive.

In clear calm weather in September few Terns will be seen along shore. They probably wander farther out to sea at such times, or congregate upon the sand-bars to rest and plume themselves. The cleanliness of these birds is remarkable. Not only is the plumage invariably spotless, but I have on more than one occasion seen a

wounded one, which had been taken into the boat, begin to arrange its disordered feathers, and its feeble efforts to remove the blood-stains from its fresh wounds were truly touching.

When the wind blows hard the Terns spend much of their time on the wing, and then display great restlessness and activity. They seem to exult with the freshening breeze, like ships that have been becalmed. At such times I have seen them play for many minutes with a fish which one of their number had captured. The holder would drop it, evidently by design, and the whole troop go sweeping down in pursuit. The foremost was sure to seize it before it reached the water, when it was taken up into the air and again dropped. In this manner the prize would be in turn passed from one to another. The game was apparently well understood by all, as no attempt was made by any of them to devour the fish. Swallow swill frequently play with a feather in a similar manner.

The ease with which sea-birds find their way through the densest fog is as astonishing as it is inexplicable. I have seen the Terns passing between the fishing-grounds and Muskegat when it was impossible for human eyes to discern an object many yards away, and yet their course was as direct and decided as in the clearest weather. Indeed, at such times the fishermen are often guided by their flight.

The Least Terns usually leave for the south in the latter part of August, and the Short-tailed species commonly departs before the close of the succeeding month. But the Wilson's, the Roseate, and the Arctic Terns linger about Nantucket through the first half of October. After that their numbers thin rapidly, and by the 25th all are gone. The fishermen say that they follow the blue-fish in their southward migration. However that may be, when the chilling blasts of early November sweep across the sea, the Herring and Black-backed Gulls have taken their places upon the sand-bars about Nantucket; the Eider Duck, the Scoter, the Whistler, and the Shelldrake flock to fish among the Muskegat "tide-rips"; and troops of Snow-Buntings whirl over the bleak sand-hills. ¶

ON THE COLORATION OF EGGS.

BY S. D. OSBORNE.

A SHORT time ago my attention was called to the peculiar appearance presented in the markings of certain eggs. I allude more particularly to the purple marks on the eggs of *Uria grylle*, which have the appearance, mentioned in several descriptions, of being laid on under the surface; and the idea occurred to me that the purple shade was just such a color as the dark markings of the egg would produce if they were covered with a coating of white, and that therefore it was possible that the bird was provided with only one shade of coloring matter, the varied appearance being given by the manner in which it was deposited. The determination of this point seemed easy: so, taking a knife, and choosing one of the most distinct of the purple marks, I began carefully to scrape it, and in a very short time had reduced the spot to the color of the darker markings on the egg; thus showing that instead of two distinct pigments, the glands of the oviduct deposit only one, namely, a peculiar blackish-brown.

Of course, in working up a question of this sort, the first thing to do is to make the observations as general as possible; and, in the present case, the only way to accomplish this end was by continued experiment. Accordingly, I began with the intention of proceeding with the investigation through all the different orders. The second experiment was with an egg of *Alca torda*, which I chose as being most similar to that of *Uria grylle*, and one in which the same result would be most likely to be obtained. As I expected, the apparently purple markings became blackish-brown. I then made a slight deviation and took an egg of *Sterna fuliginosa*, which has a reddish-cream ground-color, over which are spots of a distinct purple, and also of a beautiful shade of reddish-chocolate. It was with some misgivings as to the result that I began to scrape the shell over one of the purple marks, but the effect was instantaneous, and by a very little work I could have made all the markings conform to one color, namely, the chocolate. I then took eggs of *Larus argentatus* and *Sterna macrura*, as they were easy to work upon. In both cases the dark purple changed to dark brown.

These examples made me pretty certain that the law applied at least to the *Natatores*, but I had still the other orders to investigate, and, beginning with the *Raptores*, I made two experiments; one with an egg of *Cathartes aura*, in which purple marks changed to reddish-brown, and the other an egg of *Accipiter fuscus*, in which a very deep purple blotch became a distinct chocolate-brown, similar to the majority of the markings on the egg. Next turning to the *Grallatores*, I first took an egg of *Rallus crepitans*, and worked at one of the purple dots until it became a brown similar to the darker dots on the specimen. In an egg of *Ibis alba*, purple changed to light brown, and in those of *Aegialitis meloda* and *Tringoides macularius*, lilac and purple became dark brown. The *Insessores* alone now remained for me to work upon, and here the great difficulty was in being able to scrape the shell in such a way that, while the outer layer of calcareous matter should be removed, the shell should yet remain unbroken. In the case of *Corvus americanus* this was easy, and light purple became light brown without any difficulty, but when I came to experiment upon the smaller eggs, it was no easy matter to persuade the shell to stay together long enough to give the desired result; but after quite a number of disasters I obtained very satisfactory results in the cases of *Tyrannus carolinensis*, where all the markings became chocolate-brown, in *Ampelis cedrorum*, where the peculiar purple marks turned to dark brown, and in *Agelæus phæniceus*, in which purple became almost black.

These are all the experiments which I have thus far been able to make, and as they comprise all orders of birds, and as the result was uniform in every instance, it is fair to suppose that, at least, the purple, lilac, and lavender marks on eggs are not the results of corresponding pigments in the oviduct, but are formed merely by the darker pigments covered by a layer of calcareous matter.

In regard to the brown markings of different shades which occur in very many eggs, the same experiments bring about a rather different result; for, while the darker shades seem more fixed, a very little scraping will cause the lighter ones to disappear altogether, showing that where the color is light, the layer of coloring matter is thin, and where the color is dark there is always a large deposit; and I have never seen an egg in which the different shades of brown were not such as a greater or less quantity of the same pigment could produce.

This appears to cover all cases, and, unless something different is shown, it seems to me to be fair to consider that, in regard to the spotting pigments, a single bird has but one color, which may be varied according to the way in which it is deposited on the shell, — either with respect to the thickness or position in depth from surface of the deposit, — and even may itself vary temporarily among birds of the same species, owing to a temporary condition of the system.

In regard to the ground-tint of the egg, which in many cases is colored, it can hardly be accounted for on the same principle. Of course those eggs which have a white or even a soiled ground-color offer no objection; neither do those which have a colored ground but are unspotted, as we might justly say that the remarks in regard to there being but one coloring matter still apply. But there are certain eggs which are spotted on a colored ground, and which make it necessary to account for the ground-color in some different way, or else to widen the theory, and to allow these few cases to enter as exceptions. As to which of these two hypotheses is more apt to be the correct one, I am not as yet prepared to hazard an opinion, but am at present pursuing a course of chemical experiments by which I hope to settle the question.

NEST AND EGGS OF THE CERULEAN WARBLER.

BY J. A. ALLEN.

THE Museum of Comparative Zoölogy has recently received a nest and four eggs of the Cerulean Warbler (*Dendraeca cerulea*), collected at East Penfield, Munroe County, N. Y., June 7, 1878, by Mr. P. S. Fuller. The female was shot as she left the eggs, which were nearly fresh. The nest was placed in the fork of a small ash-tree, about twenty-five feet from the ground. It is neatly and compactly built, consisting externally of fine dry grasses of an ashen tint, bound firmly together with spider's silk, to which are affixed a few bits of whitish lichen; it is lined with strips of bark and fine grasses, of a reddish-brown color. The nest is thus gray externally and brown within. It measures as follows: inside diameter, 2

inches; outside diameter, 2.50 inches; depth inside, 1.40; external depth, 1.75. The eggs vary little in size or color, and mainly in respect to the size of the blotches. The ground-color is dull creamy-white, thickly covered with rather heavy blotches of reddish-brown. In one egg the blotches are coarse and cover the greater part of the surface; in another the markings are finer, quite evenly diffused, and of a lighter tint; in the other two about two thirds of the surface is covered by the markings. The eggs measure $.60 \times .47$ of an inch.

The Museum has also two other nests of this species. One was taken, with one egg, at Drummondville, Ontario, in June, 1873, and, with the egg, was soon after described by Dr. Brewer (Hist. N. Amer. Birds, Vol. III, p. 505). The other nest was taken at Mount Carmel, Ill., May 16, 1878, by Mr. William Bryant of Boston. It contained four eggs, which are now in his collection. The nest described by Dr. Brewer differs from the Penfield nest in no essential point, except that it is rather slighter, and has a more nearly continuous covering of lichens, with which are mixed small pieces of hornet's nest. The bottom of the nest shows that it was built in the fork of a small branch. The Mount Carmel nest differs from the others in having somewhat thicker walls, thus giving to the structure greater bulk and firmness. Like the others, it is partly covered externally with lichens, which enclose some of the smaller twigs amidst which it is fixed to the upper surface of a small branch. These nests agree as closely in their general structure, as well as in the material of their composition, as three nests of the same species are often found to do, and differ quite widely from the nests of any other species of the genus known to me. The Penfield and Mount Carmel nests were placed respectively twenty and twenty-five feet from the ground, and the Drummondville nest at a height of fifty feet.

Audubon describes the nest of the Cerulean Warbler as placed in the forks of a low tree or bush, and as being partly pensive, and the eggs as being pure white, with a few reddish spots about the larger end. In the light of present information, Audubon's description is evidently erroneous in nearly every particular. The only other description of the nest and eggs of this species is that given by Dr. Brewer, as already stated.

Dr. Brewer describes the egg as somewhat similar in its general appearance to the eggs of the Yellow Warbler (*D. aestiva*), but as be-

ing smaller, with the ground-color of a different shade of greenish-white. On calling Dr. Brewer's attention to the discrepancy between his description and the set of eggs above described, he was led to re-examine the subject, and also to compare his egg with the set obtained by Mr. Bryant. As a result, he writes me that his egg corresponds exactly with those obtained at Mount Carmel. He further states that while they seem to resemble the eggs of *D. astiva*, a comparison shows that while the spots on the eggs of the last-named species are "olivaceous-brown," those on the eggs of *D. cerulea* are "decidedly red-brown." He also still further observes, "In my egg and in Mr. Bryant's the ground-color is very conspicuous, the spots sparse. In yours the spots are large and confluent, obscuring all the ground-color." In the eggs collected at Penfield the blotches are probably exceptionally large and heavy, but the differences between these eggs and the others are not greater than occur not uncommonly between different sets of eggs in most species of birds that lay spotted eggs. There consequently appears to be no reason for doubting the authenticity of either of the sets of eggs here attributed to *D. cerulea*, which in two of the instances at least were identified by the capture of the parent bird.

ADDITIONAL CASES OF ALBINISM AND MELANISM IN NORTH AMERICAN BIRDS.

BY RUTHVEN DEANE.

IN Volume I (pp. 20 - 24) of this Bulletin I gave a list of sixty species which were affected by albinism, either partial or complete, and five species representing a melanistic phase of plumage. Since then I have been enabled to add twenty-seven species to the list of albinistic birds, and one case of melanism.

In March, 1878, Mr. N. C. Brown of Portland, Me., saw a pair of pure white Mocking-Birds confined in a cage at Coosada, Ala.; they had been taken from the nest, and retained the snowy whiteness of their plumage. Mr. George A. Boardman of St. Stephens, N. B., writes me that he has in his possession a specimen of the Mocking-Bird which is nearly white, which he shot at St. Augustine, Fla.

Mr. C. J. Maynard has in his possession a Black-capped Titmouse

with the two middle tail-feathers white. This is the only instance of albinism occurring among the *Paridae* of which I have heard.

I have recently procured an immature specimen of the Catbird from Mr. H. K. Coale of Chicago, Ill., which was shot at Hyde Park, Ill., the 21st of July, 1878. Dr. Charles C. Abbott informs me that a pure white bird of this species with pink eyes was captured alive on his grounds at Trenton, N. J., and sent to the Museum of Biology at Princeton, N. J.

I have recently obtained from Mr. W. H. Collins of Detroit, Mich., a strange-looking specimen of the Shore Lark. The under parts are white, the upper parts being slightly washed with a rusty brown. The feathers are much worn, and the bird has a sickly appearance.

Mr. Charles E. Aiken of Colorado Springs has kindly presented me with a specimen of Audubon's Warbler which he collected at Camp Apache, Arizona, September 23, 1876, with albinism represented by a distinct white ring around the neck; the feathers being only tipped with white. Under date of the 25th of July, 1878, Mr. Charles A. Allen of Nicasio, Cal., writes me: "I had a fine specimen of Audubon's Warbler that I shot in the Sierras this spring. It was a male, and had a white collar extending around the back of the neck and on each side of the neck and shoulders, meeting in a large white patch on each side; otherwise the bird was in its ordinary plumage." It is a little odd that two specimens of the species should have been taken showing the freaks of albinism in such a similar way.

A white specimen of the American Goldfinch is in the collection of Mr. J. B. Gilbert of Penn Yan, N. Y. Mr. John Akhurst of Brooklyn, N. Y., writes me that he once shot a Savannah Sparrow pure white with the exception of the head and neck, which had a creamy tint.

Mr. George A. Boardman has in his fine collection, in which so many albino birds are represented, a pure white Purple Finch; and through the kindness of Mr. H. Herrick of New York I have in my collection a dull cream-colored bird of this species which he shot at Umbagog Lake, Me., some years ago. I am indebted to Mr. N. C. Brown for a specimen of a male Sharp-tailed Finch, which he collected at Scarborough, Me., October 19, 1877, showing slight traces of albinism. A few white feathers may be seen over each superciliary stripe and also on the secondaries and coverts of one

wing. An albino Swamp Sparrow is in Mr. Boardman's collection, taken at St. Stephens, N. B. On the 30th of November, 1878, Mr. William Brewster saw a pure white Black Snow-Bird in his garden, in Cambridge, Mass. It was in company with a flock of the same species, but unfortunately he was unable to secure it. Mr. S. Palmer of Ipswich informs me that he has an albino Indigo-Bird.

A mottled Rusty Blackbird has been mounted by Mr. W. H. Collins of Detroit, Mich., and Dr. J. G. Cooper of Haywood, Cal., writes me that he has seen a partial albino specimen of Brewer's Blackbird.

In a letter from Mr. Charles E. Aiken, this gentleman states that his friend, Mr. C. N. Holden of Chicago, Ill., has a perfect albino Wood Pewee.

The only instance of albinism occurring in the Chimney-Swift, which has come to my notice, is a fine pure white specimen in the collection of Mr. Jesse Warren of West Newton, Mass. In Volume III, page 192 of this Bulletin, Mr. C. A. Allen gives a description of partial albinism in the Anna Humming-Bird.

Mr. Boardman informs me of a partially white Belted Kingfisher which he saw at Halifax, N. S., and Mr. Collins writes me that there is a male specimen at the Museum of the Detroit Scientific Association which was taken near that city in 1872. It is of a creamy-white color, though the natural markings of the plumage can be seen. Through the kindness of Mr. N. C. Brown I have been enabled to procure a most beautiful specimen of the Black-billed Cuckoo; the plumage is of immaculate whiteness; the bill and feet are dull white, and the collector said that the eyes were pink. It was taken in the vicinity of Portland, Me.

Mr. Robert R. McLeod of Houlton, Me., has generously presented me with a fine specimen of the female Spruce Partridge, which was shot in the vicinity of that town. The tail is pure white, a few primaries and secondaries of each wing are white, while on the upper and lower parts the white feathers are quite evenly interspersed with the black and buff plumage, and present a beautifully marbled appearance.

I have in my collection a skin of the Semipalmated Sandpiper, which was found in Quincy Market, Boston, by Mr. J. T. Heftye of Christiania, Norway, in October, 1876, who kindly presented it to me. The head, neck, and upper parts are of a uniform light gray, and it lacks the buff on the breast and sides. In the Museum at

Detroit is a specimen of the Coot (*Fulica americana*) which is white, marked with dark blotches. It was shot at Detroit, Mich., in 1873, and was mounted by Mr. Collins. Mr. Aiken informs me that he once saw a beautiful white specimen of this species in the Calumet Marshes in Indiana, but failed to procure it.

I have in my possession a wing of the American Bittern with one secondary quill pure white. Mr. R. L. Newcomb of Salem, Mass., who shot the bird, states that the rest of its plumage was normal.

In Mr. Boardman's collection is a Lesser Scaup Duck in white plumage. Mr. John Akhurst informs me that he has seen an albino specimen of the Surf Duck.

The only instance of albinism detected among the *Laridae* which has come to my notice is in a specimen of Heermann's White-headed Gull, which Dr. Cooper informs me he shot in California. He writes: "I never shot but one albinistic specimen in California, a *Larus heermanni*, with a white patch about three inches square across the secondary quills. It looked very pretty in the air." Dr. Cooper also says that he has seen a pale and mottled specimen of the Fulvous Tree Duck.

The only additional example of melanism which I can add to the previous list is represented by the Carolina Rail, for which I am indebted to Mr. Gilman W. Brown of West Newbury, Mass., who presented me with the specimen. It was one of about sixty of this species shot by Mr. Brown on the shores of the Merrimack River at West Newbury, September 1, 1877. At a short distance the bird looks almost black. The upper parts are black with a tinge of rufous, more especially on the scapulars, which are only tipped with this color. The throat, sides of the neck, and breast are dull brown, belly and under tail-coverts black. There is a white ring around each eye, and a small patch of white behind each eye on the occiput.

As I remarked in my previous list, it is strange that albinism should occur so frequently in some families and be of such rare occurrence in others; and it would be interesting to learn from any of the readers of the Bulletin of any instances which may have come to their notice of this abnormal plumage in such families as the *Troglodytidae*, *Vireonidae*, or subfamily *Icterinae*.

LIST OF BIRDS OBSERVED IN THE NAVAL HOSPITAL
 GROUNDS, IN BROOKLYN CITY.*

BY GEORGE HUGHES COUES.

THE Hospital enclosure contains about twenty acres, occupied by several public buildings and private residences; the land is divided into ornamental grounds with large shade-trees, a cemetery, a kitchen-garden, and a cultivated field. Contiguous to the enclosure is a tract of marshy land containing five or six acres, overflowed at times by tide-water. The neighborhood is a populous one, and full of manufacturing establishments, the gaseous emanations from which are very noticeable.

1. *Falco columbarius*. PIGEON HAWK. — Very common.
2. *Falco sparverius*. SPARROW HAWK. — I have seen three individuals.
3. *Buteo lineatus*. RED-SHOULDERED HAWK. — Quite common.
4. *Syrnium nebulosum*. BARRED OWL. — One seen in the immediate vicinity.
5. *Picus villosus*. HAIRY WOODPECKER. — Common; but no instance of its breeding observed.
6. *Picus pubescens*. DOWNY WOODPECKER. — Common; breeds.
7. *Melanerpes erythrocephalus*. RED-HEADED WOODPECKER. — Common during summer.
8. *Colaptes auratus*. GOLDEN-WINGED WOODPECKER. — Common; breeds.
9. *Trochilus colubris*. RUBY-THROATED HUMMING-BIRD. — Common.
10. *Chætura pelagica*. CHIMNEY SWALLOW. — Common; breeds.
11. *Chordiles popetue*. NIGHT-HAWK. — Common.
12. *Ceryle alcyon*. BELTED KINGFISHER. — Common.
13. *Tyrannus carolinensis*. KINGBIRD. — Common; breeds.
14. *Empidonax minimus*. LEAST FLYCATCHER. — Common; breeds.
15. *Turdus fuscescens*. TAWNY THRUSH. — Very common.
16. *Turdus migratorius*. ROBIN. — Very common; breeds.

* This list, prepared at my request by my nephew, who has proved himself a close observer, is of interest as showing how many birds may be found in the very heart of a great city. Others than those here given doubtless occur, the present list being restricted to those actually observed, and identified beyond question. — E. C.

32 COUES on Birds at Brooklyn Naval Hospital Grounds.

17. *Harporhynchus rufus*. BROWN THRUSH. — Common; breeds.
18. *Mimus polyglottus*. MOCKING-BIRD. — One specimen seen in 1877, which I unfortunately could not secure.
19. *Mimus carolinensis*. CATBIRD. — Common; breeds.
20. *Sialia sialis*. BLUEBIRD. — Common; breeds.
21. *Regulus calendula*. RUBY-CRESTED WREN. — Common in spring and autumn.
22. *Parus atricapillus*. CHICKADEE. — Common.
23. *Sitta carolinensis*. WHITE-BELLIED NUTHATCH. — Quite rare.
24. *Certhia familiaris*. BROWN CREEPER. — Common.
25. *Cistothorus palustris*. LONG-BILLED MARSH-WREN. — Very rare.
26. *Troglodytes aëdon*. HOUSE WREN. — Common; breeds.
27. *Mniotilta varia*. BLACK-AND-WHITE CREEPER. — Very common.
28. *Dendrœca coronata*. YELLOW-RUMPED WARBLER. — Common.
29. *Dendrœca pennsylvanica*. CHESTNUT-SIDED WARBLER. — Quite rare.
30. *Dendrœca æstiva*. YELLOW WARBLER. — Common; breeds.
31. *Pyrauga rubra*. SCARLET TANAGER. — An occasional visitor.
32. *Hirundo horreorum*. BARN SWALLOW. — Common; breeds.
33. *Ampelis cedrorum*. CEDAR-BIRD. — Common.
34. *Vireo olivaceus*. RED-EYED VIREO. — Common; breeds.
35. *Passer domesticus*. ENGLISH SPARROW. — Very abundant.
36. *Carpodacus purpureus*. PURPLE FINCH. — Quite common.
37. *Plectrophanes nivalis*. SNOW-BUNTING. — Common at times in winter.
38. *Junco hyemalis*. SNOW-BIRD. — Common.
39. *Spizella socialis*. CHIPPING SPARROW. — Very common; breeds.
40. *Melospiza melodia*. SONG SPARROW. — Common; breeds.
41. *Melospiza palustris*. SWAMP SPARROW. — Once seen.
42. *Passerella iliaca*. FOX-COLORED SPARROW. — Quite common.
43. *Guiraca ludoviciana*. ROSE-BREADED GROSBILL. — One specimen secured.
44. *Pipilo erythrophthalmus*. CHEWINK. — Very abundant.
45. *Dolichonyx oryzivorus*. BOBOLINK. — Three specimens secured.
46. *Molothrus ater*. COWBIRD. — Once seen.
47. *Agelæus phœniceus*. RED-WINGED BLACKBIRD. — Seen only occasionally.
48. *Icterus baltimore*. BALTIMORE ORIOLE. — Very common.
49. *Quiscalus versicolor*. CROW BLACKBIRD. — Seen occasionally.
50. *Corvus americanus*. CROW. — Seen occasionally.
51. *Cyanurus cristatus*. BLUE JAY. — One specimen secured.
52. *Botaurus lentiginosus*. BITTERN. — One specimen seen.
53. *Ægialitis semipalmata*. RING-NECK. — Seen occasionally.
54. *Tringa minutilla*. LEAST SANDPIPER. — Quite common.

55. **Totanus melanoleucus.** GREATER TELLTALE. — Seen occasionally.
56. **Totanus flavipes.** LESSER TELLTALE.
57. **Bucephala albeola.** BUFFLE-HEAD DUCK.
58. **Anas obscura.** DUSKY DUCK. — One specimen seen.
59. **Querquedula discors.** BLUE-WINGED TEAL. Five specimens seen.
60. **Graculus carbo.** CORMORANT. — One pair seen.

NOTES ON SOME OF THE LESS HARDY WINTER RESIDENTS IN THE HUDSON RIVER VALLEY.

BY EDGAR A. MEARNS.

1. **Turdus migratorius.** ROBIN. — A rather scarce winter resident throughout the Hudson Valley; occurring at least as far north as the northern limit of the red cedar (*Juniperus virginiana*), perhaps much farther. In the Highlands sizable flocks of Robins generally remain all winter amongst the cedars, in sheltered situations, near the Hudson River. I have found them quite as common in cold as in warm winters. Very few — scarcely any — were seen during the winter of 1877-78, which was the mildest I have ever experienced. The wintering birds affect only certain favorite spots, where they subsist mainly upon the berries of the sumach (*Rhus typhina*) and red cedar.

2. **Turdus pallasi.** HERMIT THRUSH. — A few sometimes winter along the Hudson. In the Highlands, during the severe winter of 1874-75, when birds of the Canadian Fauna, such as *Pinicola enucleator*, *Loxia leucoptera*, *L. curvirostra* var. *americana*, *Ægiothus linaria*, *Chrysomitris pinus*, and *Plectrophanes nivalis*, were very numerous, the Hermit Thrushes were frequently observed or shot. They were found only in the cedar groves by the river, and were very shy and silent; only occasionally uttering, in a low tone, their customary *chuck*. These wintering birds remained until the middle of March, and the regular migrants began to arrive April 2. No Hermits were seen here during the past extremely mild winter (1877-78); but "Mr. A. J. Huyler, a competent observer, told Mr. Ernest Ingersoll, on several occasions, that he had seen *Turdus pallasi* at Tenafly, N. J. [opposite Riverdale, N. Y.], during each month of the past winter, — of course not in any great numbers."* Mr. Huyler since writes me that he "took a specimen of *T. pallasi* during the past winter, about the middle of February." Mr. Eugene P. Bicknell, of Riverdale, N. Y. (to whom I am indebted for many valuable notes on our winter birds), writes

* E. P. Bicknell *vide* Ernest Ingersoll.

me: "The extremes of early arrival and late departure of this species are April 11 and November 20, both dates being in 1875; though on February 28 (same year) I saw one in a grove of pine-trees, feeding on the dried berries of sumach (*Rhus*), and appearing quite at home. I again observed it (doubtless the same bird) at the same place, on March 28."* I have observed a great irregularity in the migrations of this species, both as to abundance and time of arrival.

3. *Sialia sialis*. BLUEBIRD. — The winter range of the Bluebird is about co-extensive with that of the Robin. In the Highlands they are seen every winter, and are generally abundant when the weather is mild; but there are often long periods when none are seen. They were present — but not numerous — in the winter of 1874-75. During the past winter they were very abundant throughout; they warbled their pleasant notes even in January; fed upon cedar and sumach berries.

4. *Lophophanes bicolor*. TUFTED TITMOUSE. — This species is to be included among our winter birds on the recent authority of Mr. Eugene P. Bicknell, † who observed one on November 29, 1874, in a piece of open woodland, near his residence, at Riverdale, N. Y. For several weeks thereafter this bird was occasionally noticed about the same spot, and without doubt remained during the winter, as he felt certain of having heard it in January, and the following March it was often seen or heard about the same woods, being then in full song. It disappeared after March 28. As long ago as 1844 Dr. DeKay wrote: ‡ "This lively and noisy bird appears in the southern counties of our State about the first of May, and remains with us until very late in the autumn, and indeed may be said to be a constant resident." It has never been observed in the Highlands.

5. *Anorthura troglodytes* var. *hyemalis*. WINTER WREN. — The Winter Wren is found in winter in the Hudson Valley at least as far north as Rhinebeck. Mr. Bicknell writes me that "it is somewhat irregular as a winter resident," but does "not consider it unusual to see it any time between October and May (May 4, 1877). It is, however, most abundant in the fall (October)." In the Highlands it is generally common all winter, but is somewhat irregular. It has been abundant during the severest winters, and uncommon, at times, in mild ones. Not plentiful last winter. It is often found in the rushes of the salt marshes beside the Hudson River; feeds, at such times, upon small mollusks.

6. *Dendroeca coronata*. YELLOW-RUMPED WARBLER. — The Yellow-rumps generally stay with us in autumn till November; a few remain-

* There is a notice in "Forest and Stream" newspaper of the occurrence of a Hermit Thrush, at St. John, N. B., on January 11, 1878; and there are numerous records of its capture, in winter, in Southern New England.

† See this Bulletin, Vol. III, p. 129.

‡ New York Fauna, Part II, p. 59.

ing among the cedars, in sunny places, till the early part of the following month, after which all depart to a more genial climate farther south. But during the past winter (1877-78) they remained in considerable numbers throughout that section of the Hudson Valley known as the Highlands. Their food consists mainly of the berries of the red cedar. The following notes are extracted from my journal: "November 26, 1877. Still abundant, flying about uttering a loud *chip*, and feeding on the berries of the red cedar. December 19. Yellow-rumps still here; have been steadily abundant up to this time. January 8, 1878. Still present; weather intensely cold; ground covered with snow. January 18. Quite numerous. They are flying about in the orchards, and inhabit bushy places near the river, or among the cedars. They seem to be quite contented so long as the ground is bare; but after a long snow-storm they are seen flying restlessly about, seeking with great alacrity any bare spot of ground. Numbers were seen during the last storm about the woodpile, in company with *Parus atricapillus*. February 12. Very numerous among the cedars and all along the way; feeding on cedar berries, in company with the Robins; just beginning to acquire the summer plumage, as are also the Yellow-Birds (*Chrysomitris tristis*). This change, as in the Yellow-Birds, is confined, at this season, to a few feathers of the rump and crown. March 8. One small flock seen; still in winter plumage. March 18. Numerous at Rhinebeck, Dutchess Co., N. Y. April 3. Several seen. One that I shot was in the midst of the spring moult; the new feathers being those of the nuptial dress."

From the above notes it will be seen that the Yellow-rumps were steadily present in considerable numbers throughout the past winter. They were always gentle and familiar; uttered a sprightly *chip*,—the solitary expression of their various emotions,—and were very agreeable winter companions. Later in the spring they favor us with a very pleasant little song.

7. **Carpodacus purpureus.** PURPLE FINCH. — These beautiful birds and sweet songsters are regular winter residents. In winter there is always a great preponderance of females,—almost as marked as was noted in the case of *Pinicola enucleator* and *Ægiothus linaria*, in the early part of the winter of 1874. Even the females are heard singing during the coldest weather; this is of common occurrence in early winter. They are gregarious, often assembling in very large flocks. On such occasions they are quite wild, and, on being approached, all rise at once on wing, with a loud, rushing noise, accompanied by certain peculiar wild notes, which produces quite a startling effect. They feed upon seeds, chiefly those of the iron-wood (*Ostrya virginica*), and red cedar berries.

8. **Melospiza melodia.** SONG SPARROW. — A regular winter resident, throughout the severest winters, in favorable situations; its abundance and dispersion depend on the character of the winter.

9. **Melospiza palustris.** SWAMP SPARROW. — I have an impression

that a few sometimes remain, even in the Highlands, throughout the milder winters. I remember one bird that seemed to be permanently established in a pile of lumber and débris on Consook Island, in the Hudson River; but it was unfortunately shot on the 19th of November, 1874. Mr. Bicknell writes me: "The only instance which has come to my knowledge of *M. palustris* wintering was in the severe winter of 1874-75, when a single individual remained during the winter about a roadside drain, which, owing to a continual inflow of water, was not often frozen. The water was supplied through a small passageway passing beneath the road, in which the bird doubtless found a desirable and effectual retreat in severe weather, as I several times started it from within the opening of this passageway, where the water was quite shallow. Other than the above, the latest record I have is November 30, 1876, when two were noted."

10. **Zonotrichia albicollis.** WHITE-THROATED SPARROW. — Mr. Bicknell writes me: "A regular winter resident here (Riverdale) is *Zonotrichia albicollis*. I rarely find it, however, in winter, except in the vicinity of private residences, where an abundance of spruce-trees and other evergreens affords it a suitable shelter. At that season it often approaches familiarly about the kitchen doorstep, in company with *Junco hyemalis* and *Spizella monticola*."

11. **Passerella iliaca.** FOX SPARROW. — Possibly a few may stay in sunny sheltered situations all winter. I found them as late as December 8, 1877, and as early as February 28, 1878. Mr. Bicknell furnishes the following dates: "December 4 (1874 and 1876); February 24, 1874 (a warm day, temperature 74°!)"

12. **Sturnella magna.** MEADOW LARK. — They remained at Fishkill, Dutchess Co., N. Y., during the winter of 1874-75. Found at various points along the Hudson in winter.

13. **Ceryle alcyon.** BELTED KINGFISHER. — None of the collectors seem to have found this bird wintering, though it might easily have done so during the past winter. My latest capture was November 4, 1874; also saw two November 30, 1878. It probably occurs on the lower part of the river in winter.

14. **Sphyrapicus varius.** YELLOW-BELLIED WOODPECKER. — Frequently observed in the Highlands during the severest winter weather. Mr. Bicknell gives the following record from Riverdale: "November 24, 1872; December 3, 1874; and January 22, 1876. On the latter date one was shot while feeding on some decayed apples that still hung on the branches of a tree, close to the house." Another was taken the same month, also feeding on decayed apples. Mr. A. J. Huyler states that "the Yellow-bellied Woodpeckers stayed at Tenally, N. J., until the last of December, 1877; and that they were more abundant than they had been for a number of years."

* 15. **Melanerpes erythrocephalus.** RED-HEADED WOODPECKER. — Mr. Huyler says the Red-headed Woodpeckers stay at Tenally all winter.

They occur at that season about Peckskill; and I observed them in abundance at Locust Grove, Lewis County, Northern New York, during the last of December and early part of January, 1878. Several adult specimens that I shot had the ventral surface strongly discolored with red, doubtless derived from the oak-trees, though my friend, Mr. C. Hart Merriam, assured me that no oak-trees grow in that region.

16. *Colaptes auratus*. YELLOW-SHAFTED FLICKER. — The "Highhold" is occasional, but of somewhat rare occurrence, in winter, in the Highlands and at Peckskill. Mr. Bicknell speaks of it as "rare in winter; only occasionally seen at that season."

17. *Circus cyaneus* var. *hudsonius*. MARSH HAWK. — Observed during every winter; particularly numerous in that of 1874-75, when numbers were observed in the bluish plumage, on the meadows near Constitution Island.

18. *Accipiter fuscus*. SHARP-SKINNED HAWK. — Of quite frequent occurrence all winter in the Highlands; observed from Rhinebeck to Riverdale at that season. Mr. Huyler states that it is plentiful at Tena-fly, where it builds in the ledges of the Palisades near by, and is called "Rock-Hawk" by some.

19. *Ectopistes migratorius*. WILD PIGEON. — Of unusual occurrence in winter; generally in very mild weather, when the ground is bare; observed in the Highlands on several occasions.

20. *Zenædura carolinensis*. CAROLINA DOVE. — The following record is from my journal: "January 12, 1878. A Carolina Dove flew down from a ledge above the Garrison's Tunnel, and alighted upon the railroad, close beside me, where it hopped about, looking askance at me, finally hopping on to the rail, where it sat ogling me till a train came along, when it flew on to the ledge. The flagman at the station told me that they were occasionally present throughout the milder winters, feeding on the grain that drops from the cars."

BREEDING OF THE WINTER WREN AT HOULTON, ME.

BY RUTHVEN DEANE.

THE finding of the nests of many of our ground-building species is considered by many as a matter of luck; but a thorough acquaintance with the woods and fields in which one is collecting, and a habit of perseverance, often leads to success, and these accomplishments must indeed be attributed to any one who has had the good fortune to discover three nests of the Winter Wren in one season.

About the middle of June, 1878, while collecting at Houlton, Me., Mr. James Bradbury, a resident of the town, showed me a nest of this species partly finished in a little clearing of thick woods on the banks of the Meduxnekeag River. He had previously noticed the bird in the same locality with small twigs in its bill, and after secreting himself at a short distance saw the Wren disappear under the roots of a fallen tree, where it remained for a time, and upon investigation he found the entrance of the nest. It was imbedded in the earth which remained attached to the roots, and it could only be detected by crawling under the thick brush which surrounded the tree; and on looking up, all that could be seen was a small aperture just large enough to admit the tiny birds. The nest was unfortunately deserted, for on the 22d of June we again visited it and it showed no further signs of completion. It was apparently almost finished, but lacked the fine lining of moss and feathers. The external breadth and depth of the nest was 4.50 inches, the internal depth 2.50 inches. It was composed of hemlock twigs, moss, and a few bits of lichens compactly woven together.

Early in June Mr. Bradbury found a nest containing six young a few days old. This nest was sunk into the thick moss which enveloped the trunk of a fallen tree. A bunch of ferns grew out of the moss near the entrance of the nest, and one of the parent birds suddenly flying from the ferns enabled him to discover its little home.

On the 8th of August, 1878, Mr. Bradbury took a third nest of the Winter Wren, which contained four eggs; and I am indebted to my friend, Mr. R. R. McLeod, who visited the locality before it was removed, for the following description: "The nest was in a place which does justice to the name *Troglodytes*, for it was away under an upturned cedar-root in the dark. The tree had blown over somewhat, and in the roof made by the earth and roots she had excavated a hole and made her nest, where but the least glimpse of light could have reached it. A little spring flowed over the rocks beneath, on which the tree stood, and only by watching the bird with a feather in her mouth was the nest discovered. Mr. Bradbury put his head and shoulders under the roots and the Wren fluttered past his face, and diligent search revealed the treasure."

The nest, which is in the possession of Mr. H. A. Purdie, is now before me, and presents a beautiful bit of bird architecture. It differs from the one already described by having the top open, similar to that of *Sayornis fuscus*, though possibly the bird had some natu-

ral crevice through which to pass before reaching the nest. It is composed mainly of very compact green moss, with a few hemlock twigs interwoven, and is lined profusely with feathers of the Canada Jay, Blue Jay, and other species, which arch over the eggs so as to almost conceal them. The average measurement of these eggs is .65 by .49 of an inch. The ground-color is pure white, and marked with fine spots of reddish-brown and a few blotches of a darker shade. In one specimen the markings are very small and faint, and free from any blotches. This was undoubtedly a second brood, and one egg was far advanced in incubation.

DESCRIPTIONS OF THE FIRST PLUMAGE IN VARIOUS SPECIES OF NORTH AMERICAN BIRDS.

BY WILLIAM BREWSTER.

V.*

99. *Cinclus mexicanus.*

First plumage. Above clear plumbeous-ashy, not darker on the head or neck; primaries and secondaries tipped with white; greater wing-coverts edged with pale rufous. Beneath pale whitish-fulvous, strongly tinged with purplish brown on the crissum; throat immaculate; rest of under parts transversely barred with obscure plumbeous. Bill and feet (in the dried specimen) brownish-yellow. From a specimen in my cabinet taken by Mr. C. A. Allen in Blue Cañon, Sierra Nevada Mountains, Cal., June 10, 1878.

100. *Lophophanes inornatus.*

First plumage. Above similar to the adult, but with a decided brownish tinge, especially on the interscapular region. Beneath dull ashy-white, only slightly darker upon the crissum and across the breast. From a specimen in my collection taken by Mr. C. A. Allen at Oakdale, Cal., June 17, 1878.

101. *Parus carolinensis.*

First plumage: female. Similar to the adult, but with the black of the crown and throat less glossy, the back more strongly tinged with olive,

* For parts I, II, III, and IV, see Volume III, pp. 15-23, 56-64, 115-123, 175-182. Part V may be regarded as an appendix to the four that precede it. With the few species that still remained to be described are included a number which have been received since the former papers were prepared, and too late for insertion in their proper places. To avoid confusion, and for greater convenience, the numbering of species is continued in the order in which they occur.

and the sides of the body slightly washed with pinkish-salmon. Distinguishable from *atricapillus* of the same age by the deeper, more glossy black of the crown and throat, by the absence of white margining on the secondaries, and by the sharper defined and more convex posterior outline of the black throat. From a specimen in my cabinet, collected at Mount Carmel, Ill., May 8, 1878. This bird, though apparently fully feathered, was taken from a brood of five young that had not left the nest.

102. *Helminthophaga celata lutescens*.

Autumnal plumage: young. Above intense olive-green, brightest on the rump, and obscured on the interscapular region by a washing of a neutral tint. Beneath greenish-yellow, tinged with obscure olive on the sides. No trace of rufous on the crown. From a specimen in my collection taken by Mr. C. A. Allen at Nicasio, Cal., August 2, 1878. Mr. Ridgway, in proposing the name *obscura* for a dark form of this species from the Southern States, says (B. B. & R., Birds of N. Amer., Vol. I, p. 202), that all the specimens before him from Georgia and Florida "lack any trace whatever of orange on the crown." I think his specimens must all have been females or immature birds, as an adult male before me, collected at St. Mary's, Ga., April 7, 1877, has the crown patch of exceptionally bright orange-rufous.

103. *Myiodiocytes pusillus pileolatus*.

Autumnal plumage: young female (?). Similar to the adult, but with the black pileum nearly obscured by a greenish-olive wash and the coloring generally even more intense. From a specimen in my cabinet collected by Mr. C. A. Allen at Nicasio, Cal., August 3, 1878. Another young bird (Nicasio, Cal., August 1, 1876), which apparently still retains portions of the first plumage, has the entire under parts pale yellow.

104. *Poœcetes gramineus*.

First plumage: male. Above reddish-brown, the feathers everywhere streaked with dark brown. Upon the nape and the anterior portion of the back much whitish mottling appears, for the most part upon the margins of the feathers. Shoulder and wing anteriorly, nearly as in the adult. Secondaries and all the rectrices except the outer pair (which are marked with white like the adults), bright reddish-brown. Beneath ashy-white, slightly tinged with brownish-yellow. Throat, breast, and sides thickly and broadly streaked with brownish-black. Upon the sides of the chin and throat these streaks are run together, forming a short but continuous stripe. From a specimen in my collection obtained by Mr. N. C. Brown at Portland, Me., July 26, 1877.

105. *Peuceæa ruficeps*.

First plumage. Above pale brown-olive streaked with dull reddish-brown, most thickly on the crown. Feathers of the interscapular region

with dark brown centres. Wing-bands pale fulvous. Secondaries edged externally with reddish-brown. Beneath pale brownish-yellow, thickly but finely streaked upon the breast and sides with dark reddish-brown. Superciliary lines and sides of neck bright greenish-olive. Auriculars dusky. Chin stripes dark brown. From a specimen (sex not ascertained) in my cabinet collected by C. A. Allen at Nicasio, Cal., July 11, 1878. Two others in first plumage collected at the same time and place are essentially similar.

106. *Euspiza americana.*

Autumnal plumage: young. Crown, shoulder, and rump, with sides of head and neck, light olive-brown, the centres of the feathers slightly darker; a little concealed chestnut on the shoulders. Feathers of the interseapular region with dull black centres and brownish-fulvous edges. Wing-bands, with outer margins of wing-coverts and secondaries, dull brownish-fulvous. Superciliary line brownish-yellow, fading anteriorly to brownish-white. Throat, central area of the abdomen, and the crissum, pale brownish-white. Sides of breast and body brownish-olive, with dark brown streaking on the flanks. Breast dull reddish-orange, streaked with dark brown, and washed with obscure ashy-white. From a specimen in the collection of Dr. J. M. Wheaton obtained at Circleville, O., August, 1878.

107. *Goniaphea melanocephala.*

First plumage: male (?). Generally similar to the adult female, but with the cinnamon of the under parts stronger; the sides of the throat and body, with the breast, profusely spotted with dull black. Crown black, with median stripe of brownish-yellow. Rest of upper parts brownish-cinnamon, each feather centrally blotched with dull black. Wing-bands and tips of secondaries yellowish or brownish-white. Superciliary line, chin, and sides of the throat ashy-white. Throat, jugulum, and breast, with sides of body and crissum, buffy-cinnamon, palest on the latter, and profusely sprinkled with dull black tear-shaped spots on the sides of throat, breast, and abdomen. May be distinguished from *G. ludoviciana* of same age (which it generally resembles) by the bright gamboge-yellow axillars and under wing-coverts. From a specimen in my cabinet obtained by Mr. Allen at Nicasio, Cal., June 26, 1878.

108. *Pipilo fuscus crissalis.*

First plumage: male. Wings and tail dark clove-brown, the wing-bands reddish-fulvous, and the secondaries edged with rusty. Rump bright reddish-brown. Rest of upper parts uniform dull reddish-brown. Beneath light rufous, deepest on crissum, scarcely paler across the breast. Pectoral region and sides anteriorly, faintly spotted with dark reddish-brown. From a specimen in my cabinet taken by Mr. C. A. Allen at Nicasio, Cal., July 2, 1878.

109. Dolichonyx oryzivorus.

First plumage. Top and sides of head, with the neck behind, buffy-cinnamon. A post-ocular stripe and two lateral ones on the crown dark-brown; a few of the feathers with lighter edgings. Rest of upper parts, including the tips of the wing-coverts and the outer margins of the primaries and secondaries, brownish-yellow. All the feathers of the interscapular region with broad dark-brown centres. Under parts warm reddish-buff, deepest on breast and throat. A band of faint dusky spots across the breast, and a few nearly obsolete streaks along the sides. From a specimen in the Museum of Comparative Zoölogy, collected by Mr. C. J. Maynard, at Newtonville, Mass., June 26, 1878. The autumnal plumage of this species seems to be very early acquired.

110. Tyrannus verticalis.

First plumage: male. Above similar to the adult, but with the crown patch entirely wanting, the ash-gray of that part washed with brown, and the back uniform grayish-olive. The wing-coverts are also tipped with brownish-fulvous and the secondaries margined with greenish-yellow. The outer webs of the outer rectrices are yellowish-white. Throat ashy-white; rest of under parts similar to adult, with the yellow of a deeper shade and extending higher up on the breast. From a specimen in my cabinet collected by Mr. C. A. Allen at Nicasio, Cal., July 8, 1878.

111. Myiarchus cinerascens.

First plumage. Above olive-gray tinged with brown on the crown. Wing-bands brownish-white. Outer edges of the primaries and most of the secondaries chestnut-brown. Tail-feathers reddish-chestnut, with a dull black longitudinal band next the shaft on both webs of the central pair, and on the outer web of all the rest. Beneath similar to the adult, the ashy on the breast perhaps a trifle deeper. From a specimen in my cabinet taken by Mr. C. A. Allen at Nicasio, Cal., August 26, 1878.

112. Sayornis nigricans.

First plumage: male. Head, and neck all around, sooty black, darker than in the adult. Wing-bands and bend of wings rusty, the tips of the primaries, secondaries, and rectrices, and the feathers of the interscapular region, rump, and crissum, with the posterior margin of the black on the breast, more or less strongly washed with brownish or rusty-fulvous. Otherwise similar to the adult. From a specimen in my cabinet taken by Mr. C. A. Allen at Nicasio, Cal., June 29, 1878.

113. Glaucidium passerinum californicum.

Autumnal plumage: young. Similar to adult male, but with the whole top and sides of head and the neck behind ashy-plumbeous, tinged with olive-brown, and *entirely unspotted*. The band across the throat also dif-

fers from that of the adult in being much darker, and the tail is conspicuously tipped with white, and crossed by six bands of white spots. From a specimen in my collection obtained by Mr. C. A. Allen at Nicasio, Cal., August 3, 1878. This bird was thought by Mr. Allen to be in first plumage. Its feathering, however, is so perfect, and the coloring so nearly like that of the adult, that I am inclined to consider it as in the second or autumnal plumage. The iris was yellow; the bill pale green; the feet greenish-yellow.

114. *Ictinia mississippiensis.*

Autumnal plumage: * young male. Head and neck ashy-white, each feather centrally streaked with dark plumbeous. Rest of upper parts dull black, with a narrow terminal rusty edging upon most of the feathers. Primaries and secondaries, with a few of the primary coverts, broadly tipped with white. Loes and eyelids black, as in the adult. Cheeks black, slightly streaked with white. Throat yellowish-white, with fine longitudinal plumbeous pencillings. Rest of under parts deep rich salmon, fading to yellowish-white on the abdomen, each feather with a medial, longitudinal, ovate spot of chestnut, which in most cases is laterally bordered by dark brown. Tail black, crossed beneath by three white bands (formed by angular spots on the inner webs), with corresponding ashy ones above, very faintly but more continuously defined. From a specimen in my cabinet collected by Mr. G. H. Ragsdale at Gainesville, Tex., September 5, 1878. A young female of apparently about the same age as my bird, described by Mr. Ridgway (B. B. & R., Hist. N. Am. Birds, Vol. III, p. 204), seems to differ in several important respects.

115. *Tetrao canadensis.*

Downy stage: chick about a week old. General ground-color buff-yellow. Central area of crown bright rufous, with a marginal lining of black. A spot of black on the forehead and on each lore, with three nearly confluent ones over the auriculars. Rump yellowish-rufous. Back and wings fulvous, the primaries, secondaries, wing-coverts, and scapulars barred with brownish-black. Under parts immaculate. From a specimen in my collection obtained with the female parent at Upton, Me., June, 1873.

First plumage: female. Ground-color above bright reddish-brown, becoming reddish-chestnut on the crown. The feathers are marked everywhere with black blotches of angular outlines and irregular shapes. Upon the neck and rump they form transverse bars: they are broadest

* It is possible that, like certain of the Owls, this species may pass through two preparatory stages, viz. a downy one and a distinctive first plumage. In this case the plumage above described would represent a first plumage corresponding with that of most Passerine birds. The better known members of this family, however, change directly from their downy dress into the regular autumnal plumage.

and most conspicuous on the scapulars, where they restrict the ground-color to a narrow central lining along the shaft of the feathers, and a few irregular outlying spots. Primaries and secondaries edged and tipped with pale fulvous. Tail crossed by eight distinct, continuous black bars. Auriculars spotted with dusky black. Throat and a broad superciliary line pale buff. (It should be stated that these parts are covered with what seems to be the still unchanged feathering of the chick.) Breast and sides bright rufous-orange, each feather with a pair of black spots on the outer webs. Upon the breast these spots are small and nearly round, but along the sides they become broader until about the anal region they form transverse bars. Central, abdominal, and anal regions immaculate buffy-white. From a specimen in my collection obtained at Upton, Me., July 28, 1874. Among the series of young males before me there are none in strictly first plumage. The moult begins early in August and proceeds very gradually, a few of the feathers dropping out at a time, as they are replaced by the more permanent fall plumage. The wing and tail feathers are invariably moulted; thus through the last half of August and nearly the whole of September the plumage presents a curiously patched appearance. In this condition the young male may be distinguished from the female by the black feathers which begin to appear in patches on the breast. The sexes are otherwise quite similar at this age. In both, the throat, cheeks, and sides of the neck are profusely but rather finely spotted with black upon a yellowish — in some examples ashy — white ground. This is unquestionably a remnant of the first plumage, which in the young female previously described had not replaced the down. The feathers upon the throat and crown are apparently the last to go, as they are not replaced in any of the specimens before me until the succeeding plumage is nearly complete. Both sexes acquire their full plumage during October, and by the latter part of that month, adults of either sex can only be distinguished with the greatest difficulty from birds of the year.

116. *Ægialitis meloda*.

Autumnal plumage: female. Differs from the adult in having the black frontal crescent entirely wanting, the feathers upon the crown and back with ashy-brown centres, a broad white collar around the neck behind, and the band across the breast brownish or ashy-plumbeous, instead of black. From a specimen in my collection obtained at Nantucket, Mass., September 22, 1875. Mr. Ridgway's western variety of this species cannot possibly be maintained. A large proportion of our New England Coast specimens have the breast band continuous, and in several that I have examined it is as broadly so as in the supposed variety *circumcincta*.

117. *Philohela minor*.

Downy stage: chick a few days old. General ground-color warm buff, tinged above with ashy. Large areas of rich seal-brown occur upon the

crown, back, and sides of the breast, while spots, blotches, and angular stripes of a lighter shade of the same color diversify most of the remaining surface. The throat and central portions of the breast and abdomen are, however, immaculate. From a specimen in my collection taken at Lexington, Mass., May, 1869.

First plumage: male. Ground-color above brownish-ashy; forehead and broad band around the neck behind immaculate. Crown brownish-black, crossed by two narrow transverse bands of fulvous. A few of the scapulars and the feathers of the back generally, with very dark brown centres. Chin brownish-yellow. Throat and sides of neck brownish-ashy, paler than that on the upper parts. Rest of the under surface yellowish-rufous, palest on the breast and body anteriorly, much richer and redder on the lower abdominal and anal regions. From a specimen in my cabinet shot at Cambridge, Mass., July 3, 1872. The plumage above described is the characteristic one of the young bird in summer. It is worn up to about the middle of August, when the moult — which with this species is unusually protracted — takes place. Adults and young moult about the same time, and with both the wing and tail feathers are changed with the rest of the plumage. Autumnal specimens are much more richly colored than spring adults.

118. *Rallus virginianus.*

Downy stage: chick about a week old. Entirely clothed in long, rather coarse, glossy, or blue-black down. Bill nearly straight, .72 inches long, yellowish at tip and base, crossed in the middle by a broad black band. From two specimens in my cabinet collected by Mr. D. C. French, at Concord, Mass., June, 1870.

First plumage: female. Top and sides of head, neck behind, back anteriorly, rump, breast, and sides, dull dead black. Interseapular region black, with a few of the feathers margined with brownish-olive. Wing-coverts and wings nearly as in adult, a little duller and darker perhaps. Superciliary line obscure ashy. Throat ashy-white, finely spotted with black. Central region of lower breast and abdomen, with a few of the feathers on the sides, tinged with white. Anal region and crissum dull reddish-chestnut. In my cabinet, from Cambridge, Mass., August, 1875. Several other specimens of corresponding ages agree closely with the one above described. A male, however (Cambridge, August 9, 1875), differs in having a faint reddish wash over the white on the breast and abdomen.

This species, as previously stated, passes through a regular first plumage, which precedes the downy stage, and is in turn succeeded by the regular autumnal plumage. The first moult occurs in the latter part of August. The autumnal plumage is a little brighter than that of the adult in spring, but does not otherwise materially differ.

119. *Porzana carolina.*

Downy stage: chick a few days old. Bill short, exceedingly depressed, high at base, rapidly tapering, the tip deflected. The whole body densely covered with dull black down, beyond which are produced abundant long, glossy, black hair-like filaments. Upon the throat is a tuft of stiff, coarse, bristle-like feathers of a *bright orange-color*. These are directed forward, and give the bird a most singular appearance. From a specimen in my cabinet collected at Cambridge, Mass., June 24, 1874. This bird, although the only specimen of the kind now at hand, is one of a large brood which was attended by the female parent. Several of the others were distinctly seen and closely examined at the time. All had a similar orange tuft upon the throat.

Notwithstanding the close relationship of this species to the preceding one, I am inclined to think that it has no distinctive first plumage, and that the down is worn until the feathers of the fall dress begin to appear. Negative evidence tending to strengthen this belief is afforded by a good number of specimens shot during the summer months. The autumnal plumage is too well known to merit description. The plumage of the adult varies but slightly at the different seasons.

SUPPLEMENTARY. — *Tachycineta bicolor.* In my remarks upon the development of the plumage of young birds of this species (Vol. III, No. 2, p. 63), I stated that the first plumage was worn "much longer than in most birds." From investigation of material collected during the past season, I find that the change takes place from about the middle to the last of September. Six specimens shot at Concord, Mass., October 16, 1878, have all acquired the full autumnal dress. The young differ from the adults only in having an exceedingly faint brownish-ashy wash on the breast and throat, and also in the shade of the metallic lustre of the back, which is of a greener and less steely cast. Both adults and young possess the conspicuous white tipping on the secondaries.

Under the head of *Coturniculus leuslowi* (Vol. III, No. 3, p. 118), I made the generalization that, "with the single exception of *Chrysomitris tristis*, this is the only species of the *Fringillidae*, so far as I am aware, in which the young in first plumage are entirely immaculate beneath." That statement I now find must be considerably modified. At the time of writing it entirely escaped my notice that I had previously described a third unspotted species (*Pipilo aberti*), and that still a fourth, namely, *Pyrrhuloxia sinuata*, remarked upon in the same paper as in transitional condition, was also plain. Mr. Ridgway has since informed me that the following additional North American species are, in the first plumage, entirely immaculate beneath: *Hesperiphona vespertina*, *Chrysomitris psaltria*, *Chrysomitris psaltria mexicana*, *Spizella atrigularis*, *Cardinalis virginianus*, *Pipilo aberti*, *Pipilo fuscus mesoleucus*, *Pipilo fuscus albigula*, *Plectrophanes nivalis*, *Leucosticte griseinucha*, *Goniaphea carulea*, *Cyanospiza ciris*.

NOTES ON THE HABITS AND DISTRIBUTION OF THE
RUFIOUS-CROWNED SPARROW (*PEUCÆA RUFICEPS*).

BY WILLIAM BREWSTER.

For the following notes, which are of interest as tending to throw some light upon the distribution and habits of a bird previously but little known, I am indebted to Mr. Charles A. Allen of Nicasio, Cal., a collector whose energetic as well as carefully conducted labors in Californian field ornithology have produced results too well known to need mention here.

Although the Rufous-crowned Sparrow was found abundantly near the Calaveras River by Heermann, and in small numbers upon Catalina Island by Dr. Cooper, it was not detected by Mr. Henshaw in any of that portion of California explored by the Wheeler Expedition in 1876. It is probably somewhat local in its distribution, and the peculiar character of its chosen haunts renders it the more likely to be overlooked. Mr. Allen writes me that the Rufous-crowned Finch arrives in Marin County, Cal., about the 20th of March. They come singly or in pairs, and are found in considerable numbers every season on all the mountains about Nicasio. Black Mountain, however, seems to be their stronghold. It is destitute of forests, and the exceedingly steep, rocky sides are abundantly clothed with "wild oats" and a bush very like the sweet-scented southern-wood. Another shrub, called by the hunters the "spit bush," is also characteristic of the locality, which is otherwise dry, and barren to a degree. The males sing from the tops of these low bushes: their notes are very sweet, and bear considerable resemblance to those of the Lazuli Finch (*Cyanospiza amœna*), but the difference can readily be distinguished. Both sexes are very shy, and to secure any considerable number of specimens is a task of extreme difficulty. If approached from above, they drop to the ground, run like mice through the grass and bushes, and are next seen flying down the mountain-side a hundred yards or more away. The best plan is to work upward. They are then more easily seen against the sky, and are less apt to take wing, as they always prefer to fly down hill. They apparently breed early in April, as a female, shot by Mr. Allen on April 7, 1878, had two fully developed eggs in the ovaries and a third, which would have been laid in a few

hours, in the oviduct. The latter was unfortunately broken by a shot; the fragments of the shell were pure white and unspotted. The nest* is placed on the ground in a slight hollow scratched by the birds. It is exceedingly hard to find, as the sitting female when approached steals silently away under cover of the surrounding vegetation, and if seen at all is likely to be mistaken for a startled mouse. The occurrence of two nests with young in July, 1878, near Point Reyes, communicated to Mr. Allen by Mr. T. H. Estey, seems to indicate that a second brood may be sometimes raised. The food of these Sparrows apparently consists largely of grubs and a certain green worm that infests the bushes among which they live. At least, this is the case during the breeding season, when Mr. Allen has repeatedly seen the parent birds carrying these worms to their young. In the autumn the Rufous-crowned Sparrows are to be found in straggling groups composed of two or three individuals. They all depart for the south before the winter season sets in.

Recent Literature.

LAWRENCE AND OBER ON THE BIRDS OF DOMINICA AND ST. VINCENT. — The important explorations by Mr. F. A. Ober in some of the smaller West India Islands (Lesser Antilles) have been rich in interesting results relating to birds. The collections and observations made by Mr. Ober have been made the basis of several recent papers by Mr. George N. Lawrence, in which no less than fourteen species supposed to be new have been described.† Mr. Lawrence has also prepared special lists of the birds obtained by Mr. Ober at two of the principal localities ex-

* For a description of the nest and eggs of this species see Vol. II, p. 37, of this Bulletin. Mr. Allen assures me that all uncertainty as to the correct identification of the specimens there described has been removed by his subsequent investigations in the same locality. Not only have similar nests been found, but *Peucaea ruficeps* is ascertained to be the only bird of any species that breeds on that portion of Black Mountain.

† 1. Descriptions of New Species of Birds from the Island of Dominica. By George N. Lawrence. Ann. N. Y. Acad. Sci., Vol. I, pp. 46-49. (Spp. nov. *Thryothorus rufescens*, *Dendroica plumbea*, *Myiarchus oberi*.)

2. Descriptions of Seven New Species of Birds from the Island of St. Vincent, West Indies. By George N. Lawrence. Ann. N. Y. Acad. Sci., Vol. I, pp. 147-153. June, 1878. (Spp. nov. *Turdus nigrirostris*, *Myiadestes sibilans*,

plored, namely, the islands of Dominica* and Saint Vincent.† Introductory to these lists are several pages descriptive of the islands in question, and of his experiences there, by Mr. Ober, and copious notes by the same gentleman relating to the habits of the various species observed, and giving measurements, color of eyes, etc., from the fresh specimens. The Dominican list numbers fifty-six species, of which rather more than one third are North American, but the greater part of these are wading and swimming birds. Six species are mentioned that are not scientifically determined. To the insular form of the Barn Owl (*Strix flammea*), occurring here, Mr. Lawrence gives the varietal name *nigrescens*. The Saint Vincent list numbers fifty-nine species (including three undetermined), one half of which are common also to the Island of Dominica, and nearly one half to North America. About one fifth of the whole number are semi-cosmopolitan *Grallæ*. The characteristic species, as would be expected, belong to genera almost wholly tropical in distribution. Mr. Ober notes especially the paucity of species as well as of individuals, and the total absence of Woodpeckers, although the islands are well forested.

Mr. Ober also made collections at the islands of Grenada, Antigua, and Barbuda. Those obtained at the two islands last-named he left to be forwarded at the earliest opportunity, but they appear to have not yet reached this country. Although Mr. Ober's work was several times interrupted by severe illness, the results attained are of the highest importance, and relate not only to ornithology but to other departments of science.— J. A. A.

COUES'S FIELD-NOTES ON BIRDS OBSERVED ALONG THE FORTY-NINTH PARALLEL.— In an article of one hundred and sixteen pages.,‡

(*Thryothorus musicus*, *Certhiola atrata*, *C. saccharina*, *Leucopiza bishopi*, *Coliste versicolor*.)

3. Descriptions of Supposed New Species of Birds from the Islands of Grenada and Dominica, West Indies. By George N. Lawrence. Ann. N. Y. Acad. Sci., Vol. I, pp. 160-163. July, 1878. (Spp. nov. *Turdus caribbaeus*, *Thryothorus grenadensis*, *Blacicus brunnicapillus*, *Quiscalus lutosus*.)

* Catalogue of the Birds of Dominica, from Collections made for the Smithsonian Institution by Frederick A. Ober, together with his Notes and Observations. By George N. Lawrence. Proc. U. S. Nat. Mus., Vol. I, pp. 48-69. 1878.

† Catalogue of the Birds of St. Vincent, from Collections made by Mr. Frederick A. Ober, under the Directions of the Smithsonian Institution, with his Notes thereon. By George N. Lawrence. Proc. U. S. Nat. Mus., Vol. I, pp. 185-198. 1878.

‡ Field-Notes on Birds observed in Dakota and Montana along the Forty-ninth Parallel during the Seasons of 1873 and 1874. By Dr. Elliott Coues, U. S. A., late Surgeon and Naturalist U. S. Northern Boundary Commission. Bull. U. S. Geol. Survey of the Territories, Vol. IV, No. 3, pp. 545-661. July 29, 1878.

Dr. Cones gives us the results of his field-work during the seasons of 1873 and 1874 in Northern Dakota and Montana, while acting as naturalist and surgeon to the United States Northern Boundary Commission. The observations relate mainly to the country immediately bordering the forty-ninth parallel, which was surveyed from Pembina, on the Red River, to the Rocky Mountains, or for a distance of about eight hundred and fifty miles. Dr. Cones, in his preliminary remarks, divides the country traversed into three regions, which he terms respectively the "Red River Region," the "Missouri Region," and the "Rocky Mountain Region." The physical and zoological characteristics of these regions are briefly detailed, to which is added a tabular enumeration of some of the more conspicuous birds of the three regions. Then follows a copiously annotated list of all the species observed, with lists of the specimens obtained, accompanied frequently with measurements. The Missouri Skylark (*Neocorys spraguei*) very naturally comes in for an extended notice, as do also two species of Longspur (*Plectrophanes ornatus* and *P. macconni*) and Baird's Bunting, relating especially, however, to their respective areas of distribution. At page 648 we notice interesting general remarks on the breeding range of our Geese and Ducks, and concerning the great numbers of individuals that sometimes assemble about the prairie sloughs and mountain pools. It is also noted that partly grown young of the Canvas-back Duck were secured at Turtle Mountain, while young of the Harlequin and Rocky Mountain Golden-eye (*Bucephala islandica*) were obtained at Chief Mountain Lake. Respecting this latter species Dr. Cones says: "This is, I believe, the first recorded instance of the occurrence of this species during the breeding-season in the United States." Hence it may be worth while to here record that eggs of this species, in the Museum of Comparative Zoology, were obtained in Middle Park, Colorado, by Mr. Edwin Carter, June 3, 1877. The paper concludes with a bibliographical appendix of nearly three pages, in which are entered the titles of nearly forty works and papers relating to the ornithology of portions of country adjacent to the forty-ninth parallel. — J. A. A.

MERRILL'S NOTES ON THE ORNITHOLOGY OF SOUTHERN TEXAS.— Attention has already been called through the pages of the Bulletin to Mr. Sennett's "Notes on the Ornithology of the Lower Rio Grande of Texas." That interesting locality now receives a still more complete overhauling at the hands of Dr. J. C. Merrill, U. S. A.,* who has been stationed for several years past at Brownsville, Texas. Although to some degree anticipated by Mr. Sennett's list, as well as by various previously published announcements on the part of the author himself, this paper comes to us

* Notes on the Ornithology of Southern Texas. Being a List of Birds observed in the Vicinity of Fort Brown, Texas, from February, 1876, to June, 1878. By James C. Merrill, Assistant Surgeon U. S. Army. Proceedings of United States National Museum, pp. 118-173.

teeming with fresh matter of no ordinary interest. A little of the cream has perhaps already been skimmed, but the milk that remains is none the less palatable on that account. The pamphlet comprises about fifty pages, and is illustrated by three fine woodcuts, which acceptably present the characters of some of the rarer forms. Dr. Merrill's investigations were mainly conducted in the immediate vicinity of Fort Brown, on the Rio Grande, about eighteen miles inland from the Gulf Coast. They were prosecuted unremittingly through a period of a little over two years, and the results bear abundant testimony to the thoroughness and reliability of his work. Two hundred and fifty-two species and varieties are given in all, and the character of their presence is in most cases satisfactorily defined. While it is manifest that Dr. Merrill has devoted his researches largely to the department of oölogy, the general subject has, nevertheless, been by no means neglected. The habits of such rare and little-known species as *Molothrus æneus*, *Nyctidromus albicollis*, *Chordeiles acutipennis texensis*, *Falco fusco-cærulescens*, *Buteo albicaudatus*, *Æchmoptila albifrons*, *Ortulida vetula*, *Plegadis guaravana*, and *Dendrocygna autumnalis* are treated at considerable length, and the intrinsic interest of the subject is well set forth by the clear, able style in which these biographies are written. Besides the addition of about a dozen Mexican forms new to our avi-fauna, Dr. Merrill has contributed much useful information relating to the geographical range of many North American species otherwise well known. As before stated, the nests, eggs, and breeding habits of Texan birds receive the larger share of attention, and much of the matter pertaining thereto is as valuable as it is new. The probable nidification upon our southern border of such northern species as the Carolina Rail and the Turnstone is indicated, while the Caspian Tern (*Sterna caspia imperator*) is unqualifiedly given as breeding on Padre Island in the Gulf. In view of the unusual interest attaching to this last announcement, it is to be regretted that the facts upon which the statement is made are not fully given. We understand, however, that they are unimpeachable. Numerous notes by Mr. Ridgway and Dr. Brewer occur throughout the paper and greatly enhance its value. The former gentleman contributes the synonymic tables and diagnoses which are appended to many of the rarer species, and in one instance (that of *Myiarchus erythrocerus cooperi*) certain changes of nomenclature are adopted for which the author's reasons are given at some length.

In a few details of arrangement the paper is open to adverse criticism. The initials "R. R.," after Mr. Ridgway's contributions, are in several cases omitted, and nothing appears to show that the entire text relating to those species was not written by Dr. Merrill himself. But still more unfortunate is the citation of references in parentheses after the annotations. As the list is printed, the matter which precedes each reference impresses the reader at first sight as a quotation, with its authority following. Had these references been placed under the headings in the form of

synonyms, and brackets made use of to enclose Mr. Ridgway's notes, much needless confusion would have been avoided.* Altogether, however, the paper is a most excellent one, and its contents supply a fund of information the lack of which has been long felt. — W. B.

JONES AND SHULZE'S ILLUSTRATIONS OF THE NESTS AND EGGS OF THE BIRDS OF OHIO. — Too late for the fuller notice we may hope to give hereafter comes to us the first number of a very beautiful work, which we sincerely hope may be successfully completed according to the announced design of the lady authors. Part I contains figures of the nests and eggs of *Icterus baltimore*, *Turdus mustelinus*, and *Coccyzus erythrophthalmus*, of life size, colored by hand, printed on Whatman's antiquarian drawing-paper, and forming three of the most exquisite pictures of bird-homes we have ever seen. Each plate has its sheet of letterpress, which fitly illustrates these artistic plates. The work is to appear, if it meets with sufficient support, in parts of three plates each, to be completed in about thirty parts; it is published by subscription, at \$ 5.00 for colored, and \$ 2.00 for uncolored, impressions. The objects are represented of life size, in their natural surroundings, calling for the large folio form in which the work appears. To judge by the first Part, the work is one of very unusual merit, deserving that hearty recognition and support which we trust will be accorded by all who can appreciate the combination of great artistic excellence and fidelity to nature. The authors are to be congratulated upon their taste and evident ability; we hope in due time to be able to felicitate them upon the complete success of their undertaking. — E. C.

ADAMS'S NOTES ON THE BIRDS OF ALASKA. — Some twenty-eight years ago (October, 1850) Mr. Edward Adams, a Surgeon in the British navy, and at the time only twenty-five years of age, having the post of Assistant-Surgeon and Naturalist on board the "Enterprise," in an expedition fitted out in search of Franklin, was sent to the Redoubt of Michalaski, on the shores of Norton Sound, Alaska. He remained there until late in the following June, and made some very interesting and valuable notes on the birds of that region. His collections were given to the

* We understand, however, that the author had not the opportunity of revising the proof-sheets himself. He also informs us that the following corrections should be made: —

Page 128. *Embernagra* should have the *.

" 131. After "habitat" add initials "R. R."

" 133. *Sturnella magna* should not have the asterisk; this belongs to *S. mexicana*, on the next page.

" 138. *Myiarchus erythrocecrus* var. *cooperi* should have the *.

" 156. After "measurements" add initials "R. R."

" 164. Under *Herodias egretta* the reference to "the preceding species" applies to *Plegadis guarauna*, not to *Ardea herodias*.

British Museum, to Mr. John Gould, and to the late Mr. G. R. Gray. The latter dedicated to him the *Colymbus adamsi*. Unfortunately this youthful explorer and already accomplished ornithologist died in 1856 at Sierra Leone, at the early age of thirty-two. His papers have recently been placed by his family in the hands of Mr. H. Stevenson, and have been published in the "Ibis" for October of this year.* Much that he observed has been anticipated by the notes of Messrs. Dall and Bannister. Yet there are several of his observations at once new and interesting. The most noticeable of these is his procuring on the 5th of June, near the redoubt, a specimen of the Blue-throated Warbler (*Cyanecula suecica* Linn.). There were seven in the flock. This is the only instance of the procuring of this well-known Palearctic species in North America.

So too *Motacilla flava*, the Yellow Wagtail, another well-known Palearctic bird, was found by him quite common at Michalaski. He first met with them on the 5th of June, and found their nests on the 12th. Mr. Bannister has since found these birds breeding in the neighboring island of St. Michael's.

The Short-eared Owls came there in the middle of May, and were quite common. Mr. Adams's notes on the Snow Goose, Gambel's Goose, the White-fronted Goose, Painted Goose (*Chlaephaga canagica*), the Black Brant, Hutchins's Goose, the American Scoter, the Blue-eyed Duck (*Lampronetta fischeri*), the Black-throated Eider, Pacific Eider (*S. v. nigrum*), etc., are full of new and valuable information. So too are his observations concerning the American Dunlin, the Least Sandpiper, the Hudsonian Godwit, Sabine's Gull, and the *Colymbus adamsi*, believed by many to be a valid species and not a mere form of the Northern Diver.

These early observations of Alaskan species, which, had they appeared at the time they were made, would have anticipated so much of what has only recently appeared, have both a melancholy and their own intrinsic interest, and are well worthy of attention. — T. M. B.

WILSON AND BONAPARTE'S AMERICAN ORNITHOLOGY. — A new and handsome octavo reprint of Wilson and Bonaparte's "Ornithology" has been issued by Porter and Coates of Philadelphia.† It claims to be an exact reproduction, minus the atlas of colored plates, of the \$100, three-volume edition issued by the same firm some years ago. At the beginning of the present book are bound in a large number of illustrations of birds, reduced from the original plates of Wilson and Bonaparte. They are not bad cuts, for the most part, but are of very little importance or

* Ibis, 4th Ser. Vol. II, pp. 420 - 442, October, 1878.

† American Ornithology; or, The Natural History of the Birds of the United States. Illustrated with plates engraved from drawings from Nature. By Alexander Wilson and Charles Lucian Bonaparte. Popular edition. Philadelphia: Porter and Coates. Three volumes in one.

artistic value in their present position. Between this collection of plates and the text is inserted Ord's biography of Wilson.

No one can help rejoicing at any effort to disseminate more widely an acquaintance with Alexander Wilson and his charming and painstaking work. Happy the young ornithologist whose first draughts are from this fountain. But simply to reprint Wilson, even with Bonaparte added, at \$7.50, pointing out none of the errors, nor supplementing the shortcomings, is, to say the least, utterly unnecessary to the advancement of the science. What *would* be welcome is an edition of Wilson at moderate price, prepared under the direction of a competent ornithologist, which should be a commentary on the splendid work of the Father of American Ornithology, and should indicate in a brief and graphic way the progress in the science since his death. Such a work would be of great value to the ordinary man of culture as well as to the specialist; and to fail to do this, as in the present case, simply represents a grand opportunity thrown away. This is the more to be regretted since the publishers seem to have had an inkling of the truth, and made a faint effort toward it by including Baird's Catalogue, which was a fair nominal list at the time of the former reprint, but is now obsolete in all particulars, and is thus worse than useless as an addition to Wilson's volume. — E. I.

COUES'S BIRDS OF THE COLORADO VALLEY. — Judging by the volume now at hand,* the "Birds of the Colorado Valley" will leave far in the shade the same author's very useful and justly popular hand-book of the "Birds of the Northwest," to which this work is designed as a complementary treatise. It has a much wider scope, treating exhaustively the technicalities of the general subject of North American Ornithology, especially its bibliographical phases. The biographical portion of the work is limited to the species inhabiting the Colorado Basin. This constitutes the chief part of the text, and is evidently written to meet the wants and tastes of the general public. It is accordingly couched in well-turned periods, and displays the graceful diction, the facility of expression, and the telling ways of putting things that so strongly mark Dr. Coues's attempts at a popular presentation of natural history subjects, and which give to his style an attractiveness few writers are able to command. The plan of the work, we are glad to see, so far departs from that followed in the "Birds of the Northwest" as to include descriptions of the species. These have evidently been drawn up with special regard to conciseness and precision, and of course render the work a convenient hand-book of the birds of the region specially treated.

* Birds of the Colorado Valley. A Repository of Scientific and Popular Information concerning North American Ornithology. By Elliott Coues. Part First. Passeres to Laniide. Bibliographical Appendix. Seventy illustrations (woodcuts). 8vo. pp. xvi, 807. Washington, Government Printing Office, 1878. "Miscellaneous Publications, No. 11" of the United States Geological Survey of the Territories, F. V. Hayden, U. S. Geologist-in-Charge.

As regards the technicalities of the subject, the bibliography and synonymy of each species, not only of the region in question but of the whole continent north of Mexico, is exhaustively presented,* no reference of importance to any of the species being apparently omitted, while not unfrequently, and especially in case of the rarer and little known species, the locality to which the reference relates is stated, or the general nature of the information specified is indicated. Notwithstanding the fact that titles are abridged to the minimum,† the tables of reference usually range in length from half a page to a page and a half, and embrace from fifty to one hundred, and sometimes more than two hundred, references. While some of them may be valueless, we feel assured that the work of compilation has been so thoroughly done, — especially as we are informed that all the references have been personally verified by the author, — that no one need go over the same ground again. In all cases of complicated synonymy the matter is sifted to the bottom, and where specific names have been based on figures or descriptions by non-systematic writers, the exact basis of such names is distinctly stated, and their claims to priority or other recognition judiciously presented. In short, the evidence of tireless research and unquestionable thoroughness marks especially this intricate portion of the author's work. The outcome of all this labor does not, fortunately, often disturb commonly accepted names, although elucidating many interesting points of synonymy. The first one hundred and ninety-two pages of the work, it appears, were electrotyped in 1876, or two years before the remainder of the work was put in type. In the later portion of the work generic synonymy is given as well as specific, and in the later chapters the etymology of various scientific and vernacular names receives special attention, — features lacking in the earlier portion. Under the head of Swallows is given also a *résumé* of the principal writings relating to the supposed hibernation of these birds, with an extensive bibliography of the subject.

As indicated in the title-page already quoted, this part of the work treats the Perching Birds as far as the Shrikes (including the latter), or that portion of the order sometimes termed *Dentirostral Passeres*. The geographical area embraced is "the whole region drained by the Colorado River of the West and its tributaries, as far south as the present Mexican boundary of the United States." It hence includes "Arizona, much of

* We miss, however, all reference to *Regulus curieri*, and the bibliography of *Sitta pusilla* and of *Parus atricapillus*, excepting that relating to var. *septentrionalis*.

† The abridgment of titles is carried to such an extreme that while intelligible at sight to the advanced specialist, they must in many cases be useless to the less experienced, as many by no means novices in ornithology might be at a loss for an interpretation of "Bp. CGL.," "Bp. CR.," "Bp. CA.," or "Cab. MH.," or even "C. & S. NHWT."

New Mexico, Utah, and Nevada, a part of the State of Colorado, and some of Southern California." The surface of the region is greatly varied, and the climate presents extremes equalled in no other area of similar extent in the United States. The region is not only walled in by high mountain ranges, but embraces chains and peaks that nearly reach the line of perpetual snow; yet the greater portion is low, and includes some of the hottest and most arid portions of the continent. The influence of such highly diverse conditions leaves its impress upon animal and vegetable life, so that here are developed among the birds modifications of coloration and structure of special interest. Here, too, the birds "find their summer and winter homes, and perform their migrations rather according to 'the lay of the land' than with reference to degrees of latitude."

The two hundred and eighteen pages of "Bibliographical Appendix" with which the work closes is by no means the least important part of the volume. Although so extended, embracing about fifteen hundred (though the author incorrectly says "nearly or about one thousand") titles, it is restricted to a "List of Faunal Publications relating to North American Ornithology," being "the North American section of the 'Faunal Publications' series" of a general "Bibliography of Ornithology," upon which the author has been for some years engaged. The scope and plan of the present instalment of the work is explicitly stated by the author to include "titles and digests of works and papers relating solely to Birds of North America indiscriminately, collectively, or in general. In short, the titles are those that relate to the Birds of North America *as such*, — not as components of any genus or family." Hence are excluded all monographs, all general treatises on birds of larger areas, even if including North America, and all general works on ornithology. "By this means," the author adds, "the scope of the present article is conveniently narrowed and rendered perfectly definite; and only in a few instances, for one or another particular reason, is the rigidity of the rule of exclusion relaxed." The bulk of the titles hence consists of "local lists" and articles of an allied character, but embraces a range of publications from the works of Wilson or Audubon down to the "least note" on the subject, with also the reviews and notices that relate to them. A few titles are included upon arbitrary grounds, but perhaps come as naturally here as elsewhere. Contrary, however, to what one might expect in a list of faunal publications, records of the capture of single species, as, for example, the Lark Finch or the Lark Bunting in Massachusetts, do not here find a place. Although an inconvenient omission, the explanation is obvious, when we reflect that this list of titles is only one division of a general work, in which the titles are systematically classified under perhaps a hundred or more different heads, and where references to single species, whatever the character of the reference, are entered under family headings; the instances cited hence coming under "*Fringillidae*" in the general scheme of arrangement, although strictly faunal in character. On the other hand, a paper chroni-

eling the occurrence of the Blue-winged Yellow Warbler and the Clapper Rail in New England would be entered here.

Having explained the *scope* of this piece of bibliography, we may now turn to its general character. On this point we will let the author explain. "There is little to be said," he says, "of the way in which the work has been done; for if it cannot speak for itself, the less said the better. It should be stated, however, that the compiler has habitually regarded THE TITLE as a thing no more to be mutilated than a man's name; and that he has taken the utmost pains to secure transcription of titles *verbatim, literalim, et punctuatim*. It may be added that, excepting in certain specified cases, *no title in this Bibliography has been taken at second hand*." The titles are generally followed by remarks, explanatory rather than critical, but in certain cases tersely stating the merits or demerits of the work to which they refer. A short *résumé* is given of all the more general and important works, with a list of the species or genera newly described, named, or figured in them. The titles are presented in chronological order, with a secondary alphabetized arrangement under each year. Facility of reference, however, is afforded by means of duplicate indexes, the first relating to authors and the second to localities. The indexes, besides affording ready access to any title, are really secondary bibliographies, showing at a glance, first, a list of the papers referred to in the bibliography any author has published, and secondly, a complete list of the papers that relate to particular geographical areas, the two indexes alone occupying nearly forty pages.

In point of completeness, mode of execution, and general usefulness, the bibliography here under notice far excels any natural history bibliography known to us, and deserves to rank with the best bibliographies of any department of literature, and may well serve as a model for future workers in similar fields. While we regret that it does not cover quite the whole field of North American Ornithology, ornithologists cannot be too deeply grateful to Dr. Coles for erecting so elaborate a guide-board to the literature of the subject. We shall certainly await with impatience the completion of the arduous task he has so resolutely and energetically undertaken, and trust that finally his general "Bibliography of Ornithology" will be supplemented by a special and complete bibliography for the Ornithology of North America.—though this may be unnecessary to any one having access to the general work, which we understand is already about half compiled.

As regards the general work, or the "Birds of the Colorado Valley" as a whole, no more important contribution to the subject of North American Ornithology than this promises to be has for a long time appeared, and none covering all points of the field here taken; and the speedy publication of the remaining parts of the work must be looked for with equal eagerness both by specialists and those who simply love and admire birds, and can appreciate a pleasant rehearsal of the habits and traits that render them objects of such universal interest.— J. A. A.

General Notes.

KIRTLAND'S WARBLER AGAIN IN OHIO. — I have been informed by Mr. R. K. Winslow and other ornithologists of Cleveland, O., that two specimens of *Dendroica kirtlandi* were taken at Rockport, Cuyahoga County, O., by William and John Hall, during the past season. One of these is a female, the first of the sex taken. Both were captured within two miles of the spot where the original specimen was taken by Dr. Kirtland. A third specimen is said to have been taken in that vicinity about the same time, but I was unable to obtain any definite information concerning it. — J. M. WHEATON, Columbus, O.

VIREO ATRICAPILLUS IN TEXAS. — The acquaintance with this beautiful little Vireo has been so limited that any remarks or dates of additional capture cannot fail to be of interest. We find, in Baird, Brewer, and Ridgway's "North American Birds," that but three or four specimens of this Vireo have been previously recorded. One specimen, "probably a female," was obtained at Mazatlan, on the western coast of Mexico, in April, by Colonel Grayson." It was "first met with by Dr. Woodhouse, on the 26th May, 1851, in Western Texas. This was on the Rio San Pedro, within ten miles of its source." Dr. Woodhouse obtained two males and "Mr. John H. Clark, the naturalist of the Mexican Boundary Commission, likewise found this species in Texas, and not far from the same locality in which it was discovered by Dr. Woodhouse." Mr. Clark shot a single specimen in June.

Since the above citations I believe there has been no record made of further captures. The following is an abstract from a letter received by me from Mr. George H. Ragsdale, to whom I am indebted for information regarding his recent experience with the Black-headed Vireo: —

"On the 20th of April, 1878, while collecting some birds at Camp Verde, in the northern part of Medina County, Texas, my friend, Mr. W. Norris, who accompanied me, shot a male of this species, shooting the bird at random, not knowing its rarity. On the 2d of May, 1878, I collected a female in Comanche County, about one hundred and fifty miles northeast of Camp Verde. The specimen, like the former, was found in post oak woods on upland. On the 3d of May, 1878, I shot a second male, while singing, in the northeastern part of Earth County. The song resembled that of *Vireo belli*, only weaker. Both specimens which I shot were exceedingly shy, darting into thick bushes at sight. I am convinced as to the breeding of this species on the borders of the Red River in Cook County. In 1876 a Vireo's nest which contained one egg was shown me by a person who declared the bird had a black head. I watched the nest for some days, but the parent did not return, and the egg was lost. The locality in which the nest was found was identical with that in which I had collected the birds, and I have never found Bell's Vireo breeding in such a locality."

One of the above males is now in the collection of Mr. W. Brewster, and the other is in my own cabinet; the female is in the collection of Mr. Greene Smith of Peterboro', N. Y. — RUTHVEN DEANE, *Cambridge, Mass.*

SOME LIGHT ON THE HISTORY OF A RARE BIRD. — In the Bulletin for January, 1878, I mentioned the fact that a third specimen of the White-throated Warbler (*Helminthophaga leucobronchialis*, Brewster) had been found in the collection of the Philadelphia Academy of Natural Sciences. In the paper I stated that there was no label attached to the bird, designating its species, sex, or the locality where it was procured; but that on the bottom of its stand was written, "J. C., 20 Oct., 1862," and also what I made out to be, "Not from Bell," which was much blurred. Further, the history of the specimen was involved in obscurity.

I wrote to Mr. N. T. Lawrence of New York, concerning the bird, and shortly afterwards, having called on Mr. Bell, the well-known ornithologist, Mr. Lawrence wrote me as follows:—

"I asked Mr. Bell if he remembered at any time procuring a specimen of *H. chrysoptera* which differed in any way from the normal specimens. He said that when his attention was called to your last article in the Bulletin, he recalled the fact that somewhere about 1832, in the spring of that year, at Rockland, N. Y., he shot, as he supposed, a young male Golden-wing, but at the time remarked to his brother, who was collecting with him, that the bird was highly plumaged, but lacked the black of the throat, hence he took it to be a young male. His attention was first attracted to the bird by a note he had never heard before, and one of Bell's specialties in his younger days was his accuracy in determining different species by their notes. He also said he kept the specimen a long time, thinking it an unusual form of the Golden-wing, and finally sold it to a man in Philadelphia; therefore, I think in all probability the bird you found at the Academy is the identical one Bell procured over forty years ago. He said he intended to question his brother the next time he saw him, in regard to it; so if I hear anything more on the subject I will let you know."

From the above extract from Mr. Lawrence's letter, it seems there is strong reason for believing that the bird discovered in the Academy's collection is the self-same one shot by Bell at Rockland, N. Y., in 1832; and on the almost obliterated words, "Not from Bell," or, as Mr. George N. Lawrence says might be, "Note from Bell," hung the history of the specimen. The sentence, "J. C., 20 Oct., 1862," is, I think, explainable. Mr. Cassin, having charge of the Academy's ornithological collections, like Mr. Bell supposed the bird to be an abnormal form of *H. chrysoptera*, wrote his initials on the bottom of its stand, and also the date of deposit in the Academy, and set it aside among the specimens of that species. I think this fact is of much interest, as throwing light on a specimen of a species as rare as *H. leucobronchialis*, and also as showing its close relation to the Golden-winged Warbler (*H. chrysoptera*). — SPENCER TROTTER, *Philadelphia, Pa.*

OCURRENCE OF THE WESTERN VARIETY OF THE YELLOW RED-POLL WARBLER IN MASSACHUSETTS. — The first instance of the capture of Mr. Ridgway's interesting variety, *Dendroica palmarum hypochrysea*, in Massachusetts has recently come to light, a specimen having been shot by Mr. Arthur Smith at Brookline, about the middle of October, 1878. Mr. William Brewster has compared the bird with specimens in his collection, and, although the bird is in autumnal plumage, he says it is very typical of the form in question. — RUTHVEN DEANE, *Cambridge, Mass.*

THE GOLDEN-CHEEKED WARBLER AND BLACK-CHINNED HUMMING-BIRD IN TEXAS. — In a letter just received from Mr. George H. Ragsdale, of Gainesville, Texas, he writes: "You may mention in the January Bulletin my taking in Bosque County, last April, a male *Dendroica chrysoparia*, now in the Smithsonian Institution, and two male *Trochilus alexandri*, in Gillespie and San Saba counties, during the same month. One of the latter is in the Museum of Greene Smith, Peterboro', N. Y., the other I have."

The few specimens* known of the above Warbler are from the highlands of Vera Paz, Guatemala, and one specimen was procured on the Medina River, near San Antonio, Texas, in early spring, about 1864, which till now was its only United States record. The species of Hummer has not, I believe, been before observed east of Arizona and Utah, and Mr. Ragsdale's success in securing in his State two examples, and also a rare *Dendroica*, is worth noting. — H. A. PURDIE, *Boston, Mass.*

CAPTURE OF TWO RARE BIRDS AT RIVERDALE, N. Y. — Among the rare and accidental avian visitors which have come under my observation as having occurred at Riverdale, N. Y., it may be well to note the following: —

Tyrannus verticalis. ARKANSAS FLYCATCHER. — A young male, in somewhat worn plumage, taken on October 19, 1875, furnishes the third extra-limital eastern record of the species, and the first for New York State. The bird was first observed on the afternoon of the day previous to its capture, pursuing its avocation of insect-hunting from the topmost branches of some tall trees near a private residence, and the following day was again found about the same spot and without much difficulty secured.

* Rowley's Ornith. Misc. Part III, January, 1876, pp. 181-184, is devoted entirely to the history of this species, a beautiful colored plate being also given. Mr. Salvin, the author of the article and the discoverer of the species, corrects an error made by Dr. Brewer in Hist. N. A. B., 1, p. 161, respecting the original specimens procured by Salvin in Vera Paz. He states that he never procured more than two specimens, instead of the three Dr. Brewer speaks of, these two, with Dresser's Texas one, being all that were known when he wrote. If none have been discovered meanwhile, Mr. Ragsdale's is the fourth known one. — E. C.

Its stomach contained parts of a small beetle and partially digested berries of *Ampelopsis quinquefolia*, the latter also often forming the principal food supply of its congeneric species, *T. carolinensis*, during the last few days of its northern stay.

Helminthophaga celata. ORANGE-CROWNED WARBLER. — A female was taken on October 9, 1876, and a second specimen seen on the 29th of the same month. The former bird was shot while gleaning among the withering blossoms of a patch of golden-rods (*Solidago*), while the latter was hopping about in a clump of leafless briars and shrubbery quite unsuspectingly, allowing an approach of a few feet. — E. P. BICKNELL, *Riverdale, N. Y.*

THE WHITE-BELLIED NUTHATCH CONCEALING FOOD. — While collecting in Waltham, in November, I observed a *Sitta carolinensis* feeding on a small dead locust-tree. It finally went to the end of a broken limb and took therefrom quite a large larva, which it tucked into a crevice, bent the bark upon it, gave a few light raps over the place, and then proceeded to do the same with two more larvæ. — W. B. DOWSE, *Boston, Mass.*

THE GREAT CAROLINA WREN (*Thryothorus ludovicianus*) IN CONNECTICUT. — Dr. Brewer recorded in the last issue of the Bulletin (Vol. III, p. 193) the first known capture of this Wren in Massachusetts and New England. I now give a second instance, which is also its first Connecticut record. A line from Mr. J. H. Clark informs me that he obtained a fine specimen at Saybrook, November 25, 1878. — H. A. PURDIE, *Boston, Mass.*

OCCURRENCE OF SEVERAL RARE BIRDS NEAR SING SING, N. Y. — The capture of the following birds is of some interest, as they are comparatively rare in this locality; also the time of year in which some of them were taken is unusual.

1. **Oporornis agilis.** CONNECTICUT WARBLER. — I shot a male September 19, 1878, in a clump of bushes, while I was looking for a *Myiodioctes mitratus*, which I had seen a few minutes previous, and had failed to shoot.

2. **Collurio.** — June 16, 1877, I met a boy who had a young Shrike which was able to fly only a few yards. He would not part with it, although I made him a liberal offer for it. I afterwards learned that it got away from him, or he let it go, the same day. I was unable to tell whether it was *C. ludovicianus* or the var. *excubitoroides*. At all events the bird must have been raised in the vicinity.

3. **Strix flammea** var. **americana.** BARN OWL. — A farmer, a mile or so north of the village of Sing Sing, found in January, 1873, a fine specimen on the open barn floor. It was frozen stiff, and hardly a feather on it was displaced. He took it to Dr. G. J. Fisher for identification, to whom he afterwards gave it. The Doctor had it mounted, and it is now in his collection.

4. *Ardea egretta*. GREAT WHITE EGRET. — A specimen was shot, early in September, 1870, on a broad marshy flat a short distance north of this village, where the Croton River joins the Hudson. The bird was taken to Dr. Fisher, but the warm weather spoiled it before it was preserved.

5. *Graculus dilophus*. DOUBLE-CRESTED CORMORANT. — On June 22, 1876, a specimen was found in a fyke in the Croton River. It must have dived after a fish, and getting entangled in the netting was drowned. Mr. George Ayles got it from the fisherman, and gave it to me. It was a male. — A. K. FISHER, *Sing Sing, N. Y.*

OCCURRENCE OF BIRDS RARE TO THE VICINITY OF COLUMBUS, O.
1. *Loxia curvirostra*. RED CROSSBILL. — On the 18th of June last Mr. Charles Hinman killed one of these birds out of a flock of eight or ten which visited the coniferous trees in his garden in this city. The specimen which came into my possession by the kindness of Mr. Oliver Davie was a male, not in full plumage. I have since learned that the Red Crossbill has remained during the season in the vicinity of Cleveland in considerable numbers, and it is reported to have nested there.

2. *Elanoides forficatus*. SWALLOW-TAILED KITE. — This bird, which has not been recorded from Ohio for over twenty-five years, was taken in Licking County, near the town of Pataskala, seventeen miles east of Columbus, August 22, 1878. It is reported to have been killed when in the act of pursuing chickens. On being brought to the town of Pataskala, it excited considerable remark, no one being acquainted with it. It was finally decided to be a Bald Eagle escaped from Barnum's Show, and thrown away. It was discovered and identified by Rev. C. H. Permott, who carefully removed the skin from the decomposed remains and presented it to me. It is in high plumage, the dark area iridescent with purple-bronze and green.

3. *Strix flammea* var. *americana*. BARN OWL. — Mr. Oliver Davie of this city has a specimen of this bird killed in this immediate vicinity November 2, 1878. This is its northernmost appearance in the interior, except on one occasion recorded by Mr. E. W. Nelson (*Bull. Ess. Ins.*, 1876, Vol. VII, p. 116) of two taken in a trap near Chicago. Dr. Howard E. Jones informs me that he killed a specimen twenty-five miles south of Columbus, near Circleville, in the summer of 1873, which is now in the Museum of Hobart College, Geneva, N. Y. Mr. Dury reports several specimens taken in the vicinity of Cincinnati.

4. *Cupidonia cupido*. PINNATED GROUSE. — A male Pinnated Grouse was killed by a gunner, seven miles west of Columbus, November 16, 1868. By the kindness of Mr. A. Stevenson, who purchased the bird, the skin is now in my collection. As long ago as 1838 Dr. Kirtland wrote (*Ohio Geolog. Surv.*): "The Prairie Hen is found in considerable numbers in the northwestern parts of the State." It is now very rare, though

a few remain in the vicinity of Toledo, and in Erie, Ottawa, Crawford, and Marion counties. Mr. R. E. Neil informs me that a few years since a few remained at Radnor, Delaware Co. — J. M. WHEATON, *Columbus, O.*

THE GREAT WHITE EGRET IN NEW BRUNSWICK. — Mr. C. J. Maynard has informed me of the capture of an immature specimen of *Ardea egretta*, which he examined in the flesh, shot at Whitehead, Island of Grand Menan, on the 3d November, 1878. It is a singular fact that so many instances have occurred in late years of southern species having wandered north to New England and more northern localities in the fall and winter months. Besides a bird of this species recorded for Nova Scotia by Mr. J. Matthew Jones of Halifax, this is, I think, the most northern locality in which this bird has been detected. — RUTHVEN DEANE, *Cambridge, Mass.*

THE STILT SANDPIPER (*Micropalama himantopus*) ON THE NEW JERSEY COAST. — During my stay at Squam Beach, N. J., last summer, from July 15 to September 15, ten Stilt Sandpipers were shot there. Nearly all were killed about September 1, and, excepting a flock of three, all were single birds. Six are now in my possession. I believe the Stilt Sandpiper has been rarely taken in New Jersey, as I know of but one other recent capture.

This species will now have been recorded, in numbers, all along the Maine, New Hampshire, Massachusetts, Long Island, and New Jersey coasts, at suitable places from Portland, Me., to Squam Beach, N. J., showing not only that it is a regular migrant, but also that there is every probability of its being taken farther north and farther south. It would now seem that it can hardly be regarded as a rare straggler on that part of the Atlantic coast from Maine to New Jersey. The question arises, Has the Stilt Sandpiper been much overlooked, or has it, of late years, increased in abundance? — J. DWIGHT, JR., *Cambridge, Mass.*

NOTES ON NEW ENGLAND BIRDS. — Mr. George H. Mackay furnishes me with the following memoranda, which are not without interest.

1. **Gallinula galeata.** FLORIDA GALLINULE. — An immature bird was shot late in the autumn of 1872, probably in October, near the north end of Hummock Pond, Nantucket. The specimen is now in the collection of the Boston Society of Natural History.

2. **Micropalama himantopus.** STILT SANDPIPER. — A single specimen, in company with one *Gambetta flavipes*, was shot July 25, 1878, at Nantucket. The capture is interesting on account of locality and its early date. [See this Bulletin, Vol. III, p. 148.]

3. **Gallinago wilsoni.** WILSON'S SNIPE. — Obtained August 29, at Nantucket.

4. **Ægialitis meloda.** PIPING PLOVER. — Taken at Nantucket as early as April 14, 1878.

5. *Mimus polyglottus*. MOCKING-BIRD. — A young male, evidently a wild bird, was shot by Mr. Mackay at Nantucket, October 8, 1878.

Besides the above I have to record: —

6. *Macrorhamphus scolopaceus*, *Laur.* — A female was shot at Eastham by Mr. Frank L. Tileston, November 2, 1878. Without presuming to decide whether this is entitled to rank even as a variety, the fact remains that this bird was in a very different form from the common *M. griseus* and was shot at a period much later than the latter bird has been known to appear.

7. *Limosa hudsonica*. HUDSONIAN GODWIT. — A female was shot by Mr. Tileston on Cape Cod, November 2, 1878; a little late in the season for this species. — T. M. BREWER, *Boston, Mass.*

THE FRIGATE PELICAN IN NOVA SCOTIA. — The occurrence of *Tachypetes aquila* so far from its usual range is a note of much interest, the only instance previously recorded of its capture as far north even as New England being a specimen taken at Faulkner's Island, Long Island, in 1859.*

Mr. Andrew Downs of Halifax, N. S., to whom I am indebted for the following information concerning its capture, writes me: "The Frigate Bird which I sent to Boston was shot October 16, 1876, outside of Halifax Harbor. It is the only one which has ever been seen here, and was driven here by a strong southwest gale. It was very warm weather for the time of year." The specimen, which is a fine adult male, is in the possession of Mr. Charles J. Maynard of Newtonville, Mass. — RUTHVEN DEANE, *Cambridge, Mass.*

FULMARS GLACIALIS ON THE MASSACHUSETTS COAST. — In my Catalogue of the Birds of New England this bird is spoken of as generally supposed to be found off our coast, but as unsupported by fact. This can be said of it no longer. On Monday, November 4, 1878, I saw a living specimen of it in the yard of Mr. George O. Welch of Lynn, to whom it had been sent to be mounted for the Smithsonian Institution. Mr. James W. Milner writes me that this specimen of the Fulmar Petrel was taken by Captain William Sweet of the fishing-schooner *Grace C. Hadley*, "on a cod-hook, on the eastern part of George's Bank, which is a very little south of east of Boston, and certainly belongs to the New England coast. It was taken October 28, 1878." — T. M. BREWER, 233 *Beacon Street, Boston, Mass.*

* *American Naturalist*, Vol. IX, p. 470, August, 1875.

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HISTORY OF THE EVENING GROSBEAK.*

BY ELLIOTT COUES.

A BIRD of the most distinguished appearance, indeed, is the Evening Grosbeak,† whose very name of the “Vesper-voiced” suggests

* By permission, from advance copy of “Birds of the Colorado Valley,” Vol. II. — Ed.

† *Hesperiphona vespertina*.

Fringilla vespertina, COOPER, Ann. Lyc. N. Y. I, Pt. II, 1825, 220 (deser. orig. Saute Ste. Marie, Michigan). — COOP., Annals of Philos. XI, 1826, 135. — LESS., Féruss. Bull. 2^e Sect. VII, 1826, 110. — BR., Ann. Lyc. N. Y. II, 1826, 113, No. 183. — LESS., Féruss. Bull. 2^e Sect. XII, 1827, 267. — BR., Zool. Journ. IV, 1828, 2. — BR., Am. Orn. II, 1828, 75, pl. 15, f. 1. — NUTT., Man. I, 1832, 594. — COOPER, Isis, XXV, 1832, 1073. — AUD., O. B. IV, 1833, 515, pls. 373♂, 425♀. — TOWNS., Journ. Phila. Acad. VIII, 1839, 154.

Coccothraustes vespertina, SW. & RICH., F. B. A. II, 1831, 269, pl. 68. — BR., C. & G. L. 1833, 30. — AUD., Syn. 1839, 134. — AUD., B. A. III, 1841, 217, pl. 207. — HENRY, Pr. Phila. Acad. 1855, 312 (New Mexico). — COTTLE, Canad. Journ. III, 1855, 287 (Canada; historical and descriptive).

Coccothraustes vespertinus, GAMB., Journ. Phila. Acad. I, 1847, 49. — SCL., P. Z. S. 1860, 251 (Orizaba). — SCL., Cat. Am. Birds, 1862, 123. — RIDGW., Ann. Lyc. N. Y. X, 1874, 371 (Illinois).

Cocoborus vespertinus, HOY, Pr. Phila. Acad. 1853, 383 (Wisconsin).

Hesperiphona vespertina, BR., C. R. XXXI, 1850, 424; C. A. I, 1850, 505. — BD., B. N. A. 1858, 409. — HENRY, Pr. Phila. Acad. 1859, 107 (N. Mexico). — COOP. & SUECKL., P. R. R. Rep. XII, Pt. II, 1859, 196. — KIRTLAND, Ohio Farmer, IX, of Mar. 24, 1860 (Ohio). — WHEATON, Ohio Agr. Rep. for 1860, 1861. — BLAKIST., Ibis, 1862, 5; 1863, 69 (Fort Carlton). — COUES, Pr. Phila. Acad. 1866, 80 (Arizona). — McILWRAITH, Pr. Essex Inst. V. 1866, 88 (Woodstock, Canada). — LAWR., Ann. Lyc. N. Y. VIII, 1866, 289 (near New York City). — COUES, Pr. Essex Inst. V, 1868, 280, 312 (Canada and New York —

at once the far-away land of the dipping sun, and the tuneful romance which the wild bird throws around the fading light of day. Clothed in the most striking color-contrasts of black, white, and gold, he seems to represent the allegory of diurnal transmutations; for his sable pinions close around the brightness of his vesture, just as the night encompasses the golden hues of the sunset; while the clear white space enfolded in these tints foretells the dawn of the morrow.

not New England). — SUMICH., Mem. Bost. Soc. I, 1869, 550 (near City of Mex.). — COOP., Am. Nat. III, 1869, 75 (Montana). — COOP., B. Cal. I, 1870 174. — COUES, Key, 1872, 127. — AIK., Pr. Bost. Soc. XV, 1872, 199 (Wyoming). — AMES, Bull. Minnesota Acad. 1874, 58. — COOP., Am. Nat. VIII, 1874, 17. — COUES, B. N. W. 1874, 104. — B. B. & R., N. A. B. I. 1874, 449, pl. 22, f. 1. — HENSIL., Rep. Orn. Specs. 1874, 108 (Arizona). — HENSIL., List B. Ariz. 1875, 158. — HENSIL., Zool. Expl. W. 100 Merid. 1875, 239. — BREWER, Pr. Bost. Soc. XVII, 1875, 451 (Essex Co., N. Y., in winter). — SNOW, B. Kans. 3d ed. 1875, 6 (Kansas, in November; common). — TIFFANY, Amer. Nat. XII, July, 1878, 471 (Minneapolis, Minn.; habits).

Hesperiphona vespertina var. *montana*, RIDG., apud B. B. & R., N. A. B. I. 1874, 449, pl. 22, f. 4. — RIDGW., Bull. Essex Inst. V, 1873, 181 (Colorado).

Coccothraustes bonapartii, LESS., "Hist. de Zool. 1834, pl. 34 (♀, Melville Isl.)."

Loxia bonapartii, LESS., "Bull. Sc. pl. XXV."

♂ *adult*. General color sordid yellow, overlaid with a sooty-olive shade, deepest on the fore parts, the crown becoming quite black, clearest on the under parts behind. A frontal patch prolonged into a short streak over each eye, the scapulars, and rump, quite pure yellow. Wings and tail black; several of the inner secondaries, with the inner half of the series of greater wing-coverts, white. Lining of wings partly black, partly yellow. A narrow black line around base of upper mandible. Tibiæ black. Bill greenish-yellow. Feet apparently dusky flesh-color. Length, $7\frac{1}{2}$ – $8\frac{1}{2}$ inches; wing, 4 – $4\frac{1}{2}$; tail, $2\frac{1}{2}$ – 3 ; bill, $\frac{3}{4}$ long, $\frac{2}{8}$ deep, and $\frac{2}{8}$ broad at the base.

♀ *adult*. Brownish ash-color, paler below, and whitening on the belly, irregularly mixed or patched with yellowish. Lining of wings and axillars bright yellow. White speculum on the wing incomplete, the feathers being partly black, and sometimes having the white part tinged with yellow; the primaries, which are entirely black on the male, having also large white areas on the inner webs, and being sometimes tipped with white.

The adult males differ much in the shade of the yellow, and degree to which it is obscured by the sooty-olive. Taking age and sex also into account, the range of variation in color is wide, but the remarkable species cannot be mistaken for any other.

Specimens from the Southern Rocky Mountain region and southward are said to have the bill less turgid, the yellow frontlet narrower, and less white on the wings. Such constitute Mr. Ridgway's variety *montana*, a typical example of which I have seen from Illinois.

Once seen, the Evening Grosbeak will not likely be forgotten, even though we only glance at what was once a brilliant denizen of the maple groves, and is now but a bunch of feathers stuffed with tow; for there is no bird of our country that in the least resembles this striking likeness of a sunset. They say he has a near relative in the land of Montezuma,* but he is otherwise quite an isolated magnificence, his closest kinship being with the Hawfinch of Europe (*Coccothraustes vulgaris*), whom he resembles in his stature and proportions, though not at all in coloration. Nor has he the curious construction of the wing-feathers that the typical Hawfinch displays, these quills being as simple in form as they are in any other member of the extensive family of the Finches. No very distant relatives among our *Fringillide* are such species as the Blue, the Cardinal, the Rose-breasted, and other Grosbeaks, as well as those, like the Pine, with which we have grown accustomed to see him associated in our books and catalogues.

He is rather a late aspirant to the questionable honors of our literature, having remained unknown to fame all through the Wilsonian period, and until brought to our notice by Mr. William Cooper, whose letter of introduction, originally published in the "Annals of the New York Lyceum of Natural History," was soon extensively copied by the editors of other periodicals.† The bird thus

* *Hesperiphona abeillii* (LESS.) BP.

Guiraca abeillii, LESS., "Rev. Zool. 1839, 41 (Mexico)."

Hesperiphona abeillii, BP., C. A. I, 1850, 505. — SUMICH., Mem. Bost. Soc. I, Pt. IV, 1869, 550. — B. B. & R., Hist. N. A. B., I, 1874, 449.

Coccothraustes abeillii, SCL. & SALV., Ibis, I, 1859, 19. — SCL., P. Z. S. 1859, 365. — SCL., Cat. A. B., 1862, 123.

Hesperiphona vespertina, Jun. ex Mex., BP., C. A. I, 1850, 505.

◦ *Coccothraustes maculipennis*, SCL., P. Z. S. 1860, 251, pl. 163 (Vera Cruz). — SCL. & SALV., P. Z. S. 1860, 398.

† Special papers on *Hesperiphona vespertina*: —

1825. COOPER, W. Description of a New Species of Grosbeak [*Fringilla vespertina*, p. 220], inhabiting the Northwestern Territory of the United States. Ann. Lyc. Nat. Hist., New York, I, Pt. II, 1825, pp. 219–222. (Read January 10, 1825.)

This is the original description of the species, from the Schoolcraft specimen, Saute Ste. Marie, Michigan, April, 1823.

1826. COOPER, W. Description of a New Species of Grosbeak [*Fringilla vespertina*, p. 136], inhabiting the Northwestern Territory of the United States. Thomson's Ann. of Philos. (new series), XI, 1826, pp. 134–136.

Reproduced from Ann. Lyc. Nat. Hist. New York, I, 1825, pp. 219–222.

1826. LESS[ON, R. P.]. Description d'une espèce nouvelle de Gros-bec

speedily became known to ornithologists of all parts of the world. The actual discovery of so welcome an addition to our recognized Fauna was made by Mr. Schoolcraft, who secured the original example of the species in April of the year 1823, at or near the Saute Sainte Marie, Michigan. This individual, upon its presentation to the Lyceum just named, became the basis of Mr. Cooper's communication, and was supposed for a little while to be the only representative of the species known to naturalists; but other specimens soon became available for the purposes of science. Thus Bonaparte, who first figured the interesting acquisition, in 1828, states that at this date he had examined two other specimens, besides Mr. Schoolcraft's, which had been shot early in the spring on Lake Athabasca, and were preserved in the Leadbeater collection in London; one of them serving him for the elaborate description which he gives in his "American Ornithology." Soon after this, we find Sir John Richardson's allusion to specimens sent to the authors of the "Fauna Boreali-Americana" by Mr. Prudens, Chief Trader at Carlton House; and this author remarks that the bird is a common inhabitant of the maple groves of the Saskatchewan region, — a circumstance from which its Cree Indian name *Seesebutsquit-pethaysish*, or Sugar-Bird, is derived.* A very characteristic likeness of the male bird of natural

[*Fringilla vespertina*, COOP.], etc., habitant le territoire N.-O. des États-Unis; par William Cooper. . . . Féru. Bull. 2^e sect. VII, 1826, p. 110.

Extrait des Annales du Lycée d'Hist. Nat. de New York, I, 1825, pp. 219 - 222.

1827. LESSON, R. P. Description d'une espèce nouvelle de gros-bec [*Fringilla vespertina*, COOP.], habitant la partie nord-ouest des États-Unis; par William Cooper. . . . Féru. Bull. 2^e sect. XII, 1827, pp. 267, 268.

Tiré des Annal. de Philos. XI, 1826, pp. 134 - 136.

1832. COOPER, W. Neue Gattung Kernbeisser [*Fringilla vespertina*]. Oken's Isis, Bd. XXV, 1832, p. 1073.

Auszug aus d. Ann. Lye. Nat. Hist. New York, I, 1825, pp. 219 - 222.

1855. COTTLE, T. *Coccothraustes vespertina*. — Evening Grosbeak. Canad. Journ. III, 1855, p. 287.

Historical and descriptive; occurrence of the species in Canada.

1869. KIRTLAND, J. P. [Occurrence of *Hesperiphona vespertina* in Ohio.] Ohio Farmer, IX, March 24, 1860.

The original ascription of the species to Ohio; but it had been observed in that State in 1847.

* The accompanying descriptions are of a male killed on the Saskatchewan in 1829, and of a supposed female from some locality not stated; the latter is, however, the immature male; for Bonaparte, in stating that the female scarcely

size, drawn and colored in William Swainson's well-known style, accompanies the notice to which I refer; the remainder of the account in the work just named consisting of the junior author's fanciful speculations on the quinary affinities of this remarkable Grosbeak. His ingenuity brings him to the sage conclusion that the bird is related to certain *tennirostral* types, notwithstanding that it has one of the largest, stoutest, stockiest bills to be found in the whole Fringilline assemblage.

It is sometimes interesting, and it may not seldom become edifying, to look back through the perspective of time and see how the heaviest artillery of the systematists may turn to Quaker guns, when thus viewed through the telescope reversed. It is no less profitable to ponder how the disputes of the schools arise in particular ways of looking at things that never change, and are fostered by the varying idiosyncrasies of individuals who aspire to solve the silent, persistent, unending mysteries that Nature will never fully reveal to man's unaided understanding. We play a game of chess with brilliant pieces of natural workmanship, each on a checkered field of his individual experiences, all too small for the full development of the game, yet quite too large for us to cover successfully; and the most we may indulge a hope of, is the barren victory of a perpetual stale-mate. We shift and shift positions, but can never extricate ourselves. Thus Bonaparte wrote in 1828: "The Evening Grosbeak is . . . so precisely similar in form to the Hawfinch-type of the group, as to defy the attempts of the most determined innovators to separate them"; and in 1850 he established a genus *Hesperiphona* upon a basis which he had thus declared not to exist. We seem to be no wiser after than before such events as these, in anything that pertains to our actual knowledge of the Evening Grosbeak.

Let us turn another page of written history respecting the subject of the present notice. The statements of fact I have made are all staple accounts, copied by each successive compiler with no less scrupulous exactitude than I have myself exhibited. Quite a fresh

differs from the male, spoke from insufficient evidence, and Richardson, making note of this inadvertence, committed another error. The subject was not rectified until Audubon described and figured the female from specimens and information furnished him by Townsend. The female obtained by Audubon from Townsend was marked "Black Hills, June 3, 1824," and therefore missed being the earliest specimen of which we have any account by only one year.

and interesting chapter was added by J. K. Townsend, who contributed his observations to Audubon's work, under date of "Columbia River, May 27, 1836." He corrected two grave errors which had already cropped out, namely, respecting the sexual similarity in plumage, and concerning the wrong notion that the bird sings only at evening, as implied in the term *vespertina*. His notice is worth transcribing, even at this late day, so little further information have we acquired respecting the habits of the Evening Grosbeak.

"The Evening Grosbeak," says Townsend, "is very numerous in the pine-woods at this time. You can scarcely enter a grove of pines at any hour in the day without seeing numbers of them. They are very unsuspecting and tame, and I have, in consequence, been enabled to procure a fine suite of specimens. The accounts that have been published respecting them by the only two authors to whom I have access, Mr. Nuttall and Prince Bonaparte, are, I think, in many respects, incorrect. In the first place, it is stated that they are retiring and silent during the day, and sing only on the approach of evening. Here they are remarkably noisy during the whole of the day, from sunrise to sunset. They then retire quietly to their roosts in the summits of the tall pines, and are not aroused until daylight streaks the east, when they come forth to feed as before. Thus I have observed them *here*, but will not say but that at other seasons and in other situations their habits may be different. They are now, however, very near the season of breeding, as the organs of the specimens I examined sufficiently indicate. They appear fond of going in large bodies, and it is rare to see one alone in a tree. They feed upon the seeds of the pine and other trees, alighting upon large limbs, and proceeding by a succession of hops to the very extremities of the branches. They eat, as well as seeds, a considerable quantity of the larvæ of the large black ant, and it is probable that it is to procure this food that they are not uncommonly seen in the tops of the low oaks which here skirt the forests. Their ordinary voice, when they are engaged in procuring food, consists of a single rather screaming note, which from its tone I at first supposed to be one of alarm, but soon discovered my error. At other times, particularly about mid-day, the male sometimes selects a lofty pine branch, and there attempts a song; but it is a miserable failure, and he seems conscious of it, for he frequently pauses and looks discontented, then remains silent sometimes for some minutes, and tries it again, but with no

better success. The note is a single warbling call, exceedingly like the early part of the Robin's song, but not so sweet, and checked as though the performer were out of breath. The song, if it may be so called, is to me a most wearisome one : I am constantly listening to hear the stave continued, and am as constantly disappointed. Another error of the books is this — they both state that the female is similar to the male in plumage. Now, this is entirely a mistake : she is so very different in color and markings that were it not for the size and color of the bill, and its peculiar physiology, one might be induced to suppose it another species."*

The nest and eggs of this elegant Grosbeak have not been discovered yet ; nor have we, in fact, gained much further insight into the bird's mode of life than Townsend's note affords. I was greatly disappointed in my expectations of making the personal acquaintance of the "Sugar-Bird" in the solitudes of the Saskatchewan region : for my search was never rewarded with a glimpse of the fugitive among the lowering pines of northernmost Montana, nor has it ever been my fortune to see him in the mountains of Colorado, New Mexico, or Arizona, where we are informed he is to be found. But, before mapping what we have learned of the geographical distribution of the species, I may continue with the observations of others who have watched the course of the bird in his native haunts.

A fresh glimpse of the Evening Grosbeak was lately given (Am. Nat. XII, July, 1878, p. 471) by Mr. W. L. Tiffany, of Minneapolis, Minn., where the interesting bird is said to have resided during the winters of the past few years. The Grosbeaks were seldom seen except in each other's company, the flocks sometimes numbering scores of individuals. They frequented usually the groves of the sugar-maple ; and the buds of these trees, together with the seeds of the box-elder, formed their principal food. They were very familiar in their demeanor, appearing even less suspicious of man than the confiding Bohemian Waxwings seemed to be, for they established their headquarters in the town itself, among the shade-trees, and were sometimes seen to ramble over house-tops and porches like so many Wrens. Their notes are called by Mr. Tiffany

* A nominal species had, in fact, already been named by the French ornithologist, R. P. Lesson, who, in 1834, described the female or young male Evening Grosbeak as *Coccothraustes bonapartii*. (See *autca*, p. 66.)

“strangely ejaculatory as well as harshly piping,” and thus scarcely to be considered musical; still, the birds seemed to be fond of such performances, and occupied much of their leisure in practising both as soloists and as choristers. The writer adds that his female specimens usually showed whitish edgings of the inner webs of the tail-feathers, apparently overlooked by some of our standard authorities.

Dr. J. G. Cooper has recorded the Evening Grosbeak as a common resident of the forests of Washington Territory, where the bird's habit of keeping in the summits of the tall trees screened him to a degree from observation. In January, 1854, he obtained several specimens from a flock that had descended during a snow-storm to some bushes about Vancouver; and he subsequently observed it flying high among poplar-trees, or feeding upon the seeds, and uttering a loud, shrill call-note. In later years he was enabled to make further observations in various portions of California. Thus, he speaks of one flock of about a dozen individuals which wintered near Santa Cruz, remaining until the end of April. “Their favorite resort was a small grove of alders and willows, close to the town, where their loud call-note could be heard at all hours of the day, though I never heard them sing. When the herbage began to grow in spring, their favorite food was the young leaves of various annual weeds that sprouted up under the shade of the trees. They then fed on the buds of the ‘box-elder’ (*Negundo*), and frequented the large pear-trees in the old mission garden, probably to eat their buds. They were generally very tame, allowing an approach to within a few yards of them when feeding.”

The annual movements of the Evening Grosbeak within the area of its usual dispersion have not been well determined. It is a migratory bird in one sense, but does not appear to be subjected to the impulse of migration with periodical regularity, as a strict and proper migrant should be. It is certainly able to endure a very rigorous climate, for its presence during the most inclement weather of winter along our Northern border, and even in British America, is sufficiently attested. Thus it appears, from Captain Blakiston's article in the “Ibis,” that the Evening Grosbeak occurs in the inhospitable region of the Saskatchewan between the months of November and April, when birds of this kind were seen feeding on the ash-leaved maples in company with the very boreal Pine Grosbeaks. Mr. Tiffany's note, already quoted, shows that they endure a Minnesota winter, which is not a thing to be lightly dis-

regarded. On the other hand, we have witnesses to their occurrence and probable residence on the table-lands of Mexico, not far from the capital city of that country, where Sumichrast observed them in the pine woods of Monte Celto, in May, 1857. Mr. Henshaw considers the species to be "doubtless a rare resident" in Arizona, in which Territory he secured a specimen in September, near Camp Apache. As I have intimated, our rather meagre records do not furnish the data for the full solution of the question; and they are in some respects so conflicting apparently, as well as fragmentary, that we feel our doubts rather increased than removed when we compare them. It would appear in present light, however, that the bird is scarcely a true migrant, but rather a wanderer according to exigencies of food supply, to some extent resembling the Bohemian Waxwing, the Pine Grosbeak, Red-poll Linnet, Crossbill, and species of *Plectrophanes*. Its general habits, and some traits of its character, especially its sociability, familiarity with man, and ways of feeding, are those of Crossbills, Red-polls, and certain other northerly *Fringillide*, rather than of such species as the Rose-breasted, Black-headed, Cardinal, and Blue Grosbeaks, with which it seems to be nevertheless related in some technical characters.

The erratic movements just intimated to be probably chargeable to this singular bird bring it at times to localities remote from its usual centres of abundance. I shall conclude with consideration of this point, in sketching the geographical distribution of the species. Our early accounts, as I have presented them, indicated a range along the northern border of the United States from Michigan westward to the ocean, and Richardson ascribed to the bird a northward extension to latitude 56° N. But since those days it has been traced much farther south and east. Being a bird of woodland, it will not be found on the great plains; but, aside from any matters of local distribution resulting from surface-conditions of the country, this Grosbeak may be said to inhabit the United States from the outliers of the Rocky Mountains to the Pacific. It is thus essentially a Western species; but in the region of the Great Lakes, and for some little distance thence southerly, it stretches far to the eastward, not in solitary and fortuitous instances, but regularly, or at any rate frequently. Its normal range cannot well be short of Canada, in different localities in which Dominion specimens have not seldom been secured. Thus Mr. McIlwraith states, in the paper

above cited, that he had heard of its presence near Hamilton, Canada West, and that a few years previously several had been shot by Mr. T. I. Cottle at Woodstock, where they were "quite numerous for a day or two during the month of May."

Respecting the Evening Grosbeak's presence in the States of Wisconsin and Illinois, Dr. Brewer presents the following paragraph in the "History of North American Birds" (p. 452): "On February 14, 1871, Mr. Kumlain, while out in the woods with his son, saw a small flock of these birds in Dane County, Wisconsin. There were six of them, but, having no gun, he did not procure any. Later in the season he again met with and secured specimens. In the following March Dr. Hoy of Racine also obtained several near that city. He also informs me that during the winter of 1870-71 there were large flocks of these birds near Freeport, Ill. One person procured twenty-four specimens. One season we noticed them as late as May. They frequent the maple woods, and feed on the seeds fallen on the ground. They also eat the buds of the wild cherry. Their visits are made at irregular intervals. In some years not a single individual can be seen, while in others they make their appearance in December and continue through the whole winter."

The Evening Grosbeak has also long been known to occur in Ohio. The original announcement of the fact was made by the late Professor J. P. Kirtland, in the "Ohio Farmer" of March 24, 1860. "Those of your readers," says the Professor to the editor, "who are interested in the natural sciences will no doubt be gratified to learn that so rare a bird as the *Evening Grosbeak* has made its appearance in these parts. Early last week a beautiful female was secured by Charles Pease, Jr., and on the next day I saw several others of this species. It is known among ornithologists as the *Hesperiphona vespertina*, and has never before, I believe, been discovered east of Lake Michigan." But this last statement seems to be not strictly accurate; for Dr. J. M. Wheaton, in transcribing this paragraph into his excellent "Catalogue of the Birds of Ohio," adds that Mr. William Kent informed him that he obtained a specimen in the vicinity of Columbus, Ohio, in 1847.

But we have the evidence that the Evening Grosbeak occasionally strays still further eastward. It has occurred in New York State, and is liable to be found even in New England. Its presence near New York City is attested by Mr. George N. Lawrence, who, however, gives no particulars of the case. Dr. Brewer asserts that the

Rev. Dr. Cutting of Brooklyn saw one in the winter of 1875, at Elizabethtown, Essex County, New York. Dr. Brewer also incorrectly makes me out to have "hypothetically" included the Evening Grosbeak among the birds of New England; but I beg to remind him that I never did so. The species is not included in my "List of New England Birds," hypothetically or in any other way. The name of the bird occurs in two places in my text. On page 280 of the "Proceedings of the Essex Institute," Vol. V, 1868, I make this simple remark: "Mr. Mellwraith records the capture of the Evening Grosbeak, *Hesperiphona vespertina*, Bon., at Woodstock, Canada." On page 312 I say again: "Add to the record of this species at Woodstock, Canada, Mr. Lawrence's notice of its occurrence near New York. Stragglers will probably in time be found in New England." In offering me one of those side-thrusts which he has become notably overfond of giving to any one who may chance to differ with him, Dr. Brewer nevertheless goes on to say in substance precisely what I had remarked. His words are: "So far there is no positive evidence to corroborate this claim [i. e. my alleged claim, which I never made], yet its presence [i. e. the bird's, not the claim's] as a straggler may be looked for as possible in Vermont or New Hampshire."

I have thus endeavored to faithfully reflect all that we have learned respecting the life-history of this engaging bird. Notes illustrating its distribution — particularly the manner and occasion of its movements, and its breeding-places — will long continue to be acceptable contributions; while the fortunate discoverer of the nest and eggs will supply what still remains one of the special desiderata in North American ornithology.

ON THE HABITS AND NESTING OF CERTAIN RARE BIRDS IN TEXAS.

BY WILLIAM BREWSTER.

I RECENTLY have had the pleasure of examining a superb collection of birds and eggs obtained by Mr. W. H. Werner in Comal County, Texas, during the months of April and May, 1878. Among the specimens represented are many of great rarity, and several of

the eggs are believed to be entirely new to science. An inspection of the fine collection of Mr. Edmund Ricksecker, of Nazareth, Penn., has also afforded much valuable information, bearing upon the ornithology of the same locality, for, as elsewhere explained in my account of the Black-capped Vireo, in this number of the Bulletin, Mr. Ricksecker's cabinet includes many eggs and nests from Comal County. The following notes are based entirely upon material contained in these collections, and my grateful thanks are due Messrs. Werner and Ricksecker, not only for the many courteous attentions extended to me during my visit, but also for the opportunity afforded me of measuring and examining the rare specimens. All their notes relating to the subject under consideration were also freely placed at my disposal. Readers of the Bulletin may expect in some future number a more detailed account by Mr. Werner of some of the rarer species, which are here but briefly treated:—

1. **Parus carolinensis.** CAROLINA TITMOUSE. — Although the probable occurrence in Texas of this diminutive Titmouse has been already hinted at, I believe there is no previous record of its actual capture in that State. Mr. Werner, however, ascertained it to be a rare resident in Comal County. Two pairs only were observed. A male and female shot near Bow Creek are in the collection, and appear to be considerably smaller than more northern specimens.

2. **Lophophanes atricristatus.** BLACK-CRESTED TITMOUSE. — A common resident in Comal County. Mr. Werner examined several nests, all of which were placed in natural cavities of hollow limbs. In every instance pieces of snake-skins or their separate scales were included among the other material composing the nest. Mr. Sennett, in his description* of a nest obtained at Lomita Ranche, in Southern Texas, mentions the same peculiarity, and it would appear that this habit may be characteristic of the species. Our previous knowledge of the eggs of this Titmouse rests solely upon the account by Mr. Sennett of a single example found in the Lomita nest above referred to. Mr. Ricksecker's cabinet contains a set of the eggs of this species which were taken in Comal County, April 5, 1878. These eggs measure, respectively, $.74 \times .58$; $.78 \times .57$; $.76 \times .59$, being thus considerably larger than Mr. Sennett's specimen, the measurements of which are given as $.60 \times .48$. They are regularly ovoid in shape, and handsomely marked with reddish-brown upon a clear white ground. Over the general surface these markings are distributed in fine spots, but about the larger end bold, strongly defined blotches occur, forming a nearly confluent ring. Four eggs of a set in Mr. Werner's collection are nearly similar in shape and general appearance,

* Science News, Vol. I, No. 4, p. 57.

but the markings are finer and the ring of color about the larger end less apparent. This nest, together with the eggs and parent birds, is beautifully preserved in a section of the limb in which it was found. The entrance hole is of large size, and the entire cavity is apparently a natural one. The nest proper is placed about six inches below the exterior opening.

3. *Dendrocæa chrysoparia*. GOLDEN-CHEEKED WARBLER.—In the Bulletin for January, 1879, the fourth known specimen of this rare Warbler was recorded by Mr. Purdie, and the past history of the species fully given. The original specimens were procured by Mr. Salvin in Vera Paz, Guatemala. Since that time, with the exception of a male obtained by Mr. Dresser, near San Antonio, Texas, about 1864, no additional ones have apparently been taken. The specimen mentioned by Mr. Purdie was taken by George H. Ragsdale in Bosque County, Texas, April, 1878.

In view of these facts the following account, kindly furnished by Mr. Werner, can scarcely fail to prove of great interest. Of the habits of the Golden-checked Warbler Mr. Werner writes:—

“While on a collecting tour in the mountainous districts of Comal County, Texas, I noticed these Warblers, and after studying their habits and different attitudes I shot one, which proved to be a male. Their habits were similar to those of *D. virens*; they were very active, always on the alert for insects, examining almost every limb, and now and then darting after them while on the wing. The male uttered soft notes at intervals, which sounded, as nearly as I can express it, like *tsrr weasy-weasy tweeh*. I found them invariably in cedar timber, or ‘cedar brakes,’ as the ranch men call them. I was not fortunate enough to find a nest until the 13th of May. About eight days prior to that date I noticed a female bird with building material flying in a certain direction, but it gave me a good deal of trouble before I traced her through underbrush and thickets to a cedar brake, where I found new difficulties. The trees were numerous and standing near together, and a large patch at that; so I came to the conclusion that if I wanted the nest I must examine each tree separately. Accordingly I waited till the 13th, and then commenced in good earnest on my first tree. In about an hour’s time, to my great joy, I found the nest, containing three eggs, and also one of the Cow Bunting. I am inclined to think that they generally lay their eggs earlier in the season, as I had, a few days previous to this, found a brood of young ones following their parents (with young Cow Buntings in their wake), clamoring for food.

“I also found in the immediate neighborhood another nest, but it was abandoned; I think it belonged to the same pair of which I found the eggs. This would account for finding them so late with fresh eggs. On the 14th of the same month I found two more nests vacant, and by examining them found that young ones had been hatched, and had already left the nest.

“The four nests that I have found were similar in construction, and

were built in forks of perpendicular limbs of the *Juniperus virginiana*, from ten to eighteen feet from the ground. The outside is composed of the inner bark of the above-mentioned tree, interspersed with spider-webs, well fastened to the limb, and in color resembling the bark of the tree on which it is built, so that from a little distance it is difficult to detect the nest."

I have had the pleasure of examining two of the nests above referred to by Mr. Werner. They are so nearly identical in every respect that one description will answer for both, and accordingly I will take for my type a fine specimen which, with an adult male bird, Mr. Werner has generously contributed to my collection. The original position of this nest is well shown, as it is preserved with a section of the limb upon which it was found. It is placed in a nearly upright fork of a red cedar, between two stout branches, to which it is firmly attached. Although a large, deep structure, it by no means belongs to either the bulky, or loosely woven class of bird domiciles, but is, on the contrary, very closely and compactly felted. In general character and appearance it closely resembles the average nest of the Black-throated Green Warbler (*Dendroica virens*). It is, however, of nearly double the size, in fact, larger than any Wood Warbler's nest (excepting perhaps that of *D. coronata*) with which I am acquainted. It measures as follows: external diameter, 3.50; external depth, 3.45; internal diameter, 1.60; internal depth, 2.00. The exterior is mainly composed of strips of cedar bark, with a slight admixture of fine grass-stems, rootlets, and hemp-like fibres, the whole being kept in place by an occasional wrapping of spider-webs. The interior is beautifully lined with the hair of different quadrupeds and numerous feathers; among the latter, several conspicuous scarlet ones from the Cardinal Grosbeak. The outer surface of the whole presents a grayish, inconspicuous appearance, and from the nature of the component materials is well calculated to escape observation. Indeed, it must depend for concealment upon this protective coloring, as it is in no way sheltered by any surrounding foliage. The nest just described is that spoken of by Mr. Werner as the one probably first constructed by the pair whose nest and eggs he found on May 13. A direct comparison between these two specimens presents few differences worthy of comment. Mr. Werner's nest is placed in a precisely similar cedar fork; the outer walls are of felted strips of cedar bark, and a few brilliant cardinal feathers are mingled with the hair lining. The eggs belonging with this nest are similar in shape, all being of a regular but somewhat rounded oval form; their ground-color is clear white. Two are thin and evenly covered with fine but distinct spots of light reddish-brown, while the third is so very faintly marked with the same color that at a little distance it appears nearly immaculate. Their measurements, as taken for me by Mr. Werner, are, $.75 \times .57$; $.77 \times .56$; $.76 \times .58$. In size and general appearance they are unlike any Warbler's eggs that I have ever seen, and most closely resemble faintly spotted examples of those of the Tufted Titmouse. Mr. Werner is of the opinion that they are exceptional in being

so finely spotted, as the broken shells found in the deserted nest exhibited much heavier markings, and in that respect agreed closely with two eggs in Mr. Ricksecker's cabinet, collected in Comal County, May 24, 1877. These last are unidentified, but Mr. Werner is confident that they can belong to no other species than the one under consideration, as the person by whom they were originally taken showed him the very fork in which the nest had been found the previous season, and his own nests were subsequently obtained in similar localities in the immediate neighborhood. These facts, taken in connection with the close resemblance of the nest to those already described, render the specimens well worth description as probable examples of the eggs of *D. chrysoparia*. They measure, respectively, $.72 \times .53$ and $.76 \times .53$. The latter dimensions, it will be observed, nearly coincide with those of one of Mr. Werner's specimens. The ground-color of the shell is a dead, dull white, thickly spotted everywhere with fine dots of reddish-brown and shell markings of pale lavender. At irregular intervals bold, conspicuous blotches of a darker shade of brown occur. These markings become nearly confluent around the larger ends, forming the wreath-pattern so common among spotted eggs. The nest bears a very close resemblance to those already described, but is somewhat smaller, measuring as follows: External depth, 2.15; external diameter, 2.00; internal depth, 1.50; internal diameter, 1.50. As with the other two, the outer walls are made up of strips of cedar bark, and the lining differs only in being composed almost entirely of feathers. These are used in such profusion as to form a dense, downy bed for the eggs, while around the rim or mouth of the nest they arch over inward, prettily concealing the greater part of the interior. The occurrence of such a nest in semi-tropical Texas is of itself a most interesting fact, especially when considered in connection with the theory that warm, feather-lined domiciles are peculiar to northern-breeding birds. Although the parentage of this last nest is undeniably involved in some obscurity, I have little doubt that it is correctly referred to *D. chrysoparia*. I should perhaps have stated before that the identification of the nest and eggs in Mr. Werner's collection is of the most positive character. The female was sitting on the nest, and at the first alarm her mate appeared when both were secured.

4. *Ceryle americana* var. *cabanisi*. TEXAS KINGFISHER. — This beautiful little Kingfisher was found by Mr. Werner in comparative abundance at several points in Comal County, notably about some of the springs that empty into the Guadalupe River. A set of six eggs,* taken April 25, 1878, was authenticated by the capture of both parent birds, the female being caught

* The only previous description to which I can at present refer is that by Dr. Brewer (Birds of North America, Vol. II, p. 397), of some unidentified eggs from Dr. Berlandier's Matamoras collection, which were supposed to belong to this species. They were apparently somewhat larger than the specimens above described, the measurements being given as " $1.06 \times .61$."

on the nest. Five of these (the sixth is so badly broken as to be unavailable for examination) measure, respectively, $1.00 \times .71$; $.94 \times .69$; $.99 \times .69$; $1.00 \times .71$; $1.00 \times .75$. They are rounded-oval in shape; in color, clear ivory-white, with a rather high polish. The shell is so extremely thin that nearly every specimen was cracked in transportation, although they were carefully packed. They contained embryos of large size. The nesting-cavity was in a sandy bank near the water's edge. The eggs were laid on the bare sand, no fish-bones or other extraneous material being near. The entrance was not quite $1\frac{3}{4}$ inches in diameter, and the hole extended inward from the face of the bank about $3\frac{1}{2}$ feet. Another set of the eggs of this species, obtained in the same locality, May 25, 1878, is in Mr. Ricksecker's cabinet. The four eggs constituting this set differ from those taken by Mr. Werner in being creamy-white in color, with scarcely any perceptible polish. This, however, may be due to the fact that they were freshly laid. They measure, respectively, $.93 \times .72$; $.97 \times .75$; $.95 \times .71$; $.94 \times .75$, and are nearly elliptical in shape.

5. **Buteo zonocercus.** BAND-TAILED HAWK.—This fine *Buteo*, which has previously been known only as a rare straggler into Arizona and Southern California from across the Mexican border, is now entitled to a place in the fauna of Texas upon the strength of a fine adult male preserved in Mr. Werner's collection. Only two pairs were observed by Mr. Werner during his rambles, and he regards the species as of rare occurrence in Comal County. On May 17, 1878, he had, however, the rare good fortune to secure a nest and set of eggs, which, if I am not mistaken, are the first authentic specimens known. The nest — a large, bulky structure, composed of coarse sticks, with a rather smooth lining of Spanish moss — was built in a cypress-tree on the banks of the Guadalupe River. It was placed on a large and nearly horizontal branch, about fifteen feet out from the main stem, and at least forty feet above the ground. It measures as follows: External diameter, 20 inches; external depth, 6 inches; internal diameter, 7 inches; internal depth, 4 inches. The two eggs which it contained were slightly incubated. One is still preserved with the nest; the other is in Mr. Ricksecker's collection. The latter measures 2.09×1.55 . It is marked with blotches of reddish-brown upon a dull white ground. These blotches occur most thickly about the larger end, where they tend to form a nearly confluent ring. In Mr. Werner's specimen, which is similar in color, the markings are most numerous around the smaller extremity. Its dimensions are 2.06×1.53 . Although the parent birds belonging to this nest successfully eluded all attempts at capture, their identity can scarcely be doubted. As Mr. Werner was climbing to their eyry, they swept down about his head, repeatedly passing within a few feet of him. As but a few days previously he had shot the specimen above referred to, it is not likely that he could have mistaken a species so distinctly marked. The two ash tail-bands of the male, set off by its otherwise nearly uniform black plumage, are characters that even at a long distance would serve to distinguish it from any other Hawk.

LATE FALL AND WINTER NOTES ON SOME BIRDS OBSERVED IN THE VICINITY OF PRINCETON, N. J., 1878-79.

BY W. E. D. SCOTT.

As the present winter is here exceptionally severe, as regards both snow-fall and temperature, some statistics respecting the Fauna at this season may be of interest. As it is not within the scope of the present paper to enumerate every species occurring, the following observations will be restricted to notes on the comparative rarity or abundance of particular species.

It is hardly necessary for me to say that, as usual, Robins and Bluebirds have been common, the latter particularly so. Early in January, on a day when the mercury marked seven degrees below zero, both species were noted, and at short intervals of a day or so they have been observed from December 1 till the present time (January 20).

On January 17, after a heavy fall of snow, there being from a foot to eighteen inches on the ground, I took a male Hermit Thrush, the only one seen during the month.

Tufted Titmice (*Lophophanes bicolor*) have been, and still are, common at this date, and Black-capped Titmice (*Parus atricapillus*) are more abundant than I have ever known them to be before. A series of careful observations leads me to believe that the Carolina Titmouse (*Parus atricapillus* var. *carolinensis*) is not a resident here throughout the year, or, if so, that it is very rare in winter, when its place is filled by the Northern form. The Southern variety, even in summer, is by no means common, but is most abundant in early fall. I have found them nesting in May and June.

Shore Larks (*Eremophila alpestris*) have been very common in localities, and are generally to be found every winter on the coast, but not always inland. Late in December large numbers of Yellow-rumped Warblers (*Dendroica coronata*) were still here, but they have not been noted this month (January).

Cedar Birds (*Ampelis cedrorum*) are common at certain localities, and become abundant, where suitable food is to be obtained, about January 20 to February 1.

Great Northern Shrikes (*Collurio borealis*) are abundant. Their

presence is particularly noticeable, as they are generally rather rare in winter, and always shy. This year, however, it is not unusual to see ten or a dozen in a day's collecting, and most of the specimens obtained are highly colored.

On December 17 I noted a Loggerhead Shrike (*Collurio ludovicianus*) in very fine plumage, and early in January two others. These birds, which five years ago were rare, are not at all uncommon now. There seems to have been a decided increase in September of each year for the past two years. I find no mention of it in Dr. Turnbull's list, and the first specimen that I know of I took at New Brunswick, N. J., during August, 1873. I have notes of the species now from Princeton, New Brunswick, and Barnegat. At the former place I observed three in one day early in November.

As regards the Sparrows, all that usually winter here are well represented, especially the Song Sparrows and Purple Finches. In addition, on the 16th of January, two large flocks of Red-poll Linnets (*Aegithus linaria*) were seen. Among these were many highly colored adult birds. This is the southernmost point at which I have noted this species, and I have no record south of Plainfield, Union County, save the above. On January 14 I took a single Fox-colored Sparrow (*Passerella iliaca*). Saw no others. This is the first note I have made of this species occurring in this locality in January. The Grass Finch (*Poocetes gramineus*) is not generally common in winter, usually leaving about the middle to the last of November, but on January 21 I took two, and saw several more, and on the 25th I saw three others.

Cardinals (*Cardinalis virginianus*) are quite common, and to be found everywhere. Meadow Larks are particularly abundant. A specimen taken on January 21, and three others taken the next day, are in full spring plumage. Having carefully observed the birds during the preceding six weeks, I am of the opinion that they have not moulted, but have changed by the direct wearing away of the tips and edges of the feathers. On January 17 I took a fine male Raven (*Corvus corax*) at West Creek, Ocean County, N. J. On January 21 I took a Fish Crow (*Corvus ossifragus*), and another on the following day, and saw many others flying about with the common species. The plumage seems to be decidedly more glossy and intense in color than that of representatives of *Corvus americanus* taken at the same time.

The preceding notes are not particularly remarkable except in

the case of the Hermit Thrush and Fox Sparrow, both of which are, to say the least, very rare during so severe a season. The following notes on the Birds of Prey, I think, indicate so unusual an abundance of the species noted as to require observations during other seasons of like severity before any conclusions as to the cause of such abundance can be drawn. It is to be particularly remarked that until December 20 the season had been very mild, with but little or no snow, yet their migration, noted below, certainly began two months before, or by October 20. The great abundance of the large Buzzard Hawks has been so conspicuous as to attract very generally the attention of the farmers of the region, and I am thus enabled to supplement my own observations by those of others. Without following any systematic arrangement, I propose to give a simple record of their migration following the season.

Late in September I noticed the fall arrival of the Marsh Harriers (*Circus cyaneus* var. *hudsonius*), but took no special note of these birds till the first week in October. They were then unusually common, and a few days later became so abundant that it was not unusual to see from five to ten individuals in an ordinary field of from ten to twenty acres. Most of the birds were in the brown plumage, and adults of either sex were rare. For the next four weeks they remained in about the same numbers, and then began gradually to disappear. But all through November they were common, and even early in December. By the 10th of that month most of them had left. One was noted December 14, and another on December 20; both of these in the immature plumage. On January 6 I took a female in immature plumage, and on the following day I saw another.

I am informed by most creditable witnesses that late in October, or about November 1, there appeared in a field of about forty acres, which was covered with a heavy growth of long dead grass, vast numbers of Owls. A visit to the field in question, which is directly adjacent to the railroad depot at Harlingen, and a talk with farmers living close by gave me the following additional data. The birds were exclusively the Short-eared Owl (*Brachyotus palustris*), as I learned from an examination of specimens in the possession of several farmers. Their number was variously estimated at from a hundred and fifty to two hundred. Many were shot, and as some are still to be found in the field in question, I should think this locality had been fixed on as a wintering point. There are no

trees in the field, and in the daytime the birds rest on the ground. They hunt for food morning and evening, and sometimes on dark days. Throughout this and adjoining townships these Owls have been more or less common, and many have been brought in by gunners. In previous years I have looked on this species as rather rare, and some seasons have passed without my meeting with them.

Since writing the above, two other points, at which vast numbers of these birds have congregated, have come to my knowledge, and in each case the conditions of locality are identical with those above described.

As the Marsh Harriers began to disappear, their places were speedily filled by Red-tailed Hawks (*Buteo borealis* [*]), which of course are resident here every winter. These birds appeared here November 2, and were in a few days more abundant than the Marsh Harriers had been. Though they were to be seen everywhere, they particularly affected the meadows along water-courses, where there were large trees. It was not uncommon to see two or three in the same tree, and once I counted five, and at another time six in a single tree. Many times during the past month or so I was able, standing at one place, to see twenty, and even more, on the various trees, fences, and other suitable places for alighting. The majority were in the gray plumage, but about a quarter of the whole number noted were adult. They were here in greatest numbers about November 20, and there are still very many at every suitable point. To give further idea of their numbers, I may state that I have taken more than seventy-five individuals without any particular exertion.

The Red-shouldered Hawks (*Buteo lineatus*), generally our commonest species, were rare, not more than one or two being seen, until January 25, when they became quite abundant. I have taken ten specimens, three of which are in adult plumage. Cooper's Hawks (*Accipiter cooperi*) have been and still are plenty, while Sharp-shinned Hawks, usually very abundant, have been rare. Several Rough-legged Hawks have been noted, and on November 15 I saw five individuals in a small field, two in the same tree. Of these,

[* NOTE. — Examination of Barton's "Fragments Nat. Hist. Penna," 1799, p. 11, will show that this species is there recognizably *described*, and named *Falco aquilianus*. Barton was a strict binomenclator; and, as this name antedates Vieillot's *F. borealis*, it becomes necessary to know the species as *Buteo aquilianus* (see Birds Col. Vall. 1, 1878, 593). — E. C.]

one was in the black plumage. Sparrow Hawks have been and still are abundant.

With a few words on other Owls than the kind already mentioned, I conclude. Barred and Great Horned Owls have been rather more common than usual, and Long-eared Owls abundant in localities. Mottled Owls do not seem as common as usual. Until last fall I had never met with the Saw-whet Owl (*Nyctale acadica*) at this point, and was surprised at having one brought me on December 1. This bird was taken from a hole in a tree alive. Just after a severe storm, in the early part of December, I was told of some small Owls being quite common in a certain cedar grove. In this and in an adjacent grove on December 10 I obtained ten Saw-whet Owls, and the following day seven more. Since that time until writing I have found these birds more or less common in cedar groves, and have obtained many more specimens. During the day they roost in cedars close to the trunk, and can frequently be taken alive in the hand. They seem to affect scattered groves, where the trees do not grow too thickly. Most of the birds taken are females, and, judging from their ovaries, the time of breeding cannot be more than six weeks or two months distant. The testes in the males taken are as large as No. 2 shot, and in one case were much more developed. Though the birds may breed in this region, I have yet to meet with them during the breeding season; but a careful search may result in finding their nests during the coming season.

It is hardly necessary to state that none of the specimens of the Saw-whets presented the peculiar plumage known as *N. albifrons*. As I write (January 20), these birds are still common, and are to be met with more in hollow trees than before the severe cold of the past three weeks.

On January 1 I secured a specimen of the Goshawk (*Astur atricapillus*), and a second one on January 7. Both these are females in immature plumage. Two others have been noted, one adult. Since the great snow-fall of the 15th and 16th of January, the Rough-legged Hawks have become much more abundant, and are now almost as common as the Red-tailed Hawks, which are still very common.

On January 21 six Carolina Doves (*Zenaidura carolinensis*) were seen. On January 23 several others were noted. Mr. R. H. Allen informs me that he has seen several of these birds at Chatham.

NOTES ON THE BREEDING HABITS OF THE CALIFORNIA
PYGMY OWL (*GLAUCIDIUM CALIFORNICUM*), WITH A
DESCRIPTION OF ITS EGGS.

BY WILLIAM A. COOPER.

To Mr. George H. Ready, whose untiring exertions in the oölogical line have placed him among our most reliable collectors, I am under obligations for the material for this article.

June 8, 1876, while collecting in the bed of the San Lorenzo River, two miles from Santa Cruz, Cal., he saw a male Pygmy Owl with a Brown Towhee in his claws alight on one of the topmost branches of a dead, isolated poplar-tree standing on the bank of the river. Mr. Ready did not hear the bird call his mate, but in a moment she came out, took the food brought to her, and returned to the nest, which was in a hole in the trunk of the tree, about seventy-five feet from the ground.

An hour's climb, which he pronounces the most difficult and dangerous he ever attempted (it being quite windy at the time), brought him to the nest, which was in a Woodpecker's deserted burrow, about nine inches deep and two inches across the mouth. The female bird was incubating on *two* eggs, and would not leave the nest. After removing her and the eggs, together with the Towhee (the head and neck of which were gone), Mr. Ready examined the nest. The eggs rested on a bed of twigs and a few feathers forming a lining three inches deep; in removing this he accidentally broke another, an unfertilized egg, situated in the middle and completely covered by the twigs. The question arises, Was this nest made by the Owl? Taking into consideration the facts that Owls usually build no nest; that the twigs of which the nest was formed were identical with those used by *Troglodytes parkmanni*, and that this Wren builds in similar places, sometimes as high, and is a persistent builder; that the feathers may have been placed there by the Wrens, or have accumulated from birds the Owls fed upon, — it seems probable that the nest was really a Wren's of which the Owls had taken possession. In regard to the addled egg, the Owls and Wrens may have contested for possession of the nest, and the egg been covered up by twigs brought by the latter; or it may have been laid in a hollow formed by the twigs which the Owls

pulled down to make the nest more comfortable, thus covering the egg.

The two eggs are dull white, with a scarcely perceptible yellowish tinge. The surface is quite smooth, and has the appearance of having been punctured with a fine point over the whole egg. They are oblong-oval in shape, more pointed at one end. The smaller measures 1.17. × .87 inches, the other is more pointed and measures 1.18 × .90 inches. Incubation was far advanced, and the embryos were extracted with difficulty.

SANTA CRUZ, CAL.

NOTE. — To prevent confusion in respect to the history of the nidification of this species, it may be well to state that the only previous account of its eggs (given by Captain Charles Bendire in Proc. Bost. Soc. Nat. Hist., Vol. XIX, 1877, p. 232) was also based on those here described, — a fact unknown to Mr. Cooper at the time his paper was written, and which became developed only by subsequent correspondence with Mr. Cooper in relation to the matter. — J. A. A.

THE AMERICAN BROWN CREEPER.

BY T. M. BREWER.

FOR a species so abundant at certain seasons, so widely distributed over North America, and so well known to all ornithologists, there is, even at this day, a surprising amount of doubt, and a deficiency of positive knowledge in regard to several points in the history of our common Creeper that are inferred rather than actually known. I propose to touch upon a few of these.

In "North American Birds" the Creeper is assigned a distribution from the Gulf of Mexico to high northern latitudes. This, of course, does not mean Arctic regions, nor should it be understood as including localities destitute of forests. An implied doubt has been recently suggested as to the extent of its northern habitat, merely because Audubon did not happen to meet with it in Labrador, and because Richardson makes no mention of it in the "Fauna Boreali-Americana." But no importance can be attached to this silence. If Audubon did not meet with it in Labrador, it was probably because he explored very little of the land and none of the forests, but other explorers in Labrador have been more successful.

Richardson had few if any opportunities to explore regions congenial to this species. It is a well-known fact that our Creeper is abundant throughout Newfoundland, where the forests have not been swept off by fire, as in a large part of the peninsula of Labrador, as far north as latitude 52° . It is also known to occur in Manitoba to very nearly the same parallel of latitude, and in 1850 I saw in Halifax examples that had been procured in Northeastern Labrador. Examples are also collected there by Moravian collectors and sent by them to Europe. Inasmuch as there is so little perceptible specific difference between our Creeper and the *Certhia familiaris* of Europe, there is good reason to believe that the habits and distribution are essentially the same, and that the northern distribution of both is limited only by the presence or absence of large forests. The European bird is known to range as far north as latitude 63° , both in Norway and Sweden. The specimens received from the Moravian settlements in Labrador were from a latitude of at least 57° .

Another point still involved in obscurity, so far as I am aware, is one that can hardly fail to be soon solved by the hosts of observing explorers in the field. This is to what extent our Creeper breeds among wooded mountains south of latitude 42° , and how far south it may occur as a common species in the breeding season. Up to 1874 I had known of but a single instance of its nesting, and that in one of the Grand Menan group of islands. Since then I have known of its nesting in Northern New Hampshire, in Maine, and, more recently, near Lynn, Mass., and last summer in Taunton, Mass. I have no doubt, therefore, that it will be found breeding in elevated forests somewhat farther south than any place to which as yet it has been traced.

In "North American Birds" it is said to breed in hollow trees, in the deserted holes of Woodpeckers, and in decayed stumps and branches of trees. This statement is rather legendary than positively ascertained, and I am now inclined to somewhat modify this opinion, the more so that I learn from Mr. Dresser that the European *C. familiaris* usually places its nest between the detached bark and the trunk of a large tree. This exactly describes the situation of the nest found in Grand Menan, and of six or seven other nests since identified and described to me. All of these nests have been in just such situations and in no other. Instead of this being exceptional, it is probable that this is our Creeper's most usual

mode of nesting, and that this is one of several reasons that unite to make this nest one so rarely discovered. But other situations are sometimes chosen. The European Creeper was found nesting in Spain by Lord Lilford (Ibis, 1866), in the foundation of the nest of the Cinereous Vulture, and Mr. Sachse informs Mr. Dresser that on the Rhine it nests in cracks on the outside of peasants' huts. The only instance of its breeding other than between the loosened bark and the trunks of trees that has come to my knowledge is that mentioned by Professor Aughey, who found a nest of our Creeper in a knot-hole in the timber near Dakota City, in June, 1865.

The nesting of the Creeper in Southeastern Massachusetts was brought to my notice by Mr. I. S. Howland of Newport, R. I., and I give substantially the notes furnished by that gentleman. The nest of the Brown Creeper was found, after a careful search, by Mr. Charles T. Snow of Taunton, on the 27th of May, 1878, in the middle of a large maple swamp, where he had noticed the presence of the bird for several previous summers without being able to discover its nest. This had been constructed between the bark and the trunk of a dead pitch-pine, the latter being about ten inches in diameter. The opening was nearly closed with chips of bark and other substances forming its foundation, and the nest was a mingling of fine bits of inner bark and soft vegetable substances, so soiled by its occupants that it could not be recognized. The young were just leaving the nest, which was ten feet from the ground. Its diameter was about three inches. As the set of eggs taken at Grand Menan appear, as compared with other sets, to be not typical, either in regard to ground-color or size, I will here add other descriptions. The gray ground of that set was possibly owing to their being just on the point of hatching. In all others since seen the ground-color is pure white, and the spots are a blending of brown and purplish-brown blotches. A set of six taken in May, 1875, in Milan, N. H., are larger than those described in "North American Birds." The largest measures $.60 \times .49$ inches, the smallest $.58 \times .47$, and they average $.59 \times .48$. This set very closely resembles, in every respect, my set of the eggs of *C. familiaris* from Sweden, as well as the set of *C. brachydactyla* from the mountains of Eastern France. The blotches are a trifle larger on the eggs of both the European races. The largest number of eggs in any set of our Creeper's that I have known is seven. In the

C. familiaris of Europe they vary from six to nine. The usual number is six, which are placed in two rows of three, in this way best conforming to the oblong shape of the nest.

The reasons given by Mr. Dresser for regarding *Certhia familiaris*, *C. brachydactyla*, *C. costæ*, *C. americana*, and *C. mexicana* as but closely allied races of a common species appear to be quite conclusive. European examples are found not distinguishable from the American.

NOTES ON BIRDS OBSERVED AT TWIN LAKES, LAKE COUNTY, COLORADO.

BY W. E. D. SCOTT.

THE following brief summary gives the results of some seven weeks' work at the point above indicated. The time spent at this locality extended from June 12 to July 30, 1878, and the area explored being small, only a limited number of species were observed. The Twin Lakes are situated in the valley of the Arkansas River, about a hundred and fifty miles southwest of Denver, and at an elevation of 9,265 feet above the sea. Five miles to the eastward of these lakes, and several hundred feet below them, flows the Arkansas River. Lake Creek, flowing from these lakes into the river, is one of its main branches at this point. The lakes are situated the one to the eastward of the other, the smaller of the two, a mile and a half long by a mile wide, being the western one. The larger lake is about three times the size of the other, and, like it, is oval in form. The two are not more than a quarter of a mile apart at their nearest point. On all sides, save to the eastward, the land rises very abruptly to the height of four or five hundred feet, and forms a sort of plateau from which at the distance of a mile rise mountains of different altitudes, some rather more and few less than fourteen thousand feet high.

The land is sandy and rocky, having a considerable growth of sagebrush, and is, for this portion of the country, well wooded. The greater portion of the trees are pines, but in localities occur groves of quaking asp (*Populus tremuloides*). These latter and some low willows along the outlet form the only deciduous trees.

Without entering into any consideration of what species may be attracted to this region at any other seasons than that of my visit,

I shall simply give those absolutely noted, passing the better known with but a word to indicate their occurrence. As a whole, this seems to be a very thickly populated region, considered ornithologically, there being very many individuals of most of the species noted.

1. **Turdus migratorius.** ROBIN. — Very common at the level of the Lakes. Begins to breed about June 5. The breasts of the males are more tawny, and the general coloring lighter, than in individuals from the Eastern States. Young fully fledged were observed June 29. All the nests found are curiously built of sage-brush, and the "mud walls" were not prominent.

2. **Turdus pallasi.** HERMIT THRUSH. — Not common. Noted on the hills to the south of Lower Lake.

3. **Oreoscoptes montanus.** MOUNTAIN MOCKING-BIRD. — Not common. Not met with about the Lakes, but at a point five miles north in a small park.

4. **Sialia arctica.** ARCTIC BLUEBIRD. — Abundant. Breeds about June 1 in deserted Woodpeckers' holes and hollow trees.

5. **Cinclus mexicanus.** WATER OUZEL. — Not common. Occur above the Upper Lake on the stream flowing into it, and on the Arkansas River at the junction of Lake Creek. On the 22d of June I found a pair on a pond of *still water* about a hundred yards from the stream that flows into the Lakes, the pond and stream not being connected. The female showed no signs of having laid eggs or of incubation. This pair was not at all shy, allowing my close approach as they walked about on some floating logs feeding on the aquatic larvæ that abounded.

6. **Regulus calendula.** RUBY-CROWNED KINGLET. — Abundant. One of the most common song-birds, and heard everywhere. On the 20th of June I saw a female fly to a pine-tree with material in her bill for building a nest. On looking I found a nest nearly finished. On the 25th of June I took this nest with five fresh eggs, and the female showed signs of having incubated. I think no more eggs would have been laid. The nest is before me as I write, and presents the following peculiarities: It is semi-pensile, being suspended to the leaves of the pine, and to one small branch, much like the Red-eyed Vireo's nest. It is very large in proportion to the builder, and is made of the bark of sage-brush and of *green moss* very firmly twisted together, and forming a soft outer wall, of from half to a full inch in thickness. This is lined with feathers and hair. The whole nest is very soft, and has the following dimensions: Four inches deep outside; three inches deep inside; three inches in diameter outside, and two inches at the top inside, but narrowing to an inch and a half at the bottom. On the outside it is as wide at the bottom as at the top, being in this respect like a Baltimore Oriole's. It was placed at the very outermost twigs and leaves of the tree, about twelve feet from the ground. The eggs are five

in number, of a dirty white color, faintly spotted all over with light brown, which becomes quite definite at the larger end. They are large in proportion to the size of the bird, and one end is very little sharper than the other. The following are the dimensions: $.55 \times .45$, $.55 \times .44$, $.54 \times .42$, $.57 \times .45$, $.58 \times .43$.

7. *Parus montanus*. MOUNTAIN CHICKADEE. — Not common. On the 15th of June I took a female that had evidently incubated. July 9 I found a nest containing four young, about ready to fly. The nest was very like that of our common species (*P. atricapillus*), and was in a dead cottonwood stub, about two feet from the ground. There was a mat of lining material some three inches in thickness at the bottom of the cavity. The young birds show distinctly the white bands conspicuous in this species.

8. *Sitta carolinensis* var. *aculeata*. WHITE-BELLIED NUTHATCH. — Not common. Met with but once. On July 11 I took a family of this species, two adult and five young birds fully fledged. They had apparently just left the nest.

9. *Sitta pygmæa*. PYGMY NUTHATCH. — Common in localities. Saw old birds carrying food to their young June 29.

10. *Eremophila alpestris*. SHORE LARK. — Not common.

11. *Anthus ludovicianus*. TITLARK. — Undoubtedly breeding, as I met with a flock of ten on Weston's Pass, at an elevation of about 13,000 feet, July 19.

12. *Dendrocæca auduboni*. AUDUBON'S WARBLER. — Not very common. Two females, taken the 15th of June, showed signs of incubating, and the plumage was much worn. On the 25th of June I took a nest containing four eggs nearly ready to hatch. The nest is a rather bulky structure, composed of twigs of sage-brush and fine grass, and is lined with soft hair and large feathers. In general shape it is flat and rather shallow, as the following dimensions show: Diameter outside, four inches; diameter inside, three inches; depth, two and a half inches outside and two inches inside. It was situated on the outer twigs of a large pine-tree, five feet from the ground. It contains four eggs, of a light greenish tint, with a circle of dark brown spots at the larger end. They are quite sharply pointed, and of the following dimensions: $.76 \times .55$, $.72 \times .58$. I give the dimensions of only two, as the others were too badly broken to yield accurate measurements. The nest was not fastened in any crevice, but simply laid on a bunch of pine leaves, and was sheltered by another bunch directly above it. On the 29th of June I found a second nest containing four young a day or two old. This one was situated in the topmost branches of a small fir-tree, about twenty-five feet from the ground. The nest is essentially the same in structure as the one above described. On July 9 I took young which had just left the nest.

13. *Pyranga ludoviciana*. LOUISIANA TANAGER. — Not uncommon in localities. On the 25th of June I found many in the scattered pines on the high hills to the north of the Lakes, and at an altitude of at least

10,000 feet. Among them were two females, showing marked signs of incubation. The birds were very tame, and went about in small companies of two or three pairs. A large number of males taken show a very appreciable lack of the red on the breast and throat, and are of a decidedly paler yellow than individuals of the same species taken about Colorado Springs and near Denver.

14. *Hirundo erythrogastra*. BARN SWALLOW. — The rarest of the Swallows found here. Three pairs bred in a barn near the Lakes.

15. *Tachycineta bicolor*. WHITE-BELLIED SWALLOW. — Common, though not as abundant as the next species. Breed in deserted Woodpeckers' holes and suitable localities. June 24 I saw pairs building; June 29 incubation had begun in several cases. July 4 I found a nest with six eggs slightly incubated.

16. *Tachycineta thalassina*. VIOLET-GREEN SWALLOW. — Abundant in localities, but not generally distributed. It breeds at about the same time as *T. bicolor*, and in similar places.

17. *Petrochelidon lunifrons*. CLIFF SWALLOW. — Very abundant. The 20th of June they began to build under the eaves of a barn. Many breed on the faces of the cliffs on the Arkansas River.

18. *Ampelis cedrorum*. CEDAR BIRD. — Not met with at Twin Lakes, but I saw a pair building about twenty miles east of Fairplay, on June 9, at an elevation of about nine thousand feet.

19. *Myiadestes townsendi*. TOWNSEND'S FLYCATCHING THRUSH. — In Clear Creek Cañon, five miles south of Twin Lakes, I took one specimen, July 6, the only one seen.

20. *Vireo gilvus* var. *swainsoni*. WARBLING VIREO. — Abundant. The only species of Vireo met with. The 9th of July I found a nest with four eggs nearly ready to hatch. The nest was built in a "quaking asp," about ten feet from the ground, and is a structure in every way similar to that of its Eastern representative.

21. *Carpodacus cassinii*. CASSIN'S PURPLE FINCH. — Rather uncommon. Breeds about June 20. The males obtained are appreciably larger and lighter-colored than those of the Eastern bird obtained in New Jersey.

22. *Loxia curvirostra* var. *mexicana*. RED CROSSBILL. — Common. On the 24th of June I met with large flocks composed of males, females, and young. The latter must have been several months old, as some showed the adult plumage taking the place of the striped immature plumage. The birds are rather larger, and the males are not so brightly colored as those in a series taken in Massachusetts.

23. *Chrysomitris pinus*. PINE FINCH. — I saw large flocks, and took several young birds of the year on June 25.

24. *Poœcetes gramineus* var. *confinis*. GRASS FINCH. — Common. Breeding.

25. *Spizella socialis*. CHIPPING SPARROW. — Not very common.

On the 14th of June I took a nest with four fresh eggs; July 4, a nest with four eggs slightly incubated; July 9 I met with four young nearly fully fledged, and on July 11 with two young just hatched.

26. *Zonotrichia leucophrys*. WHITE-CROWNED SPARROW.— June 9 I saw two in crossing the Kenosha range twenty miles east of Fairplay, at an elevation of 9,500 feet; also June 12, in crossing Weston's Pass, twenty miles southwest of Fairplay. These were almost the only birds to be met with, and on July 29, when again crossing this pass, they were even more abundant. That they breed in large numbers at high elevations, such as the point just spoken of, there can be no doubt. On the 28th of June I took a female, on one of the hills a mile and a half north of the Lakes, at an altitude of a little less than 10,000 feet, which was evidently breeding, as, on dissection, it was plain that eggs had been laid.

27. *Pipilo chlorurus*. BLANDING'S FINCH.— Not very common. The habits of this species remind one of the Sparrows of the genus *Zonotrichia*, but its peculiar notes resemble much more those of the Pipilos.

28. *Agelæus phœniceus*. RED-WINGED BLACKBIRD.— Not common. Breeds.

29. *Xanthocephalus icterocephalus*. YELLOW-HEADED BLACKBIRD.— Very rare. A single adult male was taken July 20. I am not aware that this species has been before taken at this altitude.

30. *Sturnella magna* var. *neglecta*. MEADOW LARK.— Rare. Met with on one occasion, July 10.

31. *Scolecophagus cyanocephalus*. BREWER'S BLACKBIRD.— Abundant. Breeding June 13. One of the most familiar birds about the ranches.

32. *Corvus corax*. RAVEN.— Not common. Noted several times.

33. *Picicorvus columbianus*. CLARKE'S CROW.— Common in localities. Met with in enormous flocks June 24, and for several days after. These flocks seemed to be passing through, but several pairs were resident about the Lakes.

34. *Pica melanoleuca* var. *hudsonica*. MAGPIE.— Not common. Occasionally met with. A few breed. Said to be common in fall.

35. *Cyanurus stelleri*. STELLER'S JAY.— Not very common. I took young fully fledged, June 25.

36. *Perisoreus canadensis*. CANADA JAY.— Common. The specimens met with were all in very worn plumage, and had evidently bred some time before my arrival.

37. *Contopus borealis*. OLIVE-SIDED FLYCATCHER.— Not uncommon. Met with everywhere in pairs, June 15.

38. *Contopus virens* var. *richardsoni*. WESTERN WOOD PEWEE.— Common. On July 11 I took a nest containing three eggs. The nest was built where three branches crossed in a brush-heap two feet from the ground. It differs widely from that of the typical *virens*, as it is composed

of sage-brush bark, very compactly woven, and has *no lichens* whatever on the outside. Inside it is lined with grass. The eggs have the same general appearance as those of *C. virens*.

39. **Empidonax obscurus**. WRIGHT'S FLYCATCHER. — A single specimen obtained.

40. **Chordiles virginianus** var. **henryi**. WESTERN NIGHTHAWK. — Abundant. Breeds. I took an egg July 3, fresh. The ground-color is whitish, thickly sprinkled all over with dark pink. Dimensions, $1.24 \times .86$. I took two eggs, July 11, of an entirely different color, the ground-color being deep lead, thickly marked with spots of the same color, but much deeper. Dimensions, $1.10 \times .80$, $1.12 \times .79$. The birds fly quite as much in the forenoon as at any time, and it was not unusual to see fifty flying low over the lake at a time.

41. **Selasphorus platycercus**. BROAD-TAILED HUMMING-BIRD. — Common. June 15 I took a male, evidently breeding, that lacked the crimson on the throat.

42. **Ceryle alcyon**. BELTED KINGFISHER. — Met with but once.

43. **Picus pubescens** var. **gairdneri**. DOWNY WOODPECKER. — Not common. One taken June 20.

44. **Picus villosus** var. **harrisi**. HAIRY WOODPECKER. — Rather common, but shy. July 11 I took fully fledged young with red on top of the head.

45. **Picoides americanus** var. **dorsalis**. BANDED WOODPECKER. — Not uncommon in localities.

46. **Sphyrapicus varius** var. **nuchalis**. NUCHAL WOODPECKER. — Common. Breeds about June 5. Took young fully fledged the 15th of July. The nests are generally low, not more than ten feet from the ground.

47. **Sphyrapicus thyroideus**. BROWN-HEADED WOODPECKER. — Not rare. Several pairs bred about the Lakes. The 23d of June I found a nest containing four young about two or three days old. The nest was in a "quaking asp," about ten feet from the ground. The entrance to the nest was very small, and the cavity inside not large. July 4, I took three. In nestlings nearly fully fledged the sexual difference was as plainly marked as in the adults. There were two males and two females in this nest. On July 11 I found a second nest in a pine-tree about twelve feet from the ground. This contained four young females fully fledged. These birds do not seem shy, but are restless.

48. **Colaptes mexicanus**. RED-SHAFTED FLICKER. — Common. Breeds about June 1. Took young fully fledged on July 2 and July 4. Seven in each nest. These nests, like those of most Woodpeckers I found in this region, were not more than ten feet from the ground. The birds are all typical, and show the distinguishing marks of sex in the first plumage.

49. **Bubo virginianus**. GREAT-HORNED OWL. — Not common. Specimens are much *grayer* than those taken in the East.

50. *Falco sparverius*. SPARROW HAWK. — Not common. Breeds. Two fully fledged young were taken July 15.

51. *Falco mexicanus*. LANIER FALCON. — Rare. A young male was taken July 20.

52. *Pandion haliaëtus*. FISH HAWK. — Rare. A pair bred on the south side of the Lower Twin Lake. The eggs were evidently laid by June 13, as at this time the female was constantly on the nest.

53. *Zenædura carolinensis*. CAROLINA DOVE. — Rare. A pair taken July 9.

54. *Tetrao obscurus*. DUSKY GROUSE. — Common. Breeds about the middle of June.

55. *Centrocercus urophasianus*. SAGE COCK. — Not common. A few were seen in a small park a few miles north of the Lakes.

56. *Lagopus lecurus*. WHITE-TAILED PTARMIGAN. — Rare. Some pairs bred on Mount Elbert, west of the Lakes.

57. *Ægialitis vocifera*. KILLDEER PLOVER. Rather common in localities. Breeds.

58. *Gallinago wilsoni*. AMERICAN SNIPE. Rather rare. A few pairs bred in June in a small swamp above the Upper Lake.

59. *Bucephala clangula*. GOLDEN EYE; WHISTLER. Took a male in worn plumage the 21st of June at the Lower Lake.

60. *Podiceps auritus* var. *californicus*. HORNED GREBE. — Took a pair in full plumage, June 20, on the Lower Lake.

NEST AND EGGS OF THE GOLDEN CROWNED KINGLET (*REGULUS SATRAPA*).

BY T. M. BREWER.

I HAVE been recently permitted to examine an example of one of ten eggs from an unknown nest, but which, by the pretty sure evidence of exclusion, cannot well belong to any other species of bird than the Golden-crowned Kinglet (*Regulus satrapa*). The nest was found in the neighborhood of Bangor, Me., was about six feet from the ground, and is now in the possession of Mr. Harry Merrill of that city. Through his courtesy I have been permitted to examine one of its eggs, and to compare it with sets of the eggs of *Regulus cristatus* and *R. ignicapillus* of Europe. My reasons for supposing the nest and eggs to belong to this species are, that this bird is a not uncommon summer resident in that neighbor-

hood; that from their size and markings they cannot well belong to any other species; and because, while the egg so closely resembles those of *R. cristatus* (to which bird *R. satrapa* is also very closely allied) as to be hardly distinguishable from them, it is also essentially different from the egg of *R. calendula*,* which more nearly resembles the eggs of *R. ignicapillus*.

The following account of the nest and eggs I copy, by permission, from Mr. Merrill's letter: "In 1876 a friend presented me with the nest which I shall describe, but the bird was not obtained, and consequently its identification is a matter of conjecture. The nest consisted of a large ball of soft moss, the whole forming a mass about $4\frac{1}{2}$ inches in diameter. The opening was at the top, and was about $1\frac{3}{4}$ inches across and 2 inches deep. It was lined with hair and feathers, principally the latter. The nest was in one of those bunches of thick-growth so common on many of our fir-trees, and contained ten eggs of the following dimensions:—

No.	Length.	Width.	No.	Length.	Width.
1	.52	.41	6	.47	.39
2	.50	.40	7	.52	.41
3	.50	.41	8	.51	.41
4	.50	.41	9	.50	.41
5	.47	.39	10	.50	.41

The eggs are of a creamy-white color, and are covered with very obscure spots, so very obscure, in fact, that they merely give a dingy or dirty tint to the egg, and some to whom I have shown them are doubtful if they are spots, but I regard them as extremely obscure and confluent spots, not on, but in, the shell. From the number of the eggs, their extreme smallness, and the situation of the nest, I have been inclined to believe it to be a Kinglet's."

Examining my example with a powerful magnifier, I find the ground-color to be white with shell-marks of purplish-slate, and a few ob-

* See the interesting notes of Mr. W. E. D. Scott in the present number of the Bulletin, p. 91. I have also compared the egg in question with that of the *calendula* obtained by Mr. J. H. Batty on Buffalo Creek in Colorado, July 21, 1873. This, though in a somewhat fragmentary condition, exhibits its size and markings. It measures .59. x .45. The ground-color is a creamy white, and over this are profusely scattered minute dots of brown with a reddish tinge. It closely resembles in its general character the supposed egg of *satrapa*, is larger, more oval in shape, and the spots are more distinct and of a different shade. Mr. Batty's nest contained one egg and six young. The parent, though not procured, was seen, and there appears to be good reason to accept the identification.

senre superficial markings of a deep buff, giving to the ground the effect of cream-color. This egg so closely resembles my set of the eggs of *R. cristatus* that, placed in the same tray, it is not readily distinguishable from them. It differs in size, shape, and markings from the eggs of *R. calendula*, which are more oval, are marked with brown, and resemble, in description, the eggs of *R. ignicapillus*. It will be seen that the greatest length of an egg of *R. calendula** is .58, that of the supposed *satrapi* only .52; the least length of *calendula* .54, that of *satrapi* .47. The variation in breadth is also as .45 to .41. The average measurement of *calendula* is $.56 \times .45$, that of *satrapi* $.49 \times .40$.

In "North American Birds" I ventured the remark, in reference to this nest, — then unknown except, as given by Mr. Lord, as pensile and suspended from the extreme end of pine branches, — that the presumption is that it builds a pensile nest not unlike its European congener, and lays small eggs finely sprinkled with buff-colored dots on a white ground, in size nearly corresponding with those of our common Humming-Bird." Mr. Merrill's nest, if not pensile, is at least in a pensile position, and is in all respects such a nest as was to be anticipated from the uniform habits, so far as they are known, of the members of this genus.

Both of the European species of this genus, *R. cristatus* and *R. ignicapillus*, and their Asiatic relative, *R. himalayensis*, are known to build pensile nests, though, like very nearly all pensile builders, they occasionally make use of other positions. It was, therefore, not only natural, but even unavoidable, to anticipate that our own *Reguli*, so closely allied to these in all respects, would be found to nest in a similar manner, and accordingly in "North American Birds" I ventured to say that we might "reasonably infer that its nest (that of *R. calendula*) is pensile like that of its European kindred." Mr. Scott's timely discovery shows that my anticipations have been realized. But even without this verification I should have felt fully justified in still maintaining the reasonable probability that both of our *Reguli*, when their history shall be more fully known, will be found to be pensile in their architecture. Yet the author of "Birds of the Colorado Valley" says: "Since Dr. Brewer thought he might reasonably infer that the nest was pensile *the discovery has been made that it is not so* [the italics are mine], showing that care must be exercised in natural history inferences." Even without the light

* See Mr. Scott's valuable paper, *antè*, p. 91.

of Mr. Scott's valuable discoveries I would still venture to maintain that all due and proper "care" had been exercised by me when I drew my inference, and that the writer quoted was too hasty in his own conclusions. There has been nothing to show that Mr. Batty's nest was not of a semi-pensile character, and certainly the time has gone by for any one to assume, on the score of a *single* example, the unvarying character of the nest of any bird. I say *single* example, for, except that of Mr. Batty, there was no other. Mr. Henshaw's was wholly unidentified, and it is quite likely belonged to some other bird. Of course Mr. Scott's testimony now settles beyond dispute the pensile character of its nest, but it does not necessarily show either that Mr. Batty was mistaken in his identification, or that Mr. Henshaw's supposed nest may not have been rightly surmised. We know too little as yet of these nests to lay down any arbitrary rules of generalization.

Since the above was written, Dr. J. C. Merrill has called my attention to the illustration of an egg of *R. satrapa* by Dr. Baldamus in Cabanis's "Journal" for 1856 (p. 23, Pl. I, No. 8). Although somewhat rudely represented, the identification is probably correct. In this egg there is more of the buff-colored markings, and much less of the obscure purplish-slate than in my specimen. The ground-color is less concealed, and is represented as a buffy-white.

NOTE. — Since this paper was prepared, Mr. Allen has called my attention to the description of the nest of *R. satrapa*, which I had overlooked, in Minot's "Land and Game Birds of New England" (p. 56). This nest, the writer states, was found in the White Mountains, and "*hung* four feet above the ground, from a spreading hemlock bough, *to the twigs of which it was firmly fastened*; it was globular, with an entrance in the upper part, and was composed of moss, ornamented with bits of dead leaves, and lined chiefly with feathers." The italics are my own, to emphasize the pensile character of this nest, the account corresponding so closely to descriptions of the nests of *R. cristatus* of Europe.

NOTES UPON THE DISTRIBUTION, HABITS, AND NESTING OF THE BLACK-CAPPED VIREO (*VIREO ATRICAPILLUS*).

BY WILLIAM BREWSTER.

SINCE the discovery of the species by Dr. G. W. Woodhouse in 1851, very little additional information regarding the Black-capped Vireo has been brought to light. The two original specimens, both

males, were obtained by Dr. Woodhouse on the 26th of May, 1851, near the source of the Rio San Pedro in Southwestern Texas. About three years later a third, also a male, was shot in the same locality by Mr. J. H. Clark, one of the naturalists of the Mexican Boundary Commission. Still a fourth, probably a female,* the date of whose capture has not been recorded, was taken at Mazatlan, Mexico, by Colonel A. J. Grayson. Upon these data alone our knowledge of the species has until very recently rested, and the Black-capped Vireo, with Baird's and Leconte's Buntings, and several other birds, seemed in a fair way to be assigned a permanent place among the lost species. In this Bulletin for January, 1879, however, Mr. Deane brought the species once more to the front by an interesting announcement of the capture of three Texas specimens, which were taken by Messrs. George H. Ragsdale and W. Norris in April and May, 1878. Shortly after the appearance of Mr. Deane's note on this species, Mr. Edmund Ricksecker of Nazareth, Penn., wrote me that he had received two sets of the eggs of the Black-capped Vireo, which he felt sure were correctly identified, and that a friend, Mr. W. H. Werner of South Bethlehem, Penn., had still a third set, together with the nest and both parent birds. Knowing well from past experience Mr. Ricksecker's thorough reliability in such matters, I at once obtained from him one of these sets, which, with the nest, is now in my collection, and will presently be considered in detail. In reply to my further inquiries, Mr. Ricksecker informed me that all these nests had been collected in Comal County, Texas, in May, 1878, by Mr. Werner and a gentleman with whom he was at the time staying, and who, during a residence of several years in Texas, has collected for Mr. Ricksecker many rare eggs and nests. The latter's name I am for obvious reasons requested to withhold. Mr. Ricksecker, however, very kindly put me in communication with Mr. Werner, who has answered all my inquiries in a very full and satisfactory manner, leaving no doubts in my mind as to the correct identification of these Vireo's nests.

I am also indebted to him for the following interesting account

* Since the above article was written I have examined all Mr. Werner's specimens of the Black-capped Vireo, and find that there is no obvious difference between the sexes. Several females, whose sex was determined by careful dissection, have the head-markings as dark and strongly defined as the males. Mr. Ridgway informs me that he is now doubtful whether the Mazatlan specimen really belongs to this species.

of the nesting habits of the birds: "I first observed the *Vireo atricapillus* in the northwestern part of Comal County, Texas, along the Guadalupe River, about twenty-three miles northwest of New Brunsfels. They were not very plenty: I noticed during my rambles ten to twelve specimens in a radius of about ten miles, in the course of six weeks. The peculiar song of the male first attracted my attention, and as soon as I saw the bird I was sure that it belonged to the *Vireo* genus. They seemed to prefer mountainous districts; at least I always found them in such localities. They frequented low brushwood, and built their nests from three to four feet above the ground. They were of a very lively disposition, restless, I should say, always flitting about from bush to bush, warbling and mimicking other birds like a Mocking-Bird in miniature. They seemed to be very much attached to their nests, and were very tame while sitting, so much so that at different times I walked up to the nest and touched it with my hand before the bird would leave it. On one such occasion I shot the bird that had just left the nest, and it proved to be a male. I think that establishes the fact that both male and female assist in incubation. . . . I found the first nest on the 6th of May. It was built in a small live-oak, and contained four eggs. I shot both parent birds (from which my drawing * was made). A few days later I found another nest containing three eggs, and also obtained both parent birds. A week after this I found a third nest in which were three young. These, after a close examination, I left unmolested."

From the above it will appear that to Mr. Werner is due all credit for discovering the first authentic nest of the Black-capped *Vireo* known to science. Those received by Mr. Ricksecker were collected May 26 and June 13 respectively. Concerning the former specimen, which is now before me, Mr. Werner writes: "I saw also (when found) the nest and eggs Mr. Ricksecker is speaking of, and you can safely rely that they are well-authenticated and correct." This nest — so the legend upon the label runs — was built "in a red-oak tree." It is suspended in the fork of two very slender twigs, and is in every way after the usual type of *Vireonine* archi-

* Mr. Werner has sent me for examination an exquisite little study in water-colors of a pair of Black-capped *Vireos*, with their nest and egg, taken from specimens in his fine collection. Probably many who visited the Centennial Exhibition at Philadelphia will remember seeing there his exhibit of several groups of mounted birds, all masterpieces of taxidermal skill.

ecture. In a few points of detail, however, it differs slightly from any Vireo's nest that I have seen. Although, generally speaking, of the ordinary cup-shaped form, the walls are unusually thick and firmly felted, and the entrance being very much contracted, the bulging sides arch over to the mouth of the nest, giving to the whole a nearly spherical shape. This peculiarity may be of an individual nature, though it is conspicuously shown in the specimen represented by Mr. Werner's drawing (see the last foot-note). The measurements of my nest are as follows: Greatest external diameter, 2.90; external depth, 2.25; internal diameter at mouth, 1.30 \times 1.68; internal depth, 1.40; greatest thickness of walls, .63. Of the materials which compose it little really need be said, save that they are of the general kind and appearance made use of by most Vireos; but for the benefit of the critical in such matters, I will present the following analysis, premising that, as I have never been in Texas, I am not posted on the botany of that State, and consequently feel somewhat incompetent to identify the collections embodied in their domicile by the industrious little birds. The great bulk of the structure, however, is made up of fine strips of reddish bark, probably from some species of cedar, layers of small, delicate, bleached leaves of a former year's growth, a few coarse grasses, one or two catkins, and several spiders' cocoons. These are firmly bound together, and the whole attached to the forked twigs above by fine shreds of vegetable fibre, caterpillars' or spiders' silk, and sheep's wool. The lining is of fine grasses and what appear to be the slender needles of some coniferous tree, the whole being arranged with that wonderful smoothness and care which belong to the highest order of nest-builders alone. Mr. Werner's nest, to judge from the sketch already mentioned, is almost identical with mine. He describes it as "pendent, similar to that of *Vireo belli*, perhaps rather more bulky. The outside is composed of dried leaves and grass, interwoven with spiders' webs and lined with fine grass and rootlets. The greatest diameter is 3 inches; inside diameter, 1.75 inch; depth, 1.80 inch; thickness of walls, from .45 to .60 of an inch." The eggs found in my nest measure respectively $.68 \times .53$; $.66 \times .53$; $.67 \times .52$; $.68 \times .55$. They are regularly ovoid in shape, and of a uniform pure, though rather dull, white, *without spots or marking of any kind*. In this last respect *all* the specimens obtained during the past season in Comal County, Texas, agree. In reply to my inquiries on this point, Mr. Werner assures me that

the closest scrutiny on his part has failed to discover even the faintest dotting upon any of the specimens that he has examined, while Mr. Ricksecker writes that his set are exactly similar in shape and color to those now in my possession, and that all he has seen are entirely immaculate. I am aware that occasional unspotted eggs occur in nests of the other and better known *Vircos*; indeed my collection embraces several such specimens, but they must be classed as comparatively rare exceptions. If, however, the Black-capped species ever lays spotted eggs, they will probably be found to constitute the exceptions to the rule. The testimony on this point is already, I think, ample enough to warrant this conclusion, based as it is upon the examination of no less than fifteen authentic examples. So far as I am aware, no other North American representative of this interesting family is known regularly to lay unmarked eggs. To show the range of variation in size, I give the following measurements, kindly taken for me by Messrs. Werner and Ricksecker. Set of four eggs in the collection of Mr. Ricksecker : $.68 \times .50$; $.71 \times .51$; $.70 \times .51$; $.65 \times .50$. Set of four eggs collected by Mr. Werner and recently presented by him to the Smithsonian Institution : $.75 \times .52$; $.73 \times .50$; $.76 \times .53$; $.74 \times .56$. Set of three eggs in the collection of Mr. W. H. Werner : $.72 \times .53$; $.73 \times .50$; $.74 \times .52$.

THE IPSWICH SPARROW (*PASSERCULUS PRINCEPS*, MAYNARD).

BY W. A. JEFFRIES.

On the 23d of January, 1875, while collecting in Swampscott, Mass., I shot a female *Passerculus princeps*. It was, at the time, on the crest of the beach, running about on the snow, and picking up seeds in company with a few Snow Buntings. Not hunting for it, I did not again meet with it till October 26, 1878, when, by chance, it was noticed in the same locality in good numbers. My brother and myself shot eleven before December 1, and one again on January 25, 1879. During November we searched for them carefully several times, and, with one exception, always shot one or more specimens. Probably as many rose out of range as we shot, although, from the same bird being seen several times, it was hard to judge of the true number. From what I have seen and heard of this bird in this part of Massachusetts, I should give it as a late fall migrant, a few spending the winter here, there being few true winter but many fall records of its capture.

When first noticed they were very tame. If approached they would at once crouch in the thin grass, or even on the bare sand, until we were only a few feet from them, when, half erect, they would run a few yards in a straight line and again crouch. When put up they flew quickly for some distance, then ran along the sand for many yards before stopping, which rendered them very hard to find without a good dog. The later comers were very shy, never allowing a near approach, but, running before the dog for several yards, would then rise wildly.

At daybreak they would perch with the Savanna Sparrows on some bush, fence, or ridge-pole, and fly freely to and fro; later in the day they were rarely seen unless carefully searched for, and not once did they give any note or chirp of alarm.

The thinly scattered beach grass at the edge of some fresh-water pond seemed to be their favorite feeding-ground, though seen on the beach seaweed twice, and again with Shore Larks in straw stubble.

Mr. Maynard in "The Naturalist's Guide," speaking of *P. princeps*, says, "With *P. savanna* it cannot justly be compared, as it is much larger, and has a shorter and more obtuse bill." In "The Birds of Florida" the same author says that it is "readily distinguished, . . . which is due to its pale tints and large size." In Baird, Brewer, and Ridgway's "North American Birds," *P. savanna* is given as having the "superciliary stripe yellow anteriorly," and *P. princeps* as having the "superciliary stripe white anteriorly," and later, as having the "bill small."

From a careful comparison of the specimens of *P. princeps* and *P. savanna* that I have access to, I have come to the conclusion that *princeps* ought not to be retained as a species, but believe it is only a northern form of *P. savanna*. As to the distribution of *P. savanna*, we find it nearly throughout the United States, some passing even north to breed. But in this, as in other species, the Northern races are the larger and the Southern the darker, while the individual variation from any locality is great.

In Eastern Massachusetts, where both *princeps* and *savanna* occur, the best opportunity for a comparison of their habits is offered. The breeding habits of *princeps* are unknown, but in nothing that is known do the two forms vary. *P. savanna* is among our early spring migrants, the majority of the birds passing north; many, however, remain and breed. In October they begin to move south, and by the 20th many are gone. At about this date come the *princeps* in small flocks, and are found with *P. savanna* on the feeding-grounds. Early in the morning flocks of six or eight birds are found moving along the edge of some pond, or perched in a clump of bushes. These flocks consist in part of *savanna* and in part of *princeps*, both often perching on the same twig and on good terms with one another. If disturbed they fly together to some other spot. During the first week of November the *princeps* arrive in force, while the *savanna* are fast disappearing, a few scattering birds remaining till late in the

month. By December the *princeps* in their turn move south, a few remaining through the winter.

If we regard *princeps* as merely a Northern form or variety of *P. savanna*, in what ought we to expect it to differ from the typical form? First, it should be of greater size; second, it should be of lighter color, but have the same style of coloration.

First, as to size, *princeps* is undeniably larger on the average than Savanna Sparrows shot in Massachusetts, but not so decidedly as I had inferred from published measurements. The following table shows that specimens of *princeps* intergrade with typical *savanna* in size, while the average size of *princeps* is smaller than var. *sandwichensis* as given in "History of North American Birds":—

Measurements.*

	Sex.	Alar extent.	Length, Fresh.	Wing.	Tarsus.	Mid. Toe and Claw.	Bill along Gape.	Date of Capture.	Remarks.
<i>P. princeps</i>	+♂	9.50	6.25	3.10	.90	.87	.53	Nov. 9, 1878	Largest specimen.
" "		9.06	5.88	2.79	.80	.81	.52	Nov. 28, 1878	Small specimen.
" "		9.63†	6.05†	2.96	.89	.89	.53		Average of 17 specimens.
" "		11.00	6.25	3.28	.95				From Maynard's "Birds of Florida."
" savanna var. sandwichensis			6.12	3.10		.56			From Baird, Brewer, and Ridgway's "History North American Birds."
" savanna	♂	9.50	6.00	2.82	.87	.80	.52	April 24, 1875	

* All of the specimens of *Passerculus princeps* were taken either at Marblehead or Swampscott. Four are in Mr. Brewster's collection, and the remaining fifteen in that of Mr. J. A. Jeffries.

† Average of eleven specimens.

Certainly *princeps* is not distinguishable from *savanna* by its larger size, since it is generally smaller than that variety which lives in the Northwest. In the above table most weight is given to length of wing, that being the measurement least liable to vary with the person measuring.

Secondly, *princeps*, the Northern race, should be the lighter. Here we have one of the characteristics given as easily distinguishing *princeps* from *savanna*. The plan of coloration is alike in both forms throughout, the variation being simply one of intensity of color. The color of the ventral surface of both birds is often identical. The yellow superciliary stripe varies with season, and in different individuals, sometimes there being no yellow, while again it is very marked. One point in which extreme specimens seem to differ is, that *savanna* has a good deal of buff on the sides of the head, breast, and flanks; the whole back also shows this buffy tinge; while a light *princeps* shows very little of it, if any. Intermediate specimens, however, grade one into the other. It so happens that we have an excellent parallel of this coloration in our Thrushes, the Southern form of *Turdus swainsoni* showing a very similar suffusion on the sides of

the breast, cheeks, throat, etc., while the whole dorsal surface also often has a decidedly more buffy color than the Northern form, *aliciæ*, which has little or no buff. Intermediate specimens vary between the extremes in this case. This buff is most marked in young birds.

The point in which *savanna* differs most from *princeps* is the color of the back, *princeps* being quite pale, and *savanna*, while often nearly if not as pale, is usually comparatively dark. Part of this difference we have just accounted for. The plan of coloration of nearly all the dorsal feathers of *savanna* and *princeps* is alike, — a black or very dark centre surrounded by one or more shades of brown, lightening as we approach the edge, which is buff, pale gray, or nearly white. This light edging varies greatly in breadth, its increase causing a proportionate decrease of the darker centre, thus giving us darker or lighter birds.

In light examples of *princeps* this extension of the light edging is carried still farther, at the expense of the brown color.

There are double reasons why *princeps* should be lighter than more southern *savanna*. First, it lives in high latitudes, and secondly, it is fond of dry, sandy wastes, never, so far as we know, passing far south, thus giving a good opportunity for the same paling influences, that render the birds of the plains light, to exert their force.

The examples of typical *savanna* approaching in color nearest the *princeps* are those taken late in the fall.

Finally, I believe that *princeps* ought not to be retained as a specific name, as it does not cover greater variations than may be easily accounted for by well-known laws of climatic variation.

NOTES ON A FEW BIRDS OCCURRING IN THE VICINITY OF PORTLAND, ME.

BY NATHAN CLIFFORD BROWN.

ONE of the commonest Sylvicoline summer residents in the townships adjacent to Portland is *Dendroica maculosa*, a bird whose southernmost regular breeding-ground has been supposed to be the latitude of Umbagog Lake. It breeds in especial abundance about the spruce woods of Cape Elizabeth, in that locality outnumbering every other Warbler except *Dendroica virens*. Young first make their appearance about August 3, and soon abound.

Dendroica blackburni is another Warbler, supposed to have a more northern regular distribution during the breeding-season, which nests every year in this vicinity. It is far from common,

however; and I regret to add that the rapid destruction of the forests about the city is tending rapidly to the local extermination of the bird. In fact, in Deering, where I first made its acquaintance, it is now hardly to be found except during the migrations. Young leave the nest about July 10.

On the 13th of June, 1874, I found a nest, containing four eggs, of *Zonotrichia albicollis* in Scarborough, and subsequent observations have proved the species almost a common summer resident. It is perhaps more numerous in Cape Elizabeth and Scarborough than elsewhere, but is to be found, in suitable localities, quite throughout Cumberland County through the summer months. Its nesting in Massachusetts has been recorded,* but it has been regarded a representative of the Fauna of Northern New England and Canada.

Junco hyemalis completes the list of so-called Northern species which I have to record as breeding in this vicinity. Although it is probably the rarest of the summer-resident *Fringillide*, it occurs every year. Like the preceding three species, it particularly affects the wilder portions of Scarborough and Cape Elizabeth, where the country closely resembles that of Northern Maine. The young leave the nest about August 1. I am, of course, aware of the numerous instances in which this bird has been detected nesting in mountainous districts far to the south of Portland, but I believe no record has hitherto been made of its breeding, in level country, in this latitude.

Dr. Brewer writes † of *Dendroica pinus* that it has not been found in Maine by Professor Verrill nor by Mr. Boardman, but I am informed that it appears in Professor Verrill's supplementary catalogue as "rare [in Maine] in summer." On the contrary, it is an abundant summer resident in this part of the State. It arrives very early in spring, occasionally by the middle of April, and by the third week in June brings out its young. With regard to its range, I found it, in 1875, common at Brunswick, the easternmost township of Cumberland County; and it even occasionally reaches Calais, as I learn from a marginal note by Mr. Boardman upon a copy of his list. In the western part of the State, however, it does not occur so far to the north. I detected but one specimen in Northern York County during two weeks' work in 1875, and Mr. Brewster writes me that he is very sure it is not found at Lake Umbagog, unless fortuitously.

* Hist. N. A. Birds, Vol. I, p. 575.

† Ibid., p. 269.

The first specimen of *Recurvirostra americana* known to have been taken in Maine was shot at Simonton's Cove, Cape Elizabeth, on the 5th of November, 1878, and passed through my hands. A notice of the bird was shortly afterwards published in the "Portland Press" by the Portland Natural History Society, in whose cabinet the specimen is preserved. I should add that reports have reached me of the occurrence of several other individuals of this species about the same time, but have not been traceable to any authentic source.

I am not aware that any of the scientific papers* relating to the birds of Maine include the name of *Rallus longirostris*. It appears, however, to be a rare visitor to the State. Mr. Samuel Hanson, a gentleman who is perfectly familiar with the species, has given me three instances of its occurrence in the vicinity of Portland. One specimen was killed by himself, in Falmouth, on the 17th of October, 1866, and about the same time two others were noticed in the game-bag of a sportsman in the same town. A probable fourth specimen (if correctly identified, doubtless the first killed in the State) was shot by my friend Mr. Luther Redlow, about September, 1864. It proved a "sp. nov." to all local sportsmen, and was pronounced to be of the species in question only after comparison with printed descriptions.

Two young examples of *Hydrochelidon lariformis* were taken in Scarborough the past autumn, and are probably, with one exception, the first detected within the limits of the State. Professor Verrill gives the bird as rare in Maine, but writes me of it: "I think its occurrence rests on examinations of a specimen or specimens formerly in the Portland Natural History Society's collection before it was burned. I cannot remember whether I ever saw more than one or not." And since not only the Society's entire collection, but all its records, were destroyed in the great fire of 1866, it must remain a matter of doubt whether more than one specimen existed in its cabinet before that time.

* A contributor writing from Portsmouth to the defunct "Country," under date of February 14, 1878, noted the capture of a "*Rallus crepitans*" at York, Me., in the last week of December, 1875. Since the gentleman chose to conceal his identity under the initial "E.," I am unable to say under whose sponsorship this record was made, but regard it as probably correct. Mr. Purdie writes me that his allusion on page 22, Vol. II, of this Bulletin, to the bird's occurrence in Maine was based on a knowledge of the same specimen, which, he adds, was preserved by Mr. Vickery, of Lynn, Mass.

STRANGE STORY OF A CALIFORNIA BIRD.

BY MISS FANNY MILLER.

AN interesting story respecting the habits, under peculiar circumstances, of the Chaparral Cock (*Geococcyx californianus*), commonly known as the "Road-Runner," is related by a California lady, who takes pleasure in reproducing any interesting matter regarding the natural beauties of her native State.

It appears that a family named Davies, being engaged in olive-culture, occupied the "Old Mission" at San Diego, around which is a dense growth of cactus, passing through which, one day, Mr. Davies heard a strange noise resembling the sound made by a pair of Pigeons billing and cooing, winding up with a succession of short, quick, jerky notes, thus: *per-root! per-root! per-root!* The listener searched until he discovered the cause of his surprise, which was a nest of four young birds of the species *Geococcyx californianus*. He took them home, and succeeded easily in raising them in a coop, like chickens, the old ones feeding them. Their beautiful plumage soon attracted the attention of a number of visitors to the Old Mission, and notes of the captives have already been given in the San Francisco papers. The birds were finally released, but they regularly returned at night to the coop, and lingered around, becoming satisfied habitués of the barnyard. Two of them died. The two remaining fought until one vanquished the other, which for a while repaired to the cactus, but returned with the nest-making season. In the mean time the sole remaining bird had become so selfish in its attachment to Miss Davies, that it became a nuisance to the household. It would allow no living thing near her, showing its jealousy by darting fiercely at the object of its hatred, pecking it furiously with its sharp bill, whether cat, dog, or child, oftentimes drawing blood, after which it would retire satisfied. For its own dainty consumption it would bring in beetles, bugs, spiders, and when anything larger was captured, — for instance, a lizard or small snake, — it would fly to its mistress, strut around her until noticed and petted for its enterprise, during which it cooed like a Parrot whose feathers are being rubbed down. With the returned mate it began a nest on a small table by the window, in the young lady's

room. This nest — a most uncomfortable affair, about the depth of a soup-plate — was made of large rough sticks, some of them about ten inches long, which they brought and laid on the outside of the window-sill, if the window remained closed, for the occupant of the room to add to the nest, which she faithfully did, and the nest was soon completed, the inner lining being dry grass and straw. But *one* egg was laid in this rude nest in its present location, inasmuch as the male one day decided the fate of “household and home,” by bringing to his mate a large Gopher snake, which twirled itself around his beak more than half alive, whereupon, with a peculiar nervous sensation, the lady immediately removed their lodging to the “cold ground” among the cactus, where the birds hatched a promising brood, and again brought them to the house for food, like chickens. The young birds are much like young turkeys, and at full size are about as large as half-grown turkey-hens. The “Road-Runner” particularly mentioned never forgot its attachment to Miss Davies, and would follow her everywhere after its chicks were grown; they only parted when the family left the country, — leaving the birds behind, which they now regret.

SAN RAFAEL, CAL.

Recent Literature.

AUGHEY'S NOTES ON THE FOOD OF THE BIRDS OF NEBRASKA. — In a paper of fifty pages,* contributed to the “Report of the United States Entomological Commission for 1877,” Professor Aughey records his observations on the food of the birds of Nebraska, with especial reference to their locust-eating propensities. These observations extend over a period of thirteen years, and include the examination of the stomachs of probably a thousand specimens. He says: “Up to the present year [1877] my studies in this field have been pursued with no thought of a publication of the results, but simply from a love for such pursuits, and hence my notes are not as complete as they otherwise would have been.” Yet we find under a large number of the species tabulated statements of the contents of the stomachs of from two to a dozen or more specimens of each species,

* Notes on the Nature of the Food of the Birds of Nebraska. By Professor Samuel Aughey, of Lincoln, Neb. First Ann. Rep. U. S. Ent. Com. for the Year 1877. Appendix II, pp. 13-62. 1878.

giving locality and date of capture, the number of locusts and of other insects found in each, etc.

The list numbers two hundred and fifty species, and hence includes a pretty large proportion of the birds that visit the State, and as the list relates ostensibly to only locust-eating species, our first feeling is one of surprise that it should be so large, or that it should include many of the species it enumerates. A closer examination, however, shows that they are there with reason, and that the list of insect-eating, and particularly locust-eating, species includes not only the so-called insectivorous birds, but Hawks and Owls, Grouse, Plovers, Sandpipers, Herons, Ducks and Geese, Terns and Gulls, and even Grebes. In former numbers of this Bulletin, and elsewhere, attention has been repeatedly called to the grasshopper-eating habits of the Red-headed Woodpecker, and various speculations were indulged in by one writer respecting a change of habit supposed to have taken place in several Woodpeckers anent their capturing insects on the wing. As showing how little we know about the food of our birds, it may be noted that Mr. Anghey records finding one half to two thirds of the contents of the stomachs of various specimens of the Hairy, Downy, Yellow-bellied, and Red-bellied Woodpeckers to consist of locusts. The Grouse, Plovers, and Sandpipers are among the most efficient of the locust-destroying species, although nearly all birds subsist largely upon these insects during the season of their occurrence, and are believed to be of great importance in checking their ravages. The Blackbirds, particularly Brewer's Blackbird, are found to be of very great utility in this regard.

Although Mr. Anghey's paper bears especially upon the subject of birds as grasshopper destroyers, it forms at the same time a valuable faunal list of the birds of Southern Nebraska, containing notes relating to the relative abundance and season of occurrence of most of the species.

Mr. Anghey contributes to the same Report (pp. 338-350) a special communication on the general subject of the usefulness of birds, with particular regard, however, to the locust question. After detailing instances where the work of birds had a marked effect in keeping down the "hateful locust," especially in the case of Grouse, Quail, Upland Plovers, etc., as well as the smaller birds in general, he concludes that even the majority of the Raptorial birds should be protected. He mentions among those that should be destroyed the Snowy Owl, the Cooper's Hawk, Goshawk, Prairie Falcon, Pigeon, and Sparrow Hawks. He also regards the Blue Jay as "only a blackleg in fine clothes," whose depredations on the nests of other birds render his existence incompatible with the increase of the smaller birds. The Cowbird is regarded as an extremely obnoxious species, and as meriting banishment and death. The House Sparrow also comes in for nearly a page of condemnation. Mr. Anghey refers to the wholesale destruction of Grouse and Quails as a serious injury to the welfare of the agriculturist, which should be checked by severe legal means. He states that in thirty counties of the State 300,000 Prairie Chickens and 150,000

Quails were destroyed in a single year. He also refers to the great destruction of the eggs and young of birds by the prairie fires in the month of June, and recommends that the burning of the prairies later than the middle of April or the first of May should be prohibited by stringent legislation. Referring to the destruction of bird-life by this cause he says: "In June, 1869, I passed over a small portion of Wayne County behind a raging prairie fire. In one hour I found ruined nests of 13 Prairie-Chickens, 9 Quail, 5 Plover, and three others that I did not recognize. In some seasons many thousands of nests are destroyed in this way."

He also alludes to the wholesale destruction of Blackbirds by poison, formerly practised, under the mistaken notion that they were damaging the crops. About the year 1865, and for some years previous to this date, this mode of destruction prevailed to an alarming degree, to which not only Blackbirds, but many other species, fell victims, and appreciably decreased in numbers in consequence. He says it was not unusual to see "piles of them" that had been gathered in the cornfields. He estimates that in "a single autumn, in Dakota County alone, not less than 30,000 birds must have been destroyed in this way." He believes that sooner or later the protection of useful birds should become not only a national, but an international matter, since, owing to the migratory habits of the species, wide areas are affected by the excessive destruction of birds at particular points. — J. A. A.

LANGDON'S REVISED LIST OF CINCINNATI BIRDS.* — About two years ago Mr. Langdon published a catalogue of the birds of the vicinity of Cincinnati, with notes, including 279 species. The present revision of the subject gives the numerous additional facts which have meanwhile become known to the author, and in recognition of which the list has been entirely remodelled, "to represent the present state of our knowledge of 'Cincinnati Birds,' so far as their local distribution is concerned, as well as the later conclusions of the most approved authorities in respect to classification and nomenclature." The list is chiefly based upon collections and observations made at two or three points between the Great and Little Miami Rivers, within ten or twelve miles of the Ohio. The breeders, known or inferred, are marked with the asterisk or obelisk. The 256 identified species are of the following categories: Constant residents, 27; summer residents, 62; winter visitants, 10; regular migrants, 82; irregular migrants, 37; casual visitants, 31; species that have disappeared within forty years, 7. There are also included 26 "species of probable occurrence, not yet identified," nearly or quite all of which seem likely to be found. The List is annotated throughout with the usual and proper comments on each species, and is concluded

* A Revised List of Cincinnati Birds. By Frank W. Langdon. Svo. pamph. repaged pp. 27, 200 copies, from Journ. Cincinnati Soc. Nat. Hist., Vol. I, No. 4, Jan. 1879, pp. 167-193.

with some general observations suggested by the writer's experience. It is a very good piece of work, based in greatest part on original personal observations, very carefully elaborated, with attention not only to the material facts presented, but to those niceties of workmanship which are too often neglected. There are a few slips, in spite of the author's evident pains, such as *ædon* for *ædon*, and *Vireosylva gilvus* for *gilva*. The chief fault we have to find with the List is that it is *repaged* in the separate pamphlet issues. This troublesome, unnecessary, and inexcusable practice should stop; it is a relic of barbarism, an anachronism which has obvious disadvantages without any counterbalancing recommendation. We are glad to see, especially among our younger writers on ornithology, evidence of increased attention to details of execution. Those who are satisfied to say what they have to say, without regard to how they say it, may be reminded that the *form* as well as the *substance* of their communications to the public is essential to successful authorship; and that an article may be made a contribution to letters as well as to science. It is even worth while to spell correctly. — E. C.

A WOMAN'S WORK AS A NATURALIST.* — Among the many wonderful "exhibits" at the recent Centennial Exposition in Philadelphia, few things attracted such general attention, or created more surprise, among visitors of every grade of intelligence, than Mrs. M. A. Maxwell's collection of the animals of Colorado. This collection formed a part of her "Museum" at Boulder, Colorado, from which it was selected, under a commission from the State authorities, to represent the Fauna of the mountains and plains of that enterprising State. This selection embraced over one hundred mammals and nearly four hundred birds, most ingeniously and effectively arranged in artistic groups on a miniature landscape. The objects represented ranged in size from Humming-Birds to the largest mammals of the Colorado mountains and plains, — the gigantic elk and bison, — and were all mounted in the highest style of the taxidermist's art. This exhibit was not only unique and effective in execution and arrangement, but was a startling revelation of what a woman can do in one of the most difficult fields of art, for not only were all these objects prepared by Mrs. Maxwell, but all were procured by her, a large part of them having been taken by her own hands. But Mrs. Maxwell is something more than a successful and enthusiastic taxidermist; she is an ardent and thorough student of nature, and her explorations of the zoölogy of Colorado have revealed the existence of many species in that State not previously known to occur there, and contributed many new facts regarding the habits and distribution of others. The little book before us, devoted mainly to a very intelligent and pleasantly written account of how

* On the Plains and among the Peaks; or, How Mrs. Maxwell made her Natural History Collection. By Mary Dartt. Philadelphia: Claxton, Remsen, and Hoffsinger, 624, 626, 628 Market Street, 1879. Svo. pp. 237.

Mrs. Maxwell's work was accomplished, was prepared by a sister of the lady-naturalist. The main text of the work is intended for the general public, and as an answer to the thousand-and-one questions asked by the eager crowd that daily thronged the Colorado building during the days of the Centennial Exposition, in reference to the "wonderful woman" and her remarkable work; but in an "Appendix" of twenty pages are given annotated lists of the mammals and birds represented in the collection, the former by Dr. Coues and the latter by Mr. Ridgway. The list of mammals is here for the first time printed, but the report on the birds appeared first in "Field and Forest" (Vol. II, pp. 194-199) in the early part of the year 1877.* Dr. Coues pays well-merited compliments to her artistic skill and the scientific value of her collection, and refers to the pleasure it gave him "to see a collection of our native animals mounted in a manner far superior to ordinary museum work, and to know that there was at least one lady who could do such a thing, and who took pleasure in doing it," and further speaks of it "as one of the most valuable single collections" he had seen. Mr. Ridgway says the collection of birds "consists of excellently mounted specimens," and "illustrates very fully the avian Fauna of Colorado, while it bears testimony, not only to the great richness and variety which characterize the productions of the new State, but also to the success which has crowned the enthusiastic and intelligent efforts of a 'woman-naturalist.'" "The collection," he continues, "embraces many species whose occurrence in Colorado was wholly unlooked for; such as *Nyctherodius violaceus*, *Garzetta candidissima*, and *Tantalus loculator* among Southern species, and *Stercorarius parasiticus*, *Xema sabinei*, and *Oedemia americana* from the high North." The list of birds numbers 234 species and varieties, among which Mr. Ridgway describes one new variety (*Scops asio*, ϵ . *maxwellii*), as well as specimens of other species of peculiarly interesting phases of plumage. The annotations relate mainly to an enumeration of the specimens represented, but occasionally to facts of distribution and locality of occurrence. — J. A. A.

MAYNARD'S BIRDS OF FLORIDA.† — The first part of a work with the above attractive title was issued in 1872, followed by parts two and three in the two following years. After an interval of four years the fourth‡ and subsequent numbers appeared, and the eighth part has just been received. The title of these later numbers has been extended to include the Water and Game Birds of Eastern North America, though it would seem as if these might more appropriately have been made the subject of another series.

* See this Bulletin, Vol. II, p. 75, where the list is simply referred to by title.

† The Birds of Florida, with the Water and Game Birds of Eastern North America. By C. J. Maynard. Illustrated. Published by C. J. Maynard & Co., Newtonville, Mass.

‡ A notice of this number was published in the Bulletin of July, 1878.

The text is by far the most satisfactory part of the work, and contains much of interest, though, perhaps, too much space is given to the habits of some species as observed in New England and elsewhere. The author pleasantly describes his travels in search of birds, which resulted in the addition of *Phonipara bicolor* to our Fauna; and he gives well-written descriptions of the scenery in different parts of Florida. *Ammodromus melanoleucus* and *Pipilo leucopis* are given as new species, but they were previously described as *A. maritimus* var. *nigrescens*, Ridg., and *P. erythrophthalmus* var. *alleni*, Coues. Objection may be made to the consideration in this work of *Passerculus princeps* and *Perisoreus canadensis*, neither of which have yet been taken within eight hundred miles of Florida, although in the prospectus of the later numbers the author announces his intention of adding an appendix which will contain the species which occur east of the Mississippi River not found in the body of the work. Certain changes are made in nomenclature and classification, notably raising the Kingfishers and Nighthawks to the rank of orders.

Twelve species* are figured, and there are two plates of the heads, sterna, and tarsi of several others. Plates I, II, III, and XII are passable, being the best of the series, but the others are extremely poor, and for this there is no excuse.[†] All ornithologists know what admirable colored plates of birds have been published during the last fifteen years, and the time when a bad figure was better than none has certainly passed; the labor and expense of preparing such might profitably be devoted to other purposes. From the known habits of the Nuthatches, and from what the author states in regard to the Brown-headed species, it seems inappropriate to figure it (Pl. VII) on a spray of smilax.

Plate VII, in Part VI, has figures of sixty-six eggs of sixty-four species. These can be identified with the aid of a list of the species, which is printed on a loose brown-paper advertising-sheet that accompanies this number, though we are unable to find in the text any mention of the represented fact that many Florida birds lay angular eggs.

We have made the above remarks in no spirit of captious criticism, but as our candid opinion of the shortcomings of the work, and in the hope that the parts yet to appear will more worthily give the results of Mr. Maynard's known familiarity with the birds of a very interesting ornithological region. — J. C. M.

* *Rosthramus sociabilis*, *Phonipara zena*, *Passerculus princeps*, *Pipilo leucopis*, *Ammodromus melanoleucus*, *Sitta pusilla*, *Dendroica dominica*, *Micropalama himantopus*, *Empidonax acadicus* (with nest and eggs), *Virco philadelphicus*, *Phæton flavirostris*, and *Certhiola bahamensis*.

[† The author desires to have it stated that he is now having the plates redrawn, and that better ones will be soon sent out, without additional cost to subscribers, to replace those already published. — ED.]

General Notes.

OLIVE-BACKED THRUSH (*Turdus swainsoni*) IN TEXAS. — I collected at Gainesville, Texas, May 16, 1878, a Thrush which I marked *Turdus swainsoni*, after close examination, having previously noted Dr. Cones's remark, "not recorded from Southwestern U. S." Professor Snow mentions its rarity in Kansas. Dr. J. C. Merrill, Mr. George B. Sennett, and Lieutenant McCauley omit it from their lists of Texas birds. I sent a box of birds to Mr. Greene Smith, of Peterboro', N. Y., among them being the specimen in question, requesting Mr. Smith to notify me if they were correctly named. He stated in reply that Mr. J. G. Bell, of New York, agreed with him upon the identification of the Thrush. I saw several of the birds at the time the specimen in question was secured. — G. H. RAGSDALE, *Gainesville, Tex.*

ALBINISM IN THE TUFTED TITMOUSE. — In his article on "Albinism and Melanism in North American Birds" (this Bulletin, January, 1879, pp. 27-30), Mr. Ruthven Deane records the occurrence of a partially albinotic specimen of the Black-capped Titmouse, with the remark that it is "the only instance of albinism occurring among the *Paridae*" of which he has heard. It may be of interest to note in this connection, that the writer's collection contains two examples of the Tufted Titmouse (*Lophophanes bicolor*) which illustrate this abnormal condition. In one of these (female, November 29, 1877) nine of the rectrices are entirely white, one has a white blotch at the distal end, and the other two are normal. The order of arrangement is as follows, beginning at the left side: 3 white, 1 normal, 3 white, 1 normal, 1 white, 1 blotched, 2 white; and owing to the distribution of the gray feathers towards the centre, the bird when flying presented a somewhat striking resemblance to the Black Snowbird (*Junco hyemalis*). The second specimen of *L. bicolor* (male, March 22, 1874) has several white feathers scattered through the black of the forehead. — FRANK W. LANGDON, *Maulsonville, Hamilton Co., O.*

HOODED WARBLER IN WESTERN NEW YORK. — This beautiful species has been noted as of not uncommon occurrence near Riverdale, N. Y. (Bull. Nut. Orn. Club, Vol. III, p. 130), and as of rare occurrence in Lewis County, N. Y. (Bull. Nut. Orn. Club, Vol. IV, p. 7). From nearly three months' study of the bird in Northern Cayuga and Wayne Counties (N. Y.), we are able to give a pretty correct account of its occurrence in this section. We first met with the bird July 16, 1878, in the woods bordering the shore of Lake Ontario, near Fair Haven. Our attention was attracted by a loud alarm note, not unlike that of the Golden-crowned Thrush (*Siurus auricapillus*). We secured the female on the spot, the

male not until the next day. From that time forward we found them in every suitable locality for miles around. The birds' favorite haunts appeared to be dense and solitary woods with tangled undergrowth, where fallen hemlock tops and other débris of the woods that mark decay are overgrown with various briery bushes. From our arrival in July until the time of their departure, they were in full song. In many cases we found single birds having two distinct songs. Often have we observed them singing one for some time, and then, as though tired of that, take up the other, sometimes alternating the two.

July 25 we found their nest, containing three young and one egg. The next day we found a second nest, near which were three young, scarcely able to fly. The nests were placed in the forks of small saplings, near the ground, and were composed of hemp and grapevine fibres, lined with horse-hair, interspersed with feathers.

The birds began moulting about the first week in August, but by the middle of September we obtained some fine specimens apparently recovered from this state. We secured female birds with the black gradating from a single spot to a full tracing of the hood. We also found young males of the year, with the black as dense and glossy, and the yellow as rich, as in the best adults; yet the little "spike tails" scarcely exceeded half an inch in length, and their peculiar plumage marked them as young. We observed this Warbler as late as September 20, when a few cold breezes from the lake drove them southward. — SAMUEL F. RATHBUN and FRANK S. WRIGHT, *Auburn, N. Y.*

NOTE ON *DENDRÆCA TOWNSENDI*. — The following interesting observations occur in a letter addressed to me by William A. Cooper, of Santa Cruz, Cal., dated January 18, 1879: "I have made skins of about a dozen specimens of *Dendræca townsendi* this year, and have killed others, too much shot to prepare to advantage. My first specimen, taken November 3, 1878, was feeding in company with *Parus rufescens*, *Vireo huttoni*, *Psaltriparus minimus*, and *Regulus*, in willows, alders, and sycamores on the bank of a river. November 14 I shot eight specimens, and could readily have obtained thrice the number, as I saw fully a hundred feeding in a similar location, with several small birds as above mentioned. I have obtained a few specimens since; but they have left the trees along the river, probably because they are now bare, and live among the taller redwoods, firs, and oaks, and are obtained with difficulty. January 1, 1879, I shot my last specimen, not having been out since. Shot a couple, December 29, of one of which I now have the skin. As soon as I can conveniently do so I shall go into the woods and try to obtain a fresh specimen to send you in the flesh. My opinion, based chiefly on the above facts, is that *D. townsendi*, or at least a portion of those that come here, spend the winter. Further investigations will decide it." — ELLIOTT COUES, *Washington, D. C.*

THE YELLOW-RUMPED WARBLER (*Dendroica coronata*) WINTERING IN SWAMPSCOTT, MASS. — During the last three years I have been in the habit of finding these birds in December. But this year I have quite frequently seen flocks of from five to forty birds flying about among the bushes and junipers. I have taken specimens this winter on December 14, 1878, February 1, and February 8, 1879. Their occurrence here this winter cannot be due to favorable weather, since the winter has been severe, and for at least three weeks before the last capture the ground was covered with snow. Cape Cod, as given in Mr. Allen's "List of the Birds of Massachusetts," is the most northern locality in which this bird has previously been known to winter, though most recent lists suggest the probability of the Yellow-rumps spending the winter with us. — J. A. JEFFRIES, *Boston, Mass.*

CAPTURE OF KIRTLAND'S WARBLER (*Dendroica kirtlandi*) IN THE BAHAMA ISLANDS. — This interesting species will, I think, prove not uncommon on the Bahama Islands during the winter months. Whether it is a resident there remains for future research to reveal; but I am of the opinion that, like most of its family, it is migratory.

On January 9 a specimen was taken at Hawk's Nest, on Andros Island, which proved to be a female. Its actions much resembled those of *D. coronata*, and it seemed to prefer the thick brush. Its stomach contained the remains of insects. I append the following description of the specimen:—

D. kirtlandi, ♀. Above bluish-ash, the feathers of the crown with a narrow, those of the middle of the back with a broad, streak of dark brown. A narrow semicircular ring of black surrounds the eye, touching its anterior part; eyelids white. Under parts yellow; throat and breast with small spots, and sides of the body with short streaks of black. Greater and middle wing-coverts, primaries, and tail-feathers edged with dull white. Two outer tail-feathers with a dull white spot on the inner web. Under tail-coverts yellowish-white. Length, 5.50; wing, 2.75; tail, 2.50; tarsus, .80. — CHARLES B. CORY, *Boston, Mass.*

THE EGGS OF THE REDSTART (*Setophaga ruticilla*). — I would like to give a more complete idea of the size of the eggs of this bird than would be conveyed by the figures given in "North American Birds." The eggs from the Hingham nest (see Vol. I, p. 325) are unusually small (.55 × .45). In eleven sets now before me the least length is .59, the greatest length .70; the least breadth .48, and the greatest breadth .52. The largest set from Swampscott, Mass., averages .688 × .51. Two sets from Milan, N. H., average, one, .595 × .495, the other .63 × .49. One from Grand Menan averages .65 × .50. Two sets from Lynn average .656 × .484. One from Ohio, .68 × .51, and two sets from Vermont range from .68 to .64 in length, and from .49 to .51 in breadth. Their general average is about .66 × .49. — T. M. BREWER, *Boston, Mass.*

ROUGH-WINGED SWALLOW IN CONNECTICUT. — Although not given by Samuels as a bird of New England, and classed as "a rare summer visitant" by C. H. Merriam in his "Birds of Connecticut," the Rough-winged Swallow breeds regularly in this State. It has nested for the past three seasons in the old stone abutments at a road-crossing over the New York, New Haven, and Hartford Railroad, within eight or ten rods of the depot at Green's Farms, twenty-six miles west of New Haven. Half a dozen pairs nested there last season, and perhaps more; but, judging from the number seen, I should say there were fewer than during the season of 1877. I have been unable to account for the fact that more than thirty trains could pass within six or eight feet of their nests each day, and not drive them away or apparently disturb them in the least. — J. A. STANNIS, *Hartford, Conn.*

THE LOGGERHEAD SHRIKE (*Collurio ludovicianus*) BREEDING IN NORTHERN NEW ENGLAND. — On the 5th of May, 1877, Mr. C. A. Morse, of Bangor, procured, near that city, the parent bird, nest, and four eggs of what he supposed to be the Great Northern Shrike, and which was so described in the "Oologist." Without suspecting the incorrectness of this identification, I wrote to Mr. Harry Merrill of that city for full particulars of this interesting find, which he has very kindly given me in full. The parent of Mr. Morse's nest was fortunately procurable, and was sent to me. I have submitted it to Mr. Ridgway's examination. The result is that the nest and eggs procured by Mr. Morse near Bangor were those of the typical *Collurio ludovicianus*. No authentic instance could be ascertained by Mr. Merrill where the *borealis* had been known to breed near that city, but of the six nests found within the past two years, the parents of which were procured, all were like the specimen sent me for identification.

In the summer of 1877 I received a set of eggs, sent me as those of the Great Northern Shrike, from Rutland, Vt. Making further investigations in regard to the particulars of a matter so replete with interest, by the aid of Mr. Jenness Richardson of that city, I have received here also one of the parent birds, and in this instance I have been again surprised to learn that it is the Loggerhead, and not *borealis* or *excubitoroides*, that is the species referred to. In regard to the parent of the nest found by Mr. Richardson, Mr. Ridgway writes me that "it is again *ludovicianus*, but approaching very decidedly the *excubitoroides* type; in fact it is quite as 'typical' of the latter as a great many Western specimens."

Mr. Richardson has furnished me with the particulars of four nests of this species found in that region, one near Castleton, and three in and about Rutland. So that we have in all ten well-authenticated instances of the Loggerhead breeding in the very heart of two of the most northerly of the New England States. — T. M. BREWER, *Boston, Mass.*

CAPTURE OF THE LOGGERHEAD SHRIKE IN WINTER IN NEW HAMPSHIRE. — Another late and northern record of the Loggerhead Shrike

(*Lanius ludovicianus*) occurring in New England has been placed at my disposal by Mr. Charles F. Goodhue, of Webster, N. H., who has kindly forwarded me a specimen for examination which was taken near Concord, N. H., January 20, 1879. — RUTHVEN DEANE.

THE WHITE-RUMPED AND LOGGERHEAD SHRIKES IN OHIO. — On the 22d of August, 1878, I took a well-marked example of *Collurio ludovicianus* var. *excubitoroides* at Madisonville, which upon dissection proved to be a male "young of the year." It had attained its full plumage, however, the under parts being immaculate, and the dorsal surfaces showing no traces of the buffy suffusion and transverse vermiculation usually observable in the young of this genus; the clear, pale bluish-ashy of its upper parts, with the conspicuously white rump and superciliary line, proclaimed its relationship at a glance. Its capture here will be regarded with interest by ornithologists, this being the southeasternmost point at which it has been recorded; and is of additional significance on account of the occurrence here of the typical *C. ludovicianus*, which is a regular though somewhat rare summer resident in this vicinity, where it has been found breeding* on three occasions at least. — FRANK W. LANGDON, Madisonville, Hamilton Co., O.

THE GREAT NORTHERN SHRIKE IN NEW ENGLAND. — I wish to correct an important error into which, Dr. Coues has inadvertently fallen in his "Birds of the Colorado Valley," where he says: "In narrating an instance of its nesting on a low spruce-tree in New Brunswick, within twelve miles of St. Stephen, Dr. Brewer is certainly mistaken in asserting that 'we know of a single recent instance in which this bird has bred within the limits of the United States.'" The error of Dr. Coues is in his supposition that the nest in question was in New Brunswick. On the contrary, it was in the State of Maine, some twelve miles west of the town of St. Stephen, and about the same distance from any part of New Brunswick. This error may have been occasioned by an erratum that occurs in a sentence that follows the one quoted. This sentence should read: "He has since met with its nest within twelve miles of St. Stephen in New Brunswick." In the work the last three words are out of their proper place. My positive statement that the nest had been found within the limits of the United States was no careless mistake, but the statement of a well-known fact of which I had full knowledge when I penned it. [†]

* See the writer's "Observations on Cincinnati Birds," Journal Cincinnati Soc. Nat. Hist., Vol. 1, 1878, p. 114.

[† Dr. Brewer's whole paragraph comes from a misinterpretation, doubtless unintentional, of my remarks. Dr. Brewer's mistake, which I criticised, was in saying that "we know of a single recent instance," etc., the fact being, that we know of many such instances, if the testimony of competent observers is to go for anything. See B. C. V., 1, 561. — E. C.]

Mr. Boardman informs me, in a recent letter, that up to the present time this has been the only instance in which he has met with the nest of this species, and that he regards the Great Northern Shrike as a very rare bird in his neighborhood in the summer. So far as I now know, this is the only instance of its occurrence in New England. — T. M. BREWER, *Boston, Mass.*

ÆGIOTHUS EXILIPES IN MASSACHUSETTS. — On the 16th of November last, while collecting in Swampscott, I fired into a flock of *Ægiothi*, killing seven of the common form and one male of the light Northern race, *exilipes*. The occurrence of this form so far south has been noted previously. Audubon, in writing of the Greater Red-poll (*Æ. canescens*), mentions seeing it in Greenland, and also in New Jersey, and as found by others in Maryland. In this and in the following references *Æ. canescens* is doubtless our form *exilipes*. In 1863 Mr. Samuels gives Mr. Verrill as authority for the occurrence of *Æ. canescens* in Maine. Mr. Maynard, in his list of 1870, takes the opportunity to refuse to give *exilipes* specific rank, but does not state whether the so-called species exists or not in Eastern Massachusetts. In 1874 Dr. Coues, in "Birds of the Northwest," writes that *exilipes* rarely if ever occurs in the United States. Dr. Brewer's list of 1875 gives *Æ. canescens* as rare in Eastern Maine, as I afterwards learned, on the authority of Mr. Boardman. Mr. Purdie, in his criticism of this list, seemed to doubt its occurrence; while the last Massachusetts list, Mr. Allen's, does not refer to the form as a synonym or otherwise.

The flock from which my specimen was shot rose after being fired at, circled round and alighted on an elm close by, remaining quiet for a few seconds, then flying by twos and threes back and forth between the tree and their wounded comrade, hovering within twenty feet of my head, but, though I looked carefully, I could not see a second light bird.

In this connection I may also mention a young moulting *Æ. linaria*, showing no red on the head, but a slight coppery tinge above the forehead. — W. A. JEFFRIES, *Boston, Mass.*

RECORD OF THE BREEDING OF CROSSBILLS IN NORTHERN VERMONT IN 1796. — This early record of the breeding of the Crossbills in New England, which I have found in "The Rural Magazine; or, Vermont Repository" (Vol. II, Rutland, 1796), may not be without interest. Of late years they have been found breeding in Maine and Vermont, though but few instances have been recorded. — RUTHVEN DEANE, *Cambridge, Mass.*

Account of the Crossbill Bird.

RUTLAND, October 16, 1796.

TO THE EDITOR OF THE RURAL MAGAZINE.

SIR, — There is a small bird, common in the northern part of this State, called Crossbills, from the singularity of their bills, which cross at the extremity. Their bodies are a size larger than the Wren, but more full of feathers. Their color is ash, or brownish, in general; on some of which there are tinges

of red. In the depth of winter they collect around houses, oftentimes in flocks of several hundreds, appearing to be particularly fond of feeding and picking in places around an house where slops have been thrown, and especially where anything salt or briny has been cast; and they are so tame as often to be taken. But what is extraordinary, and makes this bird worthy of notice, is, that they lay their eggs and hatch their young in the middle of winter.

Samuel C. Crafts, Esq., informs me that a person of entire credibility in Craftsbury assured him that in the depth of winter, sometimes in February, he discovers at one time as many as twelve of their nests on one small shrubby *Hacmatac*-tree, in which there were eggs, and the birds were then setting and hatching. As a confirmation of this, he also assures me, that when they have been taken in the dead of winter, and been opened, litters of eggs have been found in the females, and a part of them with shells, in a state of maturity, to be laid. The naturalist will, I think, be inclined to notice this curiosity, notwithstanding the minutia of the thing, and the insignificance of the bird as to size. He may do it, also, perhaps, with more security from sarcasm than if he lived in the vicinity of Peter Pindar.

I am, sir, yours, &c.,

THOMAS TOLMAN.

NOTES ON THE PURPLE FINCH. — It has been a matter of remark that several of our once rare birds have largely increased in numbers within a few years, and I think in no case is this so apparent as in that of the Purple Finch (*Carpodacus purpureus*). At the same time its distribution extends over a much larger range. It was formerly considered a strictly northern migrant, but has recently become resident in Massachusetts, where it breeds quite plentifully in certain sections, and from the following instance would seem inclined to remain even farther south. Among some notes taken at Bayside, L. I., I find under date of April 21, of this year: "Saw a Purple Finch (male) in full song and plumage and apparently resident." In the early part of June I visited the same locality and again saw both male and female. Feeling sure they must have nested there, after diligent search I discovered the nest, located, as usual, some forty feet from the ground, near the top of a large spruce-tree, and contained only two eggs, well advanced in incubation. This was June 15, and I am at a loss to explain the reason of their late domestic arrangements, except with the surmise that their first nest was destroyed, or that they felt out of their latitude, as indeed their actions seemed to indicate. They remained in the vicinity but a short time after, and, I think, did not attempt another nest. The construction of the nest, its situation, and the eggs, except in number, were almost identical with a set procured just previously at Grand Menan. This is, I believe, the most southern point at which the species has been found breeding. — R. F. PEARSALL, *New York City*.

NESTING OF THE BLACK-THROATED BUNTING (*Euspiza americana*) IN MASSACHUSETTS. — On page 45, Vol. III, of the Bulletin, Mr. Purdie records the finding of two nests of this Bunting in Medford, Mass., in June, 1877, one containing eggs and the other young, and on page 190

mention is made of several specimens seen at Hingham, Mass., in June, 1878, one pair seen feeding their young.

Although this bird has been rarely met with of late years in the State, yet it would seem that a limited number must breed with us every year.

Through the kindness of Mr. N. C. Hammond I am enabled to record an instance of its breeding in Hyde Park, Mass., where he collected a nest containing four eggs, about August 1, 1878. The nest was placed on the ground in the middle of a large open field, and from the lateness of this date would indicate that it must have been a second brood. — RUTHVEN DEANE, *Cambridge, Mass.*

RARE BIRDS IN MICHIGAN. — In a recent letter from Dr. H. A. Atkins, of Locke, Ingham Co., Mich., among various ornithological items of general interest occur the following, which he has kindly placed at my disposal. Writing under date of November 19, 1878, he says: "This fall the Western Meadow Lark (*Sturnella neglecta*) drifted in here. Several quite large flocks were seen; they were first observed about September 28; the last were noticed October 19." He speaks of their being more in flocks than is the Eastern Meadow Lark, and as frequenting trees and elevated positions. He refers especially to their song, which he considers "in point of sweetness nearly equal to the notes of the Rose-breasted Grosbeak," and wonders that any one can consider the bird as merely a variety of the common Meadow Lark. He adds that the Western Meadow Lark has also been met with at Ann Arbor by Mr. A. B. Covert.

He also notes the occurrence of the Oregon Snow-Bird (*Junco oregonus*), of which he says he "shot two, and saw perhaps twelve or fifteen in all." They were first noticed October 11, and last seen October 30 (1878). He says: "I also took alive, October 22, a fine specimen of the Chestnut-backed Snow-Bird (*Junco ciniceps*), found in a flock of the common Snow-Birds." The Oregon Snow-Bird he believes will yet be found to be quite common in Michigan, and that it possibly extends to quite a distance south and east. — J. A. ALLEN, *Cambridge, Mass.*

THE COW-BLACKBIRD OF TEXAS AND ARIZONA (*Molothrus obscurus*). — Dr. Merrill has called my attention to a grave error in "North American Birds" (II, p. 157) in regard to the measurement of the eggs of the Southern variety of the Cow Blackbird. It is there given as $.60 \times .55$, an obvious error for $.70 \times .55$, but even this is too small. In a set of eggs from Arizona the least length is .72 and the least breadth .58; average, $.73 \times .59$. In a series from Matamoras, .72 is the least and .75 the greatest length, and .55 the least diameter; average, $.74 \times .57$. In a fine series of fifteen eggs from Fort Brown, Texas, the length varies from .74 to .81, and the diameter from .59 to .64. The average length is .77, the average diameter .62. The eggs from Fort Brown range much larger than those from Arizona or even from Matamoras, on the opposite side of the Rio Grande. — T. M. BREWER, *Boston, Mass.*

A SPOTTED EGG OF *EMPIDONAX MINIMUS*. — [The following note, communicated to me by Mr. Hayward, seems of sufficient interest to merit publication. I have examined the egg in question, and there is apparently no reason to doubt its correct identification. Save for the reddish-brown dotting it is quite typical of *E. minimus*, and not for a moment to be compared with the eggs of either *E. traillii* or *academicus*. I have never seen a spotted egg of the Least Flycatcher before. — W. BREWSTER.]

Last spring, during the month of May, while collecting eggs at Milton, Mass., I found a nest of this species in the forks of an apple-tree about fifteen feet from the ground, containing four eggs, three of which were of the usual color, but the fourth, of the same ground-color, was minutely marked with fine dots of reddish-brown. The spots are irregularly dispersed over the surface of the egg, and while numerous on one side are few on the other. The egg measures $.63 \times .50$ of an inch. The nest was like others of this species, and the bird had the well-known note of *chebéc*. — R. HAYWARD, *Boston, Mass.*

ADDITIONAL CAPTURES OF THE CURLEW SANDPIPER IN NEW ENGLAND. — The three specimens of this rare straggler, which have previously been recorded as occurring in New England, have all been collected in Massachusetts, and I am enabled to add two more instances, both of which have also been taken in this State.

Mr. John Fottler, Jr., writes me that he has in his possession a fine spring specimen which was shot on Cape Cod about the 10th of May, 1878. Another specimen is in the collection made by Mr. Baldwin Coolidge (now in possession of the city of Lawrence, Mass.), which was taken on Nahant Beach some ten years ago, and at that time was preserved by Mr. N. Vickery, of Lynn. — RUTHVEN DEANE, *Cambridge, Mass.*

A SECOND SPECIMEN OF THE YELLOW-CROWNED NIGHT HERON (*Nycticorax violacea*) IN MASSACHUSETTS. — Since the Yellow-crowned Night Heron was added to our New England birds by Mr. Allen's record* of an individual shot by Mr. Vickery in Lynn, Mass., in October, 1862, no additional specimens have been brought to light by the numerous enterprising observers that are so thoroughly working up our bird Fauna. It is therefore with great pleasure that I am enabled to announce the occurrence of a second Massachusetts example, which is now in my possession. The history of this wanderer, so far as it is known, is briefly as follows: On the afternoon of July 30, 1878, Mr. George Cunningham — who resides in a rather densely populated part of Somerville, just beyond the line separating that city from Cambridge — was attracted by a commotion among the Robins and other small birds in the orchard behind the house. Upon investigating the cause of this unusual excitement a large bird was seen to take flight and disappear over the adjoining fence. Shortly after this there was another alarm from the orchard, and it was found that the

* *Am. Nat.*, III, 637, February, 1870.

strange intruder had returned. A neighbor who is fond of shooting was called in, the bird winged, and after a sharp chase overtaken. It showed plenty of fight, and, to use the words of its captor, "chattered very like a monkey." It was entirely alone, and had not been seen before in the vicinity. It was sent to Mr. Charles I. Goodale, our well-known Boston taxidermist, by whom it was finely mounted. Mr. Goodale first called my attention to it while it was still in his possession, and upon writing to Mr. Cunningham on the subject he very generously placed the bird at my disposal, at the same time giving me the facts above recorded. The specimen is in the spotted immature plumage, and is apparently very young, inasmuch as many of the feathers still retain the peculiar hair-like filaments which characterize the downy stage of Herons, and which are pushed outward on the tips of the feathers that succeed. This fact, taken in connection with the date of capture, is certainly suggestive of a not very remote breeding-place, though the bird was perhaps old enough to have flown northward from the Carolinas, its nearest known breeding-ground. — W. BREWSTER, Cambridge, Mass.

ADDITIONAL NOTES ON THE WHISTLING SWAN (*Cygnus americanus*) IN NEW ENGLAND. — Since the appearance of my note on the Whistling Swan in the Bulletin for October, 1878, the occurrence of two additional New England specimens has been brought to my notice. The history of the first of these is unfortunately involved in some obscurity, but nevertheless the following facts, for which I am indebted to my friend Dr. Brewer, would seem to entitle it to mention as of probable New England origin.

Shortly after the publication of the October Bulletin, Dr. Brewer, in conversation with Mr. George O. Welch of Lynn, happened to speak of the Nantucket specimen therein recorded. Mr. Welch at once said that he remembered the shooting of a Swan at Nahant some fifteen years ago. It was killed by a Mr. Taylor, who, having since died, cannot be looked to for any further light on the subject. Mr. Welch, however, assured Dr. Brewer that it was finally deposited in the collection of the Boston Society of Natural History, and if still there might be recognized by traces of immature plumage upon the head and neck. Upon referring to the cases of mounted birds, a Swan fully answering this description was found. The only data relating to it, however, is the simple record that it was presented by Deming Jarvis, Esq. This gentleman, at that time, lived at Nahant, and the only apparent flaw in the evidence is the fact that Mr. Welch originally saw this bird at the house of a Mr. Tudor, to whom he then supposed it belonged. This point is, however, of trifling importance, as it may have changed hands several times before reaching its present resting-place.

The other Swan was killed at Seabrook, N. H., October 18, 1878. It is a male in immature plumage, and was shot by a gunner while lying off shore in a dory waiting for Sea-Ducks. It was mounted by Mr. Emery C. Greenwood, of Ipswich, Mass., to whom I am under obligations for the facts just given. Although I have seen neither of the above specimens, the full

descriptions of plumage and careful measurements furnished by Mr. Greenwood are conclusive of the identity of his bird, while I have Dr. Brewer's high authority for stating that the other is certainly *C. americanus*. — W. BREWSTER, *Cambridge, Mass.*

OCURRENCE OF ROSS'S GOOSE (*Anser rossii*) ON THE PACIFIC COAST AND INLAND. — Until very recently the Ross's Goose, Chen, or Horned Wavy, as it was called by Hearne, has been considered a very rare species, and the six or seven specimens in the Smithsonian Collection, with perhaps one or two others in this country, presumably represented all the specimens known. In 1876 Captain Bendire chronicled it as a visitant of the interior lakes and rivers of Oregon in winter, and secured possession of a single individual.

While in San Francisco last November I learned from various sources that a number of specimens of this Goose had been obtained from season to season from the markets, nearly all in October. Recently, as I learn from Mr. Ridgway, Mr. C. A. Allen, of Nicasio, Cal., has sent the Smithsonian two specimens with information that establishes the fact that, at some seasons at least, the Ross's Goose is by no means a very uncommon bird along the coast, and even in the interior lakes and rivers. A single collector has procured for him seven individuals about Sacramento, and, as he states, might have sent in, at least, twenty more; but, as they were in the immature plumage, he believed them to be valueless. The same person states to Mr. Allen that for the past ten years he is certain he has seen half a dozen or so each season, but that this year the bird has been more numerous than ever. Mr. Belding has also sent a specimen to the Smithsonian Institution, with notes indicating the occurrence of this Goose in the tule beds near Stockton. Mr. Allen is of the opinion that the unprecedented cold weather of the past winter has had an influence in the unusual abundance of these Geese, and thinks that they have been driven from their more usual winter quarters somewhat to the north. It is probably safe to say that this Goose is a regular fall migrant in the latitude of San Francisco, and doubtless ere long specimens will have so multiplied as to be generally represented in cabinets. — H. W. HENSHAW, *Washington, D. C.*

NOTE ON BUCEPHALA ISLANDICA. — Dr. J. Bernard Gilpin has published* an interesting article on the specific distinctions of this species from *B. clangula*. Besides the well-known outward marks of differences especially observable in the head, he finds important anatomical characters in the structure of the trachea, bronchi, and lower larynx. According to the plate, the difference is very strongly marked. In the words of the

* Pages 390-403, with a plate, in some periodical not named in the over-sheets which have reached me. Doubtless the publication of the Nova Scotia Institute.

text: "In the male common golden-eye, the wind-pipe, soon after leaving the throat and before it enters the breast, has a very sudden enlargement, almost as it were a broad hoop thrown obliquely around its stem; on the inside this leaves large circular pouches on the posterior surface before the restriction of the pipe takes place again. In the Rocky Mountain species, the wind-pipe simply and gradually enlarges itself, becoming restricted again before it enters the breast. In one the enlargement is suddenly from 2-8 of an inch to an inch and 1-8, while in the other from 2-8 to 5-8 of an inch, and that with no protuberances. In the males alone of both species there is, after the wind-pipe has entered the breast, that very complicated sub-quadrangular knob, from which the bifurcation of the pipe proceeds." — ELLIOTT COUES, *Washington, D. C.*

NOTES ON THE SEA-BIRDS OF THE GRAND BANKS. — During September, 1878, Mr. Raymond L. Newcomb of Salem, well known as an ornithological collector, spent several weeks on and near the Grand Banks, under the direction of Professor S. F. Baird, for the purpose of obtaining specimens of the various sea-birds to be found there. Mr. Newcomb left Gloucester August 28, and returned September 19, and although much of his time was engrossed with other duties, he secured many interesting birds. The following is an abstract from his note-book, kindly communicated for publication in the Bulletin.

August 29, off Thatcher's Island, several Jaegers were seen which were thought to be *Stercorarius pomatorhinus*. The next day (August 30) the first Shearwater (*Puffinus major*), the "Hagdon" of the fishermen, was met with, the vessel being then just out of sight of land. The following day (August 31) several Terns (thought to be either Wilson's or the Arctic) were seen, some Petrels, and three flocks of "Sea Geese," — one containing about twenty individuals, and the others four or five each. Three of the "Sea Geese" were shot, and proved to be Red Phalaropes (*Phalaropus fulicarius*). Several Skua or Jaeger Gulls were also seen. On September 1 only one "Hagdon" and two or three Petrels were seen all day. Under date of September 2, Mr. Newcomb writes: —

"Saw what Captain Collins called a 'Sea Hen,' a number of 'Hags' and Mother Carey's Chickens. The 'Sea Hen' is the Skua Gull [*Stercorarius cotarrhætes*], about which considerable stir has been made the past summer.* The Fish Commission secured one, but I did not get any; still, our 'skipper,' who is an intelligent and very persistent man, says he *will* get one, just to make his word good. The fishermen say they are seen comparatively often, still I feel somewhat doubtful, owing to the meagre and inaccurate knowledge which this class of men have of the subject."

"September 3. On Sable Island Bank, at anchor. I shot to-day twenty-three birds, including [the Greater] Shearwater in two plumages, some Petrels (*Cymo-*

* See this Bulletin, Vol. III, p. 188.

chorea leucorhoa), and some Skuas (*Stercorarius pomatorhinus*) and one *Sterna hirundo*. The men were dressing fish, and 'Hags' were numerous and bold, coming within six feet of me to pick up fish livers. Petrels by the hundreds all around."

Several days of stormy weather followed, when few birds were obtained or apparently observed. Later, he says:—

"September 8. Saw several *S. pomatorhinus*, *P. anglorum*, and 'Carey Chickens' this A. M. These birds evidently follow vessels for the garbage. The Petrels seem to be flying about all night, as when on deck at night I have often seen a black shadow flit by close to me, and on moonlight nights they come up very close, even picking bits of gurry off the rail. Shot to-day eleven *S. pomatorhinus*, representing two plumages. These birds in the sooty plumage are known as Black Marlingspikes. This afternoon a Yellow Warbler (*Dendroica aestiva*) came aboard, but soon flew away.

"September 9. Shot two *S. pomatorhinus* and one 'Whip-tail.' This bird was not common. I saw only a few. It proved to be *Stercorarius cephus* [= *parasiticus*]. Saw two Gray Gulls, which I think were *Larus marinus*. 'Hags' have been quite scarce the past day or two.

"September 12. Shot eight Carey Chickens at once to-day; they were very numerous.

"September 15. Made the coast of Nova Scotia, — the first land seen for sixteen days. It looked good. Gannets (*Sula bassana*) in winter plumage common all day along the coast; also some 'Hags' and Terns; nothing new. Strange to say, these Gannets are called by their right name.

"September 16. Saw several 'Sea Geese'; they were much tamer than when previously seen. At 3 P. M. two Gray Eagles were seen, and at 3.30 a Sharp-shinned Hawk flew astern, going north toward the land, some seventy miles distant."

On September 17 Skua and Herring Gulls were seen in Ipswich Bay apparently contending for "tinker" mackerel. A "Gray Coot" (*Aedemia cœlestina*) was also observed.

Under date of September 5, on Querean Bank, he notes the appearance in the vicinity of the vessel of the Greater Tattler (*Totanus melanoleucus*) and the Turnstone (*Streptopus interpres*), a single individual of each. On August 31, when eighty-two miles from land, a Yellow Warbler (*Dendroica aestiva*) alighted on the vessel, but soon flew away in the direction of the land, this making two specimens of this species that visited the vessel when out of sight of land.

Of the species of strictly Sea-Birds noted, the Petrels and the Pomarine Jaeger appear to have been the most abundant, in addition to which were observed the Skua (*Stercorarius catarrhactes*), the Long-tailed Jaeger (*S. parasiticus*), and one or two species each of Terns and Gulls, while small flocks of Red Phalaropes were seen on several occasions. Mr. Ridgway informs me that Mr. Newcomb's collection contained also two specimens of Richardson's Skua (*S. crepidatus*). — J. A. ALLEN, Cambridge, Mass.

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ON THE USE OF TRINOMIALS IN ZOÖLOGICAL NOMENCLATURE.

BY ROBERT RIDGWAY.

IN order to elicit a general expression of opinion in regard to the use of trinomials in zoölogical nomenclature, I adopt this method of answering the inquiries of several correspondents who have addressed me on this subject. It must, sooner or later, become evident to the scientific naturalist, that a strictly binomial system, while answering in the case of really distinct species, is entirely inadequate for the designation of those which are in the incipient stage. The use of a third term, therefore, becomes a matter of necessity in the case of forms which are not completely differentiated, i. e. which are not yet isolated by the extinction of intermediate specimens. In what manner this third term shall be connected with the generic and specific names is a question upon which scarcely two authors agree; and as it is obviously desirable that some generally acceptable form be adopted, at as early a date as possible, we hope the subject may meet with due consideration.*

* In the "American Naturalist," Vol. V, 1871, pp. 346-373, Dr. Coues very strongly urges the employment of trinomials, and presents the most explicit reasons why they should be used; his excellent article should, therefore, be carefully read in connection with the present subject. The first ornithologist to adopt the trinomial system of nomenclature on an extensive scale, so far at least as this country is concerned, was Professor Baird, who used them freely in that standard work, "Birds of North America" (Vol. IX, Pacific R. R. Reports), published in 1858, and subsequently in his "Review of American Birds" (1864-66). The purpose of the present article is, therefore, not

The question is one of the greatest importance to ornithologists, and should be decided without unnecessary delay. In order to show that it is likely, sooner or later, to be agitated abroad, the following opinion of a writer* in a late number of "The Ibis" is quoted:—

"It is the boast of British ornithologists that their system of nomenclature is binomial. When Linnæus substituted a word instead of a sentence to designate a species, he made an immense stride toward simplicity of nomenclature. The practice of Brisson and the earlier ornithologists, if it aimed at scientific accuracy, failed in consequence of the multiplicity of facts with which it had to deal. There seems, however, to be a tendency at the present time to carry the idea of a binomial nomenclature to a pedantic extreme. It is a common practice amongst ornithologists to quote specific names without authorities, under the cover of adhering to a strictly binomial nomenclature. In nine cases out of ten no harm is done by omitting the authority, but in the tenth case it leaves the precise species intended to be discriminated open to doubt. Exactness is the foundation of all scientific research, and the moment any doubt attaches to the meaning of a term, that moment such term ceases to be scientific. The fact that the same specific term has been applied by different ornithologists to different species, makes the addition of the authority to the specific name in many cases a necessity, — an unwelcome necessity, no doubt, to the binomial nomenclator, but not the less an absolute necessity to the truly scientific student. It would be well if the complication stopped here. Unfortunately, in too many instances, a difference of opinion exists amongst eminent ornithologists as to which species were intended to be discriminated by certain terms made use of by some writers.

"For example: *Saricola stapazina* is a name intended to discriminate a certain species of Chat. *Saricola stapazina* (Linn.) professes to restrict that name to the species of Chat to which Linnæus gave the name of *Motacilla stapazina*; but since the publication of Dresser's 'Birds of Europe,' the title *Saricola stapazina*

so much to defend this system of nomenclature, which in truth needs no defence, but to set forth the necessity of an agreement between ornithologists as to the exact manner in which the subspecific term is to be combined with the specific name.

* Mr. H. Seebohm, in the Ibis, January, 1879, pp. 18-21.

(Linn.) ceases to have a definite meaning, and the reader must always be in doubt as to whether a bird so described be the *Saricola stapazina* of Linnæus, *apud* Latham, Vieillot, Temminck, and a host of other authors, or the *Saricola stapazina* of Linnæus, *apud* Dresser, — two totally distinct birds. At all costs scientific accuracy must be preserved, and I see no possible alternative but to complicate our ornithological nomenclature still further, by calling the Black-eared Chat *Saricola stapazina* (Linn.) *et* Dresser.

“It would be well for the simplicity of ornithological nomenclature if its complications could even stop here. From the days of Linnæus to those of Wallace and Darwin, most ornithologists were agreed that species were divided by a hard and fast line, and that the difficulty which the student had to surmount was the discovery of the lines of demarcation which Nature herself had drawn between the various specially created species. Now that most scientific ornithologists have adopted the theory that these hard and fast lines seldom exist in nature; that species were not specially created, but were gradually developed according to certain more or less known fixed laws; and that consequently there must be at any one period of the world’s history a large number of species in process of differentiation, our difficulties are largely increased. The question naturally arises, What is a species? We must either draw an artificially hard and fast line where Nature has drawn none, or we must accept Nature as she is, and make the best of the complications which necessarily arise in our nomenclature in attempting to harmonize it with facts which we cannot, as scientific students, ignore. Hence, it appears to me to be absolutely necessary for modern ornithologists to recognize the existence of *subspecies*, — that is, species in the process of differentiation, incipient species, where the intermediate forms have not yet died out, but where a series gradually leading from one extreme to the other may be obtained. I fully recognize the danger of such a practice. It is easy to imagine the abuses of which it is capable. Inexperienced ornithologists will be tempted to think that differences of age, sex, and season, to say nothing of accidental individual variations, are intermediate forms worthy of the rank of a subspecies; and our nomenclature may run the risk of being still more flooded with names as injurious as the useless synonyms of the elder Brehm. I am, however, of the opinion that these difficulties will have, sooner or later, to be faced. It seems to me that the scientific ornithologist cannot

afford any longer to ignore the existence of subspecies in nature, or to attempt to make ornithological nomenclature simpler than the facts of nature which it is intended to discriminate."

Until the matter shall have been definitely decided by the agreement of leading ornithologists, it may be considered purely optional with a writer what combination of generic, specific, and subspecific names he uses in the case of geographical races of animals, provided, of course, he does no violence to the essential principles of the nomenclature established by Linnaeus and adopted, with amendments, by the British Association. Linnaeus, as well as subsequent authors of the past century, not unfrequently employed a third term for the designation of races or varieties. This practice, however, though not actually prohibited by the Rules of the British Association for the Advancement of Science, such prohibition is *implied* in the first three lines of the third paragraph under § 1 of the rules referred to, which read as follows: "As our subject-matter is confined strictly to the *binomial system of nomenclature*, or that which indicates species by two Latin words, the one generic, the other specific; and as this invaluable method originated solely with Linnaeus," etc. At the time Linnaeus wrote, intergradation between supposed species was a thing not thought of; therefore, no provision was made for geographical races, which are, in fact, incipient species: and this provision was also overlooked when the important rules of the British Association were framed, in 1842. Even in the last revised edition of these rules (1878), this great desideratum is completely ignored. Were all species perfectly stable, a purely binomial system would of course suffice; but the more recent developments of zoölogical research reveal the fact that comparatively few species are what may be termed completely isolated, a very large proportion being still united by a series of incompletely differentiated individuals, even, in many cases, where the degree of divergence in separate geographical areas is greater than between many where intergradation is unknown and extremely improbable. It is therefore clear, that the only true "species," or forms which may be properly designated by a strictly binomial combination, are those which are isolated through the extinction of intermediate specimens, or the *complete* differentiation of the several offshoots from the parent stock. And it is equally obvious that this distinction between real and incipient species should be practically recognized by a suitable amendment of the rules of nomenclature.

The use of a third name, in combination with the specific and generic, to designate a "race" or "subspecies," has been objected to on the ground of its being opposed to the Linneæan canons of nomenclature; but, so far from this being the case, we find that Linneæus frequently gave names to what he considered as races or "varieties" of a species, prefixing the letters of the Greek alphabet. As an example, we find in the twelfth edition of "Systema Naturæ" (1766), on pages 270 and 271, that Linneæus recognizes seven forms of "*Phasianus gallus*." The first of these he terms simply *Phasianus gallus*, the others being *cristatus* β., *ecaudatus* γ., *morio* δ., *lmata* ε., *pusillus* ζ., and *crispus* η.; each being accompanied by its diagnosis. Others of the older authors, whose works were published subsequent to the twelfth edition of the "Systema Naturæ," and who adopt the Linneæan system, follow the same plan. Numerous instances may be found in Gmelin (1788). On pages 589, 590, of Latham's "Index Ornithologicus" (Vol. II, 1790), the domestic Pigeon is termed "*Columba domestica*," being species "2" of the genus *Columba*. Twenty varieties of this species are named, as follows: "2 β. *livia*," "2 γ. *rupicola*," "2 δ. *hispanica*," "2 ε. *dasypus*," et seq. The fourteen varieties of the domestic Fowl ("*Phasianus gallus*"), are named after the same manner on pages 626–628. In other instances, both Linneæus and Latham indicate the different forms supposed to belong to one species simply by the Greek characters, followed by a diagnosis, references, and habitat (e. g. *Streptilas interpres*, β., γ., and δ.; Lath., Ind. Orn., II, pp. 738, 739).

The term "*var.*" between the specific name and that of the race is objectionable, from the fact that a "variety" is properly "a difference not permanent or invariable, but occasioned by an accidental change";* and in this sense would apply only to *individuals* presenting some abnormal variation, as *albinism*, *melanism*, *erythrisim*, or some unusual form of bill, foot, etc., having little, if any, relation to geographical distribution. As affording a suitable example, the two common North American forms of *Colaptes auratus* and *mexicanus* may be cited, restricted to either side of the continent, but along the line of junction (or, rather, merging) of their respective habitats intergrading in a wholly promiscuous way, few specimens, apparently, perfectly typical of either form, being found in this neutral territory; not only this, but specimens of this intermediate

* Webster.

character not infrequently occur far to the eastward or westward, in the very "heart" of the region where the typical form prevails. Now *Colaptes auratus* and *C. mexicanus* differ from each other much more, in their typical state, than do very many congeneric species between which intergradation is not known (e. g. the small Thrushes, of the subgenus *Hyllocichla*, many of the *Fringillide*, and numerous other groups)! Formerly, these intermediate specimens were supposed to be hybrids; but it is difficult to conceive of hybridization on such an immense scale. Now what is to be done in this case? Probably very few ornithologists would be willing to call the whole series simply *C. auratus*, while, on the other hand, since they prove not to be specifically distinct, it is obviously wrong to imply such distinctness by the use of a specific name in each case.

It seems to me, that Linnaeus himself has shown us how to solve the difficulty. Had the facts as above stated been known to him, he would doubtless have called the whole series *C. auratus*, at the same time calling the western (red-shafted) form "*β. mexicanus*," and the intermediate series, *γ. hybridus* or *ayresii* (allowing him, of course, the choice of names, only the first-named form being at that time known).

To sum up, it having been found necessary to name every true race or subspecies, I have found the method indicated by Linnaeus, as described above, to be more simple than any other, and to answer every requirement of the case. By adopting this plan, the question of nomenclature becomes very much simplified, while it expresses better than any other yet tested the relative rank of the forms which have to be recognized by name.

REMARKS UPON *TURDUS PALLASI* AND ITS VARIETIES.

BY H. W. HENSHAW.

THE study of our small Olive-back Thrushes (*Hyllocichla*) has, from the times of the earliest writers, involved many interesting points, doubtless because of the general resemblance possessed in common by all the forms, and the resulting difficulties and confusion in the way of their identification, and in the proper application of the various names that from time to time have been bestowed upon each of the several members of the group.

It is the purpose of the present paper to discuss briefly the Hermit Thrush (*T. pallasi*) in relation to its two ascribed varieties, the Dwarf and Audubon's Thrushes (*nanus et auduboni*).*

Prior to Mr. Allen's paper † the three birds had generally been considered distinct species, and they were so treated by Professor Baird in the ninth volume of the "Pacific Railroad Reports," who, however, did not fail to call attention to their close relationship.

In his paper Mr. Allen reviewed the subject somewhat fully, and, indorsing the opinion of Dr. Gambel, formally reduced the two Western names to synonyms of *pallasi*. The treatment adopted by Mr. Allen has been considerably modified by most authors who have had occasion to refer to the birds since, and the two Western birds have been allowed place as geographical varieties of *pallasi*.

In his most recent work, "Birds of the Colorado Valley," Dr. Cones appears to reopen the question, and makes the following statement: "Among the Western *Hyllocichla* of the *pallasi* type, there are a larger and a smaller race, both intergrading completely with the dimensions of Eastern *pallasi*, their respective averages being at about the maxima and minima of *pallasi* proper. The difference in size between them is more noticeable than that between either of them and *T. pallasi*, and appears to be preserved with much constancy. I am unable to appreciate any of the differences in coloration which have been ascribed; at any rate, these differences are fully within the normal range of variation of typical *pallasi*. These subspecies are less strongly indicated than either of those of the *swainsoni* type, and little violence would be done by declining to recognize them by name. *Nanus*, in particular, is positively indistinguishable from some small specimens of Eastern *pallasi*."

* The current names for the three forms will be adopted in the present paper. It well illustrates the uncertainties of our nomenclature that Audubon's name *nanus* should have been allowed to stand so long for the Dwarf Thrush. His *nanus* was unquestionably based upon a small specimen of the Eastern *pallasi* proper, the locality of his bird being alone sufficient evidence of the fact. It, hence, properly should become a simple synonym of the latter, leaving a name for the small Western form, if it be deemed necessary to recognize it, to be sought for among the earlier authors. The *guttata* of Pallas applies throughout to one of the Hermit Thrushes, and as his locality, Kodiak, is now known to be the home of the true Dwarf Thrush, and of no other, it would appear that the acceptance of his name is scarcely to be avoided.

† Mammals and Winter Birds of East Florida, 1871, pp. 254 - 256.

Auduboni is rather better marked. I have never seen the wing of *pallasi* four inches long, and doubt that it ever exceeds this dimension, as is the case with some examples of *auduboni*."

Some of the statements contained in the above quotation were especially interesting to me, as, after a large field experience, and having collected many specimens of all three birds, I have never had the slightest difficulty in discriminating between the forms. This has doubtless been due in part to the fact, which the experience of every field-worker will attest, that various slight differences of color, as well as certain other points, are perfectly apparent in freshly killed specimens which are often partially or even wholly lost in dried skins.

But the main point involved is a matter of simple measurement, namely, to ascertain whether the three forms do or do not intergrade in size, and, if they do, to what extent; in other words, to determine their relations by means of rule and dividers. For this purpose Mr. Ridgway has kindly placed at my disposal the large number of specimens contained in the Smithsonian Institution, which, together with the series collected by the Survey West of the 100th Meridian, has supplied ample material, and I have been able to include in my examination and to measure over 100 specimens* divided as follows: of *T. pallasi*, 32 specimens; *T. auduboni*, 39 specimens; *T. nanus*, 35 specimens.

The following figures represent the averages obtained:—

<i>T. pallasi</i> ,	Wing,	3.61.	Tail,	2.87.	Bill,	.53.	Tarsus,	1.15.
<i>T. auduboni</i> ,	"	3.99.	"	3.12.	"	.55.	"	1.14.
<i>T. nanus</i> ,	"	3.44.	"	2.78.	"	.48.	"	1.11.

The number of specimens used would appear to be sufficient to give a result closely approximate to correctness, although, as will be evident from facts given further on, the greater the number used, the wider will be the gaps between the three forms.

From the above it will, I think, be at once apparent that the differences here indicated express something more than mere individual variation, and that the discrepancies in size, so far as the average is concerned, are fully up to the requirements of varieties. The ex-

* It is to be regretted that the tables of measurements cannot be here given in full, but lack of space forbids. They will be presented elsewhere, and opportunity thus be afforded to compare the amount of individual variation, which, it may be stated, is very great.

tremes of size of the three forms, as indicated by my measurements, here follow : —

<i>pallasi</i>	(largest),	Wing, 3.85.	Tail, 2.87.	Bill, .51.	Tarsus, 1.14.
“	(smallest),	“ 3.30.	“ 2.50.	“ —.	“ 1.05.
<i>auduboni</i>	(largest),	“ 4.25.	“ 3.35.	“ .56.	“ 1.16.
“	(smallest),	“ 3.70.	“ 2.97.	“ .54.	“ 1.13.
<i>nanus</i>	(largest),	“ 3.67.	“ 3.00.	“ .50.	“ 1.16.
“	(smallest),	“ 3.25.	“ 2.55.	“ .49.	“ 1.04.

Comparing the smallest specimens of *pallasi* and *auduboni* with the largest individual of *nanus*, a considerable percentage of the former forms will be found to fall below the latter in size. Obviously, however, this would not be a fair comparison, since it is highly exceptional that this extreme of size is attained by *nanus*; in fact, but one specimen in my series does so, the measurements of those next it falling considerably short. Attention may here be called also to the extremely small size of the smallest individual of *pallasi*, as shown by the above figures. No other of the series compares with it in this respect, the next in size having wings of 3.43, and upwards, with the other dimensions corresponding. Doubtless it was just such another individual which fell into Audubon's hands, and furnished occasion for his name *nanus*.

Similar comparison between the largest *pallasi* and smallest *auduboni* gives a similar result. But again, the largest and smallest individuals of these birds respectively represent comparatively rare exceptions.

It appears, therefore, that, while between unusual extremes of the three forms intergradation actually does take place, it is far from being “complete,” and that, in fact, it is no greater than is usual in the cases of other species, with their varieties, in which change of geographical limits has been accompanied by increased or diminished size. Our tables further demonstrate that the greater number of individuals are actually identifiable by the test of size alone.

If by the recognition of varieties nothing were to be gained but the opportunity of increasing the list of named birds, not only would no harm result from ignoring them, but, on the contrary, positive benefit. Such, however, is very far from being the case. Varieties, — species in embryo, — if understood to be the result of natural laws, the expression of new conditions under which species

have been brought, serve a far more useful purpose in the determination of faunal areas than species, which, from their insusceptibility to change, retain everywhere their peculiar type, the sign manual of specific rank. In the latter case the species cannot be identified with, and its presence relied upon as a factor in the determination of, a restricted avian area, since often its habitat may overlap the boundaries of several such areas; at all events, its use to this end must take rank far below the variety, which, having been traced to its proper stock, and the exact amount and manner of variation noted, serves a very important end as denoting by the changes it successively exhibits the limits of climatic and other influences corresponding to definable geographical limits.

An excellent illustration of this occurs to us in the cases of the Song and Lincoln's Sparrows (*M. meloda* and allies and *lincolni*). The first, from its pliability of organization, so to speak, passes through several successive phases of color change, as we cross its habitat from east to west, as well as variations of bill, etc. These in each instance serve for the discrimination of a race which is identifiable more or less closely with a limited province. The latter, on the contrary, with a general range almost coextensive with the former, reaching from the Atlantic to the Pacific, and over no small portion of which it is found breeding, appears nowhere to vary appreciably; hence, while interesting from this very fact, it is of very limited value in the consideration of questions touching faunal boundaries.

A few words may be said upon color as a means of identification of the forms here under consideration. The two Western, *auluboni* and *nanus*, are essentially alike in this respect, at least so far as dried skins are concerned; as, however, they stand at the opposite extremes of size, confusion between them is scarcely to be looked for. The Eastern bird, *pallasi*, differs from either in color, and very appreciably. The dorsum has a distinct reddish-brown tint, while the flanks are decidedly fulvous; in the others these colors are replaced by a rather pure gray. The smaller specimens of *pallasi* from Eastern localities may be instantly selected from a series of the Western *nanus* by these points of color, without appeal to the localities on their labels.

In conclusion, it is worthy of note that while the mountain-inhabiting *T. auluboni* shows a marked superiority in size to *pallasi* in general bulkiness of body and in wings, bill, and tail, its tarsus not

only does not keep pace relatively with its development in other respects, but appears to become even slightly shorter. Thus average specimens of *pallasi* have the tarsi as long as the larger individuals of *auduboni*, while a few of *pallasi* exceed in length of tarsus any of *auduboni*. No cause for this appears to suggest itself.

Nor is it easy to understand why a mountain environment, in the case of *auduboni*, should have resulted in what seems to be a natural enough change, namely, increase of size, while the very reverse is true of *nanus*, which is as essentially a bird of the mountains as its ally.

It has been remarked before as an apparent exception to a general rule that specimens of *auduboni* from Mexico, towards the southern limits of its distribution, are no smaller than those from the Northern Rocky Mountains. All the specimens from Mexico that I have been able to find in the Smithsonian collection were taken in winter, and hence it has occurred to me they may not represent the *resident type*, but may be migrants from more northern localities, and hence not eligible in a comparison of this kind. A few summer specimens would, of course, settle all doubt.

NOTES ON BIRDS OBSERVED DURING THE SPRING MIGRATION IN WESTERN MISSOURI.

BY W. E. D. SCOTT.

WARRENSBURG, the point at which the following observations were made, is about sixty miles southeast of Kansas City in Johnson County. The surrounding country is rolling prairie, well watered by several streams. Along these streams the timber is abundant, and frequently forms on either bank forests of considerable extent. The fauna and flora of the region are both Carolinian in their main features, but the change in temperature from severe cold to extreme heat is greater than in New Jersey, being from about -20° Fahrenheit in winter to $+100^{\circ}$ in the summer. The winters, with exceptions of the severe cold snaps which last only one day or more, are much milder than at the point indicated on the Atlantic coast, and the snow-fall is very slight.

The spring of 1874, when the observations that follow were made,

was very backward, and the time of the arrival of many of the species given can hardly be that of an average year. The notes extend over a period from the 27th of March until the 15th of June, and only those species actually noted or taken are given. In many cases a large series of individuals of a given species were procured, and these show, as may be surmised, interesting individual and local variation. A large number of species were doubtless overlooked, and quite a number had left the region before the date of beginning work. The country is particularly rich both in species and in individuals of the several kinds, and is hardly to be excelled in these particulars by regions bordering on the seaboard. As little has been done toward making any detailed report of the ornithology of the State, it offers an exceedingly fertile field to the naturalist.

1. **Turdus migratorius.** ROBIN. — Common; a few breed; many winter.

2. **Turdus pallasi.** HERMIT THRUSH. — Common from April 8, when they were first seen, until about the 18th. One noted April 23.

3. **Turdus ustulatus swainsoni.** OLIVE-BACKED THRUSH. — Abundant, arriving about May 5, and remaining ten days. None seen after May 15.

4. **Turdus mustelinus.** WOOD THRUSH. — Quite common. First noted May 1. Very shy. Breeds in small numbers.

5. **Mimus polyglottus.** MOCKING-BIRD. — Rather rare at this point, but said to be common in the more southern counties. Arrives latter part of April. Breeds.

6. **Mimus carolinensis.** CATBIRD. — Abundant migrant. Many breed. The majority are more highly colored than birds of the same species taken in Massachusetts.

7. **Harporhynchus rufus.** BROWN THRASHER. — Common. First seen April 14. Young ready to leave nest were found June 15. In full song on arrival.

8. **Sialia sialis.** WILSON'S BLUEBIRD. — Resident, but more common in spring and fall.

9. **Regulus calendula.** RUBY-CROWNED WREN. — Abundant migrant. First seen April 15. Remains till about May 1.

10. **Poliophtila cærulea.** BLUE-GRAY GNATCATCHER. — Common. Arrives about April 13. Nest found complete, but without eggs, May 7.

11. **Lophophanes bicolor.** TUFTED TITMOUSE. — Resident. Most common in early spring. Breeds commonly. A curiously colored individual had the inner web of the secondaries cinnamon-brown.

12. **Parus atricapillus.** CHICKADEE. — Common. Some breed. Resident. In a large series of specimens taken, many approach the var.

septentrionalis in having the secondaries and lateral tail feathers conspicuously edged with white. The song, however, is that of the typical bird, and does not at all resemble that of the var. *carolinensis*.

13. **Sitta carolinensis.** WHITE-BELLIED NUTHATCH. — Common migrant. A few breed. Specimens taken approach var. *aculeata* in the bill being more slender than in many specimens of the typical *carolinensis* from the Atlantic coast.

14. **Sitta canadensis.** RED-BELLIED NUTHATCH. — Noted several times. Migrant.

15. **Certhia familiaris.** BROWN CREEPER. — Common after April 4, when they were first seen, until the last of that month.

16. **Thryothorus ludovicianus.** CAROLINA WREN. — Rare. Two were taken early in April. Probably breeds, though the above were the only ones noted.

17. **Troglodytes domesticus.** HOUSE WREN. — Common. Arrives about April 25. A nest and nine fresh eggs were taken May 30.

18. **Anorthura troglodytes hyemalis.** WINTER WREN. — Rather rare winter resident. Two taken early in April.

19. **Telmatodytes palustris.** LONG-BILLED MARSH WREN. — One taken May 2. Saw no others.

20. **Eremophila alpestris.** HORNED LARK. — Common resident. Found only on the prairie. Breeds.

21. **Mniotilta varia.** BLACK-AND-WHITE CREEPING WARBLER. — Common migrant. First noted April 13. A few remain to breed.

22. **Parula americana.** BLUE YELLOW-BACKED WARBLER. — Common migrant. First seen April 27. A few breed.

23. **Protonotaria citrea.** PROTHONOTARY WARBLER. — Common. First noted May 7. Breeds in numbers.

24. **Helminthus vermivorus.** WORM-EATING WARBLER. — Very rare. A single male taken May 2.

25. **Helminthophaga pinus.** BLUE-WINGED YELLOW WARBLER. — Very common. First noted April 27. Probably breeds in small numbers, as the majority passed to the north.

26. **Helminthophaga ruficapilla.** NASHVILLE WARBLER. — Not common. Very few seen or taken. Arrived May 7.

27. **Helminthophaga celata.** ORANGE-CROWNED WARBLER. — Next to *pinus*, the most common of this genus. First noted April 27. After this it was common for about three weeks.

28. **Helminthophaga peregrina.** TENNESSEE WARBLER. — Not rare. First seen at same date as the last. They were common for about a week, when no more were seen.

29. **Dendroeca aestiva.** SUMMER WARBLER. — Common. Breeds. First seen April 27.

30. **Dendroeca virens.** BLACK-THROATED GREEN WARBLER. — Not common. First seen May 7. A few probably breed, as it was noted the middle of June.

31. *Dendrœca cœrulea*. CERULEAN WARBLER. — Not common, but more frequently met with than the last. First noted May 7. This species was not noticed after June 1.

32. *Dendrœca coronata*. YELLOW-RUMPED WARBLER. — Common migrant. First seen during first week in April. Most of them had passed through by May 1.

33. *Dendrœca striata*. BLACK-POLL WARBLER. — Common migrant. First seen May 10.

34. *Dendrœca pennsylvanica*. CHESTNUT-SIDED WARBLER. — Apparently rare. First noted May 7. Migratory.

35. *Dendrœca maculosa*. BLACK-AND-YELLOW WARBLER. — The rarest of the Warblers of this genus observed here. A female taken on May 18 was the only one noted.

36. *Siurus auricapillus*. GOLDEN-CROWNED THRUSH. — Common migrant. A few breed. Was first noted April 20.

37. *Siurus nævius*. AQUATIC ACCENTOR. — Quite common. First noted during the first week in May. Migratory.

38. *Siurus motacilla*. LARGE-BILLED ACCENTOR. — Rather rare. First noted April 27. Breeds, as it was seen June 12.

39. *Oporornis formosa*. KENTUCKY WARBLER. — Common, but shy. Noted first early in May. Breeds.

40. *Geothlypis trichas*. MARYLAND YELLOW-THROAT. — Common. Breeds in small numbers. First seen April 27.

41. *Geothlypis philadelphia*. MOURNING WARBLER. — Not very rare. Took two during the spring; the first on May 12, the second on May 18.

42. *Icteria virens*. YELLOW-BREASTED CHAT. — Common. First seen April 27. Breeds.

43. *Myiodiactes pusillus*. WILSON'S BLACK-CAPPED FLY-CATCHING WARBLER. Not rare. First seen May 12.

44. *Setophaga ruticilla*. REDSTART. — Common. Arrives early in May. Breeds in small numbers.

45. *Pyranga rubra*. SCARLET TANAGER. — Common. Arrives about May 1. Breeds. Many individuals are appreciably brighter and more intense in color than the average of the same species from the middle Atlantic States.

46. *Pyranga æstiva*. SUMMER REDBIRD. — Not quite as common as the last. Arrives about the same time. Breeds.

47. *Hirundo erythrogaster horreorum*. BARN SWALLOW. — Common. First noted April 15. Breeds.

48. *Tachycineta bicolor*. WHITE-BELLIED SWALLOW. — Common. First noted April 3. Migratory.

49. *Petrochelidon lunifrons*. CLIFF SWALLOW. — Common. Arrives about April 15. Breeds.

50. *Cotyle riparia*. BANK SWALLOW. — Not as common as the last. First seen April 15. Breeds.

51. **Stelgidopteryx serripennis.** ROUGH-WINGED SWALLOW. — Rather common, arriving about the same time as the last. Breeds.
52. **Progne subis.** PURPLE MARTIN. — Rather common in localities. First noted April 4. Breeds.
53. **Ampelis cedrorum.** CEDAR-BIRD. — Resident. Rather common. Breeds.
54. **Vireo olivaceus.** RED-EYED VIREO. — Common. Arrives about May 10. Breeds.
55. **Vireo gilvus.** WARBLING VIREO. — Not common. One taken May 12.
56. **Vireo flavifrons.** YELLOW-THROATED VIREO. — Not very common. First noted April 27. Probably breeds.
57. **Vireo solitarius.** SOLITARY VIREO. — Not common. First seen May 7. Migratory.
58. **Vireo noveboracensis.** WHITE-EYED VIREO. — Not very common. First noted May 5. Breeds.
59. **Vireo belli.** BELL'S VIREO. — Common. First noted May 5, when two were taken. Breeds quite commonly. Two nests were taken with four fresh eggs in each on June 2.
60. **Lanius ludovicianus excubitorides.** COMMON AMERICAN SHRIKE. — Not a very common resident. Breeds in the Osage orange hedges.
61. **Carpodacus purpureus.** PURPLE FINCH. — Not very common. Migrant.
62. **Chrysomitris tristis.** YELLOWBIRD. — Common. Resident.
63. **Plectrophanes ornatus.** CHESTNUT-COLLARED BUNTING. — Rather common during April on the prairies to the west of the town.
64. **Passerculus savanna.** SAVANNAH SPARROW. — Rather common. Breeding on the prairies May 27.
65. **Poocetes gramineus.** BAY-WINGED BUNTING. — Common. Arrives in March. Breeds.
66. **Coturniculus passerinus.** YELLOW-WINGED SPARROW. — Abundant. Arrives late in April or early in May. Breeds in large numbers.
67. **Coturniculus henslovi.** HENSLOW'S BUNTING. — Common. Not as abundant as the last. Associated with *B. passerinus*, and breeding about June 1 to 10.
68. **Melospiza lincolni.** LINCOLN'S FINCH. — Common migrant. First noted May 2. On the 12th of May they were very common, and had disappeared a week later.
69. **Melospiza palustris.** SWAMP SPARROW. — Not a very common migrant. Possibly a few breed, as they were noted very late, — May 25. First seen April 23.
70. **Melospiza meloda.** SONG SPARROW. — Common resident.
71. **Junco hyemalis.** SNOW-BIRD. — Winter resident. Most of this species had left by April 20.

72. **Spizella monticola.** TREE SPARROW. — Common winter resident. Seen as late as April 10.

73. **Spizella socialis.** CHIPPING SPARROW. — Common migrant, and breeds. First seen April 11.

74. **Spizella pusilla.** FIELD SPARROW. — Common. Arrives April 12. In song April 14. Breeds.

75. **Zonotrichia albicollis.** WHITE-THROATED SPARROW. — Common migrant. First seen April 3, and common till the first week in May.

76. **Zonotrichia leucophrys.** WHITE-CROWNED SPARROW. — Not common. First noted May 5. They were noted remaining about two weeks after that date.

77. **Zonotrichia querula.** HARRIS'S SPARROW. — Previous to my visit to Warrensburg, I had spent three weeks at Mound City, in Linn County, Kansas. This is about a hundred miles southwest of Warrensburg. On my arrival at Mound City, on March 8, I found this species very abundant and in *winter* plumage. They frequented low thickets, near water, and were rather shy. On sunny days they were constantly singing in a strain very like that of the White-throats, but a little more prolonged, and perhaps louder. They were rather shy, but I obtained without difficulty a series of about forty birds, all, as I believe, in complete winter dress. About the last of March they began to moult.

On my arrival at Warrensburg I found the birds quite common, but not as abundant as at Mound City. They were all moulting, and had much the same habits as the White-crowned Sparrows, being in small parties of three or four, and frequenting similar localities to those spoken of above. They were still common April 27, and had assumed the breeding plumage. I took some as late as May 5. That they winter in Southern Kansas I have no doubt, as they were well known to many hunters, who spoke of them as "Winter Chippies."

78. **Chondestes grammica.** LARK FINCH. — Very common. Arrives from the middle to the last of April. Breeds.

79. **Passerella iliaca.** FOX SPARROW. — Abundant, migrant, and probably a winter resident.

80. **Euspiza americana.** BLACK-THROATED BUNTING. — Common summer resident. Arrives about May 1.

81. **Goniaphea ludoviciana.** ROSE-BREADED GROSBEAK. — Not very common. First noted May 1. Probably breeds.

82. **Cyanospiza cyanea.** INDIGO BIRD. — Common migrant and summer resident. Arrives about May 1. Females taken from this region show a decided blue tinge, and the males are very intense in coloring.

83. **Cardinalis virginianus.** CARDINAL REDBIRD. — Common and resident. The birds of this species taken here are very much higher-colored than the same species taken in New Jersey, and this is particularly noticeable among the females, which often have many bright red feathers striping the buffish color of the breast. The Redbird in this region is one of the familiar species about houses and gardens.

84. **Pipilo erythrophthalmus.** CHEWINK. — Common migrant and summer resident. This is another species in which the coloring seems much more intense than in the same birds taken in Massachusetts and New Jersey. Particularly is this to be noticed in the females. Out of a series of forty females taken, all had distinctly black feathers in the throat, save four, and in some of them this blackness amounted to a decided patch on the brown of the throat.

85. **Dolichonyx oryzivorus.** BOBOLINK. — Rather common migrant. First noted May 2. In a few days they became quite common. I noticed them on May 21, and afterward about five days later, so that some may breed.

86. **Molothrus ater.** COWBIRD. — Common migrant and summer resident.

87. **Agelæus phœniceus.** RED-WINGED BLACKBIRD. — Rather common summer resident.

88. **Xanthocephalus icterocephalus.** YELLOW-HEADED BLACKBIRD. — Not very common. A few seen in May. Breeds.

89. **Sturnella ludoviciana.** MEADOW LARK. — Common resident. A much more familiar bird than in the East. Not at all shy.

90. **Icterus spurius.** ORCHARD ORIOLE. — Common summer resident and migrant. First noted May 1.

91. **Icterus baltimore.** BALTIMORE ORIOLE. — Common migrant and summer resident. First noted May 1.

92. **Scolecophagus ferrugineus.** RUSTY BLACKBIRD. — Common migrant. Noted as late as April 23.

93. **Quiscalus purpureus.** CROW BLACKBIRD. — Common migrant and summer resident.

94. **Corvus americanus.** COMMON CROW. — Not very common. Breeds.

95. **Cyanocitta cristata.** BLUE JAY. — Very familiar and common residents, breeding in the gardens in town, and much less shy than the Robin is in the East. Nest and three eggs taken April 27.

96. **Tyrannus carolinensis.** KINGBIRD. — Common migrant and summer resident. First noted April 27.

97. **Myiarchus crinitus.** GREAT-CRESTED FLYCATCHER. — Rather common migrant and summer resident. First noted May 2.

98. **Sayornis fuscus.** BRIDGE PEWEE. — Common migrant and summer resident.

99. **Contopus virens.** WOOD PEWEE. — Rather common, arriving late, as in the East.

100. **Empidonax acadicus.** SMALL GREEN-CRESTED FLYCATCHER. — Rather common. Arrives early in May. Breeds.

101. **Empidonax minimus.** LEAST FLYCATCHER. — Not common. First seen May 1. Migrant.

102. **Empidonax flaviventris.** YELLOW-BELLIED FLYCATCHER. — Rather rare migrant. Took one May 18.
103. **Antrostomus vociferus.** WHIP-POOR-WILL. — Common migrant, and breeds. First noted April 23.
104. **Chordiles virginianus.** NIGHT-HAWK. — Common migrant, and breeds. First noted May 4.
105. **Chætura pelagica.** CHIMNEY SWIFT. — Common migrant and summer resident. First noted April 26.
106. **Trochilus colubris.** RUBY-THROATED HUMMING-BIRD. — Rather common. First noted April 26.
107. **Ceryle alcyon.** KINGFISHER. — Common.
108. **Coccygus erythrophthalmus.** BLACK-BILLED CUCKOO. — Quite common. First noted early in May.
109. **Coccygus americanus.** YELLOW-BILLED CUCKOO. — About the same as the last, perhaps rather more common.
110. **Hylotomus pileatus.** PILEATED WOODPECKER. — Rare resident. Met with but once.
111. **Picus villosus.** HAIRY WOODPECKER. — Rather common resident, but shy.
112. **Picus pubescens.** DOWNY WOODPECKER. — Common resident.
113. **Sphyrapicus varius.** YELLOW-BELLIED WOODPECKER. — Not an uncommon migrant and winter resident.
114. **Centurus carolinus.** RED-BELLIED WOODPECKER. — Abundant resident.
115. **Melanerpes erythrocephalus.** RED-HEADED WOODPECKER. — Common resident.
116. **Colaptes auratus.** GOLDEN-WINGED WOODPECKER. — Abundant resident.
117. **Bubo virginianus.** GREAT HORNED OWL. — Rather rare resident. Fully fledged young April 18.
118. **Scops asio.** SCREECH OWL. — Not common.
119. **Syrnium nebulosum.** BARRED OWL. — The commonest species of this family.
120. **Circus cyaneus hudsonius.** MARSH HARRIER. — Rather common migrant.
121. **Elanoides forficatus.** SWALLOW-TAILED KITE. — Once noted, April 15.
122. **Accipiter fuscus.** SHARP-SHINNED HAWK. — Seen occasionally. Migrant.
123. **Accipiter cooperi.** COOPER'S HAWK. — Rare. Met with once.
124. **Buteo aquilinus.** RED-TAILED HAWK. — Quite common resident. Young about three weeks old taken May 2.
125. **Buteo lineatus.** RED-SHOULDERED HAWK. — Not common. Several noted.

126. *Cathartes aura*. TURKEY BUZZARD. — Common resident.
127. *Ectopistes migratoria*. WILD PIGEON. — A flock of seven seen on April 6.
128. *Zenædura carolinensis*. TURTLE DOVE. — Common resident.
129. *Meleagris gallopavo*. WILD TURKEY. — Said to have been very common, but now almost killed off.
130. *Cupidonia cupido*. PRAIRIE HEN. — Common resident.
131. *Ortyx virginianus*. QUAIL. — Abundant resident.
132. *Philohela minor*. WOODCOCK. — Very rare. Met with once.
133. *Gallinago wilsoni*. WILSON'S SNIPE. — Abundant migrant.
134. *Limosa fedoa*. MARBLED GODWIT. — Rather rare. Taken May 4.
135. *Tringoides macularius*. SPOTTED SANDPIPER. — Common. First noted April 23.
136. *Numenius longirostris*. LONG-BILLED CURLEW. Common. First noted April 1.
137. *Ardea herodias*. GREAT BLUE HERON. — Rather common.
138. *Ardea virescens*. GREEN HERON. — Abundant.
139. *Nyctiardea grisea nævia*. NIGHT HERON. — Rare. A specimen taken April 27.
140. *Botaurus minor*. AMERICAN BITTERN. — Common migrant. First noted April 18.
141. *Grus canadensis*. SANDHILL CRANE. — Common migrant. Arrives early in April.
142. *Porzana carolina*. COMMON RAIL. — Rather common. First noted April 27.
143. *Fulica americana*. COOT. — Common in April.
144. *Branta canadensis*. WILD GOOSE. — Abundant migrant.
145. *Querquedula discors*. BLUE-WINGED TEAL. — Common migrant. Noted April 3.
146. *Querquedula carolinensis*. GREEN-WINGED TEAL. — Common migrant.
147. *Spatula clypeata*. SHOVELLER. — Abundant migrant. Noted April 15.
148. *Podilymbus podiceps*. DAB-CHICK. — Common. Probably breeds.

THE ROCKY MOUNTAIN GOLDEN-EYE (*BUCEPHALA
ISLANDICA.*)

BY T. M. BREWER.

It appears to be a somewhat remarkable fact that this form of Golden-eye, now ascertained to be a species so almost exclusively North American, should have been so little known to our earlier ornithological writers; and it is hardly less surprising, — when we call to mind that nearly half a century ago Dr. Richardson, in “*Fauna Boreali-Americana*,” and only three years afterwards Mr. Nuttall (*Water Birds*, p. 444), assigned our Rocky Mountain region as the habitat of this species during its season of reproduction, — that its true character and history and geographical abode should have been so imperfectly understood up to the present time. In the ninth volume of the “*Pacific Railroad Reports*” its habitat is given as, — “Iceland and northern parts of America. In winter not rare on the St. Lawrence.” In the “*Key to North American Birds*,” we read: “Arctic America to the N. States in winter, not common. Also N. Europe.” In the “*Birds of the Northwest*,” while it is said to “probably breed in the Rocky Mountains of the United States,” we also find it stated to be “the most northerly species of the genus, having apparently a circumpolar distribution, breeding only! in high latitudes, and penetrating but a limited distance south in winter.” The same writer, in “*Field-Notes on the Birds of Montana*,” etc., was “greatly interested” to find this species “breeding in the Rocky Mountains,” and mentions it as “the first recorded instance of the occurrence of the species, during the breeding season, in the United States.”

This species entirely escaped the notice of Wilson. It is only mentioned, or referred to, by Bonaparte as a European species, and although given by Richardson and Nuttall, was overlooked by Audubon, or only regarded as a curious variety of the common Golden-eye. Nuttall refers to it as the “*Rocky Mountain Golden-eye*,” a very appropriate name, mentions its breeding in these mountains, and as having the same habits as the common species. As he makes no reference to Richardson, it is probable that what he states is based on his own observations.

Although alpine, there is absolutely nothing to authorize us in regarding this species as "circumpolar," or even "arctic," if by arctic it is intended to imply that it breeds chiefly within the Arctic Circle. It is not known to occur in any part of Asia, is unknown in Russia, and has never been known to breed in any part of Europe, except Iceland, where it is resident, and restricted to a very small district of that island. No specimen has ever been taken in Great Britain, and it is unknown to the rest of Europe except as a very rare straggler. Four individuals are recorded as having been taken at different times on different parts of the coast of Norway, and one in Southern Spain, but these five seem to comprise all of its European record outside of Iceland.

In North America its distribution appears to be not only throughout the northern portions of the continent from Greenland, on the east, to the Yukon region on the west, but it is now also known to breed throughout the mountain ranges as far south, at least, as Southern Colorado, in latitude 38° ; and although the fact has not been positively ascertained, there seems no good reason to doubt that it also breeds among the high mountain ranges that lie farther south, in New Mexico and Arizona. Its abundance in Colorado is not in harmony with its being regarded as an exclusively Northern species. After Richardson and Nuttall, Dr. J. G. Cooper appears to have been the first of our ornithologists to put upon the record the presence of this Duck among the western mountain ranges of the United States. In the "American Naturalist" (III, p. 83), in an article entitled "The Fauna of Montana Territory," Dr. Cooper mentions his having seen a number of dark-headed Ducks which he refers to this species, and no doubt correctly, although he was not able to procure an example.

Reinhardt has also recorded the *islandicus* as a bird of Greenland, where, as he states, it breeds in South Greenland, and has been procured in the neighborhood of both Godthaab and Nenortalik. Holbüll states that in Greenland its range is restricted to the space between $63^{\circ} 45'$ and $64^{\circ} 30'$. North of this the natives do not know it at all; so that its northern limit is two degrees south of the Arctic Circle. In Maine and New Brunswick a few pairs are found each summer undoubtedly breeding, though no nests have been detected, as far south as the forty-fifth degree. Mr. George A. Boardman informs me that they are somewhat rare in the neighborhood of Calais, but become much more common on the St. Croix

River in the winter. Examples have been procured, from time to time, in the Boston market, by Mr. William Brewster and others, most of which are known to have been shot within the limits of Massachusetts.

Mr. E. W. Nelson states, that it is a winter resident in the waters of Lake Michigan, and that at this season it is also found irregularly throughout the State of Illinois. An example was procured on the Wabash, near Mount Carmel, by Prof. Stein, in December, 1874, and Dr. Hoy procured one in 1860 at Racine. They are believed to be not uncommon on Lake Michigan during the winter, but the season is not favorable either for procuring them or ascertaining just how common they are.

In 1872, Mr. Henshaw procured two examples on Utah Lake, and he is quite inclined to the belief that this species occurs there regularly, and in considerable numbers. He was assured by the gunners that more or less were shot there every winter, though it was a less abundant species than the common Golden-eye, from which they could readily distinguish it.

Mr. Edwin Carter, of Colorado, who was probably the first to actually secure the nest and eggs of this species within the limits of the United States, assures me that he has been for many years well aware of the common presence of this species among the mountains of that region. A fine set of seven eggs procured by that gentleman are now in the Museum of Comparative Zoölogy at Cambridge. Mr. Carter writes me, that "the usual nest complement of Barrow's Golden-eye is from six to ten, varying with the age and vigor of the parents. Last year (1876) we took a nest of ten that contained large embryos; we also took another set of six. Another clutch (the one sent to the Museum) consisted of seven. I have also met with several young broods with from six to eight, and one with ten. They nest in hollow trees, and it is surprising to see to what small cavities, in some instances, they can accommodate themselves. The present season (1877) I have examined a great many trees, and every one that had a suitable opening either contained an occupant or indicated recent nesting by egg-shells and other marks."

This Duck has not been detected in California, but Dr. Cooper thinks that it undoubtedly occurs among the mountains of the northeastern part of the State. Mr. Dall found it present but rare on the Yukon River. Examples were procured by Bischoff at Sitka, and a single individual was taken by Mr. M. McLeod, June 29, 1863,

in the vicinity of Fort Anderson. On the 14th of June, in the following year (1864), Mr. Macfarlane secured a fine male example at Fort Anderson. This individual had been in the habit of flying over the fort for several evenings in succession, and was, at length, secured on a small lake just behind the reservation. The female had her nest somewhere in the vicinity, but eluded all their endeavors to discover the place. Mr. Macfarlane speaks of this species as the rarest of the Ducks that visit those parts.

Mr. C. W. Sheperd, in his account of his visit to Iceland, mentions finding this Duck breeding on a small island in the Lake of My'Vatn, in the northern part of that island. The little islet was occupied exclusively by two species, this Golden-eye and the *Mergus serrator*. The soil was composed of broken lava, and both species were breeding in holes. Some of their nests were quite out of reach, in the cracks and crevices of the lava. The two species were living together on the most familiar terms. One female Merganser was actually found sitting on a nest not her own, and which contained four eggs belonging to a Golden-eye; the differences between the eggs of the two species, being strongly marked, admitted of no possibility of confounding them.

The habits of the Rocky Mountain Golden-eye essentially resemble those of the more common species, but it is said by Holböll to be not so good a diver as that bird. It cannot dive in deeper water than the Harlequin, and is generally to be met with only on fjords. He also describes it as the most wary of all the Water-fowl, and it is with the greatest difficulty that one can approach within gunshot range of it. His collectors, in order to procure specimens, were compelled to conceal themselves near where it feeds, on nights when the moon gave light enough for them to see to shoot. In the spring it appeared in pairs, but flew so high that it was seldom shot.

Two eggs of this species in the Smithsonian collection, from the Yukon, measure, one 2.40×1.60 inches, and the other 2.40×1.70 . Two others from Iceland, in the same collection, measure 2.55×1.80 , and 2.45×1.80 . They are of a uniform deep grayish pea-green color.

Dr. Krüper (Naumannia, 1857, p. 40), states that in Iceland it commences breeding in May or early in June, and that eggs may be found until the middle of July. Its nest cannot be mistaken for that of any other Duck, as the down with which it is lined is pure white. The female sits so close that she may usually be captured on

the nest. The eggs, from nine to twelve in number, resemble those of the common Golden-eye, but are larger.

In my own collection I have four examples, all of them well identified, but all from Iceland. These vary from a grayish-green to a bright sea-green; the faded hue of the former is perhaps due to age and exposure. These measure 2.49×1.80 ; 2.44×1.74 ; 2.50×1.85 ; 2.50×1.75 .

The set of seven eggs belonging to the Museum of Comparative Zoölogy at Cambridge, Mr. Allen describes to me as having a pale bluish-green color, or "sea-green." Their measurements are, 2.60×1.68 ; 2.58×1.70 ; 2.48×1.70 ; 2.48×1.70 ; 2.45×1.72 ; 2.43×1.70 ; 2.43×1.66 .

NOTES ON SOME MINNESOTA BIRDS.

BY T. S. ROBERTS.

THE following species have been selected for brief note at this time, either because they seem to offer points of special interest, or because previous notices have been particularly unsatisfactory. So far as the writer is aware, the two varieties, Alice's Thrush and Ridgway's Sparrow, are here given from Minnesota for the first time. Most of the observations have been made in the vicinity of Minneapolis, and this locality is to be understood when no other is specified.

1. **Turdus swainsoni aliciae**. GRAY-CHEEKED THRUSH. — As was expected, this form, as well as *swainsoni* proper, is found here. I have several specimens taken about Minneapolis, — the first on May 11, 1876. The species is a summer resident, and breeds; but is not very common, being much outnumbered by *T. fuscescens*.

2. **Coturniculus lecontei**. LECONTE'S BUNTING. — Three regular notices of the occurrence here of LeConte's Bunting have appeared; but as the bird is one to which much interest attaches, a fourth and perhaps fuller account may not be unacceptable.

The species was first secured on June 20, 1877, by Mr. C. L. Herrick. Between this date and August 15 of the same year five more specimens were taken, one by Mr. Herrick, two by Mr. R. S. Williams, and two by the writer. A brief notice of the capture of Mr. Herrick's two specimens appeared at the time.*

* Bull. Minn. Geol. and Nat. Hist. Sur., 1876, p. 237.

These six birds are all that have been taken up to the present date, and are all that have been identified with certainty. They were found in a small, ditched meadow, on the outskirts of the city of Minneapolis. The meadow was quite swampy in places, supported a heavy growth of grass, and was dotted here and there with clumps of swamp willows. The locality was a good one for birds, the immediate neighbors of the Buntings being Savanna, Song, and Swamp Sparrows, Marsh Wrens (both species), Maryland Yellow-throats, Bobolinks, Red-winged Blackbirds, a few Virginia Rails, and others, all of which were breeding in various parts of the meadow. The LeConte's Bunting had undoubtedly bred here, also. But in view of the repeated and careful search that was made it does not seem possible that there could have been above one or two pairs and their progeny. The song, as well as the manner in which it is delivered, closely resembles the ordinary effort of the Yellow-winged Sparrow. While on the ground, among the long grass, they utter a rapid, smothered chirping, which may be interrupted at times by the song proper. They are hard to flush from the grass, and each successive attempt grows more difficult.

Through the kindness of Messrs. Herrick and Williams, I have had the opportunity of examining their four specimens and comparing them with mine. There are three adults in full plumage and three young birds. As the latter were taken at dates considerably apart, and probably belonged to the same brood, they present some points of interest in regard to the plumage of the first year. The youngest, taken on June 20, shows *distinct maxillary streaks*, and the breast is streaked entirely across for a distance of half an inch. The color of the whole under parts and broad edgings of the feathers above is a pale, brassy yellow. There is no indication of the collar of mingled chestnut and grayish, nor of the buff of the anterior under parts. In the second specimen, taken August 1, the maxillary streaks and breast-markings have become indistinct, while in the third, taken August 8, the former have disappeared entirely and the latter are confined to the sides. This last bird also approaches the adult in an imperfect separation of the under parts into the buffy anterior and light posterior areas, in the appearance of rufous on a few of the feathers of the back, and in the whitening of the back part of the median line of the crown.

Nothing certain was heard of the species during the summer of 1878. The notices of Dr. P. L. Hatch (Bull. Minn. Acad. Nat. Sci., 1878, p. 345), and of Mr. W. L. Tiffany (Am. Nat. XII., July, 1878, p. 471), are based upon the capture of these six specimens.

3. *Zonotrichia leucophrys intermedia*. RIDGWAY'S SPARROW. — On October 5, 1877, while collecting along a thick hedge between two fields, I shot two specimens of this variety of the White-crowned Sparrow. Together with others of the species, they were in company with many White-throats, Snow-birds, and a few Lincoln's Finches and Tree Sparrows. On the 17th of the following May (1878) three more

were secured in similar situations. Again, on May 6, 1879, I shot two specimens, and the next day obtained the eighth. Four had been taken on the 5th. by Mr. R. S. Williams. These specimens are all plainly typical var. *intermedia*. Two individuals, however, have been taken, that show a loral pattern intermediate between this and var. *leucophrys*.

This repeated occurrence of *intermedia* at Minneapolis, in Eastern Minnesota, considerably extends its range, since the locality is far east of its ascribed regular habitat.

The Eastern form also occurs here as an uncommon migrant, and Mr. Trippe gives it as common and breeding in the west-central part of the State.

4. **Zonotrichia querula.** HARRIS'S FINCH. — This is now to be regarded as a regular, and at times common migrant. It is especially numerous in the fall, when the young birds, in their peculiar dress, are to be found in all open brushy places. A small proportion of the fall birds have the black hood, and are in most respects just like the spring birds. In the spring it passes quickly northward during the second and third weeks of May, and appears here again between September 25 and October 15, when it is much less hurried in its movements. I have never heard any song from them except upon one occasion. That was in the fall, when a bird in the plumage of the year uttered a low, continuous warble as it sat on the top of a brush-pile. This was repeated many times, and reminded one somewhat of the subdued singing of the Tree Sparrow, often heard in the early spring.

5. **Spizella pallida.** CLAY-COLORED BUNTING. — One of our common and characteristic Sparrows. Arrives the last week of April, breeds in the latter part of May and in June, and retires with the fall passage of Sparrows in September and October.

6. **Melospiza lincolni.** LINCOLN'S FINCH. — Occurs at Minneapolis during the migration. Common during the last week of September and the first week of October, 1876, and again at the same time in 1877. They frequent hedges, patches of weeds, borders of woods, and similar situations.

7. **Picoides arcticus.** ARCTIC WOODPECKER. — During the second week of July, 1877, I found this Woodpecker rather common about the North Pacific Junction, Carlton County. The timber in that locality is mostly evergreens, white-birch, and tamarack, with numerous tracts of dead trees. The birds had evidently bred there. The young at that time were nearly full grown, and associated together in twos and threes. They were quite tame, showing no fear either at noise or at one's presence. In the young males taken, yellow feathers were already beginning to appear on the crown. At Minneapolis it is an uncommon winter visitant, but occasionally remains late in spring. I have seen a specimen taken here the second week in May.

8. **Sphyrapicus varius.** YELLOW-BELLIED WOODPECKER. — Com-

mon at Minneapolis during migrations, and in the hard-wood timber of the State during the breeding season. I found a nest on an island in Lake Minnetonka, Hennepin County, May 17, 1876; and in July, 1875, the birds, old and young, were numerous in Wright County.

9. **Gallinula galeata.** FLORIDA GALLINULE.—From being at first considered rare, the Florida Gallinule has been gradually coming more into notice, until now it must be looked upon as breeding here in considerable numbers. On the 3d of June, 1878, I collected a nest and eleven eggs, and on the eighth found five more nests in the same locality, four of which contained nine eggs each, and the fifth seven. There were thus fifty-four eggs in the six nests.

These nests were all in a large, reedy slough, lying in the Minnesota River bottom, a few miles from Minneapolis. They were placed in patches of old wild-rice stubble, and were built up on a floating foundation of reed and rice stems, so as to be high enough to keep the inside of the nest dry. Coarse rushes and reeds were used in building, much of the material being so long that only one end entered into the construction of the nest, the remainder hanging in the water. Aside from the contents, the nest can be distinguished from that of the Coot (*Fulica americana*) only by the fact that it is smaller, and that finer material is used in its construction. Eleven Coots' nests found on the same days as the Gallinules' nests mentioned above, were precisely similar in situation and style of structure to the Gallinules'. In one instance, some grass that had grown up around a Gallinule's nest was slightly woven together above it, as if to imitate the bower-like coverings formed above some Rails' nests.

There are in Southern Minnesota scores of just such sloughs as the one in which these nests were found, and if six pairs (probably many more) bred in this one, it is certainly fair to conclude that the Gallinule breeds commonly in Minnesota. It has been taken in the fall in several other localities and found breeding in one other.

MELOSPIZA MELODA AND ITS ALLIES.

BY H. W. HENSHAW.

THE Song Sparrow, as it occurs throughout the length and breadth of the United States and the adjoining regions, offers one of the most instructive studies of the workings of geographical variation that is to be found. Others of our species may be named that are possessed of a similarly extensive range, but in none is the tendency to split up into races — well illustrated as it is in many others — so well exemplified as in the case of this Sparrow.

The Song Sparrow, although apparently nowhere a permanent resident in the strictest meaning of the term, that is to the extent of the same individuals remaining in the same locality throughout the year, unless indeed *insignis* of the Alaskan islands furnish the exception, is yet migratory to but a limited extent, and it is probable that the change of locality with the migrations is in the instance of none of its forms at all marked. It is doubtless to this localization, with the ensuing constantly exerted influence of the same conditions of environment, that we are to attribute the extraordinary tendency in this bird to develop into races and offshoots, according as its range brings it under differing conditions. As Dr. Coles happily phrases it, "Migration holds species true; localization lets them slip." And nowhere do we meet a better illustration of this aphorism than is presented by this Sparrow.

A recent examination of the extremely large collection of Song Sparrows in the Smithsonian Institution, together with many others furnished by friends for comparison, has developed some facts that appear to be of sufficient value and interest to warrant brief mention.

Here, as elsewhere, the variation through which the forms are indicated are of two kinds, viz. a variation in size, and also in coloration; nor is it easy to say in which direction the change is most pronounced.

The only Song Sparrow found in the Eastern United States, and which extends from the coast as far west as Nebraska and the Indian Territory, is the *M. meloda*, and of all the forms into which the species subdivides, except perhaps *insignis*, this appears to be the most constant in the maintenance of its peculiarities over its wide habitat. So far as color goes, the variation appears to be scarcely noticeable; nor is the change in size very marked. Such as it is, it appears to bear out the general rule of an average increase of size to the northward. This law, it may be remarked here, appears to be equally applicable to all the other races. The general sameness in the topographical conditions of the eastern region, and the resulting similarity of climate, is doubtless the chief cause of the slight departure from type to be observed in *meloda* throughout its range.

The Rocky Mountains, as far to the north as Oregon and to the south as our southern border, and the intermediate region west to the Sierras, are occupied by the var. *fallax*. This bird is dis-

tinguishable from *meloda* by a generally paler tone of coloration, by a decided increase of size, especially of wing and tail, and by a slightly longer and considerably more slender bill. The intergradation of this form with *meloda* is readily traceable and complete.

From the very varied nature of the country occupied by *fallax*, it being broken up by lofty mountain ranges, and the consequent differences of climate, considerable discrepancies might naturally be expected in specimens of this race from different localities. Such proves to be the case; and, in examining a large series, the attention is often arrested by some slight phase of color which is often so intangible as to practically elude definition, but which is occasionally sufficient to identify all the individuals from some one limited neighborhood. So frequently, in fact, is this impression received, that it would almost appear as if each locality in the middle region furnished a type of its own, exhibiting the main characteristics of *fallax*, but differing more or less appreciably. Thus the region of the Gila River affords a style of this race quite distinct from any other. The principal variation seen is in the very pale reddish tints, with scarcely a trace of dusky, which is especially noticeable in the markings of the breast. Another phase from Camp Harvey, Oregon, is remarkable for its pale grayish tints. Such inter-races doubtless result from causes very local in their action, and are so slight and usually so inconstant as to deserve nothing more than passing comment.

Reaching the foothills of the Sierras, we find *fallax* beginning to assume new characters, and in the mountains and along the western foothills it finally merges into var. *heermanni*. This form is distinguished by a much darker shade of brown than either *fallax* or *meloda* possesses, and by a bill much stouter than in the former, but less robust than in the latter. *Heermanni* has usually been considered the Californian Song Sparrow, the term thus including indifferently the birds from the coast and the interior. But this is a mistake. The type, now before me, came from Fort Tejon, and it is in the interior only that the style to which this name was applied is met with.

Reaching the coast, another form is for the first time encountered. This is the var. *samuelis*, of which the *gouldii* of Baird, as correctly determined by Mr. Ridgway, is the fall plumage. Hitherto some three or four individuals from the vicinity of San Francisco

have been taken as representing all that was known of *samuelis*. But no fewer than forty-six specimens are now at hand that agree well with the type, and are unquestionably referable here.

In point of fact, it is *samuelis* alone that occurs in summer along and near the Californian coast, and nearly all published accounts of the habits, nesting, etc. of the Song Sparrow of California are to be taken as referring to it.

This form rests chiefly upon its small size, it being considerably the smallest of all the races, and the very dark, almost black, color of its prominent streakings. But it is upon a basis of size alone that it can be separated from *heermanni*, both agreeing in essential points of coloration. In fact, the question might well be raised whether it is necessary to recognize by distinct names two forms from this region. I have, on the whole, deemed it expedient to do so, as the difference of size, especially of bill, in specimens from the respective habitats of the two is pronounced and quite constant, readily sufficing in the great majority of cases for their identification. Thus, in over thirty specimens of *heermanni* from Stockton, kindly furnished by Mr. Belding, I find no marked differences, and all agree in comparatively large size and stout bills.

A series of nine males of *samuelis* from Oakland, for the opportunity of examining which I am indebted to the courtesy of Mr. D. S. Bryant, are similarly constant to the coast type, so far as size is concerned, but vary somewhat in coloration. The differences are chiefly as to number and size of the black markings below. Two of the nine are the darkest, and on the whole the most typical, examples of *samuelis* that I have seen.

Of the var. *mexicana*, Ridgway, from Southern Mexico, little can be said, since the name rests upon a single specimen. This appears to be recognizable from the other races by its rather peculiar coloration, the streakings being very broad as well as black and by its smaller (except *samuelis*) size. More specimens are necessary to determine its true relations.

Var. *guttata* next invites attention. This is characterized by a generally darker, more rufescent type of color; the streaks on the dorsum are very indistinct, in some specimens almost wanting. The bill is proportionately more slender than in any of the preceding forms. The typical home of this variety is the Columbia River region, coastwise. But long before this point is reached, evidence is afforded by specimens of intermediate character of the change to

occur farther to the north. Thus, fall and winter specimens from Nicasio, migrants from more northern localities, are noticeably intermediate in colors between *samuelis* and *guttata*; while during the past season I obtained specimens in Oregon, at the base of the eastern slope of the Cascades, — thus approximating the habitat of *fallax*, — that hold a similar relation to that central region form, the two races to the northward evidently passing by insensible stages into *guttata*.

Var. *rufina* is simply *guttata*, with its peculiarities carried a step or two farther, corresponding with increased latitude. The rufous of *guttata* becomes in typical *rufina* a reddish sepia-brown; the size is somewhat larger, the bill rather more slender. Such is *rufina* as found about Sitka and to an uncertain distance southward.

Upon certain, perhaps all, of the Alaskan islands occurs *insignis*. This gigantic Sparrow is distinguished, in addition to its great size, by a much paler, grayer phase of color than its nearest geographical neighbor, *rufina*. The streaks, instead of being nearly or quite obsolete as in that form, are well defined and of an umber-brown.

Of *insignis*, Baird and Ridgway say: "Between *M. melodia* of the Atlantic States and *M. insignis* of Kodiak the difference seems wide, but the connecting links in the inter-regions bridge this over so completely that, with a series of hundreds of specimens before us, we abandon the attempt at specific separation." It needs but a glance to determine that the var. *rufina* is nearer *insignis* by many degrees than the *meloda* of the East, and, as has been indicated, nothing is wanting in the chain of evidence to establish the connection between *rufina* and *meloda*. But while admitting the possibility, perhaps even probability, that the relations between *insignis* and *rufina* may be as close as that of races, we feel justified in asserting that the intergradation necessary to establish this cannot be shown from the material accumulated up to the present time. Measurements appended below demonstrate that between the largest specimen of *rufina* in the collection and the smallest *insignis* there is a by no means inconsiderable gap. Nor does there appear to be any known law of geographical variation by which this discrepancy of size can be accounted for.

The law of increase of size with increased latitude, while applying to the preceding members of this group, fails of application in the case of *insignis*; since Sitka, the metropolis of *rufina*, is in the same latitude with Kodiak, that of *insignis*; while one specimen of *rufina*,

and that by no means the largest, is present from Lituya Bay, which is slightly farther north than Kodiak. Possibly its insular habitat may be deemed sufficient to account for the marked peculiarities of this giant among Sparrows. So far, in fact, as color is concerned, although in this respect *insignis* is well marked, the step from *rufina* appears an inconsiderable one as compared with that of size. But, as has been stated, no intermediate specimens are at hand to prove such a close relationship, and, as analogy in cases like the present has proved far from being always a safe guide, I deem it safer to let *insignis* stand upon its merits until its claim to distinct specific rank be actually disproven.

The following measurements are given to show the average size of the various races:—

	Wing.	Tail.	Bill.	Tarsus.	Depth of Bill.
<i>M. meloda</i> (24 specimens),	2.60	2.80	.46	.83	.30
Largest individual,	2.77	2.90	.47	.78	.29
Smallest “	2.32	2.60	.45	.78	.30
Var. <i>jallax</i> (23 specimens),	2.69	2.94	.44	.84	.25
Largest individual,	2.92	3.17	.43	.83	.27
Smallest “	2.35	2.52	.43	.77	.25
Var. <i>heermanni</i> (13 specimens),	2.61	2.82	.45	.84	.28
Largest individual,	2.80	2.93	.46	.84	.28
Smallest “	2.45	2.70	.45	.83	.24
Var. <i>samuelis</i> (46 specimens),	2.41	2.48	.45	.84	.26 *
Largest individual,	2.60	2.64	.45	.86	.26
Smallest “	2.13	2.23	.40	.76	.23
Var. <i>mexicana</i> (1 specimen),	2.52	2.83	.46	.87	.26
Var. <i>guttata</i> (23 specimens),	2.63	2.89	.44	.90	.26
Largest individual,	2.78	3.14	.46	.93	—
Smallest “	2.42	2.59	.45	.83	—
Var. <i>rufina</i> (7 specimens),	2.78	2.87	.48	.92	.26
Largest individual,	2.96	3.12	.52	.93	.29
Smallest “	2.61	2.64	.43	.87	.25
<i>M. insignis</i> (20 specimens),	3.26	3.36	.61	1.07	.30
Largest individual,	3.40	3.40	.50	1.13	.32
Smallest “	3.13	3.35	.57	1.07	.29

A PARTIAL LIST OF THE BIRDS OF FORT KLAMATH,
OREGON, COLLECTED BY LIEUTENANT WILLIS WIT-
TICH. U. S. A., WITH ANNOTATIONS AND ADDITIONS
BY THE COLLECTOR.

BY EDGAR A. MEARNS.

THIS article is compiled from notes and collections forwarded to me, at different times, by Lieutenant Willis Wittich, during his residence of four years at Fort Klamath. The fort is situated in Jackson County, in Southwestern Oregon. Latitude, $42^{\circ} 43'$; longitude $121^{\circ} 55''$; * altitude, 4,200 feet above the sea, — above the limit of oak-trees. It is on the eastern margin of a valley in the Cascade Mountains. The valley runs north and south, is about twenty miles long, and is seven miles wide at the point where the post is located. Toward the south it widens somewhat, and extends to Upper Klamath Lake, about seven miles distant. High hills and mountains wall in the valley on the north, east, and west. Among them, Scott's Peak is the most prominent to the north, Mount Pitt in the range to the east, and farther south in the same range is seen, rising in the distance, the perpetually snow-clad summit of Mount Shasta. Williamson's River, flowing from the north-eastward, empties into Upper Klamath Lake at a point about twelve miles from the post. There are, besides, six streams, the waters of all of which, excepting one, are of crystal clearness, which flow through the valley within a short distance of the post. Ducks, Geese, and other Water-fowl, abound upon the lake and marshes in the neighborhood of Wood River, at all seasons of the year. The country is well forested in most places. The trees are of large size, and mainly evergreens, — pine, fir, spruce, and juniper, — with a mingling of aspens.

Upper Klamath Lake is one of a chain of large lakes composing the Klamath Basin. These lakes abound in shoal water and low islands, and are frequently bordered by marshes of *tule*. "These wide surfaces, . . . densely covered with rushes, afford most convenient retreats for a large number of swimming and wading birds,

* Extracted from the Official Record of the Quartermaster Department of the Army.

which nest and pass the summer there."* Ducks, Geese, Herons, Plovers, and Sandpipers are exceedingly abundant. Dr. J. S. Newberry, quoted above, thus describes (l. c., p. 101) the arrival of the Water-fowl in autumn: "With the first October rain, vegetation begins to spring over all these prairies, and the Geese and Ducks now come in. Flock after flock in increasing numbers they come, until their flights rival those of the Passenger Pigeon, and the heavens are always marked by their characteristic triangles and the air filled with their cries. The Ducks descend to the bays, streams, and lakes, and almost cover the smaller bodies of water, while the Geese settle on the prairie and feed upon the fallen grain of the oat, or the first tender sprigs of springing grass, which now begins to tinge the landscape with green."

Mrs. Wittich thus describes the bird islands in the lake: "Looking toward the lake there were seen two or three white hills that I should have supposed were snow-covered mountains, did they not have a background of higher mountains that were only streaked at the top with snow; but the cause of my perplexity was explained on being told that it was the island in the lake, which is perfectly bare, and rises to a considerable height. During the breeding season it is covered with the eggs of Water-birds of many species."

The present list is necessarily very incomplete, and probably does not include much more than one half of the species that actually visit the Klamath Basin.

Below is given a list of specimens, together with biographical notes and notices of other species that have been positively ascertained to occur by Lieutenant Wittich. A number of additional species are included on the authority of Dr. Henry McElderry, Assistant Surgeon, U. S. A., whose observations and collections were made contemporaneously with those of Lieutenant Wittich, and are officially recorded, at the post hospital, as "Birds personally identified by Dr. Henry McElderry, Post Surgeon."

I take this means of expressing to Lieutenant Wittich my warmest thanks for his constant efforts to procure rare specimens and important facts relating to the ornithology of his locality, as well as for many similar favors.

I am also indebted to Mr. Henry W. Henshaw, for his kindness in examining several specimens, and the determination of certain obscure varieties, besides some important suggestions, which his

* Dr. J. S. Newberry, Pacific Railroad Report, Vol. VI, Pt. IV, p. 99, 1857.

generosity and recent field experience in this region, in connection with the "Geographical Survey West of the 100th Meridian," enabled him to make.

1. **Turdus migratorius propinquus**, *Ridgway*. WESTERN ROBIN. — Mostly a summer resident. A few stay all winter. Their food consists largely of worms. Their nests are built on prairies, *on the ground*, or in timber, low down (*Wittich*).

2. **Turdus nævius** (*Pennant*). VARIED THRUSH. — Early in the spring the species was numerous in the aspen-trees, and a number of them were shot, which were pronounced to be excellent eating by a sick lady in the garrison (*Wittich*).

3. **Sialia mexicana**, *Swainson*. WESTERN BLUEBIRD; MEXICAN BLUEBIRD. — No. 3, ♂ ad., May, 1875. Found in low situations. Its flight is undulatory, and seldom more than a few feet from the ground (*Wittich*).

4. **Parus montanus**, *Gambel*. MOUNTAIN CHICKADEE. — No. 4, ad., May, 1875. An abundant summer resident (*Henshaw*). Very common in winter. In this locality they feed on the refuse meat from butchering, as do the Magpies (*Wittich*).

5. **Sitta carolinensis aculeata**, *Cassin*. SLENDER-BILLED NUTHATCH. — June, 1875 (*McElderry*)*.

6. **Sitta canadensis**, *Linneé*. RED-BELLIED NUTHATCH. — No. 78, ♀ ad., May 9, 1878; No. 79, ♂ ad., May 9, 1878; No. 75, ♂ ad., 1878. Found in the mountains (*Wittich*). Abundant (*Henshaw*).

7. **Sitta pygmæa**, *Vigors*. PIGMY NUTHATCH. — No. 5, ad., 1875. Found in the pine-trees in the mountains, in company with the former (*Wittich*).

8. **Troglodytes domesticus parkmani**, *Audubon*. WESTERN HOUSE WREN. — A nest was found in a cavity in a mortise in the frame of a barn, May 25, 1878. The mortise was too deep and narrow to allow the bird to be taken off with the hand, and, in removing her with a stick, the mother fought so fiercely as to break part of the eggs; the residue being secured, together with the parent (*Wittich*).

NOTE. — The Rock Wren (*Salpinctes obsoletus*, Say) has been found at Klamath Lake, by Dr. J. S. Newberry.†

9. **Eremophila alpestris** var. ———? SHORE LARK; HORNED LARK.

* Lieutenant Wittich observed numbers of them while encamped in the Blue Mountains, Columbia Co., Washington Territory, in the winter of 1878-9. This species and the following, with the Mountain Chickadee, were very gentle; sometimes visiting the interior of the tents, and subsisting upon refuse from the soldiers' tables, and upon scraps of bacon placed upon trees for their use.

† Pacific Railroad Report, Vol. VI, Pt. IV, p. 80, 1859.

10. **Anthus ludovicianus** (*Gmelin*). AMERICAN TITLARK; PIPIT; BROWN LARK. — An exact duplicate of Eastern specimens.

11. **Dendroeca aestiva** (*Gmelin*). YELLOW WARBLER; SUMMER YELLOWBIRD. — No. 7, ♂ ad., June 15, 1875; No. 69, ♂ ad., May 13, 1878. "Numerous; found in the aspen-trees" (*Wittich*). Not differing from the Eastern bird.

12. **Dendroeca auduboni** (*Townsend*). AUDUBON'S WARBLER. — No. 8, ♂ ad., May 5, 1875; No. 9, ♂ ad., May 5, 1875; No. 71, ♂ ad., April 29, 1878. A common summer resident of the mountains (*Henshaw*).

13. **Geothlypis philadelphia macgillivrayi** (*Audubon*). MACGILLIVRAY'S WARBLER. — No. 10, ♀ ad., spring of 1875. A not uncommon summer resident (*Henshaw*).

14. **Myiodioides pusillus pileolatus**, *Ridgway*. WESTERN GREEN BLACK-CAPPED FLYCATCHING WARBLER. — No. 11, ♂ ad., April 25, 1875; No. 70, ♂ ad., April 29, 1878. These specimens are distinctly Ridgway's "var. *pileolatus*." They differ from Eastern specimens in being much brighter yellow beneath, scarcely tinged with olive on sides; frontal band and throat with a suffusion of orange; pile-ma with brighter steel-blue, metallic gloss. Numerous; found in the willows by Wood River (*Wittich*).

15. **Pyrranga ludoviciana** (*Wilson*). CRIMSON-HEADED TANAGER; LOUISIANA TANAGER. — No. 12, ♂ ad., June 15, 1875; No. 13, ♂ ad., spring of 1875. A not very abundant summer resident (*Wittich*).

16. **Hirundo erythrogastra horreorum**, *Barton*. BARN SWALLOW. — June 15, 1875 (*McElderry*). A summer resident (*Henshaw*).

17. **Tachycineta bicolor** (*Vieillot*). WHITE-BELLIED SWALLOW. — No. 14, ♂ ad., April 28, 1875. An abundant species (*Wittich*).

18. **Vireo solitarius cassini**, *Baird*. CASSIN'S VIREO. — Recorded at the hospital as "*V. plumbeus*." A common species (*Henshaw*).

19. **Carpodacus cassini**, *Baird*. CASSIN'S PURPLE FINCH. — No. 15, ♂ ad., May, 1875; No. 67, ♂ ad., June 4, 1878; No. 68, ♀ ad., May 4, 1878. Shot in the aspen-trees; craws full of seeds, soft and just beginning to sprout.

20. **Ægiothus linaria** (*Linnaé*). LESSER REDPOLL. — Found in the mountains, May 9, 1878. Craws filled with soft white seeds or buds (*Wittich*).

21. **Chrysomitris pinus** (*Wilson*). PINE FINCH; PINE LINNET. — May, 1875 (*McElderry*). Probably breeds in the mountains (*Henshaw*).

22. **Chrysomitris tristis** (*Linnaé*). AMERICAN GOLDFINCH; THISTLE-BIRD; YELLOWBIRD. — June, 1875 (*McElderry*).

23. **Passerculus savanna alaudinus**, *Bonaparte*. WESTERN SAVANNA SPARROW. — No. 16, *young in autumn*, 1875. Abundant summer resident (*Henshaw*).

24. **Poœcetes gramineus confinis**, *Baird*. WESTERN GRASS

FINCH. — No. 73, ad., May 7, 1878. A common summer resident (*Henshaw*).

25. *Melospiza fasciata fallax*, *Baird*. ROCKY MOUNTAIN SONG-SPARROW. — Summer resident (*Henshaw*).

26. *Junco oregonus* (*Townsend*). OREGON SNOWBIRD. — No. 18, ♂ ad., February, 1875; No. 19, ♂ ad., October 29, 1875. The Snowbirds are very abundant in winter. They come close to the quarters, feeding upon the ground beneath the pine-trees, where it is a pleasure to watch them. They are very gentle and familiar, allowing one to approach quite close before flying up into a tree (*Wittich*).

[As respecting their tameness, they thus appear to be unlike their Eastern cousins (*J. hyemalis*), which are very shy, timorous birds, flying off with a scared twitter whenever approached.]

Common summer residents of the mountains (*Henshaw*).

27. *Spizella socialis arizonæ*, *Coues*. WESTERN CHIPPING SPARROW. — June 9, 1875 (*McElderry*).

28. *Zonotrichia leucophrys* (*Forster*). WHITE-CROWNED SPARROW. — No. 20, ad., April 26, 1875; No. 77, ♂ ad., April 29, 1878. The specimens forwarded are typical *leucophrys*. Numerous at Klamath (*Wittich*). This species is probably totally distinct from either *Z. gambeli* or var. *intermedia*, and is found in its integrity throughout the breadth of this continent.

29. *Zonotrichia coronata* (*Pallas*). GOLDEN-CROWNED SPARROW. — No. 21, October 29, 1875. Common as a migrant (*Henshaw*).

30. *Passerella iliaca townsendi* (*Audubon*). TOWNSEND'S SPARROW. — No. 22, ad., 1875. A migrant (*Henshaw*).

31. *Cyanospiza amœna* (*Say*). LAZULI BUNTING; BLUE LINNET. — No. 23, ♂ ad., June 15, 1875. Summer resident. Sings exquisitely (*Wittich*).

32. *Pipilo maculatus megalonyx*, *Baird*. LONG-CLAWED TOWHEE. — October 5, 1875 (*McElderry*). Summer resident (*Henshaw*).

33. *Pipilo chlorurus* (*Townsend*). GREEN-TAILED TOWHEE; BLANDING'S FINCH. — No. 24, ad., May, 1875. Found in thickets near the river in summer.

34. *Agelæus phœniceus* (*Linne*). RED-AND-BUFF-SHOULDERED BLACKBIRD. — No. 25, ♂ ad., 1876; No. 66, ♂ ad., May 7, 1878; No. 84, ♀ ad., September 26, 1878.

34a. *Agelæus phœniceus gubernator* (*Wagler*). RED-AND-BLACK-SHOULDERED BLACKBIRD. — Lieutenant Wittich states that both varieties of this species are very abundant summer residents, nesting in great numbers in the tule.

35. *Xanthocephalus icterocephalus* (*Bonaparte*). YELLOW-HEADED BLACKBIRD. — No. 61, ♂ ad., May 13, 1878. Summer resident (*Wittich*).

36. *Sturnella neglecta*, *Audubon*. WESTERN MEADOW-LARK. —

No. 26, ♂ ad., 1876; No. 62, ♀ ad., May 27, 1878; No. 63, ♂ ad., May 27, 1878. Nos. 62 and 63 are the parents, procured with a set of four fresh eggs, three of which measure, respectively, $.86 \times 1.06$, $.85 \times 1.04$, $.87 \times 1.05$; giving an average of $.86 \times 1.05$. Lieutenant Wittich observes: "In dissecting the female, to observe the condition of the ovary, I noticed quite a large and unusual bulk in the after part of the body. Opening it carefully, I took out an egg, full-size, and nearly ready to be expelled. There was also one about half-size in the ovary, and others smaller (Wittich). Mrs. Wittich speaks of its song as remarkably fine, and generally uttered while it is perched upon some tall pole on the prairie. She mentions seeing a Meadow-Lark on November 12, 1878.

37. **Scolecophagus cyanocephalus** (Wagler). BLUE-HEADED GRACKLE; BREWER'S BLACKBIRD. — No. 27, ♂ ad., 1876. A permanent resident. Very numerous (Wittich).

Alluding to the immense numbers of these birds in autumn, Mrs. Wittich's observations are as follows: "September 26, 1878. The Blackbirds (Brewer's) are here in such numbers that one shot brought down twenty-eight and another thirty-six birds. They have been present in great numbers about six weeks, and every year they come in clouds about this time, though the species is resident. In early May, 1878, we spent a day in the Klamath Marsh. We saw numbers of both the Red-winged and Brewer's Blackbirds, but they were far less numerous than is now the case about the post. They settle in the grass, and, if disturbed, fly up in clouds; and as one set of them flies off, another body rises from the same spot, and another, and another, till one can hardly credit one's own eyesight. Then, when you reach the spot, the grass is still found to be swarming with them. They stay about the stables, or where the teamsters have camped, or at any place where they can find seeds. They cover our chicken-yard, and keep the trees in its vicinity black with their numbers. Some flocks are so shiny black that they look fairly blue in the sunlight, when upon the wing; others are rather rusty-looking."

38. **Corvus corax**, Linné. RAVEN. Resident (Henshaw).

39. **Corvus americanus** (Audubon). COMMON CROW. No. 28, ad., 1875; No. 83, ♂ ad., May 5, 1878. The above specimens differ considerably from Eastern specimens of the Crow. Rarely seen in this region (Wittich).

Dr. J. S. Newberry remarks: "In the Klamath Basin we did not see it, but it appeared again with the oaks on the Des Chutes River."* Lieutenant Wittich characterizes it as excessively shy.

* Pacific Railroad Report, Vol. VI, Pt. IV, p. 82, 1857.

(To be concluded.)

Recent Literature.

BELDING AND RIDGWAY'S BIRDS OF CENTRAL CALIFORNIA.* — In this Bulletin for April, 1878 (Vol. III, pp. 64–68), is a short report on forty-seven species of California birds, by Mr. Ridgway, based on specimens forwarded to the National Museum by Mr. Belding. The present paper continues the subject, and forms a most important contribution to Californian ornithology. It is based, Mr. Ridgway tells us, “upon observations extending through about twenty years’ residence in California, and upon collections made chiefly during the last two years, which have, from time to time, been forwarded by Mr. Belding to the National Museum.” These collections embrace about 180 species, exclusive of races, and six hundred specimens. Notes on about forty other species are added, raising the whole number of species treated in the list to 220. These are quite fully annotated from Mr. Belding’s field notes, while many important technical observations are added by Mr. Ridgway, who is responsible for the identification of the species and the nomenclature adopted. Preceding the list proper is a short account of the several localities at which the collections were made, with tabular lists of the birds observed at each of the more important ones.

The number of species, exclusive of the wading and swimming birds, is 158. An analysis of these, from a geographical stand-point, gives the following interesting generalizations:—(1) About one half of the species are strictly Western, not being found east of the Middle Province. The others are species having what may be termed a continental range; but (2) of these, thirty, or rather more than one third, are exclusively represented on the Pacific Coast by Western varieties or subspecies (in several cases by more than a single variety), while (3) the remainder, constituting about one third of the whole number, represent typically the Eastern stock, but in several instances are also accompanied by strictly Western races. In reference to the large number of Western species, it may be stated that *Geothlypis macgillivrayi*, *Zonotrichia intermedia*, *Sturnella neglecta*, *Pica nuttalli*, *Contopus richardsoni*, and *Empidonax difficilis* are accorded full specific rank, while *Sphyrapicus ruber* and *Colaptes mexicanus* are treated as subspecies.

As on previous recent occasions, Mr. Ridgway here adopts (and we believe consistently) *guttata* and *ustulatus* in place respectively of the more familiar names *pallasi* and *swainsoni* for two species of *Turdus*, and

* A Partial List of the Birds of Central California. By L. Belding of Stockton. Edited by R. Ridgway. Proc. U. S. Nat. Mus., Vol. I, pp. 388–449. April, 1879.

sandrichensis and *fasciata* in place of *savanna* and *melodia*, respectively, for the Savanna and Song Sparrows. He also seems to have permanently adopted the generic name *Asio* for *Otus*, but to have abandoned *Nisus* for *Accipiter*.

In respect to the designation of incipient species, Mr. Ridgway uniformly adopts the system advocated by him in his paper on the use of trinomials in zoological nomenclature in the present number of the Bulletin (*antè*, pp. 129-134), and practically introduced by him two years since in his Report on the "Ornithology of the Fortieth Parallel," and in his account of Mrs. Maxwell's Colorado collection (Field and Forest, Vol. II, p. 194 et seq.). Mr. Ridgway, in his discussion of a third term in zoological nomenclature, raises no dead issue, although the necessities of the case have already practically forced a decision of the question, so far as this country is concerned. The "American school" of ornithology, and, we may add, nearly all American writers on vertebrate zoology, and some on Invertebrates, is a unit on the matter of the general principle involved, though varying slightly as to details of expression. The necessity of a distinction between forms trenchantly defined and those which are conspicuously unlike in their extreme phases of development, but which obviously intergrade, as insisted on by Mr. Ridgway, faithfully reflects, we believe, the feeling and the experience of American ornithologists. The writer of the present review in 1871 opposed* the recognition by binomial names of forms known to intergrade, on the ground that thereby the facts of the case would fail of proper recognition, since no distinction would thus be made between intergrading forms and trenchantly separated congeneric species, and that a recognition of the laws of geographical variation and a statement of the phases wide-ranging species are prone to manifest at particular localities, and under certain climatic conditions of environment, would sufficiently meet all requirements. This position, however, he very soon abandoned, and in the following year formally recognized, by a third term, a considerable number of intergrading forms among North American birds as geographical races, as was almost simultaneously done by Dr. Cones and Mr. Ridgway.† To Dr. Cones, however, is due the credit of suggesting, if not indeed of actually advocating, the adoption of a trinomial system of nomenclature as necessary to a proper recognition of geographical races or incipient species. In referring, as early as August, 1871, to what seemed to him must be the evil results that would follow from recognizing as species only such

* Bull. Mus. Comp. Zool., Vol. II, pp. 242-250, April, 1871.

† See Cones, Revision of the Species of *Myiarchus*, Proc. Acad. Nat. Sci. Phil., 1872, pp. 56-81, July, 1872; Allen, Ornith. Recon., Bull. Mus. Comp. Zool., III, No. 6, July, 1872; Cones, Key N. Am. Birds, October, 1872; Ridgway, Relation between Color and Geographical Distribution in Birds, etc., Am. Jour. Sci., IV, pp. 454-460, December, 1872.

forms as were not known to intergrade, he says: "To our mind, this forcibly illustrates the inefficiency of the Linnæan nomenclature as an adequate method of formulating our knowledge. It answered when a thing was either square or else it was round, — when species were held for fixed facts as separate creations; but now that we know a thing may be neither square nor round, but something between, it is lamentably defective. Not many years hence we trust naturalists will have discarded it for some better method of notation; and then the wonder will be that we advanced so far with such a stumbling-block in the way. Who shall say how much the advance of chemistry, for instance, or of philosophic anatomy, has been facilitated, or indeed rendered possible, by the invention of expressive symbols and apt formulas, or how much of the acknowledged confusion in zoölogy and botany flows from our cramped method of expressing our views? If we must continue to use a tool so blunt and unhandy as the binomial nomenclature, all cannot be expected to use it with equal skill and effect." In the same connection, in referring to the importance of "recognizing geographical and some other differentiations by name," he adds, "Not necessarily a specific name, but some one additional word, with or without the sign 'var.,' that shall stamp the form we wish to signalize. Perhaps this would be a judicious middle course, most applicable to the present state of the science."* In less than a year from this time a trinomial system was adopted, with the compromise of the sign "var." interposed between the specific and varietal names, by the three writers above named, by at least one of whom the necessity of such a procedure was formally argued. But even much earlier than this "varieties" had more or less frequently been recognized by writers on American birds, even in the sense of geographical forms (notably by Professor Baird, 1858 to 1866) but probably not in the sense of incipient species, in which they were now avowedly recognized. From this date (1872) the practice became general, as is witnessed by almost every work or faunal list relating to the birds of the western half of the continent that has since appeared. In 1876, in referring to the changes in the nomenclature of North American ornithology that had marked the few years immediately preceding that date, the present writer thus referred to the subject of trinomials: "The next step, and apparently a wholly logical one in the revolution, will doubtless be the general adoption of a trinomial system of nomenclature for the more convenient expression of the relationship of what are conventionally termed 'subspecies,' so that we may write, for instance, *Falco communis anatum* in place of the more cumbersome *Falco communis* subsp. *anatum*. This system is already, in fact, to some extent in use here, though looked upon with strong disfavor by our Transatlantic fellow-workers, who seem as yet not fully to understand the nature of the recent rapid advance ornithology has made in

* Amer. Nat., Vol. V, p. 373, and foot-note to p. 371.

this country, or to appreciate the thoroughly substantial character of the evidence on which it is based."* Mr. Ridgway, in fact, had the preceding year (1875) † adopted a purely trinomial system for the designation of local or intergrading forms, superseding it, however, and as we believe unwisely, two years later, by interposing Greek letters between specific and varietal names, the reason for which he appears to have now for the first time made public.

The necessity of trinomials being granted, there still seems to us no reason why the triple name should be rendered needlessly cumbersome by the virtual interposition of a fourth term, as "var.," "subsp.," a Greek letter, or other arbitrary sign, between the specific and varietal names. If anything is to be thus interposed, the designation "var." seems to be the least objectionable, being shorter than "subsp." and less open to complication than any system of arbitrary signs, "var." being of course thus used in a purely technical, and not in the usual "dictionary" sense of the word "variety," just as "family," in its technical use in zoölogy, has come to have special significance. As Mr. Ridgway observes, the sooner an agreement is reached respecting the method of writing trinomials, the better, and why has not simplicity here great merit? There must, in the nature of the case, always be diversity of opinion as to how slight a variation should be entitled to nominal recognition; in a polymorphic species, for example, like *Melospiza fasciata*, the number of namable geographical races may vary, let us say, from three to half a dozen, in accordance with the views or predilections of different writers, or of the same writer at different times, in which case is it probable that the γ or δ of A will be the γ or δ of B or C? To cite a case already in hand, *Melospiza fasciata*, γ of Ridgway, 1877, is *fallax*, while *Melospiza fasciata*, γ of Ridgway, 1879, is *guttata*, and *fallax* is now " δ *fallax*." The use of the Greek characters by the early systematists, as Linné, Erxleben, Gmelin, etc., being simply a system of numeration, and relating, in nearly nine cases out of ten, to forms of an albinistic or melanistic character, or resulting from domestication or hybridization, seems to have little force as a precedent bearing upon the matter of trinomials as a designation for geographical races or incipient species.

As already stated, Mr. Ridgway was the first to adopt the system of pure trinomials, and we regret to note his divergence therefrom,—especially since they have been since systematically used by Coues in his "Birds of the Colorado Valley," as well as in some of his earlier and contemporaneous papers on birds and mammals, and also by Brewster and other writers, in this Bulletin and elsewhere, and since, furthermore, each month shows a growing tendency to its uniform adoption by American

* Progress of Orn. in the United States, etc., Am. Nat., Vol. X, p. 550, September, 1876.

† Proc. Essex Institute, Vols. VI and VIII (separates dated March, 1875).

ornithologists. In response to Mr. Ridgway's call for an expression of opinion on the subject of trinomials, we have taken this occasion to present freely our own view of the case, — for whatever it may be worth. — J. A. A.

[In reply to Mr. Ridgway's request for the views of other ornithologists, we may state that we are more than ever satisfied of the expediency of using trinomials; and we coincide with Mr. Allen's view that they had better be written "pure and simple." In evidence that we practice what we preach, we refer to the "Birds of the Colorado Valley," and other writings or editings of ours of the past two or three years. We wish that all contributors to this Bulletin would adopt this rule. — E. C.]

CORY ON THE BIRDS OF THE MAGDALEN ISLANDS.* — In a sumptuous little quarto Mr. C. B. Cory has given an account of a summer trip to the Magdalen Islands, in the Gulf of St. Lawrence, undertaken, as he tells us, primarily for ornithological purposes. Part I consists of a general account of the Islands, more especially of the Bird Rocks, the record of a day's sporting on Grindstone Island, and directions how to reach the Magdalen group, etc. Part II gives a list of one hundred and nine species observed or taken by the author, and fifteen others that he believes may be found there at other seasons of the year. The annotations relate mainly to the habits and relative abundance of the species. Especially noteworthy is the occurrence of the Piping Plover (*Aegialitis meloda circumcineta*), which is stated to be an "abundant species." The specimens brought home by Mr. Cory not only affirm its occurrence there, but represent typically the so-called *circumcineta*. Less satisfactory is the record of the Catbird (*Mimus carolinensis*), which is included "with hesitation," and on Mr. Cory's having heard what he "believed to be its peculiar cry." As the Magdalen Islands are far beyond its known or probable range, perhaps it may not be unjust to suggest that stronger evidence may be requisite before it can be properly allowed a place in the fauna of these Islands. Most of the species of the list, it may be stated, are given only on the basis of actual capture. — J. A. A.

ROOSEVELT'S NOTES ON SOME OF THE BIRDS OF OYSTER BAY, LONG ISLAND.—This is a brochure of a single leaf, containing notes on seventeen species, observed at the above-named locality, by Mr. Theodore Roosevelt. The date of publication is "March, 1879." Several of the species are given as rare to the locality, while the observations respecting others are of interest. — J. A. A.

* A Naturalist in the Magdalen Islands; giving a Description of the Islands, and List of the Birds taken there, with other Ornithological Notes. By Charles B. Cory. Illustrated from Sketches by the Author. Boston, 1878. Small 4to. Part II, Catalogue of Birds taken or observed in the Magdalen Islands, with Notes regarding those found breeding, etc., etc. pp. 33-83.

INGERSOLL'S NESTS AND EGGS OF AMERICAN BIRDS. — Part I of Mr. Ingersoll's long-promised work on North American oölogy,* which is now before us, treats of ten species of Thrushes, and gives illustrations of their eggs. The text includes, not only descriptions of the nests and eggs of the species treated, but a full and pleasantly written account of their habits and breeding range. The author shows himself thoroughly familiar with the literature of the subject, and his quotations respecting the species he has not himself had opportunity of studying in the field are in the main selected with commendable judgment. For a popular work on American birds, Mr. Ingersoll could not have chosen a more attractive department of the subject, or one of greater interest to the mass of bird-lovers, and especially to juvenile collectors, whose interest in ornithology begins so frequently with the formation of an egg-cabinet. The text of the Part before us gives promise that the subject will be creditably handled. We wish that we could speak in terms of equal commendation of the chromolithographic plates, which are sadly defective in point of faithfulness to nature and in artistic execution. We understand, however, that better results may be expected in future numbers.

The work is announced to appear in monthly parts, the whole to form probably three volumes of twelve parts each. The work is printed on heavy tinted paper, and in point of typography is everything that need be desired. The nomenclature and arrangement are apparently strictly that of Dr. Cones's "Check-List," the eggs being perhaps numbered to correspond with the "Check-List"; but as there is no direct reference in the text to the figures, some explanation in this regard would have been acceptable, or, better still, the names of the species illustrated might have been placed at the bottom of the plates, in place of the needless legend there borne. — J. A. A.

A REVISED LIST OF BIRDS OF CENTRAL NEW YORK.† — This is the title of a very neatly gotten-up pamphlet of forty-seven pages, "collated and prepared for publication by Frank R. Rathbun." The original "Rathbun-Fowler List" was published in the "Auburn Daily Advertiser" of August 14, 1877, and has twice been noticed in this Bulletin (Vol. III, No. 1, p. 35; and No. 2, p. 85). It was in part a reprint of a list published by Mr. H. Gilbert Fowler in "Forest and

* Nests and Eggs of American Birds. By Ernest Ingersoll. S. E. Cassino, Naturalists' Agency, Salem, Mass. (No date.) Large Svo. Pt. I, pp. 1 - 24. Pl. i, ii. March, 1879.

† A Revised List of Birds of Central New York. Based on the Observations of Frank R. Rathbun, H. Gilbert Fowler, Frank S. Wright, Samuel F. Rathbun, in the Counties of Cayuga, Onondaga, Seneca, Wayne, and Yates. Collated and prepared for Publication by Frank R. Rathbun. Auburn, N. Y.: Daily Advertiser and Weekly Journal Book and Job Printing House. April 17, 1879.

Stream" in 1876 (Vols VI and VII), and in reviewing it for this Bulletin Mr. Allen wrote: "The list bears evidence of trustworthiness, and we would gladly see it reproduced in a more permanent and accessible form." Hence we take especial pleasure in announcing the appearance of the present "Revised List," in pamphlet form. The title-page is very pretty and attractive, and, aside from the names of Messrs. F. R. Rathbun and H. G. Fowler, contains those of Frank S. Wright and Samuel F. Rathbun, constituting "The Ornithological Four" on whose observations it is chiefly based. Several other collectors, to whom due credit is given, have furnished notes which render the list more complete and reliable. To the brief prefatory remarks are appended two foot-notes, the second of which is a letter from Dr. Coues, to whom the MSS. were submitted. The Doctor writes: "The evident care which the authors have taken to avoid error, by basing the article entirely upon original observations, and by excluding all doubtful matter, confers that very high rate of reliability which will doubtless make this List the leading authority upon the Ornithology of Central New York." That this high praise is not undeserved, a glance at the list will show, but we confess it would have looked better in a review than in the paper itself. The "Rathbun-Fowler List" treated of three counties (Cayuga, Seneca, and Wayne), while in the present "Revised List" this territory is increased by the addition of Onondaga and Yates counties. The paper is unusually free from typographical errors, though the following escaped the author's detection: *Sitta carolinensis*, *Siurus aurocapillus*, and *Chrysonitris tristis*. On page 17 we are sorry to see "*Lanius ludovicianus excubitoroides*," but are glad to notice that it is the only place where trinomial nomenclature has crept into this paper. In several other cases, however, the tendency to atavism is more marked, as manifested by "*Troglodytes domesticus*, (Bartr.) Coues," "*Corvus frugivorus*, Bartr.," "*Buteo aquilinus*, (Barton.) Coues," etc.

The original list, as published in the "Auburn Daily Advertiser" (August 14, 1877) contained 191 species, while in the present "Revised List" are enumerated 236, showing an addition of 46 species, for *Querquedula cyanoptera* (a most unlikely straggler), which was included in the original list, is not mentioned in the present paper. The 46 additions are: *Turdus swainsoni* var. *alicia*, *Helminthophaga peregrina*, *Oporornis agilis*, *Myiodioides nitratus*, *Stelgidopteryx serripennis*, *Vireo philadelphicus*, *Lanius borealis*, *Passerculus sacanna*, *Melospiza palustris*, *Spizella pusilla*, *Corvus corax*, *Empidonax acadicus*, *E. trailli*, *E. minimus*, *Brachyotus palustris*, *Accipiter fuscus*, *Falco communis*, *Buteo lineatus*, *Ægialitis meloda*, *Steganopus wilsoni*, *Macrorhamphus griseus*, *Ereunetes pusillus*, *Tringa maculata*, *T. maritima*, *T. alpina*, var. *americana*, *Calidris arenaria*, *Limosa fedoa*, *Totanus semipalmatus*, *Tringoides macularius*, *Actiturus bartramius*, *Numenius longirostris*, *N. hudsonicus*, *Rallus virginianus*, *Porzana carolina*, *Branta bernicla*, *Mareca americana*, *Sputula clypeata*, *Fuligula affinis*, *F. collaris*, *Somateria spectabilis*, *Graculus carbo*, *G. dilophus*, *Larus*

delawarensis, *L. tridactylus*, *Colymbus septentrionalis*, and *Podiceps cornutus*. It is surprising that such species as *Lanius borealis*, *Passerculus savanna*, *Melospiza palustris*, *Spizella pusilla*, *Accipiter fuscus*, *Buteo lineatus*, *Tringoides macularius*, and *Porzana carolina* should have escaped notice in the first list.

That the present paper has undergone thorough and careful revision, as well as increase in size by the addition of new species, is evidenced by the different nature of the remarks under certain species. For example, in the "Rathbun-Fowler List," *Polioptila carulea* is said to be "Irregular as to numbers, but never rare. Perhaps it breeds. Arrives from the south in May." And *Dendroica striata* is given as "a very rare migrant." In the present paper we find under the head of *P. carulea*: "Rare. One taken near Penn Yan, N. Y. No date given. Gilbert." And under *D. striata*: "Common. Arrives the third week in May, and leaves the last of September." Such radical changes as these show that Mr. Rathbun has critically re-examined the evidence on which his former statements were based, and has spared no pains to render the "Revised List" thoroughly reliable and trustworthy in every respect.

One point illustrates well the great value of giving exact data in the place of conclusions drawn therefrom. In the old list, *Anthus ludovicianus* was stated to be, "Not a rare spring and autumn migrant; a few remain and breed." In regard to this statement Mr. Allen writes, "We know not as yet on what evidence the record of so improbable an occurrence is made, but would suggest that it certainly needs strong backing, the locality being climatically and topographically so wholly unlike that usually chosen by this exceedingly boreal species as its breeding station." (Bull. Nutt. Ornith. Club, Vol. III. No. 1, p. 35, Jan., 1878.) Hence it is with peculiar interest that we read the following remarks, in the "Revised List," upon the species now under consideration: "A common migrant. Seen May 14, 1878. Departs the last of October. (Observed in the breeding season, May 18th, Gilbert.)" Now the publication of this date ("May 18") throws a flood of light upon the whole matter, clears it up, and explains the breeding statement in a most satisfactory manner. A bird which is known to breed on the cold and barren rocky shores of Labrador and the Arctic regions would naturally be expected to pass us, on its northward journey, long before the warm sun and advance of vegetation had caused the greater part of our summer residents to commence nesting; but this is not the case with the present species. The Titlark seems in no hurry to reach its bleak and desolate Arctic home, but loiters slowly along to enjoy the spring sunshine and verdure of the districts over which it passes. During the spring migration they usually pass through Lewis County, N. Y., about the middle of May, and last season (1878) I shot two as late as May 21st; hence it is not at all surprising that Mr. Gilbert should have found it at Penn Yan, May 18. The occurrence of the following species (many of them breeding) in Central New York is worthy of note from its

bearing on the interesting and somewhat complex subject of the distribution of species within this State. Several of them, of course, must be regarded as stragglers: *Poliophtila carulea*, *Eremophila alpestris*, *Helminthophaga pinus*, *H. chrysoptera*, *Dendroica carulea*, *Icteria virens*, *Mjiodiactes nigratus*, *Stelgidopteryx serripennis*, *Virco noveboracensis*, *Lanius ludovicianus* var. *excubitoroides*, *Coturniculus passerinus*, *Pipilo erythrophthalmus*, *Icterus spurius*, *Empidonax acadicus*, *Centurus carolinus*, *Strix flammea* var. *americana*, *Zenaidura carolinensis*, *Ægialitis wilsonia*, *Nyctiulea grisea* var. *narriva*, *Ardeetta exilis*, *Gallinula galeata*, *Somateria mollissima*, *S. spectabilis*, *Graculus carbo*, *Larus tridactylus*, *Sterna dougalli*, and *S. fuliginosa*. It is interesting to note that the last-mentioned bird was killed ("September 20, 1876") about the same time that nine individuals of the same species were taken in Southern New England.*

In conclusion, it is but just to say that "The Ornithological Four" have, in their "Revised List of Birds of Central New York," not only done themselves great credit, but have also made a contribution to our science which must long remain authority concerning the region of which it treats. I consider it the best list of the birds of any part of this State that has appeared for many years. — C. H. M.

HALLOCK'S SPORTSMAN'S GAZETTEER. — Mr. Charles Hallock, the author of several books on field sports, and the editor and founder of "Forest and Stream," the well-known sportsman's journal, has just issued a fifth edition of his "Sportsman's Gazetteer and General Guide." This book has become a recognized authority on all subjects of which it treats, having been already republished in England, France, and Germany. The naturalist, as well as the sportsman, may find in it convenient directions for reaching desirable localities for the prosecution of his field work. The ornithological portions were, we believe, prepared by Mr. George B. Grinnell. — J. A. A.

CONES'S BIBLIOGRAPHY OF ORNITHOLOGY. — In the January number of the present volume of the Bulletin (pp. 54-57), in reviewing Dr. Cones's "Birds of the Colorado Valley," we referred in terms of high praise to the "Bibliographical Appendix" of that work, comprising a "List of Faunal Publications relating to North American Ornithology." This, as was then stated, forms only the North American section of the "Faunal Publications" series of a general "Bibliography of Ornithology," upon the preparation of which Dr. Cones is well known to have been for a long time engaged. That our unreserved commendation of the work was well merited is evinced by the subjoined "Memorial," signed by the leading

* Merriam, Birds of Connecticut, p. 134, 1877; and Allen, List of Birds of Massachusetts, p. 30, 1878.

zoölogists of England, and addressed to Dr. Coues as a testimonial not only to the value and importance of the work he has undertaken, but of their appreciation of the thoroughness of its execution, and of his fitness for the gigantic task he has undertaken. Besides being one of the finest compliments ever paid to an American scientist, it is an appeal to the "powers that be" for a recognition from our government of the importance of the work Dr. Coues is doing for the science of ornithology, with the hope that he may be afforded every necessary facility for the completion of the work under the most favorable circumstances. Furthermore, it is agreeable and conclusive proof that English naturalists are ever prompt to recognize American ones, and to extend to them a friendly, helping hand; and on this account cannot fail to be a gratification to American naturalists in general, as well as to American ornithologists.

In heartily seconding this appeal to the Surgeon-General of the United States Army, and to our government, we feel that we merely reflect the sentiment of all American ornithologists, as we but echo that of the memorialists, when we say that, aside from the great boon the completion of the work would confer upon working ornithologists the world over, it would redound greatly to the credit of our government, which has already an enviable reputation for the aid it has given science, if it could be completed under its auspices, since without its aid the completion of the work cannot probably be soon accomplished. — J. A. A.

“Memorial.

“TO ELLIOTT COUES, ESQUIRE, ASSISTANT SURGEON, UNITED STATES' ARMY.

“We, the undersigned, beg leave to express our high appreciation of the ‘Bibliographical Appendix’ to your work, ‘Birds of the Colorado Valley,’ being No. 11 of the Miscellaneous Publications of the United States Geological Survey of the Territories, under the charge of Dr. Hayden. And at the same time we wish to place on record our gratitude to that gentleman, and to the authorities of the Department to which you are attached, for the liberality they have shown in granting you permission to stay at Washington for the completion of this and other important works upon which you have now been so long and so usefully engaged.

“The want of indexes to the ever increasing mass of Zoological literature has long been felt by all workers in every department of that science; but the enormous labor of compilation has hitherto deterred many from undertaking a task so appalling. It is with no small satisfaction that we recognize your readiness to devote yourself to work of this nature. Moreover, we feel justified in hoping that should the instalment now published in the volume above named be enlarged in a similar manner so as to include a complete Bibliography of Ornithology, this branch of science will possess an index to its writings perhaps more complete as to its scope and contents than any kindred subject of similar extent.

“An undertaking of this sort is beset with formidable difficulties; not only is its extent enormous, and the works relating to the subject are widely scattered through many libraries, public and private; but the qualifications of a good bibliographer are not easily to be found united in one person. His application and industry must be untiring, and he must be thoroughly conversant with the art of Bibliography. In addition to these requirements, in a case like the present, an equally thorough knowledge of the subject under consideration is indispensable. You happily combine all these qualifications; your industry has long been approved, your knowledge of books is evident from what you have now put before us, your knowledge of Ornithology has long been known to us. We can well believe that the libraries of your own country are better stored than any others with works relating to the Ornithology of North America, and that therefore the ‘List of Faunal Publications relating to North American Ornithology’ could be nowhere better prepared than in Washington; but when the ornithological literature of the whole world has to be examined, it seems to us almost indispensable that the older libraries of Europe, and especially of England, France, Italy, Germany and Holland, should be consulted, if one of the chief merits of your work is to be maintained, viz:—the consultation at first hand by yourself of every work mentioned therein.

“This brings us to one of the chief objects of this memorial, which is to express our sincere hope that time and means will be found you to prosecute in Europe the great undertaking you have commenced so well, and bring it to a successful conclusion. Should the authorities who preside over the Department to which you belong—and especially the Surgeon-General of the United States Army—who have hitherto so liberally granted you facilities for the scientific work you have performed, be disposed to furnish you with these means of perfecting your undertaking, we are convinced that it will reflect great credit to them and the country to which you belong. We on our part, so far as England is concerned, are ready not only to welcome a brother Ornithologist, but also to render you every assistance in our power.

“[Signed.] W. H. FLOWER, *F.R.S.*, &c., *President of the Zoological Society of London.*

T. H. HUXLEY, *Sec. R. S.*

CHARLES DARWIN, *F.R.S.*

ST. GEO. MIVART, *F.R.S.*, *Sec. L. S.*

ALFRED R. WALLACE.

A. GUENTHER, *F.R.S.*, *Keeper of the Department of Zoology, British Museum.*

PHILIP LUTLEY SCLATER, *M.A., Ph. Dr., F.R.S.*, *Secretary to the Zoological Society of London.*

ALFRED NEWTON, *F.R.S.*, *V.P.Z.S.*, *Professor of Zoology in the University of Cambridge.*

- H. B. TRISTRAM, *F.R.S.*
 OSBERT SALVIN, *M.A., F.R.S., Editor of 'The Ibis.'*
 F. DU CADE GODMAN, *Secretary of the British Ornithologists' Union.*
 HENRY SEEBOHM.
 EDWARD R. ALSTON.
 R. BOWDLER SHARPE, *British Museum.*
 H. E. DRESSER.
 J. E. HARTING, *F.L.S., Editor of 'The Zoologist.'*
 A. H. GODWIN-AUSTEN, *Lt.-Colonel.*
 W. H. HUDLESTON.
 E. W. H. HOLDSWORTH.
 J. H. GURNEY, *President of the Norwich Museum,*
 H. J. ELWES.
 JOHN VAN VOORST.
 WILLIAM BOWER.
 J. CORDEAUX.
 W. B. TEGETMEIER.
 CHARLES W. SHEPHERD.
 C. BYGRAVE WHARTON.
 CHARLES A. WRIGHT, *F.L.S.*
 L. HOWARD IRBY.
 G. E. SHELLEY.
 HENRY T. WHARTON, *M.A. Oxon.*
 H. W. FEILDEN, *late Naturalist Arctic Exp. 1875-76.*
 H. S. MARKS, *R.A.*
 A. H. GARROD, *N.A., F.R.S., Prosector to the Zoological Society.*
 W. K. PARKER, *F.R.S., F.Z.S., &c.*
 JOHN GOULD, *F.R.S., &c.*
 HY. STEVENSON, *F.L.S., Hon. Secretary Norwich Museum.*
 HOWARD SAUNDERS."

General Notes.

ODD BEHAVIOR OF A ROBIN AND A YELLOW WARBLER. — Newspaper ornithology is generally worthy of little attention, but an article entitled "A Robin's Persistency," published in the "Daily Times" of Watertown, N. Y., in the issue of May 24 of this year, comes to me with private indorsements of such a thoroughly trustworthy character, and the incident related is so strange, that it seems worth while to give the

matter a record in the Bulletin as a contribution to bird psychology. "We often hear," says the writer, "of one-idea people, and the sensations they produce. A one-idea bird, however, is something of a novelty. One of the windows of a house in Clinton Street is at present haunted by such a bird in the shape of a Robin. On the morning of May 21st it made its *début* from the window-sill. From the first this has been its mode of procedure. It alights on the window-ledge, taps vigorously on the pane, then flies up and down very rapidly about three or four times. Then it pauses a moment, steps over to the next pane, and repeats the operation. It has never been observed to tap or fly upon the third pane. After tapping or flapping industriously for half an hour or so, it descends to the ground or garden near by, makes a short repast of a bug or worm, returns again to the window-ledge and goes through with the same process. It begins its operations early in the morning, and continues until the shadows of evening begin to fall. Nothing so far seems to have seriously interrupted its movements. It flies away when the white shade is drawn down, but returns again, walks back and forward across the ledge, and peers in at the narrow, uncovered space below the bottom of the shade. It never taps or flutters against the window when the shade is drawn. It simply looks about, flies away, and returns again, until it finds the shade raised. It then repeats its beatings and fluttering as before. If, however, the outside blinds are closed, it appears quite frantic. It flies at them, and if it can gain a foothold anywhere, it thrusts its beak between the shutters and pecks violently at the window until tired out, then it retires and waits until they are opened again. It does not seem to be especially shy or tame. It flies off at the too near approach of a person, cat, or lawnmower. It returns again as soon as they remove a short distance away. Thus has it performed for three days, and shows no signs of giving up.

"Its curious persistency has attracted much attention, and called forth various remarks. One laughingly says, it must be an evil spirit in bird form. Others are inclined to regard it as an 'ominous bird.' One man, after watching it for some time, remarked that it saw its shadow in the window and mistook it for a lost mate. This seems probable, for on investigation it was found that the window, being relieved by a dark background, reflected images almost as distinctly as a mirror. It was further observed that the wall of the opposite house, with its abundance of vivid green foliage, was remarkably well defined, making a bright reflected picture, especially in the space covered by the two panes of glass to which the bird seemed to limit its attentions. Besides, it seemed entirely alone, and the supposition is, that, in searching for its mate, which may have disappeared in some mysterious way, it happened to see its own solitary image in the glass, and straightway imagined it had found its lost one, and is earnestly endeavoring to woo it back again. The present appearances are that it has gone quite daft with sorrow, and will exhaust itself with its wild beatings and flutterings."

A letter by the writer of the above to a friend continues the history as follows:—

"I have postponed my visit to — — for a few days; and for a reason which perhaps no one but an ornithologist would be likely to appreciate. I am detained by a *Robin*, and though its visits are paid at a neighbor's window, still I am fascinated. Its first *three days'* visit is described as accurately as my mother tongue would enable me to do in the enclosed paragraph published in our daily of yesterday. It still persists. The shade was left up last night, and when I awoke this morning, soon after daybreak, it was knocking loudly at the chosen window. Our home is quite near, and when my window, which is nearly opposite, is open, I hear it very plainly. It continued with but slight interruptions until about eight o'clock, when the lady of the house opened the window. It then flew down, but even now it is hopping about in the grass near by as though watching for the window to close. I have never made ornithology a study, but this seems to me a very uncommon proceeding. If you know any ornithologist to whom you think it would be interesting, please impart." Later information states that the same proceedings continued until the writer of the above left town, — nine days in all; but that on the ninth day the tappings were more feeble, and were not continued later than 7 A. M., after which time the bird was not seen that day.

As these sheets are passing through the press, a male Yellow Warbler (*Dendroica aestiva*) is behaving in a quite similar manner at my own house. For several weeks the bird has been in the habit of frequently visiting a grape-vine trellis in front of a window of the dining-room, from which he has been accustomed to sing, wholly undisturbed by the people or the proceedings within the room. Although the trellis has been a favorite resort for the bird, his behavior was not especially noteworthy till June 7, when he began to persistently fly against the window-panes, often striking them with considerable violence.

The trellis stands about eighteen inches from the window, and the portion immediately in front of it is nearly bare, and consists of two horizontal bars, about three feet apart. These form his perch, from which he usually makes his dive at the window. Immediately in front of the window is an open field with a group of five large apple-trees, all within twenty to fifty feet of the house. These, with the trellis and portions of the grape-vine it supports are vividly mirrored in the window, as well as the general landscape, and of course the bird himself whenever he visits the trellis. But his own reflection does not seem to be the point of attraction, as he *usually* strikes the pane two or three feet above the point opposite his perch, but sometimes dives down from the upper bar of the trellis to the lower panes of the window. Occasionally he flies directly from the apple-trees against the window, but generally first alights on the bars of the trellis. For several days his visits have begun with early day-break, and have been continued throughout the day till after sunset, he

rarely leaving the window for more than a few minutes at a time. He sings almost constantly. I have seen him strike the window-panes as many as ten times in a minute, barely pausing on the trellis between each plunge long enough to utter with much energy his shrill little song. These proceedings he will sometimes repeat for several minutes, then fly to the trees and return again a minute or two later, usually with a canker-worm in his beak obtained from the apple-trees. This he usually bruises on the trellis-bar and swallows at once before diving at the window, but not unfrequently makes several plunges at the window with the worm in his beak. He strikes the window-pane with such force that the clicking of his bill and feet against the glass may be heard to a considerable distance. He usually strikes the large pane a foot or two from the top, fluttering upward to the top, when he returns to his perch. The upper panes receive the chief part of his attention, but he not unfrequently descends to the lower ones, which he follows upward in the same manner to the top of the lower sash. He takes little notice of people standing quietly before the window, and will often strike the pane within six inches of the observer's face.

If the upper sash be lowered a few inches he will often, after flying against the glass, perch on the top of the open window, peer into the room, utter his song, hop to the trellis, and immediately repeat the operation. I once drew the upper sash half-way down, so as to give him free access to the room. At first he would strike the glass as usual, and then perch on the sash. I left the room for an hour, and on returning found him a prisoner between the sashes, he having evidently in the mean time entered the room, and in trying to make his exit had fluttered down between the sashes, where he had obviously been struggling for some minutes. I freed him, and presumed that this experience would serve to cure him of his strange infatuation for the window. This was on the evening of the first day, but he returned early the next morning to the window, flying against it with unabated persistency. This has continued for three days, and the window seems to have lost none of its charm for him.

In other respects he seems a perfectly sane bird; he has a mate and a nest in one of the neighboring apple-trees, and when it is approached he leaves the window and flies about the intruder with manifestations of extreme solicitude. He is also quite vigilant in driving away other small birds that venture too near his home. Whether he mistakes his own reflection in the window for a rival, or what the charm is, is not obvious, as his behavior in all other respects is apparently entirely natural. As already stated, he almost invariably strikes the window-pane at a point either considerably above or below his perch on the trellis, so that evidently he does not aim at his own reflection in the window.—J. A. ALLEN, *Cambridge, Mass.*

P. S. — His visits to the window became less frequent on the fourth day, but were continued with considerable frequency for about ten or twelve

days, when the bird wholly disappeared, being caught, it is feared, by a neighbor's cat which had been observed lying in wait for it at the window on various occasions. — J. A. A.

THE BLUE-GRAY GNATCATCHER AND SANDERLING IN MINNESOTA. — May 19, 1877, I shot here a male Blue-gray Gnatcatcher (*Poliptila cærulea*). This is, apparently, the most northern point at which it has yet been taken. Also, last fall (September 30), I shot the Sanderling (*Calidris arenaria*), its second capture in Minnesota. — ROBERT S. WILLIAMS, *Mimeapolis, Minn.*

NEST AND EGGS OF THE GRAY TITMOUSE (*Lophophanes inornatus*). — The following notes respecting the nesting habits of the Western Crested Titmouse, furnished by my friend W. E. Bryant, a promising young collector of Oakland, California, together with a description of its eggs, will prove of interest.* As is the case wherever found, the bird is a resident of its locality, and, being already on the ground, housekeeping with it begins early in the season, the first eggs being deposited about the middle of March. Fresh eggs may, however, be found up to the middle of May, from which it would appear that two broods are raised in a season. Their nesting sites are the hollows of limbs, usually in the oaks; but they appear to be somewhat less particular than others of the family, since my informant speaks of one nest as having been placed in the ventilator of an out-building. Perhaps in this respect their habits correspond more closely with those of the Wrens, and, given a cavity of almost any sort, their wants are supplied. As the only two requisites for the nest proper are an abundance of material to fill up all useless space, and of a sufficiently soft texture, almost any pliable substance becomes available. Hence feathers, fine grasses, cow's hair, rabbit's fur, moss, or even, as in one instance, a grain-sack picked into fine pieces, in turn enter into its composition, as they chance to be at hand. As to shape, the nest can scarcely be said to have any, since the character of the cavity wholly determines that.

The eggs number from five to eight. These, curiously enough, may be pure white, as is so rarely the case in this family, or spotted. I infer from my correspondent's letter that the sets are either of one or the other style; that is, that all of a complement are alike. To this, however, there may be exceptions. Nearly all the sets found have been pure white, and the spotted eggs appear to be quite rare; the latter appear also never to be as profusely marked as are those of the Eastern *L. bicolor*, or, judging

* The only other notices of the eggs and breeding habits of this species appear to be the following: 1. Description of a single nest and set of eggs by W. A. Cooper (this Bulletin, Vol. 111, p. 69, April, 1878); — 2. A brief reference to another nest and set of eggs by L. Belding (Proc. U. S. Nat. Mus., Vol. 1, p. 400, April, 1879). The eggs of the first set are described as white, thickly marked all over with small irregular spots of red.

from descriptions, of *L. atricristatus*. Four of the most heavily marked eggs Mr. Bryant has ever seen are now before me. They are of a rather elongated oval, and measure respectively $.77 \times .56$, $.70 \times .51$, $.76 \times .52$, and $.64 \times .52$. Another set of three, sent to the Smithsonian by Mr. Samuel Hubbard of San Francisco, are nearly of the same shape. The markings are in the form of clear reddish-brown dots, which are almost entirely confined to the larger ends. On one they take the shape of a perfect circle. Altogether they are extremely pretty eggs, and are much the most delicately marked of any of the family I have ever seen. — H. W. HENSHAW, *Washington, D. C.*

NESTING OF *CERTHIA FAMILIARIS*. — Having read with interest Dr. Brewer's article on the Brown Creeper in the last number of the Bulletin, I desire to add one more instance in confirmation of his opinion as to the usual situation of its nest. I have in my collection two eggs of this bird, which were obtained July 28, 1875, by a friend of mine who is something of an ornithologist. The nest was situated in the heavy forest, half a mile north of Moose Pine, Hamilton County, N. Y., concealed behind a piece of bark which had been partly torn loose from the side of a spruce-tree, about six feet from the ground. The bird was well seen and identified by my friend (who is familiar with the species), but was not shot. In describing the nest to me he used these words: "The nest was made of soft downy materials, including feathers and such soft materials as you will find in a squirrel's nest. The whole bulk was not larger than your fist." It contained three young birds with down only in tufts upon them, and two addled eggs, white, thinly marked with fine reddish spots or dots, and measuring $.60 \times .47$ and $.59 \times .47$. — EGBERT BAGG, JR., *Utica, N. Y.*

THE CAROLINA WREN (*Thryothorus ludovicianus*) BREEDING IN NEW YORK. — Through the kindness of Mr. D. H. Kellogg, I am enabled to record for the first time the breeding of *Thryothorus ludovicianus* in New York State, who, on the evening of May 2 last, showed me the nest of the species at his residence at Spuyten-Duyvil. The nest was built on a shelf in the closed room of an out-house, which was entered by the bird through a latticed window. Desiring to establish its identity beyond question, several attempts were made to capture the parent upon her nest, but unsuccessfully, until the sixth or seventh trial, she having persistently returned immediately after our departure on every unsuccessful attempt. The nest, containing five eggs, was merely a miscellaneous aggregation of rubbish, extending for fully sixteen inches along a small shelf already occupied by several articles, now partially imbedded in the materials of its structure. The whole was overhung by a mass of dried bean-vines pendent from the wall above, which partially concealed the mossy fringed side-entrance to the feather-lined cavity within. The eggs were five in number, and on the point of hatching.

Mr. Robert Lawrence has informed me of the interesting fact of this species having bred about the same early date at Flushing, L. I. [see below]. So far as I am aware, this is the first record of its breeding on Long Island, though I learn from Mr. Akhurst of Brooklyn, that in 1843 a pair reared a brood of five young at Valley Grove. At Riverdale, the present season, I observed this species in full song on April 20 and May 6; and Mr. Kellogg informs me that the male bird of the breeding pair remained about his place in full song for at least two days after its nest had been taken. — EUGENE P. BICKNELL, *Riverdale, New York City*.

THE GREAT CAROLINA WREN BREEDING ON LONG ISLAND, N. Y. — In a letter recently received from Mr. Robert Lawrence, he informs me that on May 8, 1879, he was fortunate enough to take a female Great Carolina Wren at Flushing, Long Island, and on the following day saw the male and a brood of four young birds just able to fly. Although record of two captures of this Wren has been given for New York Island by Mr. George N. Lawrence, I think this is the first record of its breeding in that locality. — RUTHVEN DEANE, *Cambridge, Mass.*

RECORD OF ADDITIONAL SPECIMENS OF THE WHITE-THROATED WARBLER (*Helminthophaga leucobronchialis*). — In this Bulletin, Vol. III, p. 199, Mr. William Brewster describes the fifth then known specimen of the above-named Warbler. I can now announce three more, and allude to what I presume is a fourth: —

1. A very typical example shot by Mr. Samuel Jillson, in Hudson, Mass., in May or June, 1858. By considerable correspondence I traced this specimen to the collection of Williams College, Williamstown, Mass. Prof. P. A. Chadbourne, without hesitation, very kindly sent it to me for examination. The under surface is clean, silky white, with no trace of yellow anywhere; back pure ashy. It was labelled "*H. pinus*, male." This capture antedates all but the Philadelphia Academy specimen, and is the second Massachusetts occurrence.

2. A male is in possession of William W. Coe of Portland, Conn., taken there May 22, 1875, which I have been able to handle by his obligingly loaning me the bird. This one departs from what we consider type specimens in the amount of yellow on both the upper and under parts. There is a broad band or blotch of this color on the breast, with a slight suffusion on the chin and the rest of the ventral aspect. The whole dorsal plumage, from the crown, is faintly washed with the same tint. Compare this and next with Mr. Brewster's account of E. I. Shores's Suffield, Conn., specimen, above alluded to.

3. At date of penning these data the following comes from my friend J. N. Clark, at Saybrook, Conn.: "Took a fine male *H. leucobronchialis*, May 30 [1879]; — an exceptional specimen, with a patch of bright yellow across the breast from the bend of wings. Thought it was *pinus* when I fired; notes and habits the same." Mr. Clark's is the fourth for Connecticut.

4. The "Daily Democrat" (newspaper) of Grand Rapids, Mich., of June 1, 1879, under the caption "A New Bird," thus alludes to a Warbler shot by Mr. Gunn in Ottawa Co.: ". . . the new bird belongs in what is called the genus *Helminthophaga*: it presents five distinctive points of specific difference to that of its nearest congener, the golden winged warbler (*Helminthophaga chrysoptera*), the chief point of difference being the absence of the black throat which is a characteristic peculiarity of the golden wing, the throat in the new species being white, the chin is pale yellow, a faint line passing down on either side as far as the cheek. The cheek patch which forms a prominent marking in the golden winged warbler, is entirely absent. The sub-maxillary stripe is not to be seen, and the lores are merely dusky; but the most peculiar feature in the coloration of the specimen is the bright yellow breast, this color extending as far down as the abdomen and over the flanks. The specimen is a female, and yet it exhibits a golden crown patch equal in intensity to that of the male golden wing. Mr. W. A. Gunn secured this new bird, May 25th while collecting in a patch of underbrush near the edge of a heavy pine forest. He deserves great credit for so valuable an addition to the avifauna of the State and in honor to his capturing it and being the first to present it to public notice, it is named *Helminthophaga Gunnii* by Dr. Gibbs, to whom it was submitted for classification." Allowing for slight individual variation, have we not here a ninth White-throated Golden-wing, or does "*H. gunnii*" hold its own? — H. A. PURDIE, *Newton, Mass.*

ADDITIONAL CAPTURE OF THE CERULEAN WARBLER IN NEW ENGLAND. — Through the kindness of Mr. Charles M. Carpenter of Providence, R. I., I am enabled to record a second specimen of *Dendroica cerulea*, taken near Cumberland Hill, R. I., May 22, 1878. The Warbler was a male, and was in company with a flock of Blue Yellow-backed Warblers when shot. The first specimen recorded for New England was taken at Suffield, Conn., June 12, 1875, by Mr. E. I. Shores, and is now in his collection. Dr. Brewer, in his "Additions to his Catalogue of the Birds of New England,"* includes this record, and says: "This Western species is said to have been taken at Suffield, Conn. I therefore venture to add this bird to my list, though not without much hesitation." The doubt thus expressed by Dr. Brewer is entirely unnecessary, as the specimen was thoroughly identified. — RUTHVEN DEANE, *Cambridge, Mass.*

ANOTHER KIRTLAND'S WARBLER (*Dendroica kirtlandi*). — Mr. Adolphe B. Covert of Ann Arbor, Mich., writes me that on May 16 last he shot a female of this much-desired Warbler, his second capture of the species. This recent specimen I make to be the ninth known to science, viz.: —

1. Male, caught on a vessel at sea off Abaco, Bahamas, by Dr. Samuel

* Proc. Boston Soc. Nat. Hist., Vol. XIX, 1878, p. 303.

Cabot of Boston, the second week in October, 1841. Not identified until some years after the type specimen was described.

2. Male, taken by Dr. J. P. Kirtland near Cleveland, O., May 13, 1851. Type of the species.

3. Female, obtained by R. K. Winslow near Cleveland, O., in June, 1860.

4. Male shot by Charles Dury at Cincinnati, O., the first week in May, 1872.

5. Female, collected by A. B. Covert at Ann Arbor, Mich., May 15, 1875.

6 and 7. Male and female, taken by Messrs. William and John Hall at Rockport, Cuyahoga Co., O., May, 1878.

8. Female, collected by Charles B. Cory on Andros Island, Bahamas, January 9, 1879.

9. Mr. Covert's specimen above recorded.

Three or four others, I believe, have been noted, but were not secured. This bird and *Helminthophaga leucobronchialis* have about an even record. — H. A. PURDIE, *Newton, Mass.*

CORRECTION. — In the January number of the Bulletin (Vol. IV, p. 60) I noted the capture of the Western variety of the Yellow Red-poll Warbler in Massachusetts, and through inadvertence gave the varietal name as "*Dendroica palmarum leucochrysea*," instead of *D. palmarum* var. *palmarum*. — RUTHVEN DEANE, *Cambridge, Mass.*

RARE BIRDS IN MICHIGAN. — May 20, 1879, Dr. H. A. Atkins of Loeki, Ingham Co., Mich., shot a fine specimen of the Connecticut Warbler (*Oporornis agilis*). May 22, 1879, I shot a male of this species in Ottawa Co. These are the only instances of the capture of this rare Warbler in the State, to my knowledge.

May 26, 1879, Dr. R. M. W. Gibbs collected a nest and two eggs, with the female bird, of the Prairie Warbler (*Dendroica discolor*) in Ottawa Co.

May 21, 1879, Dr. Gibbs shot a male Olive-sided Flycatcher (*Contopus borealis*) in a heavy pine forest in the same county. — CHARLES W. GUNN, *Grand Rapids, Mich.*

THE LOGGERHEAD SHRIKE BREEDING IN MAINE. — In the issue of "Forest and Stream" (New York paper) for April 3, 1879, I first recorded the interesting fact that *Lanius ludovicianus* nested at Bangor, Me. Incidentally I spoke of a nest and eggs of the Great Northern Shrike (*L. borealis*) from the same locality, but I have since ascertained that in all probability these also were those of the Loggerhead. See the above-named paper of May 8, 1879, for a correction. Under date of May 20, 1879, Mr. E. S. Bowler writes me that already this season he has discovered two nests of *ludovicianus*, thus apparently showing the bird to be a permanent breeder in that section. From Mr. J. N. Clark of Saybrook, Conn., I have record of two Loggerheads shot there, one in November, 1878, the other in January, 1879.

The New England examples of this species that I have examined present a slight difference in the shade of the rump and rest of dorsal surface but I think, with possibly one exception, none of the specimens show the lightness of color characterizing the so-called typical *excubitorides*. (See Merriam, this Bulletin, Vol. III, pp. 55, 56.) — H. A. PURDIE, *Newton, Mass.*

NOTES ON SOME OF THE WINTER AND EARLY SPRING BIRDS OF FORT SISSETON, DAKOTA. — In my "Notes on the Birds of Fort Sisseton, Dakota Territory" (Bull. U. S. Geol. and Geog. Survey of the Territories, Vol. V, No. 1, 1879), Dr. Coues has kindly added a note at page 103, stating the occurrence of *Pinicola enucleator*, (L.) V., and *Ægiothus linaria*, (L.) Cab., in this vicinity. My letters conveying this information to Dr. Coues arrived too late to enable him to insert the full notes in the paper, and I therefore furnish them for publication now, with notes on two other birds also rare to the Avifauna of the "Coteau des Prairies" of Dakota.

1. *Pinicola enucleator*, (L.) V. PINE GROSBEEK. — In rambling through the woods, January 6, 1879, I came across a flock of Pine Grosbeaks, numbering perhaps twenty-five birds, in the middle of quite a thick growth of timber. I had just fired at a Sharp-tailed Grouse when the birds made their appearance, having evidently been aroused from some part of the timber near by, although I had not noticed them on entering. The birds appeared to have a curiosity to know why they had been disturbed in their sheltered and warm retreat, and alighted in the trees near me, when, quickly changing my cartridges, I secured a single specimen, which dropped from the tree, wounded, at a little distance from me. The curiosity of the others quickly changed to alarm and I could not get a second shot. They, however, performed their antics high in the air, directly overhead, for several minutes after I had secured the wounded bird, until finally they were lost to view.

I believe the Pine Grosbeak to be of only casual occurrence in this region although it may have escaped my notice during former winters, as collecting at that season in this latitude is no easy matter, and the return for the amount of labor involved is very small indeed.

2. *Ægiothus linarius*, (L.) Cab. RED-POLL LINNET. — During the winter of 1878-79, flocks of these birds were often seen here. On January 28, I secured a specimen about four miles northeast of the post on the open prairie. The flock contained about forty birds, which were scratching around on the partly snow-covered ground in search of food, and did not appear to mind my approach, but after I had fired took to wing, and could not afterwards be found. In February and March these birds were very numerous around the post, flocks containing nearly a thousand birds being frequently observed, and they were not at all shy. After this time their numbers diminished, and I saw none after April 9. The past winter was the first one during which I have seen these birds here.

3. *Picus pubescens*, Linn. DOWNY WOODPECKER. — During the winter of 1878-79 the Downy Woodpecker was several times seen in the sheltered timber in the vicinity of the post, and a few specimens were secured. Not observed during previous winters.

4. *Ceryle alcyon*, Boie. BELTED KINGFISHER. — On April 14 and 16, 1879, I saw a pair of Belted Kingfishers hovering over one of the lakes near the post in search of food, the first observation of this bird here. — CHARLES E. MCCHESENEY, *Fort Sisseton, D. T.*

CAPTURE OF A THIRD SPECIMEN OF THE FLAMMULATED OWL (*Scops flammitola*) IN THE UNITED STATES, AND FIRST DISCOVERY OF ITS NEST. — This rare Owl was first added to our fauna by Captain John Feilner, who obtained a specimen at Fort Crook, Cal., August 23, 1860.* A second specimen was collected by Dr. C. C. Newberry, thirty miles south of Camp Apache, Arizona, September 11, 1873.†

I am indebted to Mr. Charles G. Brewster of Boston for the opportunity to examine a third specimen, which he recently received from Mr. Charles E. Aiken, who obtained it in Fremont County, Col., June 15, 1875. The bird, an adult female, was taken from its nest, which was in a dead pine-tree and contained one egg. The egg is now in possession of the Smithsonian Institution, and Mr. H. W. Henshaw has kindly sent me the following description: In color and shape it resembles those of other species of its genus, and measures $1.12 \times .95$. — RUTHVEN DEANE, *Cambridge, Mass.*

MACFARLANE'S GERFALCON (*Falco gyrfalco sacer*) IN MAINE. — Visiting Providence, R. I., in April last, my friend Mr. Frederick T. Jencks mentioned that there was a specimen of some form of Gerfalcon in the Museum of Brown University in that city. I soon had the satisfaction of gazing at the bird. It was labelled "var. *sacer*," and I think correctly so, for it certainly is not *candicans* nor *labradora*,‡ and is darker than any examples or plates of *islandus* that I have examined. Corresponding with

* Baird, Brewer, and Ridgway. *Hist. N. Am. Birds*, Vol. III, p. 58, 1874.

† Report upon the Ornithological Collections made during the Years 1871, 1872, 1873, and 1874. By H. W. Henshaw. Chapter III, Vol. V, of the Reports of the Geographical and Geological Explorations and Surveys west of the One Hundredth Meridian, in Charge of Lt. George M. Wheeler, p. 406, 1875.

‡ Mr. Ridgway, with whom I have lately had interesting correspondence on the Gerfalcon group, writes me that he agrees with Mr. J. H. Gurney (see *Ibis*, 1876, p. 234), that *Falco obsoletus* of Gmelin, based on Pennant's "Plain Falcon," belongs to some race of Gerfalcon, but he believes that it should be assigned to the now better known dark Labrador bird, rather than to any plumage of *islandus* or *gyrfalco*; also that it cannot relate to *Buteo swainsoni*, as associated by R. B. Sharpe. Mr. Ridgway still holds that *sacer* can be variably separated from *F. gyrfalco* of Northern Europe and Asia, in contradistinction to the later views held by English writers.

Professor J. W. P. Jenks, he has kindly written me in substance that the bird was sent alive from Katahdin Iron-Works (Piscataquis Co., Maine) by Mr. C. H. Prouty to his brother in Providence during December, 1876. It had caught several hens, and, having pursued one under a barn through a small opening, was itself caught in the arms of a man as it came out. The Gerfalcon soon died; the wings were cut off, and the body was buried. Nearly a week afterwards a Mr. Adcock saw and picked up the wings from a stable floor, and, recognizing his old English Falcon, called for the body, which he dug up and mounted. Professor Jenks happened to see the specimen, and secured it for the University collection.

I think MacFarlane's Gerfalcon has not before been known to occur in any portion of Eastern North America, nor at all outside of Arctic North-west America. The one now cited will make the third form of Gerfalcon known to have been taken in New England. I cannot ascertain for a certainty that *candicans* has yet visited us. Mr. H. G. Vennor records two examples at Montreal. The black Labrador bird has so far been the most frequent visitor to the Canadas, the Provinces, and the United States. I have record of several, one of which, now announced, was shot in Essex Co., Mass., a few years since, and is in the collection of the Essex Institute. — H. A. PURDIE, *Newton, Mass.*

NESTING OF BUTEO ZONOCERCUS IN NEW MEXICO. — May 28, 1876, I found a nest of *Buteo zonocercus* in a very large cottonwood-tree, in a grove of the same, in the mouth of a cañon of the Gila River, in New Mexico, about twenty miles above the Arizona line, I saw the parent fly from the nest, and with its mate circle around overhead. One alighted on the cliff overhanging the grove, which I succeeded in killing. It proved to be the male. I had no climbers, and could not then get to the nest, but the next day I returned with a rope, and succeeded in getting near enough to work my hand up through the nest and reach one egg, which was all there was. The nest was quite bulky, composed of twigs, lined with strips of the inner bark of the cottonwood.

The egg was very near hatching, and in attempting to extract the embryo I broke it, and it has since been broken into small pieces. It was marked with large reddish-brown blotches, irregularly distributed on a dirty white ground. I still have the male. This pair are the only Hawks of this species that I am positive I ever saw, although I have seen several Hawks here in California that at first I took to be *B. zonocercus*, but they always proved to be very dark plumages of *B. swainsoni*. It is about impossible to tell the difference at shooting distance. The latter species is very abundant here at times. — F. STEVENS, *Wilmington, Cal.*

CAPTURE OF THE GOLDEN EAGLE AT GRAVESEND, L. I. — On October 6, 1877, I had the good fortune to procure a male Golden Eagle (*Aquila chrysaëtus*) in this vicinity. He was a fine, full-grown specimen, and gave the following measurements: length, 32.75 inches; extent, 78.25; wing, 22.50; tail, 14.00. — FRANK E. JOHNSON, *Gravesend, L. I.*

THE EGGS OF THE CURLEW SANDPIPER (*Tringa subarquata*).—The eggs of this species have hitherto escaped the researches of European ornithologists, and up to the present moment have continued to be an especial object of search, and an occasion of renewed disappointment. In a recent visit to Washington, I saw, among the interesting things brought back by Mr. Ludovic Kumlien from the Howgate Arctic expedition, two eggs of this very rare species, which he was enabled to procure, through the attentions of Governor Fencker, in the neighborhood of Christianshaab in North Greenland. One egg measures 1.52 inches in length by 1.05 in breadth. Its ground color is drab, with a distinct shade of olive, and it is thickly marked with blotches of two shades of umber-brown, one quite light, the other much darker. These are most numerous on and around the larger end, and are in a somewhat longitudinal direction, with a tendency also to a spiral course. There are also a few spots, of a very dark color, almost a black, on the larger end. The other egg measures 1.47×1.04 inches, and is much more pyriform in shape. Its ground color is a very light greenish drab, with rather sparse markings of a deep umber. These are larger and more confluent about the greater end of the egg, where they are chiefly disposed in a circular ring. The rest of the egg is sparsely marked with the same. About the larger end are also a few very dark markings. — T. M. BREWER, *Boston, Mass.*

CAPTURE OF THE EUROPEAN WIDGEON IN NORTH CAROLINA. — On the 17th of last December, a gentleman called my attention to a European Widgeon hanging up with a bunch of Ducks, in an express office in New York. The expressman, of course, had no right to part with the bird, and as the address was wrong, I was unable to follow up the Ducks. The man promised my companion to send him the true address as soon as he received it, but nothing further was heard from him. The bird was a male in full plumage, and, as I have since learned, came from Currituck. Another of these Widgeons was killed at Currituck, on January 17, 1879, by William Baylis, Esq., of Brooklyn, in whose possession it now is. Through the courtesy of Mr. Baylis I was permitted to examine this bird, which is a fine adult male.

The first occurrence of *Mareca penelope* in this country was in 1842, when Mr. G. N. Lawrence obtained one in Fulton Market, said to have come from Long Island. In this Bulletin, Vol. III, p. 98, two specimens are recorded; one from Virginia, taken in 1855, the other from Long Island, in 1873.

In all, five authenticated individuals of *M. penelope* have now been recorded from the Atlantic coast. Mr. Charles W. Moxon, of Point Pleasant, N. J., informs me that during the past season several red-headed Widgeons have been shot on Barnegat Bay. — DE L. BERIER, *Fort Hamilton, L. I.*

BONAPARTE'S GULL IN KANSAS. — I have in my collection of birds

a male *Larus philadelphia*, shot on the Neosho River at this place on April 18, 1879. This is the first notice of its appearance in the State, but, as Dr. Coues, in "Birds of the Northwest," says: "No one of our species is more widely dispersed than this. Go where we may in North America, the pretty bird may be seen at one or another season, if we are not too far from any considerable body of water," I am led to believe its occurrence not exceptional, and that it has heretofore been taken for *L. franklini*, a bird which it somewhat resembles in both color and markings, and being of nearly the same size it would readily be taken for it by the casual observer. — N. S. Goss, *Neosho Falls, Kan.*

THE BOOBY GANNET (*Sula fiber*) IN MASSACHUSETTS. — In my Catalogue of the Birds of New England, I felt constrained to put the Booby Gannet in the purgatory of the "not proven." It had been mentioned by Mr. Putnam, but all traces of evidence to authorize its retention had been lost. It had also been given in Mr. Linsley's list, but erroneously. It is not a species whose appearance could be looked for with any confidence, but then the list of Massachusetts birds abounds in the appearance of quite a number of such unlooked for visitors. On the 17th of September, 1878, a fine male specimen of the *Sula fiber* was shot on Cape Cod, and brought to the Boston market. It is now in the possession of my neighbors, Edward O. and Outram Bangs. — T. M. BREWER, *Boston, Mass.*

A WORD IN DEFENCE. — *To the Publishers of the Nuttall Bulletin:—* Inasmuch as the pages of the Bulletin have given to a correspondent full liberty to make against the undersigned a personal accusation which he was utterly unconscious of having deserved, he trusts he may at least be permitted to make a brief defence. If any impartial reader of the Bulletin imagines that the undersigned deserves the double charge of untruthfulness and aggressiveness, made against him on p. 75, Vol. IV, all he asks is that, in simple justice to the party thus accused, said reader will not take the accuser's word for it all, but will examine into the matter, and judge for himself after a full examination of all the facts. Let this impartial reader first turn to a paper published in the Essex Institute Proceedings, 1868, purporting to be a "Catalogue of the Birds of North America contained in the Museum of the Essex Institute," with which is incorporated "A List of the Birds of New England," etc., and let him open at page 3. He will there find the following unmistakable clue to what the writer himself considers a New England bird: "In the following list the New England species are given in *Italics*, and those contained in the Museum of the Institute are followed by the numbers and localities of the specimens in the collection. *All other* North American species represented in the Museum are printed in *Roman*."

Let the impartial reader proceed to carefully examine this catalogue, beginning with *Cathartes aura*, on page 5, and thence to page 64. He will find some three hundred and thirty-two birds, more or less, each given

in a distinct paragraph, and each paragraph beginning with the name of the species in *Italics*. The rule given by the author demonstrates that all these are by him considered "New England birds." Among those thus given are *Saricola cenanthe*, *Oporornis formosa*, *Seiurus ludovicianus*, *Corvus ossifragus*, and several others, all of which, at that time, were without any evidence of a New England existence. Several were so admitted by the writer in giving them, and some, to this day, have no record in favor of their being of New England. Yet these stand in the list, paragraph, *Italics*, and all, indistinguishable from *Turdus migratorius* or *Spizella socialis* as to their right to be there.

On page 6t the impartial reader will find an "Addenda," giving three more species, all recorded in precisely the same manner with the preceding three hundred and thirty-two, — that is, in separate paragraphs, commencing with their names in *Italics*, — two of them claimed as actually taken, the third given as found both on our north and south, and stragglers in New England are anticipated, and all three apparently intended to be included in the list. Certainly they are not distinguishable from the others, and *Hesperiphona* is, to all appearance, as much included in the list as *Corvus ossifragus*, or any of the others that are admitted to be not actually known to have been taken within its limits.

Now, turning to my list of the birds of New England, page 18, it will be seen that I simply refer to the fact that the bird is thus given, and on *hypothetical* grounds, the only apparent reason for thus giving it being that its occurrence was regarded as probable, and that I, so far from discrediting, fully admitted this probability, strengthening the hypothesis by mentioning a new instance of its ascertained occurrence near Vermont. The impartial reader can but find that my statement, instead of being false, was to all appearance fully justified; that a "claim" was plainly implied by the writer's own test as to his own meaning and intent, — not as ascertained, like *Strix peatincola*, but as hypothetical, like *Sirus ludovicianus*: and that not only in the particular paragraph, but throughout my list, no "side-thrust" is given or intended for any one whatever, — in a word, that the accusation is purely imaginative, and that all I stated was given in entire good faith.

Whether I deserve to have it said of me that I "have become notably over fond of giving side-thrusts to any one who may chance to differ," or whether such an unamiable peculiarity is more typical of some one else, would be a question quite out of place in what I trust its publishers design to be a journal devoted to pure ornithological science, and I am the last person who would seek to misuse its pages by mere personalities. — THOMAS M. BREWER.

[Though we reluctantly open the pages of the Bulletin to mere personalities, we here give Dr. Brewer a chance to be heard. We are informed that the person referred to has no reply to make. — Eds.]



Vireo auricapillus ♂ and nest

Thos. Saylor & Son, Chromolith.

BULLETIN

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NOTE ON THE BLACK-CAPPED GREENLET, *VIREO ATRICAPILLUS* OF WOODHOUSE.

BY DR. ELLIOTT COUES, U. S. A.

WE are enabled to present our readers with a colored plate with this number of the Bulletin, through the liberality of Mr. J. C. Sinclair, the well-known lithographer of Philadelphia, who very kindly offered to engrave for us the pretty little study in water-colors of the pair of Greenlets made by Mr. W. H. Werner, as noted by Mr. Brewster in his interesting article on *Vireo atricapillus* (*anted*, p. 101). The birds were taken, with the nest and four eggs, on the 6th of May, 1878, in Comal County, Texas, about twenty-three miles northwest of New Braunfels, by Mr. Werner, to whom is due the credit of bringing to notice the first authenticated nest and eggs of the species. We would refer to Mr. Brewster's article (*l. c.* pp. 99-103) for the full particulars of this capture, including the description of the subjects of Mr. Sinclair's plate, and a review of what had before been known of the species.

It is a singular but well-attested fact in the history of several of our birds, that they remained so long unnoticed after their discovery that they were in danger of being relegated to the list of "lost species," and then suddenly became notorious. Baird's and LeConte's Buntings, and Sprague's Pipit, and the Black-capped Greenlet, are illustrations of this. How little we really learned of this species during the period from 1852 to 1878 may be seen by referring to our "Birds of the Colorado Valley" (pp. 533, 534), where a fair statement of the case is given, with a full index to the

literature of the subject. In January of the present year (*anted*, p. 58), Mr. Ruthven Deane first added something to the meagre knowledge we then possessed, giving the experiences of Mr. G. H. Ragsdale with the species in Texas. Mr. Ragsdale, it appears, took three specimens, all of which were preserved, and was shown a nest with one egg, said to be of a Vireo with a black head, but not thoroughly identified.

Mr. Deane's and Mr. Brewster's articles throw much light upon the history of a hitherto little-known species, but one which will probably soon become common in collections; and the plate now given will, we are sure, be appreciated by our readers as timely and acceptable.

A PARTIAL LIST OF THE BIRDS OF FORT KLAMATH,
OREGON, COLLECTED BY LIEUTENANT WILLIS WIT-
TICH, U. S. A., WITH ANNOTATIONS AND ADDITIONS
BY THE COLLECTOR.

BY EDGAR A. MEARNS.

(*Concluded from p. 166.*)

40. **Picicorvus columbianus** (*Wilson*). CLARKE'S NUTCRACKER. — No. 29, ♀, June, 1875; No. 30, ♂ ad., 1876. The first specimen, doubtless a young bird, has a faint suffusion of brownish laid over the ash of the dorsal surface, and the bill is much shorter and more convex. Quite common as a resident. Mrs. Wittich writes that they sometimes come about the officers' quarters, and keep around the kitchens.

41. **Pica melanoleuca hudsonica** (*Sabine*). AMERICAN MAGPIE. — No. 80, ♀ ad., 1878; No. 86, ♂ ad., 1878. A common species. Breeds. Lieutenant Wittich furnishes the following notes on its breeding: "On May 12, 1878, while on the plain opposite the post, about 3½ miles out, and near the edge of timber, I found, in a thorny bush, or low tree, a Magpie's nest. Scrambling up through the stiff, wiry branches, I looked in and saw four young, without a vestige of either down or feathers, and *mouths* like — well, like young birds. The nest was built of twigs of a dead pine-tree that had been barked and whitened by weather. It was furnished with a kind of superstructure of the same material, forming a fine, rustic lattice-work above the nest, having an aperture in the top, large enough to admit the parent birds."

42. **Cyanurus stelleri frontalis**, *Ridgway*. CALIFORNIA MOUN-

TAIN JAY. — Nos. 31 and 32, ♀ ad., June, 1875; No. 60, ♂ ad., May 4, 1878. A common resident species. Mrs. Wittich writes: "November 9, 1878. The Steller's Jay is quite common about our quarters now, and they sit on the kitchen fence." She also describes a ludicrous scene presented by a flock of Jays attempting to capture some large army biscuits, which kept constantly dropping upon the ground, as often as a bird had succeeded in getting one up in the trees.

43. *Perisoreus canadensis obscurus*, *Ridgway*. OREGON GRAY JAY. — February 2, 1875 (*McElderry*). Resident (*Henshaw*).

44. *Tyrannus verticalis* (*Say*). ARKANSAS FLYCATCHER; WESTERN KINGBIRD. — No. 33, ad., May 31, 1875. Summer resident (*Henshaw*).

45. *Contopus borealis* (*Swainson*). OLIVE-SIDED FLYCATCHER. — No. 34, ad., 1875. June 15, 1878 (*Wittich*). A summer resident (*Henshaw*).

46. *Contopus (virens var.?) richardsoni* (*Swainson*). WESTERN WOOD PEWEE. — No. 35, ♀ ad., May, 1875; No. 36, ♂ ad., 1875. Summer resident (*Henshaw*).

47. *Chordeiles virginianus popetue* (*Vieillot*). WESTERN NIGHT-HAWK. — June, 1875 (*McElderry*). Numerous summer resident (*Henshaw*).

NOTE. — Humming-Birds are very numerous at Klamath. Their nests were built about the officers' houses in the garrison; but none of the specimens shot have reached me. *Stellula calliope* and *Selasphorus rufus* doubtless occur, and possibly *Trochilus alexandri*.

48. *Ceryle alcyon* (*Linné*). BELTED KINGFISHER. — No. 37, ♀ ad., November 1, 1875. Very common at Klamath in summer (*Wittich*).

49. *Picus villosus harrisi*, *Audubon*. HARRIS'S WOODPECKER. — No. 38, ♂ ad., June, 1875. A common summer resident in the pines (*Wittich*).

50. *Sphyrapicus varius ruber* (*Gmelin*). RED-BREADED WOODPECKER. — No. 39, ♂ ad., May, 1875.

51. *Asyndesmus torquatus* (*Wilson*). LEWIS'S WOODPECKER. — Nos. 40, 41, ♂ and ♀ ad., May 10, 1875; No. 59, ♂ ad., 1878. Abundant at Klamath (*Wittich*).

52. *Picoides arcticus* (*Swainson*). BLACK-BACKED THREE-TOED WOODPECKER. — No. 58, ♂ ad., May 9, 1878. Not uncommon in the mountains, and probably breeds (*Henshaw*).

53. *Colaptes auratus mexicanus*, *Swainson*. RED-SHAFTED FLICKER. — No. 42, ♀ ad., June 15, 1876.

54. *Bubo virginianus subarcticus*, *Hoy*. WESTERN GREAT HORNED OWL. — Hospital list (*McElderry*).

55. *Otus vulgaris wilsonianus* (*Lesson*). LONG-EARED OWL. — August 16, 1875 (*McElderry*).

56. *Circus cyaneus hudsonius* (*Linné*). MARSH HAWK; HARRIER. — No. 43, ♂ ad., June, 1875; No. 44, ♀ juv., 1875. Abundant at Klamath.

57. *Accipiter fuscus* (Gmelin). SHARP-SHINNED HAWK. — No. 45, ♀ ad., 1875.

58. *Accipiter cooperi* (Bonaparte). COOPER'S HAWK. — September 2, 1874 (McElderry).

59. *Astur atricapillus* (Wilson). GOSHAWK. — Mr. Henry W. Henshaw secured a fine specimen about the last of August, 1878, about fourteen miles south of Fort Klamath.

60. *Falco mexicanus polyagrus*, Cassin. PRAIRIE FALCON. — Hospital list (McElderry).

61. *Falco sparverius* (Linné). SPARROW HAWK. No. 57, ♀ ad., May 9, 1878; No. 85, ♂ juv. Tail with a broad terminal band of pale rufous; subterminal portion and two spots on middle of inner left rectrix, black; residue of tail, dark rufous. The rufous of back is crossed by a few broad bars of black, each primary broadly tipped with very pale rufous or buff. This specimen was found dead upon the floor of a barn, in an emaciated condition, August, 1875 (McElderry). Occasionally observed (Wittich).

62. *Buteo swainsoni*, Bonaparte. SWAINSON'S HAWK. — No. 46, ♀ ad., 1875.

63. *Pandion haliaëtus carolinensis* (Gmelin). AMERICAN OSPREY; FISH-HAWK. — A summer resident; numerous on the rivers and about the Klamath lakes (Wittich). Breeds (Henshaw).

64. *Haliaëtus leucocephalus* (Linné). WHITE-HEADED EAGLE. — Common along the rivers, and especially on Upper Klamath Lake. Breeds (Wittich). Dr. J. S. Newberry gives the following: * It "is very common at the cascades of the Columbia and at the falls of the Willamette, and still more abundant about the chain of lakes which cover so large a surface in the Klamath Basin. On the shores of Upper Klamath Lake, quite to my regret, a large number of these noble birds were shot by our party. So long, century after century, parent and offspring, had they reigned there in undisputed supremacy, with no enemy more formidable than the arrow-armed Indian, of whose missiles they had learned the range, that they exhibited little of the shyness so characteristic of the tribe to which they belong. On some point of rock, or dwarfed pine, projecting from the wall of trap which, to the height of 1,000 feet, borders the eastern shore of the lake, beyond bowshot, the Bald Eagles sat, and viewed our approach with calm indifference, permitting themselves to be brought within easy range of the rifles, and too many of them falling a sacrifice to man's passion for doing what he can, simply because he can."

65. *Rhinogryphus aura* (Linné). TURKEY BUZZARD. — Hospital list (McElderry).

66. *Zenædura carolinensis* (Linné). MOURNING DOVE. — May 2, 1875 (McElderry).

* Pacific Railroad Report, Vol. VI, Pt. IV, p. 74, 1857.

67. *Canace obscura* (Say). DUSKY GROUSE. — Hospital list (McElderry).
68. *Centrocercus urophasianus* (Bonaparte). SAGE COCK; COCK OF THE PLAINS. — Near Linkville, in Lost River Valley (McElderry).
69. *Pediocetes phasianellus columbianus* (Ord). SOUTHERN SHARP-TAILED GROUSE. — Hospital list (McElderry).
70. *Bonasa umbellus umbelloides* (Dougl.). GRAY RUFFED GROUSE. — Resident (Wittich).
71. *Ægialitis vocifera* (Linné). KILL-DEER PLOVER. — No. 47, ad., 1875.
72. *Himantopus mexicanus* (Müller). BLACK-NECKED STILT. — No. 48, ad., 1875.
73. *Steganopus wilsoni* (Sabine). WILSON'S PHALAROPE. — No. 49, ad., 1875.
74. *Lobipes hyperboreus* (Linné). NORTHERN PHALAROPE. — Hospital list (McElderry).
75. *Gallinago wilsoni* (Temminck). WILSON'S SNIPE. — No. 50, ad., 1875. Summer resident; breeds (McElderry).
76. *Macrorhamphus griseus* (Gmelin). RED-BREADED SNIPE. — August 24, 1875 (McElderry).
77. *Gambetta melanoleuca* (Gmelin). TELL-TALE. — No. 51, ad., 1875.
78. *Totanus solitarius* (Wilson). SOLITARY TATTLER; WOOD TATTLER. — No. 52, ad., 1875.
79. *Numenius longirostris*, Wilson. LONG-BILLED CURLEW. — No. 76, ♂ ad., May 7, 1878. Supposed parent of a nest of four eggs, one of which measures 1.82×2.47 . This nest was built in an exposed situation, on a ridge in the Klamath Marsh.
80. *Ardea herodias*, Linné. GREAT BLUE HERON. — Hospital list (McElderry).
81. *Herodias alba egretta* (Gmelin). AMERICAN EGRET. — No. 82, ad., January 8, 1878. Numerous (Henshaw).
82. *Botaurus lentiginosus* (Montag.). AMERICAN BITTERN. — Hospital list (McElderry).
83. *Grus canadensis* (Linné). BROWN OR SANDHILL CRANE. — Common; breeds (Wittich).
84. *Rallus virginianus*, Linné. VIRGINIA RAIL. — No. 54, ad., July 2, 1875.
85. *Porzana carolina* (Linné). SORA RAIL. — June 17, 1875 (McElderry).
86. *Fulica americana*, Gmelin. AMERICAN COOT. — No. 65, ♂ ad., May 13, 1878. Shot near a nest containing six eggs, three of which measure, respectively, 1.32×1.93 , 1.30×1.92 , 1.33×1.95 ; average, 1.32×1.93 . Common summer resident (Wittich).
87. *Cygnus buccinator*, Richardson. TRUMPETER SWAN. — Hospi-

tal list (*McElderry*). Doubtless the Whistling Swan (*C. americanus*, Sharpless) also occurs.

88. *Chen hyperboreus* (*Pallas*). SNOW GOOSE. — Hospital list (*McElderry*).

89. *Anser gambeli* (*Hartlaub*). AMERICAN WHITE-FRONTED GOOSE. — Hospital list (*McElderry*).

90. *Branta canadensis* (*Linné*). CANADA GOOSE. — Hospital list (*McElderry*).

91. *Branta bernicla nigricans*, *Lawrence*. BLACK BRANT. — Hospital list (*McElderry*).

92. *Anas boschas* (*Linné*). MALLARD; WILD DUCK. — Hospital list (*McElderry*).

93. *Dafila acuta* (*Linné*). SPRIG-TAIL; PIN-TAIL. — Hospital list (*McElderry*).

94. *Mareca americana* (*Gmelin*). BALDPATE; AMERICAN WIDGEON. — Hospital list (*McElderry*).

95. *Nettion carolinensis* (*Gmelin*). GREEN-WINGED TEAL. — Hospital list (*McElderry*).

96. *Querquedula cyanoptera* (*Vieillot*). CINNAMON TEAL. — Hospital list (*McElderry*).

97. *Spatula clypeata* (*Linné*). SHOVELLER; SPOON-BILL DUCK. — Hospital list (*McElderry*).

98. *Aix sponsa* (*Linné*). SUMMER DUCK; WOOD DUCK. — Hospital list (*McElderry*).

99. *Fuligula affinis* (*Eyton*). LESSER BLACKHEAD. — Linkville (*McElderry*).

100. *Bucephala clangula americana* (*Bonaparte*). AMERICAN GOLDEN-EYE. — Hospital list (*McElderry*).

101. *Bucephala islandica* (*Gmelin*). BARROW'S GOLDEN-EYE. — Hospital list (*McElderry*).

102. *Bucephalus albeola* (*Linné*). BUFFLE-HEAD; BUTTER-BALL. — Hospital list (*McElderry*).

103. *Erismatura rubida* (*Wilson*). RUDDY DUCK. — No. 64, ♂ ad., spring of 1878; No. 81, ♂ ad., spring of 1875. Both of the above specimens were in fine breeding plumage. It probably breeds at Klamath.

104. *Mergus castor americanus* (*Cassin*). AMERICAN SHELDRAKE. — Hospital list (*McElderry*).

105. *Mergus serrator* (*Linné*). RED-BREADED SHELDRAKE. — Hospital list (*McElderry*).

106. *Mergus cucullatus* (*Linné*). HOODED SHELDRAKE. — Hospital list (*McElderry*).

107. *Pelecanus erythrorhynchus*, *Gmelin*. AMERICAN WHITE PELICAN. — Klamath Lake (*McElderry*). I saw one or two on Tule Lake when at the Lava Beds with General Howard (*Wittich*).

108. *Larus californicus*, Lawrence. CALIFORNIA GULL. — Upper Klamath Lake, November, 1875 (*McElderry*).

109. *Hydrochelidon nigra* (Linné). BLACK TERN. — No. 56, ad., spring of 1875.

110. *Colymbus torquatus*, Brunn. LOON; GREAT NORTHERN DIVER. — Hospital list (*McElderry*).

111. *Colymbus arcticus pacificus*. Lawrence. — PACIFIC BLACK-THROATED DIVER. — Hospital list (*McElderry*).

BREEDING HABITS OF THE AMERICAN BROWN CREEPER (*CERTHIA FAMILIARIS AMERICANA*).

BY WILLIAM BREWSTER.

IN his interesting article on the American Brown Creeper, in the Bulletin for April, 1879, Dr. Brewer calls our attention to the recent occurrence of several nests of that species, which were placed within loose scales of semi-detached bark, at the same time stating it to be his opinion that this mode of nesting is the one most commonly followed by the American bird. Some further evidence tending to confirm this view of the case is offered in the following number of the Bulletin by Mr. Egbert Bagg, Jr., who notes the finding of a nest similarly constructed in Hamilton County, New York.

These data cast a new light upon a previously obscure subject, although the fact that the American Creeper sometimes nests behind the loose bark of trees is by no means a novel one. As long ago as 1864 Mr. Allen described* a nest so placed, which had been examined by him in Springfield, Mass. This account, although quoted by both Samuels and Minot, seems to have been generally ignored in most of our recent standard works on ornithology, nor does Dr. Brewer refer to it in any way in the course of his article, although, in addition to being our earliest record of the breeding of the species in Massachusetts, it was apparently the first published description of what, it now appears, is the Creeper's characteristic manner of nesting.

Being greatly interested in the subject, I paid a good deal of

* Proc. Essex Nest., Vol. IV, p. 68, July, 1864.

attention to investigating the Creeper's breeding habits while on a collecting trip to Lake Umbagog, Western Maine, in May and June of the present year. During former seasons I had wasted much valuable time in sounding old Woodpecker's holes and natural cavities about places where the birds were evidently nesting; but, with the right clew at last in my possession, I succeeded on this occasion in finding quite a number of nests. In the belief that the subject is not yet exhausted, I am induced to present the following account of my observations.

Throughout the heavily timbered region bordering on Lake Umbagog the Brown Creeper is of regular occurrence during the breeding season. It is never an abundant species there, but each square mile of suitable woodland is pretty sure to harbor a pair or two, and in places along the lake shores, where numerous decaying stumps form an outer fringe to sombre forests of spruce and fir, the combination of favorable conditions attracts them in somewhat greater numbers. Any considerable collection of these stumps is nearly certain to afford one or more trees in just the right stage of decay essential for nesting purposes, while the adjoining woodlands offer the shade and seclusion so congenial to their solitary habits during this season. It was in a locality of this character that the first nest taken during the past season was found. Let me briefly sketch the picture ere it fades.

I had crossed the lake to a sheltered cove which opened an inviting way into the tangled forest. On either hand, heavily wooded ridges sloped steeply down to the water's edge, cutting off the high north-wind that was blowing over the lake outside, and the warm sunshine lay upon a smooth basin that was seldom dimpled by even a passing breeze. At its farther extremity, where a mossy bank rose abruptly from the shore, graceful hemlocks laved the tips of their drooping branches in the water, and tall firs and spruces looked down upon the perfect reflection of their stiff, soldierly forms in the mirror-like surface beneath. Here and there, where the land was more level and the water flowed back among the trees, grim stumps, many of them hung with streamers of the yellowish-gray *U'snea* "moss," stood grouped about, adding to the picturesqueness of the scene.

These quiet little nooks abound about most of the Maine lakes, and they are almost invariably well stocked with birds. The retirement that they offer, coupled with the increased abundance of

insect life, forms an attraction too powerful to be overlooked. The place just described proved to be no exception to this rule. The spruce tops were filled with busy flitting Warblers of various species, some of them migratory individuals resting for a few hours before resuming their northward journey; others already mated, and established for the brief season of reproduction so near at hand. Among the stubs, Woodpeckers were swinging from trunk to trunk, or entering their neatly rounded holes with food for their mates or young. From a dead branch that overhung the thicket beneath, a Water Thrush (*Siurus naevius*) uttered his gushing warble, while at intervals, in the cool depths of the forest on the mountain side, arose the exquisite liquid notes of a Winter Wren. Such were a few of the more prominent actors in the varied scene.

Among the other voices I shortly detected the sweet wild song of the Brown Creeper, and, looking more carefully, spied a pair of these industrious little gleaners winding their way up the trunk of a neighboring tree. Although I watched them closely, the female soon after in some way eluded my sight and mysteriously disappeared, but the male remained in the immediate vicinity, singing at frequent intervals. Being convinced that they must have a nest somewhere near, I instituted a careful search among the dead trees that stood around, and at length detected a scale of loose bark, within which was crammed a suspicious-looking mass of twigs and other rubbish. A vigorous rapping upon the base of the trunk producing no effect, I climbed to the spot and was about to tear off the bark, when the frightened Creeper darted out within a few inches of my face, and the next moment I looked in upon the eggs.

The tree selected was a tall dead fir, that stood in the shallow water just outside the edge of the living forest, but surrounded by numbers of its equally unfortunate companions. Originally killed by inundation, its branches had long ago yielded to the fury of the winter storms, and the various destroying agents of time had stripped off the greater part of the bark until only a few persistent scales remained to chequer the otherwise smooth, mast-like stem. One of these, in process of detachment, had started away from the trunk below, while its upper edges still retained a comparatively firm hold, and within the space thus formed the cunning little architect had constructed her nest. The whole width of the opening had first been filled with a mass of tough but slender twigs (many of them at least six inches in length), and upon this foundation the

nest proper had been constructed. It was mainly composed of the fine inner bark of various trees, with an admixture of a little *Usnea* moss and a number of spiders' cocoons. The whole mass was firmly but rather loosely put together, the different particles retaining their proper position more from the adhesion of their rough surfaces than by reason of any special arrangement or interweaving. The general shape of the structure necessarily conformed nearly with that of the space within which it was placed, but a remarkable feature was presented by the disposition of the lateral extremities. These were carried upward to a height of several inches above the middle of the nest, ending in long narrow points or horns, which gave to the whole somewhat the shape of a well-filled crescent. In the centre or lowest part of the sag thus formed was the depression for the reception of the eggs, — an exceedingly neat, cup-shaped hollow, bordered by strips of soft, flesh-colored bark and lined with feathers from Ducks and other wild birds. The whole was fastened to the concave inner surface of the bark-scale rather than to the tree itself, so that when the former was detached it readily came off with it. I afterwards found two old nests which were perhaps originally built by this same pair of birds, as they were placed on a tree that stood close at hand. They were under a single enormous piece of bark, but at its opposite lateral extremities. One of them, a nearly shapeless mass of rubbish, was scarcely recognizable, but the other still retained its original shape and finish, and contained an unhatched egg, the contents of which had long since dried away. Probably they represented the homes successively occupied during the two preceding seasons, and it is hence likely that this species, like so many others, returns year after year to breed in nearly the same spot.

If the above description conveys the desired impression to the reader's mind, he can scarcely fail to be struck by the manifold advantages of such a nesting-site. A perfect shelter from the sun and rain is afforded by the roof of bark, which, from the loose attachment of its lower edges, allows a sufficiently free circulation of air to insure good ventilation. And as for concealment, excepting of course the positions chosen by some of the ground-building species, who must necessarily sacrifice nearly every other consideration of safety in favor of this one, it would be difficult to imagine a more perfectly hidden nest. The very simplicity and naturalness of the situation is well calculated to deceive all enemies, and the

imperfections of our past records well attest how closely the secret has been kept from man, nor is it probable that the predatory birds or mammals are often more successful. Even should a Jay or Squirrel succeed in discovering the presence of such a nest, they would be unable to enter through the narrow crevice used by the Creeper, and it is not likely that either their patience or strength would endure to tear out the sticks and other materials of the sub-structure from below, and thus obtain possession of the coveted eggs or young. Yet, now that the secret is out, the very peculiarity of its position renders this nest a singularly easy one to find. After taking my first specimen I experienced little difficulty in recognizing a "Creeper tree" — as my guide got to calling them — almost at a glance.

The eggs of the Brown Creeper have been described so well already that it seems unnecessary to enter into further details here. My specimens show only a very limited range of variation, and this chiefly in regard to size, for the shape and markings of the different examples are quite uniform. As Dr. Brewer suspected, the grayish ground-color is peculiar to specimens far advanced in incubation. The freshly laid egg is tinged with that delicate fleshy hue found in several other eggs of thin shells and sparse markings. With the removal of the contents, however, this tint always vanishes, leaving the shell of pure, almost crystalline whiteness.

The following concise record of all the nests taken during the season of 1879 will illustrate the somewhat variable times at which the different sets of eggs were deposited: May 31, nest with set of six eggs, incubation about five days; June 5, nest with six eggs, incubation about six days; June 14, nest with five young, which were perhaps a week old; June 19, nest with four fresh eggs, — a complete set, as the bird laid no additional ones, although left unmolested for two days longer. This clutch may possibly have been a second laying by the pair robbed on May 31, as the site was only a few hundred yards distant. June 23, nest with four fresh eggs, locality several miles away from that of any of the preceding.

With respect to their general plan of construction, all of the eight nests which I have examined were essentially similar. Indeed, the uniform character of the nesting-sites chosen by the different pairs of birds was not a little remarkable. Thus, in every single instance that came under my observation, the nest was placed on a balsam fir, though spruce, birch, or elm stubs were often much more numer-

ous, and frequently presented equally good accommodations. Again, in no instance did the tree resort to retain more than three or four pieces of bark, while oftentimes the scale that sheltered the nest was the only one that remained. The height varied from five to fifteen feet, but this particular was perhaps sometimes determined more by necessity than by any individual preference, as I noticed that when several equally suitable bark-scales occurred on the same tree, the lowest was invariably the one taken. In one such case the nest was so low that I could easily look into it by standing up in my boat. As before indicated, the size and shape of the different structures varied with that of the cavities in which they were placed. When the space between the bark and trunk was very narrow, the foundation of sticks was entirely dispensed with, the nest being then entirely composed of bark. Of the five examples now before me, only two are feather-lined, the remaining three being simply finished with shreds of the reddish inner fir bark of a somewhat finer quality than those which make up the outer part of the structure. The most striking feature of all is the prolongation of the upper corners, already described. In one extreme specimen these horns rise four inches above the central cup that contains the eggs. They are, perhaps, designed to act as stays or supports, as they are firmly attached to the rough inner surface of the bark which sustains the nest.

In the article previously referred to, Dr. Brewer, in speaking of the nest found at Taunton, says: "The opening was nearly closed with chips of bark and other substances forming its foundation," etc. From this I infer that the birds entered the nest from *beneath* or between the bark and the edge of the nest. If this was actually the case, the Taunton nest must have been differently planned from any of my Maine examples, for in all of these the opening beneath was so effectually closed that no bird, however small, could have forced its way in from that direction, and ample opportunities for observation convinced me that the Creepers themselves never attempted to do so. They invariably entered at a point on the side, several inches *above* the nest and between the edge of the bark-scale and the stem of the tree. In most cases some inequality in the edge of the bark offered a convenient opening; but I remember one instance where there was only a straight, narrow crack that seemed far too small for any bird to pass through, yet I repeatedly saw the Creeper go in and out without apparent difficulty.

Were it not for Professor Aughey's testimony we might fairly be inclined to suspect that all our earlier accounts of this Creeper's nesting were either founded upon hearsay or were purely fictitious. But we have this gentleman's satisfactory assurance that in Nebraska the Creeper does sometimes nest in holes in trees. Being desirous of obtaining further particulars regarding the nest mentioned by him in his paper on "The Nature of the Food of the Birds of Nebraska," and referred to by Dr. Brewer in the April Bulletin, I wrote to Professor Aughey on the subject, and the following is an extract from his very courteous reply: "In reference to *Certhia familiaris*, it is certain that in Nebraska, where its favorite position for nesting under scales of loose bark is in some localities difficult to obtain, it makes a nest in knot-holes. I have found two other nests in such places, — one in June, 1877, between Bellevue and Omaha, on the Missouri Bluffs, in a box-elder tree; another in June of the present season on Middle Creek, four miles from Lincoln, also in a box-elder. I have also found several in the ordinary positions where old cottonwoods or elms abounded. It is therefore my conviction that this method of nesting in knot-holes was inaugurated because of the scarcity of the ordinary positions. I could not find any tree near by where a nesting-place under bark could have been obtained in these instances of nesting in knot-holes."

Reasoning upon the analogy furnished by the above facts, it seems not impossible that Eastern nests also may occasionally occur in holes, but in the present state of our definite knowledge on the subject, it is perhaps idle to speculate on a question which can only be settled by future investigations. It is, however, certainly not too much to say that in the regions where it is best known, the Creeper habitually nests behind bark-scales, and prefers them to all other situations.

I should be doing injustice to my subject were I to close the present article without touching upon the breeding habits of the birds, the more especially as very little concerning them seems to have been previously written. Of the nests taken during the past season only one was in process of construction when found. The female was putting in the lining, and the work was so vigorously pushed that by the next morning the whole was completed and the first egg laid. Her rambles in search of material were limited to the immediate vicinity, and rarely extended beyond the distance of a few rods. Winding her way up some crumbling spruce or fir, she

tore off shreds of the decomposing bark, until her bill was filled, then, swinging downward in the usual characteristic manner, she alighted against the stem of the nesting-tree just below the hole, and, glancing about for a moment to be sure that no danger was near, glided nimbly upward, and with wonderful quickness disappeared under the edge of the sheltering bark. A few moments would then elapse, when the silence was broken only by the rasping *cheep, cheep* of the wood-borers in the rotting stubs around, or the hissing of a brood of Woodpeckers from their hole in the top of a tall dead ash a few yards away; then she would suddenly appear again, flying directly from the nest to renew her search at the base of an adjoining tree. On these trips she was invariably accompanied by the male, who usually preceded her up the trunk, and upon her return to the nest, clung to the bark near at hand. His song was almost incessant, though the day was dark and stormy, and most of the wood birds utterly silent. But save by his cheering notes he apparently rendered no assistance; indeed, on more than one occasion I caught him in the act of surreptitiously swallowing a grub which he had drawn from its concealment while his patient partner's back was turned. If not an unselfish husband, he is, however, at least an attentive one. After the cares of incubation have begun, he is generally to be found in the immediate vicinity of the nesting-tree, extending his leisurely rambles through the surrounding woods, but rarely straying far away from the spot. He is a frequent but scarcely a persistent singer, and his voice, though one of the sweetest that ever rises in the depths of the Northern forests, is never a very conspicuous sound in the woodlands where he makes his home. This is due to the fact that his song is short and by no means powerful, but its tones are so exquisitely pure and tender that I have never heard it without a desire to linger in the vicinity until it had been many times repeated. It consists of a bar of four notes, the first of moderate pitch, the second lower and less emphatic, the third rising again, and the last abruptly falling, but dying away in an indescribably plaintive cadence, like the soft sigh of the wind among pine boughs. I can compare it to no other bird voice that I have ever heard. In the pitch and succession of the notes it somewhat resembles the song of the Carolina Titmouse (*Parus carolinensis*), but the tone is infinitely purer and sweeter. Like the wonderful melody of the Winter Wren, it is in perfect keeping with the mysterious gloom of the woods; a wild, clear voice that one feels would

lose its greatest charm if exposed to cheerful light and commonplace surroundings.

On sunny April mornings I have heard the Creeper singing from the elms along the noisy streets of Massachusetts towns and cities ; but the strain at such times was broken and incomplete, and gave but little idea of the author's real powers of song.

The labor of incubation seems to be performed by the female Creeper alone, nor have I been able to ascertain that the male even feeds her while she is sitting, though I have reasons for suspecting that he may sometimes do so.

Several times during each day she leaves the nest to make short excursions through the neighboring woods in search of food. On such occasions the male is invariably to be found in close attendance. He leads the way up the rough-barked boles, and when the thickly diverging branches are reached, takes flight for the next trunk, alighting near the base, always followed closely by his mate. An incessant conversational chirping is carried on in a low tone by the happy pair, and the theme no doubt is of his adventures during the morning, or their mutual hopes and fears regarding their coming brood. At frequent intervals his pure voice thrills through the dark spruce woods, and when his partner returns to her maternal cares he sings long and joyously in the vicinity before resuming his solitary wanderings. Thus the bright June days pass, until at length the young have burst the shell, and our Creeper finds the burden of a numerous family upon his hands. But he rises bravely to meet the occasion, and, laying aside his former free life, devotes himself unremittingly to the task of supplying food to the hungry brood. A nest containing five young, which I found on June 14, was visited by both parents, who came alternately at intervals of about a minute. The work was carried on with the utmost silence and despatch ; not a sound being uttered by either old or young. The latter were already partially feathered, and were perhaps a week old. With their short, nearly straight bills and preternaturally grave aspect, the little fellows presented a most singular appearance. Several of them had been crowded out of the limited space afforded by the nest, and were sitting on the rim of the surrounding platform. A week later I passed the spot and found the whole family gone.

In his description of the Grand Menan nest (*Birds of North America*, Vol. I, p. 127), Dr. Brewer speaks of the extreme grief evinced by the parents, who, upon finding their home destroyed by

one of the party, "began to circle round his head with reproachful cries, and continued to keep so close to him that it was impossible to shoot one without mutilating it." This behavior was strikingly at variance with that displayed by any of the several pairs whose nests I took during the past season. When started off, the females usually alighted against the trunk of the nearest tree and in perfect silence, watched me as I detached the nest and packed the eggs. Upon my withdrawing a little distance, they ordinarily returned at once and confidently alighted at the place where the bark-scale had formerly rested. After scanning the bare stem for a moment they became uneasy, and hurriedly climbed upward for a yard or two, then, dropping to the former level, ascended again. At length, after repeated search, a few chirps were given, when the male appeared, and both birds went over the ground, literally inch by inch, closely examining the trunk from its base to the very top. On the only occasion when I remained in the vicinity to watch the *dénouement*, they desisted from their efforts after about an hour's search, and carelessly strayed off into the forest, the female feeding as she went, and the male singing freely as before. Moreover, in the case of the nest with young, I purposely placed myself at the foot of the tree, and even partially pried off the bark that sheltered the nest, without exciting any visible apprehension on the part of the parents, who simply watched me in motionless and apparently apathetic silence. In view of these facts the conduct of the pair observed by Dr. Brewer, may probably be regarded as of individual rather than specific significance.

In regard to the question of Southern distribution, I can offer nothing new. I am, however, decidedly of the opinion that the Brown Creeper — in the Atlantic States at least — is strictly a bird of the Canadian Fauna, and while, with several other companion species, it may yet be found breeding at a sufficient elevation on mountain ranges far to the southward, the occurrence of nests in the lower portions of Massachusetts may probably be considered as purely exceptional. Many similar examples might be instanced, as the breeding in Connecticut of *Dendræca carulescens*, and *Ereunetes pusillus*, and the occasional nesting in Massachusetts of *Myiodioctes canadensis*; but it is needless to multiply quotations, as it is now pretty well understood that faunal lines must not be too strictly drawn. Broadly speaking, then, the Brown Creeper occurs in the three southern New England States only as a winter visitor, — one

of that galaxy of brave, cheerful little spirits that come to us with the first chill winds of autumn, and after enlivening the naked woods with their presence through the colder months, depart for the ever-green forests of the north when the April sun begins to freshen the turf on sheltered hillsides.

A PARTIAL LIST OF THE BIRDS OF CHESTER COUNTY, SOUTH CAROLINA.

BY LEVERETT M. LOOMIS.

[The subjoined local list has the unusual merit of being the carefully made observations of one observer. It comprises the results of the watchfulness of one student extending over three years. It was not originally intended for publication by its author, but was sent to me as a private communication, and, at first, my advice was to withhold it from publication until it could be made more complete. With the design to cull from it only such notes as mark positive additions to our knowledge, a more attentive examination has led to the conviction that, as a whole, it is well worthy of publicity. It only purports to be a "partial" list of the birds of a small portion of South Carolina, and to give only the species actually taken by the writer. It necessarily omits several kinds named by others; but this is of small consequence compared with the valuable feature of certainty which pervades all its statements, when we know that "no statement is made except after careful revision and thorough study as to comparative abundance and verification of examples."

Doubtless further observations will lead to the discovery of more resident and migratory species, and reveal chance visitants not yet recorded. Such a list as the following is a valuable substructure to build upon, while it also furnishes important additions to our previous knowledge. The asterisk (*) indicates species that remain and breed. — T. M. BREWER.]

SOUTH CAROLINA is divided into four great belts: 1. The marshy region of the coast, or "low country"; 2. The dry, sandy "pine barrens" of Middle Carolina; 3. The rolling uplands of the northern portions of the State; 4. The mountainous districts of the extreme northwest.

Chester County is situated in the third belt, between parallels of latitude $34^{\circ} 33'$ and $34^{\circ} 49'$, one hundred and twenty-eight to one hundred and sixty-six miles from the sea, with an average altitude

of about "seven hundred" feet above tide water. The general surface of the county is a rolling upland, with regions entirely level, as in the case of many of the high "black-jack" lands, which, from the underlying aphanitic porphyry, constitute a notable feature in the geological formation of the State. The geology of the county may be briefly described as follows: About one half gneiss and granite, and nearly equal parts of the remainder mica slate, talcose slate, and aphanitic porphyry. Between one fourth and one sixth of the county is in primeval forest, the timber being chiefly deciduous trees, interspersed here and there with groups of large pines. The neglected "old fields" are overgrown with red cedars, scrubby "black-jacks," and stunted pines.

The Catawba and Broad rivers bound the county on the east and west; the water-shed dividing it nearly in the centre. Numerous large creeks, with their endless tributary "branches" and springs flowing from every valley, empty into these rivers.

The following list embodies the results of my observations during the past three years in Chester County. The absence of many birds *known* to be Carolinian, such as *Strix flammea americana*, *Nauclerus furcatus*, *Aix sponsa*, etc., will be noted; but as no specimens have been actually taken by myself, they have been rigidly excluded.

* 1. **Turdus migratorius.** ROBIN. — Resident. Abundant in winter, from October to April; very abundant during its migrations in November, February, and part of March. Not common in summer.

* 2. **Turdus mustelinus.** WOOD THRUSH; "THRUSH." — Summer; rather common; common during its migrations.

3. **Turdus pallasi.** HERMIT THRUSH; "THRUSH." — Winter; very common. Specimens taken as late as the 21st of April.

4. **Turdus swainsoni.** OLIVE-BACKED THRUSH; "THRUSH." — Migratory. Rather common.

5. **Turdus fuscescens.** WILSON'S THRUSH; "THRUSH." — Migratory. Rather common.

* 6. **Mimus polyglottus.** MOCKING-BIRD. — Resident. Common in winter; very abundant in summer.

* 7. **Mimus carolinensis.** CATBIRD. — Summer; abundant; very abundant during its migrations.

* 8. **Harporhynchus rufus.** BROWN THRUSH; "THRASHER." — Resident. Common in summer; not very common in winter; most numerous during its migrations.

* 9. **Sialia sialis.** BLUEBIRD. — Resident. Abundant in winter; very common in summer. Eggs taken March 21.

10. **Regulus calendula.** RUBY-CROWNED KINGLET. — Winter; rather common, but most abundant during its migrations.

11. **Regulus satrapa.** GOLDEN-CRESTED KINGLET. — Winter; common; abundant during migrations.

* 12. **Poliophtila cærulea.** BLUE-GRAY GNATCATCHER. — Summer; abundant; very abundant during its migrations.

* 13. **Lophophanes bicolor.** TUFTED TITMOUSE. — Resident. Very common.

* 14. **Parus carolinensis.** CAROLINA CHICKADEE; "TOM-TIT." — Resident. Abundant in winter; very common in summer. Very tame and unsuspecting.

* 15. **Sitta carolinensis.** WHITE-BELLIED NUTHATCH. — Resident. Common; very common during its migrations.

16. **Sitta canadensis.** RED-BELLIED NUTHATCH. — A single specimen, taken on the 24th of February, 1877, at Chester Court-House, in a wood of downy black-jacks.

* 17. **Sitta pusilla.** BROWN-HEADED NUTHATCH. — Resident. Common in proper situations.

18. **Certhia familiaris.** BROWN CREEPER. — Winter; rather common.

* 19. **Thryothorus ludovicianus.** GREAT CAROLINA WREN; "WREN." — Resident. Common. Sings through the entire winter.[*]

* 20. **Thryothorus bewicki.** BEWICK'S WREN; "HOUSE WREN." — Resident. Not very common. Found about dwellings, out-houses, wood-piles, brush-heaps in the woodland, etc.

21. **Anorthura troglodytes hyemalis.** WINTER WREN. — Winter; rather common.

22. **Eremophila alpestris.** HORNED LARK. — Winter; common; exceedingly abundant during the severe weather of January, 1877.

23. **Anthus ludovicianus.** BROWN LARK. — Winter; abundant.

* 24. **Mniotilta varia.** BLACK-AND-WHITE WARBLER. — Summer; common; very common during its migrations. In full song from time of first arrival, about the middle or latter part of March. Very shy on first appearance, but soon becomes familiar and unsuspecting.

* 25. **Parula americana.** BLUE YELLOW-BACKED WARBLER. — Summer; rather common; abundant during the migrations.

[* In a letter dated June, 1879, Mr. Loomis writes in reference to this species: "Last week I took a very anomalous nest of the Great Carolina Wren. The structure was a wide departure from the ordinary globular one, being cup-shaped in form, with the opening at the top. It was placed obliquely in the corner of the boxing over a door, in an old and partially unfloored church that was situated in the midst of a large wood. The measurements were as follows: external diameter, 5-6 inches; internal, $2\frac{1}{2}$ -3; height, $2\frac{1}{2}$ - $4\frac{1}{2}$; depth, $2\frac{1}{4}$. The male was secured as he left the nest." — T. M. B.]

26. *Helmintherus vermivorus*. WORM-EATING WARBLER. — Summer? (specimens taken August 17, 19, 21, etc.); rather common.
- * 27. *Dendrœca œstiva*. SUMMER WARBLER. — Summer; most abundant during its migrations, when it is common.
28. *Dendrœca virens*. BLACK-THROATED GREEN WARBLER. — A single specimen, taken May 9, 1879.
29. *Dendrœca cœrulescens*. BLACK-THROATED BLUE WARBLER. — Migratory; very common.
30. *Dendrœca coronata*. YELLOW-RUMPED WARBLER. — Winter; abundant; very abundant during migrations.
31. *Dendrœca blackburniæ*. BLACKBURNIAN WARBLER. — Migratory; very common.
32. *Dendrœca striata*. BLACK-POLL WARBLER. — Migratory; common.
33. *Dendrœca pennsylvanica*. CHESTNUT-SIDED WARBLER. — Migratory; very common.
34. *Dendrœca maculosa*. BLACK-AND-YELLOW WARBLER. — Migratory. Two specimens.
35. *Dendrœca tigrina*. CAPE MAY WARBLER. — Migratory. Two examples.
- * 36. *Dendrœca discolor*. PRAIRIE WARBLER. — Summer; common.
- * 37. *Dendrœca dominica*. YELLOW-THROATED WARBLER. — Summer; common. An incessant songster, and one of the earliest of the spring arrivals.
38. *Dendrœca palmarum*. YELLOW RED-POLL WARBLER. — Winter; not very common; very common during migrations.
- * 39. *Dendrœca pinus*. PINE-CREEPING WARBLER. — Resident. Very abundant in winter, apparently most so during its migrations; common in summer.
40. *Siurus auricapillus*. GOLDEN-CROWNED ACCENTOR. — Migratory; common. Specimens taken May 12 and August 28.
41. *Siurus nævius*. AQUATIC ACCENTOR. — Migratory; rather common. Specimens taken May 14.
42. *Oporornis formosa*. KENTUCKY WARBLER. — A single specimen taken, September 4, 1877.
- * 43. *Geothlypis trichas*. MARYLAND YELLOW-THROAT. — Summer; common; abundant during its migrations.
- * 44. *Icteria virens*. YELLOW-BREASTED CHAT. — Summer; common; very common during migrations.
45. *Myiodiactes canadensis*. CANADIAN FLYCATCHING WARBLER. — A single specimen taken May 8, 1879.
46. *Setophaga ruticilla*. REDSTART. — Migratory; abundant. Three specimens were taken on the 17th of August.
47. *Pyrranga rubra*. SCARLET TANAGER. — Migratory; common.

*48. *Pyrranga æstiva*. SUMMER REDBIRD; "REDBIRD."—Summer; abundant. Although a woodland bird, the Summer Tanager is by no means strictly confined to the timber, but, on the contrary, is found in the groves and shade-trees of the town, and around the planters' houses in the open country, and is everywhere an incessant songster. During spring the woods are filled, at all hours of the day, with the fervid melody of this tireless vocalist.[*]

49. *Hirundo erythrogastra*. BARN SWALLOW.—Migratory; very common. Specimens taken May 16 and July 31. Said to breed, but not commonly, in the county.

50. *Tachycineta bicolor*. WHITE-BELLIED SWALLOW.—Migratory. Two specimens.

* 51 *Stelgidopteryx serripennis*. ROUGH-WINGED SWALLOW.—Summer; rather common; common during its migrations. Generally distributed, but most abundant in the vicinity of water.

* 52. *Progne subis*. PURPLE MARTIN; "BLACK MARTIN."—Summer; abundant.

53. *Ampelis cedrorum*. CAROLINA WAXWING.—During the winter of 1877-78 these birds were *very* abundant; so numerous did they become that even the casual observer noted their unusual numbers; but the following winter they were not abundant. Not observed in summer. Specimens taken May 9.

* 54. *Vireo olivaceus*. RED-EYED VIREO.—Summer; very common; abundant during its migrations.

* 55. *Vireo flavifrons*. YELLOW-THROATED VIREO.—Summer; common; very common during its migrations.

56. *Vireo solitarius*. SOLITARY VIREO.—Migratory. One specimen, taken on the 27th of October, 1877.

[* A nest of the Summer Redbird, containing three eggs (its usual complement), has been sent to me by Mr. Loomis, with its female parent. It was found on a public thoroughfare, in the edge of a grove, and built in a small black-jack oak, near the extremity of an inclining limb, five feet from the trunk and eight and one half above the ground. It is saddled on the limb, partially resting on the smaller branchlets, and is nearly homogeneous in structure, being a beautifully interwoven fabric of stems of grasses, the larger ones making the external framework, the finer ones enclosing the deep cup-like cavity, which is wider below than at the rim. The height of the nest is about 2 inches; the depth of the cavity, being 1.90, shows how thin is the floor. The external diameter of the cavity at the rim is 2.80, and half an inch below, 3 inches: that of the whole nest varies from 5 to 5.75 inches. The eggs measure .89 × .71; .92 × .70; .90 × .66. Their ground-color is a light shade of emerald green, marked with various shades of brown, more or less tinged with lilac, purple, and slate. These are well scattered over the egg, though larger and more numerous about the larger end. — T. M. B.]

* 57. *Vireo noveboracensis*. WHITE-EYED VIREO. — Summer; common; abundant during its migrations.

* 58. *Lanius ludovicianus*. LOGGERHEAD SHRIKE; "LOGGERHEAD," "FRENCH MOCKING-BIRD." — Resident. Common in winter; very common during spring and fall; not observed to be common during summer.

59. *Carpodacus purpureus*. PURPLE FINCH. — Winter; common; abundant during the winter of 1877-78.

60. *Chrysomitris pinus*. PINE LINNET. — Winter; irregular; not very common. Specimens taken April 14.

* 61. *Chrysomitris tristis*. AMERICAN GOLDFINCH. — Resident. Abundant in winter; common in summer. During the mild winter of 1877-78 these birds were much less abundant than during the previous and subsequent severe winters.

62. *Passerculus savanna*. SAVANNAH SPARROW. — Winter; abundant; apparently most abundant during its migrations.

63. *Poœcetes gramineus*. BAY-WINGED BUNTING. — Winter; exceedingly abundant.

* 64. *Coturniculus passerinus*. YELLOW-WINGED SPARROW. — Summer; rather common; common during its migrations; not observed during winter.

65. *Melospiza palustris*. SWAMP SPARROW. — Winter; one specimen, taken on the 1st of February, 1879; common during the migrations.

66. *Melospiza meloda*. SONG SPARROW. — Winter; very abundant.

67. *Junco hyemalis*. SNOW-BIRD. — Winter; abundant.

* 68. *Spizella socialis*. CHIPPING SPARROW. — Resident. Exceedingly abundant in winter; abundant in summer.

* 69. *Spizella pusilla*. FIELD SPARROW. — Resident. Abundant in winter; very common in summer. Two albinos obtained.

70. *Zonotrichia albicollis*. WHITE-THROATED SPARROW. — Winter; very abundant.

71. *Passerella iliaca*. FOX SPARROW. — Winter; common.

* 72. *Goniaphea cœrulea*. BLUE GROSBEAK. — Summer; common. Frequents streams skirted by willows or recent growth, partially cleared fields, edges of woods, etc.; often found in cultivated fields and about dwellings, occasionally in groves, very rarely in the dense woodland. Nests in two instances have been found in scrubby growth near houses; one within thirty yards of the piazza, by a constantly travelled path. Not timid; resents intrusion with much volubility.

* 73. *Cyanospiza cyanea*. INDIGO-BIRD. — Summer; very common.

* 74. *Cardinalis virginianus*. CARDINAL REDBIRD; "REDBIRD." — Resident. Common.

75. *Pipilo erythrophthalmus*. TOWHEE BUNTING; "JOE-REE." —

Winter; abundant during the winter of 1877-78; rather common, winter of 1878-79; abundant during the migrations. Albino obtained.

76. *Dolichonyx oryzivorus*. RICEBIRD. — Migratory; abundant.

77. *Molothrus ater*. COWBIRD; "BLACKBIRD." — Winter; common; most abundant during migrations.

* 78. *Agelæus phœniceus*. RED-WINGED BLACKBIRD. — "BLACKBIRD." — Resident. Common; abundant during its migrations.

* 79. *Sturnella magna*. FIELD LARK. — Resident. Abundant in winter; very abundant during its migrations; common in summer in some localities.

* 80. *Icterus spurius*. ORCHARD ORIOLE. — Summer; very common.

* 81. *Icterus baltimore*. BALTIMORE ORIOLE. — Summer; most numerous during its migrations; rather common.

82. *Scolecophagus ferrugineus*. RUSTY GRACKLE; "BLACKBIRD." — Winter; rather common.

83. *Quiscalus purpureus*. PURPLE GRACKLE; "BLACKBIRD." — Winter; not (?) abundant. Said to breed.

* 84. *Corvus americanus*. CROW. — Resident. Very common in winter; common in summer.

* 85. *Cyanurus cristatus*. BLUE JAY. — Resident; very abundant, especially during summer. Familiar and unsuspecting, nesting abundantly around dwellings, and in the shade-trees along the thoroughfares of the town of Chester.

* 86. *Tyrannus carolinensis*. BEE-MARTIN. — Summer; common.

* 87. *Myiarchus crinitus*. GREAT-CRESTED FLYCATCHER. — Summer; very common; abundant during migrations.

88. *Sayornis fuscus*. PEWEE. — *Winter*; rather common; very common during spring and fall. Usually frequents the woodland in winter.

* 89. *Contopus virens*. WOOD PEWEE; "DEAD-LIMB BIRD." — Summer; common.

* 90. *Empidonax acadicus*. ACADIAN FLYCATCHER. — Summer; common; very common during migrations.

* 91. *Antrostomus carolinensis*. CHUCK-WILL'S-WIDOW; "DUTCH WHIP-POOR-WILL"; "CHIP-THE-RED-OAK-WHITE-OAK." — Summer; rather common.

* 92. *Antrostomus vociferus*. WHIP-POOR-WILL. — Summer; most numerous during its migrations; common.

* 93. *Chordeiles virginianus*. BULL-BAT. — Summer; common; abundant during its migrations.

* 94. *Chætura pelagica*. CHIMNEY SWIFT; "CHIMNEY SWEEPER," "CHIMNEY SWALLOW." — Summer; abundant.

* 95. *Trochilus colubris*. RUBY-THROATED HUMMING-BIRD. — Summer; common.

* 96. *Ceryle alcyon*. BELTED KINGFISHER. — Resident. Common but most abundant during its migrations.

97. *Coccyzus erythrophthalmus*. BLACK-BILLED CUCKOO; "RAIN CROW." — Two specimens taken during the migrations.
- * 98. *Coccyzus americanus*. YELLOW-BILLED CUCKOO; "RAIN CROW." — Summer; common.
- * 99. *Hylotomus pileatus*. PILEATED WOODPECKER; "LOGCOCK," "WOODCOCK," "JOHNNY COCK," etc. — Resident. Common in proper situations.
- * 100. *Picus villosus*. HAIRY WOODPECKER; "SAPSUCKER." — Resident. Rather common.
- * 101. *Picus pubescens*. DOWNY WOODPECKER; "SAPSUCKER." — Resident. Common.
102. *Sphyrapicus varius*. YELLOW-BELLIED WOODPECKER; "SAPSUCKER." — Winter; very common.
- * 103. *Centurus carolinus*. RED-BELLIED WOODPECKER; "SAPSUCKER." — Resident. Common.
- * 104. *Melanerpes erythrocephalus*. RED-HEADED WOODPECKER. — Resident. Abundant in summer; very common during the mild winter of 1877-78; not common the past winter (1878-79); I only know of three or four that remained on my collecting grounds.
- * 105. *Colaptes auratus*. GOLDEN-WINGED WOODPECKER; "YELLOW-HAMMER." — Resident. Very common in winter; common in summer; abundant during its migrations.
- * 106. *Bubo virginianus*. GREAT HORNED OWL; "HOOT OWL." — Resident. Common.
- * 107. *Scops asio*. SCREECH OWL. — Resident. Very common.
108. *Brachyotus palustris*. SHORT-EARED OWL. — Winter; one specimen.
109. *Syrnium nebulosum*. BARRED OWL. — A single specimen taken May 3, 1879.
- * 110. *Accipiter fuscus*. SHARP-SHINNED HAWK; "BLUE-TAILED DARTER." — Resident. Common.
- * 111. *Accipiter cooperi*. COOPER'S HAWK; "CHICKEN HAWK." — Resident. Common.
112. *Falco columbarius*. PIGEON HAWK; "BLUE SKIMMER"; "BLUE DARTER." — Winter; not very common.
- * 113. *Falco sparverius*. SPARROW HAWK. — Resident. Very common during winter; rather common in summer.
- * 114. *Buteo borealis*. RED-TAILED HAWK; "RABBIT HAWK." — Resident. Common.
- * 115. *Buteo lineatus*. RED-SHOULDERED HAWK; "RABBIT HAWK." — Resident. Common.
- * 116. *Cathartes aura*. TURKEY BUZZARD. — Resident. Abundant.
- * 117. *Cathartes atratus*. CARRION CROW. — Resident. Common.
118. *Ectopistes migratorius*. WILD PIGEON. — Migratory. Com-

mon; *very* abundant during the latter part of the winter and spring of 1874.

* 119. *Zenædura carolinensis*. CAROLINA DOVE; "DOVE." — Resident. *Very* abundant during spring and fall; abundant in summer; common the past winter (1878-79), but much more abundant during the mild winter of 1877-78. Begins to flock the latter part of July and early in August.

* 120. *Meleagris americana*. WILD TURKEY. — Resident. Still common back in the county, but has steadily decreased in numbers during the past ten years, and will ultimately be exterminated by the hunters. Specimens have been taken during the past winter (1878-79) within a mile of the corporate limits of the town of Chester.

* 121. *Ortyx virginianus*. PARTRIDGE. — Resident. *Very* abundant.

122. *Charadrius virginicus*. GOLDEN PLOVER. — A single example taken September 19, 1877.

* 123. *Ægialitis vocifera*. KILLDEER PLOVER; "KILLDEE." — Resident. *Very* abundant during its migrations; common during winter and in summer.

124. *Philohela minor*. WOODCOCK. — A single specimen taken February 18, 1878.

125. *Gallinago wilsoni*. AMERICAN SNIFE. — Winter; not *very* common; common during its migrations.

126. *Tringa maculata*. PECTORAL SANDPIPER. — Two examples taken October 10, 1878.

127. *Totanus flavipes*. LESSER TELL-TALE. — A single individual taken August 8, 1877.

128. *Totanus solitarius*. SOLITARY TATTLER. — Summer; were common May 10; specimens taken May 15, June 4, July 30, August 17, 23, etc.; common during its migrations.

* 129. *Tringoides macularius*. SPOTTED SANDPIPER. — Summer; not *very* common.

130. *Actiturus bartramius*. BARTRAMIAN SANDPIPER; "PLOVER." — Migratory; common.

* 131. *Ardea herodias*. GREAT BLUE HERON; "BIG BLUE CRANE." — Summer; common.

* 132. *Ardea cærulea*. LITTLE BLUE HERON; "LITTLE BLUE CRANE" (adult); "LITTLE WHITE CRANE" (young). — Summer; common.

* 133. *Ardea virescens*. GREEN HERON; "SHY POKE." — Summer; common.

134. *Botaurus minor*. BITTERN. — Winter. Two specimens.

135. *Porzana carolina*. CAROLINA RAIL. — A single specimen taken after a heavy storm, during the autumnal migrations.

136. *Fulica americana*. COOT. — Migratory. Four specimens. Said to be common in the county. Specimen taken November 15.

137. *Anas boschas*. MALLARD. — Winter; common.
138. *Mareca americana*. AMERICAN WIDGEON. — Winter; common, but most abundant during its migrations.
139. *Querquedula discors*. BLUE-WINGED TEAL. — Winter; common, but most numerous during the migrations.
140. *Podilymbus podiceps*. PIED-BILLED GREBE; "DIEDAPPER." — Winter; common; most numerous during its migrations.

ON A NEW SPECIES OF *PEUCEA* FROM SOUTHERN ILLINOIS AND CENTRAL TEXAS.

BY ROBERT RIDGWAY.

BACHMAN'S Finch (*Peucea aestivalis*) is a species of some celebrity on account of its very restricted range. During the summer of 1871, the writer discovered what he supposed to be this species in Southern Illinois, as far north as latitude $38^{\circ} 25'$, thus, apparently, very considerably extending its range. The specimens obtained were in very much worn and faded midsummer plumage, and at the time no suspicion existed that they might prove different from South-eastern examples, undue allowance having been made for seasonal changes of plumage. Subsequently, however, upon examining specimens collected in the summer of 1875, by Messrs E. W. Nelson and F. T. Jencks, which were in better plumage than those I obtained, it was noticed that the breast in the Illinois birds was much more deeply buff or ochraceous, and the upper parts more "sandy," than in Florida and Georgia specimens, with a comparative or entire absence of the black streaks characteristic of the true *aestivalis*. Still, I hesitated to describe the Illinois bird as a distinct race, not feeling quite sure that in its winter plumage it would not resemble more closely the Florida bird, of which most of the specimens I had seen were obtained at that season. More recently, however, I have examined several summer specimens from Liberty County and Savannah, Georgia, all of which were still different from the Illinois birds; and I have lately seen three fine skins, collected in the "Lower Cross Timbers" and "Post Oak Woods" of Cook Co., Texas, by Mr. Geo. H. Ragsdale, which confirm the suspicion I have from time to time entertained, that the differences observable might

be more than a seasonal variation. The Texas specimens, (now in the collection of the National Museum,) collected, respectively, April 10 and 29, and August 11, 1879, agree in every respect with those from Illinois, in the points which distinguish the latter from true *æstivalis*, and, being in very perfect plumage, leave no doubt in my mind as to their distinctness from that bird. Whether they are a different species, or merely a western form of *æstivalis*, the material at hand is not sufficient to determine; but as, in our haste to degrade to the latter rank a Western bird more or less closely resembling *P. æstivalis*, two errors have already been made in the cases of *P. cassini* (Woodh.) and *P. arizona*, Ridgw., — and especially since a very wide area exists between the habitat of *P. æstivalis* and *P. illinoensis* in which no *Peucea* is known to exist, — it may answer the present purpose quite as well to consider the latter in the light of a distinct species, until its intergradation with *P. æstivalis* be proven: at least a safe procedure in cases of the kind under consideration. In view of the facts above brought forward, I have concluded to characterize the *Peucea* of the semi-prairie districts extending from Southern Illinois to Central Texas as a new species, and propose for it the specific name of *illinoensis*, this being the only form of the genus which, so far as known, occurs in the State of Illinois. Its characters are as follows: —

***Peucea illinoensis*,* Ridgw. — THE OAK-WOODS SPARROW.**

SP. CH. — *Adult*: Above sandy ferruginous, indistinctly streaked with light ash-gray, these streaks broadest on the back and middle line of the crown; interscapulars sometimes marked with narrow central streaks of black. Outer surface of the wings light ferruginous, the greater coverts less reddish and edged with paler; tertials dusky brown, bordered terminally with pale reddish ashy; outer surface of the secondaries ferruginous. Tail uniform grayish-brown, the edges of the feathers more ashy. Sides of the head and neck, throat, jugulum, and entire sides, deep dingy-buff, this color most distinct across the breast, paler on the throat and chin; a post-ocular streak of ferruginous along the upper edge of the auriculars; sides of the neck streaked with ferruginous; an indistinct dusky streak on each

* **PEUCEA ILLINOENSIS.**

“*Peucea æstivalis*,” RIDGWAY, *Am. Nat.*, July, 1872, 430 (Wabash Co., Illinois); *Ann. N. Y. Lyc.*, X, Jan. 1874, 373 (do.); *Pr. Boston Soc.*, XVI, Feb. 18, 1874, 308, 326 (do.; summer resid.); *Bull. Nutt. Orn. Club*, III, Oct. 1878, 164 (“extremely local and quite rare”). — NELSON, *Bull. Essex Inst.*, IX, 1877, 36, 49 (Mt. Carmel, Wabash Co., and Fox Prairie, Richland Co., Illinois).

Peucea illinoensis, RIDGWAY, MS.

side of the throat, along the lower edge of the malar region; abdomen dull white; crissum creamy buff; edge of the wing, from the carpal to the carpo-phalangeal joint, bright yellow. Bill pale horn-color, the maxilla darker; iris brown; legs and feet pale brown.

Total length, about 6.00; wing, 2.35 - 2.60 (2.51); tail, 2.55 - 2.80 (2.69); bill, from nostril to tip, .30 - .33; depth through base, .27 - .30 (.29); tarsus, .75 - .82 (.77); middle toe, .55 - .60 (.59).

Habitat.— Open oak woods, old fields, etc., of the semi-prairie region, from Central Texas to Southern Illinois. (Wabash Co., Illinois, Mus. R. Ridgway and E. W. Nelson; Richland Co., Illinois, Mus. E. W. Nelson; "Lower Cross Timbers" and "Post Oak Woods," near Gainesville, Cook Co., Texas,* U. S. Nat. Mus.)

Compared with *P. astivalis*, in corresponding plumage, the differences of coloration are at once apparent. The upper parts are much paler, and more "sandy" in hue, and the black mesial streaks which in *astivalis* mark all the feathers (except those of the nape and wings) are either entirely wanting, or confined to the interscapular region; the breast and sides are very distinctly ochraceous-buff, these parts in *astivalis* being dull buffy grayish. The proportions are very nearly the same in the two species, but *illinoensis* has a longer wing and thicker bill, the average of five specimens, compared with six of *astivalis*, being 2.51 and 0.29 respectively, against 2.40 and 0.26. *P. arizonæ* is so different as scarcely to need comparison, having, like *astivalis*, the whole crown streaked with black; the general hue of the upper parts more of a hair-brown, and the lower parts nearly uniform pale buffy grayish, the abdomen not conspicuously lighter. It is also larger, measuring, wing 2.60, and tail 2.85.

The *Peucaea illinoensis* first came under my observation early in June, 1871, when several were seen and others heard, about half-way between Mount Carmel and Olney, the former in Wabash, the latter in Richland County, Illinois. The first individual noticed sat upon a rail-fence by the road-side, and being very near, the first glance showed it to be a species I had never seen before. Before my gun could be got from the wagon, however, it dived into the weeds on the inside of the fence. We had proceeded but a short distance when a clear, loud, musical chant entirely new to me broke upon our ears, from the direction of some large dead trees standing in a weedy field some distance from the road. The singer was soon discovered, perched on one of the lower limbs of a dead tree, some

* Collected by Geo. H. Ragsdale, of Gainesville, Texas.

thirty feet from the ground, and was fired at, but, being missed, escaped further pursuit by diving into the thicket of weeds and bushes which bordered the fence near by. Several others were heard singing in this locality, after leaving which the species was lost sight of until the 11th of August following, upon our return to Mount Carmel. At the latter place it was found to be rather rare in certain places just outside the town limits, the localities frequented being invariably neglected weedy fields in which scattered dead trees were standing. The latter were selected by the males when singing; but when interrupted, they sought safety by diving into the shelter of rank weeds beneath them. Unlike most birds, this species sang with the greatest vigor and frequency during the sultry mid-day, when the sky was brightest and the heat intense, — the thermometer ranging from 90° to 103° in the shade. The song, while reminding one somewhat of the plaintive chant of the Field Sparrow (*Spizella pusilla*), was far sweeter and altogether louder; the modulation, as nearly as can be expressed in words, resembling the syllables *théééééé-thùt, lùt, lùt*, the first being a rich silvery trill, pitched in a high musical key, the other syllables also metallic, but abrupt, and lower in tone.

In July and August, 1875, several specimens of this species were collected by Messrs. E. W. Nelson and F. T. Jencks in the vicinity of Mount Carmel and on Fox Prairie, the latter in Richland County, about thirty-five miles to the northward of Mount Carmel. Their published notes, like my own, are very meagre, and it is to be hoped that we may soon know more of this interesting species.

Since the above was put in type, I have received from Mr. Ragsdale the following account of the habits of *P. illinoensis* as observed by him in Texas:—

“While riding through open post-oak woods, with tall grass underneath, April 29, 1879, my horse kicked up a bird which I recognized as new to me. It flew into the top of a fallen tree which had leaves on it, and it took some time to secure it. Riding back to the place from which this one was started, I put up a second, which alighted in a tree and was killed. Some days afterward a third specimen was *approached on horseback*, while singing from a dead black-jack, and shot. After this I was only successful in collecting this bird by taking two steps at a time while the bird was singing from the top of some dead tree, or from a dead branch in the top of a green tree. I secured only about eight good specimens during the season, although I made their capture a speciality.

“The birds soon ceased to sing, and as it was almost useless to try to put them up from the grass, I let them alone, after making several fruitless efforts to find their nests. In August I chanced to pass through the same locality, and was surprised to hear the same bird singing again. I spent several days hunting for them and got only three in worn and faded plumage. These were so different from my April specimens that I thought them to be *P. æstivalis* until your letter of recent date.

“The song I cannot describe; it has one note which renders it distinguishable from all other birds which I have heard, and which is readily distinguishable from that of *Peuceea cassini*. Upon the whole, it is a very soft, plaintive, and pleasing chant.”

NOTES ON BIRDS OBSERVED AT LONG BEACH, NEW JERSEY.

BY W. E. D. SCOTT.

LONG BEACH, New Jersey, like many other islands that form a barrier between the ocean and the bays of the Atlantic coast, from Long Island southward, is a long narrow strip of sand, extending from Barnegat Inlet on the north to Little Egg Harbor, a distance of about twenty-four miles. It nowhere exceeds a mile in width, and often has a breadth of only a few hundred feet, while at many points it is so low that during very high tides the bay and ocean communicate. Its distance from the main-land is about seven miles. The sand, beginning at the surf, extends back perfectly level for some distance, just above high water; then sand-hills from twenty to forty feet high rise abruptly, forming miniature precipices on the side toward the ocean; they slope off gradually toward the bay, and finally terminate in low marshy ground. The sands have no vegetation; the hills are generally covered with a stunted growth of a kind of bayberry (*Myrica cerifera*), and at some points with a few cedars and a little coarse grass. The marsh land is covered with a dense growth of coarse grasses, reeds, and the like. In the bay, are smaller islands, consisting wholly of “marsh,” which at one point almost connect Long Beach with the main-land.

The following observations were made principally during a resi-

dence of five months, from April 1 to September 1, 1877, at the point indicated, and about three miles south of Barnegat Inlet. A few supplementary notes have been made during visits to the same point at other times of the year. The list is nearly restricted to the so-called "Water Birds," or the Waders and Swimmers, and the few strictly maritime Land Birds, but notices of a few others, whose occurrence here seems of interest, are also added. It may be stated, in general terms, that, notwithstanding the peculiar character of the locality, nearly all of the commoner Land Birds were taken or observed, but usually only a few individuals of each were noted, and often only a single example.

1. **Lophophanes bicolor.** TUFTED TITMOUSE. — Rare. Noted a few times during summer in the cedars. Not met with in winter.

2. **Parus atricapillus carolinensis.** CAROLINA CHICKADEE. — Met with about the same as the preceding species.

3. **Eremophila alpestris.** SHORE LARK. — Abundant winter visitor.

4. **Tachycinetes bicolor.** WHITE-BELLIED SWALLOW. — Common migrant and very rare breeding. First seen April 7; not seen again till April 15. A pair bred on the northern extremity of the Beach, near the Lighthouse.

5. **Lanius ludovicianus.** LOGGERHEAD SHRIKE. — Met with but once, on April 5.

6. **Ammodromus caudacutus.** SHARP-TAILED FINCH. — Very common migrant, but not breeding as abundantly as *A. maritimus*.

7. **Ammodromus maritimus.** SEASIDE FINCH. — Arrives about 20th of April, and breeds very abundantly. The proportion of these two during the breeding season was one pair of *A. caudacutus* to three pairs of *A. maritimus*. This proportion seems about reversed during the migration.

8. **Corvus corax.** RAVEN. — Rather rare. Seen almost every day during the month of April, and occasionally throughout the summer. I am informed by reliable gunners and bay men that this species certainly breeds in limited numbers in the almost impassable cedar swamps that border the bay on the main-land.

9. **Corvus americanus.** COMMON CROW. — Rare. Noted but once or twice during my stay.

10. **Antrostomus vociferus.** WHIP-POOR-WILL. — Rather rare; breeds. First noted the 29th of April.

11. **Brachyotus palustris.** SHORT-EARED OWL. — Rather common; resident; breeds. Took a nest and seven partly incubated eggs, June 28, 1878.

12. **Nyctea nivea.** SNOWY OWL. — An irregular winter visitant, but much more common than is generally supposed. They were very abundant during the winter of 1876 and 1877.

13. *Circus cyaneus hudsonius*. MARSH HAWK. — Abundant migrant. A few breed. Took a nest containing two young just hatched and three eggs about to hatch, June 28, 1877.

14. *Falco communis*. DUCK HAWK. — Rather common during spring and fall, and a few remain during winter.

15. *Pandion haliaëtus*. FISH-HAWK. — Rather rare. Breeds early in May.

16. *Haliaëtus leucocephalus*. BALD EAGLE. — A common winter resident, and several pairs are known to breed in a cedar swamp on the main-land.

17. *Cathartes aura*. TURKEY BUZZARD. — Occasionally seen flying over.

18. *Squatarola helvetica*. BLACK-BELLIED PLOVER. — Not met with during the spring. In late July and August this species became quite common. Many were adult birds in full plumage.

19. *Ægialitis semipalmata*. RING-NECK PLOVER. — Abundant. General arrival, 10th May. Stayed about three weeks, and were first noted going south, 19th July. The next day they were common, and were about during the rest of my stay, associating with the smaller Sandpipers.

20. *Ægialitis meloda*. PIPING PLOVER. — Rather common, but not so abundant as the last. Frequents more commonly the ocean beach, while the former species affects the shores of the bay. First noted, 16th April. The larger number apparently went to the north, but a number bred. Took two nests: first, June 12, four fresh eggs; second, June 28, three eggs, partly incubated. These nests were on the "sands," and were simply depressions lined with a few bits of coarse grass.

21. *Strepsilas interpres*. TURNSTONE. — Common migrant. First noted, 16th May, — a small flock. This species frequents the marshes on the bay shore; not being found on the ocean beach.

22. *Recurvirostra americana*. AVOCET. — Very rare; seen but once, on May 20.

23. *Phalaropus* ———. PHALAROPE. — On May 20 I observed a flock of five Phalaropes swimming at sea about five miles from land; species not determined.

24. *Gallinago wilsoni*. AMERICAN SNIFE. — Rare, though observed once or twice on the salt meadows. Careful observation during some ten years has failed to show me this bird breeding in New Jersey, as recorded by Mr. Turnbull and later by Dr. Abbott. I think that such cases must be regarded, to say the least, as very exceptional, and that this species cannot be given as one that breeds here, save in very exceptional instances. During mild winters, however, it is to be met with in springy places, where the ground remains unfrozen, and I have records of birds observed twice late in June. In both cases the individuals were ascertained to have been wounded.

25. **Macrorhamphus griseus.** RED-BREASTED SNIPE; BROWN-BACK. — Abundant. First noticed, 13th May, when three were seen. They continued passing about two weeks. Observed returning July 6, and after this they were more or less common during the time spent by me here.

26. **Ereunetes pusillus.** SEMIPALMATED SANDPIPER. — Abundant. First noted May 9, associated with Ring-necks and other small species. They continued passing through until about June 1, when all had apparently gone north. On July 7 they were first noted returning, and soon became one of the most common species.

27. **Tringa minutilla.** LEAST SANDPIPER. — Abundant, and closely associated with the last species, arriving and departing about the same time.

28. **Tringa maculata.** PECTORAL SANDPIPER. — Not common; but few specimens seen or obtained.

29. **Tringa bonapartei.** WHITE-RUMPED SANDPIPER. — Common, arriving and departing about the same time as *Tringa minutilla*.

30. **Tringa alpina americana.** RED-BACKED SANDPIPER. — Abundant. First seen, 17th April. Afterward became very common. The first birds taken were moulting, and had not assumed full plumage.

31. **Tringa canutus.** RED-BREASTED SANDPIPER. — Not very common.

32. **Calidris arenaria.** SANDERLING. — Abundant on the ocean beach, but rarely seen on the bay shore. Observed six or seven during the last week of December. Probably winters.

33. **Limosa fedoa.** GREAT MARBLED GODWIT. — Rather rare; but three specimens met with, — an adult bird in May and two young late in July.

34. **Totanus semipalmatus.** WILLET. — Common. Breeds but rarely. Said to have been formerly one of the most abundant breeding species, but is fast becoming rare by the inroads of gunners and egg-hunters. I took a single male on April 6, and saw no others until May. On the 17th of July they began coming from the north, and were very common for a time.

35. **Totanus melanoleucus.** GREATER TELL-TALE. — Very common. First seen April 20, a flock of five; they remained common during the first two weeks in May. Not noted during July and August.

36. **Totanus flavipes.** LESSER TELLTALE. — Not seen during the spring migration. On the 9th of July a flock of seven seen going south, after which they were common.

37. **Totanus solitarius.** SOLITARY TATTLER. — Rare; met with but once, on May 3.

38. **Tringoides macularius.** SPOTTED SANDPIPER. — Common. Breeds. On June 14 found a nest with four eggs almost hatched.

39. **Numenius longirostris.** LONG-BILLED CURLEW. — Rare. Very shy. Seen middle of April.

40. **Numenius hudsonicus.** HUDSONIAN CURLEW. — Rather rare. Seen about May 1, and again July 9, in numbers.
41. **Ardea herodias.** GREAT BLUE HERON. — Common. Seen early in April.
42. **Ardea egretta.** GREAT WHITE EGRET. — Common; many seen. They breed in large numbers about forty miles south, near Townsend's Inlet.
43. **Ardea virescens.** GREEN HERON. — The commonest Heron. Breeds in numbers in the cedars. First seen April 20.
44. **Nyctiardea grisea nævia.** NIGHT HERON. — Rather rare. Breeds in the cedar swamps. First seen April 27.
45. **Botaurus minor.** BITTERN. — A rather common migrant. First seen April 20.
46. **Ardetta exilis.** LEAST BITTERN. — Apparently very rare. Found one dead on the beach April 1. This species is very common further inland, in the neighborhood of Princeton.
47. **Rallus longirostris.** CLAPPER RAIL. — Very abundant; breeding. First seen May 1. Began breeding about June 1, laying from seven to thirteen eggs.
48. **Cygnus americanus.** WHISTLING SWAN. — I observed a flock of nine individuals passing over Barnegat Bay in November, 1876.
49. **Branta bernicla.** BRANT GOOSE. — Very common through April; seen as late as May 1.
50. **Branta bernicla nigricans.** BLACK BRANT. — I saw two specimens which were taken by gunners April 5.
51. **Branta canadensis.** CANADA GOOSE. — Abundant migrant. Large flocks were seen going north as late as April 15, and up to the 12th of May I occasionally saw single birds.
52. **Anas obscura.** BLACK DUCK. — Common, breeding in numbers about the small salt-water ponds on the Beach.
53. **Fuligula marila.** GREATER SCAUP DUCK. — Common. Seen in flocks as late as May 1.
54. **Harelda glacialis.** LONG-TAILED DUCK. — Abundant winter resident. I saw many as late as May 1.
55. **Edemia perspicillata.** SURF DUCK. — Abundant, migrating in large flocks to the north late in April.
56. **Mergus serrator.** RED-BREASTED MERGANSER. — Five or six were seen April 5. They became very common by the last of April, and were nearly gone by the middle of May. A few, however, apparently barren birds remained during the summer. At Little Egg Harbor, on the 28th of June, I saw a number, and took a male bird in immature plumage. This bird had not apparently been shot before. The testes were undeveloped. Three other birds, two females and a male, show the same peculiarities, being in immature plumage, the generative organs undeveloped.
57. **Graculus dilophus.** DOUBLE-CRESTED CORMORANT. — A very common migrant; going north the last of April.

58. **Stercorarius pomatorhinus.** POMARINE JAEGER. — Two of these birds were taken in the bay in December, 1876.

59. **Larus marinus.** GREAT BLACK-BACKED GULL. — A regular winter visitant; quite common.

60. **Larus argentatus.** HERRING GULL. — The most abundant of the Gulls in fall, winter, and early spring.

61. **Larus delawarensis.** RING-BILLED GULL. — Most abundant of the winter Gulls, after *L. argentatus*.

62. **Larus atricilla.** LAUGHING GULL. — Common; breeding. First seen about May 1. On June 28 I found them breeding commonly at Brigantine Beach, about forty miles south.

63. **Sterna maxima?** ROYAL TERN. — On August 23 I saw two specimens, an old and a young bird, which I can ascribe to no other species than this.[*] I was quite near the birds, but unfortunately had no means of procuring them. The bay men tell me that large Terns are sometimes abundant the last of September.

64. **Sterna fluviatilis.** COMMON TERN. — Abundant, breeding on the islands in the bay and on the salt marshes, but never passing over the sand-hills to nest. They arrived May 12 in numbers, and by the last of that month were breeding. Eggs first seen May 25; fully fledged young, June 17. Found nests containing eggs as late as the 20th of July. About the first of August the old and young birds left the breeding grounds, and after that time frequented the ocean beach. Old birds began to moult the 20th of July.

65. **Sterna forsteri.** FORSTER'S TERN. — Rare. Took a pair May 14.

66. **Sterna antillarum.** LEAST TERN. — Abundant. Breeds exclusively on the ocean beach. First seen May 12. First eggs seen May 28. Eggs found as late as July 5. An adult male bird was taken on the 19th of July which had nearly completed moulting. By the 25th of August these birds had mostly left here.

67. **Hydrochelidon nigra.** SHORT-TAILED TERN. — First seen, 11th June. In a few days became very common. Many of the birds were in immature plumage, and all were moulting. About one in ten was in the black plumage. The birds remained all summer in large numbers, but did not breed at this point, and were still common September 1.

68. **Rhynchops nigra.** BLACK SKIMMER. — This is apparently the northern limit of the breeding range of this species, and even here they are rather rare. I first saw them the 10th of June, and do not think they bred here. But on Brigantine Beach and at Little Egg Harbor they are abundant and breed in numbers.

* [Perhaps *Sterna caspia*, which Mr. Henshaw reports, in this number of the Bulletin (p. 243), as occurring at Cobb's Island, off the coast of Virginia. — J. A. A.]

69. *Oceanites oceanica*. WILSON'S PETREL. — At sea off Barnegat Light, on August 10, I observed many Petrels, all apparently of this species. Took several.

70. *Colymbus torquatus*. GREAT NORTHERN DIVER. — Common during April and early May in the bay and ocean.

71. *Colymbus septentrionalis*. RED-THROATED DIVER. — Saw and took a number during April.

72. *Podiceps cornutus*. HORNED GREBE. — Rather common during April, when they were assuming full plumage.

73. *Utamania torda*. RAZOR-BILLED AUK. — On the 7th of February, 1878, I procured a fine specimen of this species, — a female.

74. *Mergulus alle*. LITTLE AUK. — A regular winter resident. I have procured many specimens during the past four winters.

Recent Literature.

OBITUARY. — We learn with great regret of the death of Miss Genevieve E. Jones, of Circleville, Ohio, one of the authors of the beautiful work just begun, on the nests and eggs of the Birds of Ohio. The sad event occurred at her home, on the 17th of August, after a painful illness of several weeks' duration. Bearing her trial with the greatest fortitude, she seemed, as we are informed, to fear less for herself than for the fate of the work upon which she had set her heart; and she expressed hope of her recovery chiefly that she might resume this, "the most pleasurable occupation of her life." In the death of this most talented and amiable young lady, ornithologists have common cause to deplore the loss of an artist and author so capable of adorning this branch of science, — a loss only less irreparable than that sustained by those who have been bereaved of friend and daughter, and to whom we beg the privilege of offering our heart-felt sympathy. We learn from the lady's father, Dr. W. E. Jones, that the second number of the work is nearly ready for distribution, and that the present intention is for Miss Schulze to go on with the publication, for a time at least, under the same ostensible authorship of Jones and Schulze. — E. C.

LAWRENCE ON THE BIRDS OF THE LESSER ANTILLES. — Since our notice of Mr. Lawrence's papers on the birds of Dominica and Saint Vincent in the January number of this Bulletin (Vol. IV, p. 48), he has concluded his series of reports upon Mr. Ober's collections, made at various points of the Antillean chain. The birds reported from the islands of Antigua and Barbuda* number respectively 42 and 39 species,

* Catalogue of the Birds of Antigua and Barbuda, from Collections made for the Smithsonian Institution, by Mr. Fred. A. Ober, with his Observations. Proc. U. S. Nat. Mus., 1878, Vol. I, pp. 232 - 242, December, 1878.

of which one, a Burrowing Owl (*Speotyto amaura*) from Antigua, is described as new. Our common Quail (*Ortyx virginianus*) occurs in Antigua as an introduced species, where, Mr. Ober states, the pastures are fast becoming populated with it, and it is now in sufficient numbers to afford good sport. The single specimen (a male) sent home by Mr. Ober is described by Mr. Lawrence as most resembling the primitive Northern stock, but differs from it in being smaller, and in having the crown and hind-neck black, resembling in this feature the var. *floridanus*, but not otherwise; in its upper plumage it resembles *O. cubanensis*. Unfortunately the date of its introduction to the island is unknown, but it has evidently already departed from the Northern stock.

The list of birds from the island of Grenada* numbers 54 species, five of which are peculiar to the island, namely, *Turdus caribbeus*, *Thryothorus grenadensis*, *Orthorhynchus cristatus*, and two unidentified species of Swift.

The birds reported from Martinique † number 40 species, and embrace eight not recorded from the other islands, these being *Cinclotterthia gutturalis*, *Thryothorus martinicensis*, *Dendroica rufiflora*, *Certhiola martinica*, *Quiscalus inflexirostris*, *Myiarchus sclateri*, *Chatura* sp.?, and *Chrysotis gouldingi*.

The Guadeloupe ‡ species number 45, and include four (*Quiscalus guadeloupensis*, *Cypseloides niger*, *Melanerpes pherminieri*, *Geotrygon mystacea*), not given for the other islands. The *Melanerpes*, seen only at Guadeloupe, is stated by Mr. Ober to be the only species of Woodpecker he met with at any of the islands. *Quiscalus guadeloupensis* appears to be the only species here described as new, but an important error respecting the supposed color of the male in *Euphonia flavifrons* is for the first time cleared up. This paper includes also a nominal list of 135 species, observed by Dr. F. L'Herminier, from 1827 to 1844, now for the first time published, many of which are migrants from North America, not observed by Mr. Ober. A large proportion (about two thirds) are wide-ranging aquatic species, while some are doubtless purely nominal.

This is the last of the series of Mr. Lawrence's special reports upon the collections made by Mr. Ober in the Lesser Antilles. A general catalogue §

* Catalogue of the Birds of Grenada, from a Collection made by Mr. Fred. A. Ober for the Smithsonian Institution, including others seen by him, but not obtained. By George N. Lawrence. Proc. U. S. Nat. Mus., Vol. I, pp. 265-278, February, 1879.

† Catalogue of the Birds collected in Martinique by Mr. Fred. A. Ober for the Smithsonian Institution. By George N. Lawrence. Proc. U. S. Nat. Mus., Vol. I, pp. 349-360, March, 1879.

‡ Catalogue of a Collection of Birds obtained in Guadeloupe for the Smithsonian Institution, by Mr. Fred. A. Ober. By George N. Lawrence. Proc. U. S. Nat. Mus., Vol. I, pp. 449-462, April, 1879.

§ A General Catalogue of the Birds noted from the Islands of the Lesser

of all the species noted, however, follows, consisting of a tabular list of 128 species, arranged to show their distribution. We regret to notice that Mr. Lawrence omits to further summarize the results of the special catalogues, as well as all discussion of the relationship of the bird-life of these islands with each other and with that of contiguous regions, — a subject he is so well able to treat. Of the 48 species of *Passeres*, only five (*Surus naxius*, *S. motacilla*, *Dendraca cirens*, *Setophaga ruticilla*, *Hirundo horreorum*) are migrants from North America, while about the same number occur in the contiguous parts of South America. Probably fully three fourths of the whole number are restricted to the West Indian Fauna, and about one fourth of these, so far as now known, are confined respectively to single islands of the Lesser Antilles. Of the seven Humming-birds, one only is South American, and the two or three species of Parrots are each restricted to single islands. The rest of the species (*Striges* to *Pygopoles*, inclusive of both), or nearly one half of the whole, are too wide-ranging to afford distinctive data, nearly all occurring in the United States, while the greater part are also found in South America. As would be expected, the general *facies* of the bird-fauna of the Lesser Antilles, so far as the Land Birds are concerned, — the only proper basis for a comparison, — is that of Middle America rather than of South America, nearly all of the genera being represented most abundantly in Southern Mexico and Central America. Although a large proportion of the genera occur also in North America, only *Dendraca*, among the resident birds, can be considered as distinctively North American, the others having a wide distribution in both North and South America.

As an indication of how little was known of the bird-life of the Lesser Antilles prior to Mr. Ober's visit, and of the importance of the contribution to our knowledge of the subject * made by the joint labors of Messrs. Ober and Lawrence, it may be noted that some twenty or more species and varieties were first made known from Mr. Ober's collections. From the shortness of Mr. Ober's stay at most of the points visited, and the number of species seen that were not strictly determined, it is evident that there is still work here for future explorers. — J. A. A.

ELLIOT'S SYNOPSIS OF THE TROCHILIDÆ. — Few groups of birds are more replete with points of interest than the great family of the *Trochilidæ* or Humming-Birds, remarkable alike for brilliancy of plumage, variety of form, peculiarities of habit, and geographical distribution. While they have been the subject of expensively illustrated monographs, and of va-

Antilles visited by Mr. Fred. A. Ober; with a Table showing their Distribution, and those found in the United States. By George N. Lawrence. Proc. U. S. Nat. Mus., Vol. 1, pp. 486-488, May, 1879.

* For a history of previous contributions to the ornithology of these islands, see Selater, Proc. Zool. Soc. Lond., 1871, pp. 263-267.

rious special papers devoted to particular genera, or to the species of special localities, the literature of the subject is so difficult of access to the general student that Mr. Elliot's concise and comprehensive "Synopsis,"* forming No. 317 of the "Smithsonian Contributions to Knowledge," forms a most welcome aid to the student of this intricate group. In respect to the classification of the *Trochilidae*, Mr. Elliot states that he has not seen his way clear to the recognition of any subfamilies, as has been done by other writers, although he finds the family to contain a certain number of groups of species having more or less relationship. He also considerably reduces the number of genera heretofore more or less commonly recognized, and many of the species of other authors here take the rank of synonymes, and expresses his belief that further information will show this to be the true status of others to which he here accords specific rank. Four hundred and twenty-six species are admitted as valid, distributed among one hundred and twenty genera. Three hundred and eight of the species are represented in the author's own collection, which is probably the largest in existence, and on which the present monograph is based. The leading characters of very nearly all the genera are represented by outline figures of the head, wing, and tail, and the species are described in sufficient detail for their easy recognition, the short descriptions being generally restricted to distinctive features. The synonymy, the author tells us, he has "not endeavored to make 'exhaustive,' as the term is used now-a-days in many instances," only such works being cited as give "some desirable information regarding the species." Neither are reasons given for the changes in nomenclature adopted, nor for the synonymy presented, but a discussion of many of these determinations may be found in the series of papers published by Mr. Elliot, either alone or in conjunction with Mr. Salvin, in the "Ibis," during the last six or seven years. The only changes we note in the currently accepted names of North American species are the following: the substitution of the generic name *Basilinna* (Boie, 1831), for *Heliopædica* (Gould, 1861), and of the name *henshawi* for the species claimed by Mr. Henshaw to be the true *Selasphorus rufus*, and the reference of Henshaw's *S. alleni* to what Mr. Elliot takes to be *S. rufus*. There is, however, no discussion of the point at issue, nor any allusion to Mr. Henshaw's defence of his interpretation of this peculiar case. (See this Bulletin, Vol. II, pp. 54, 97, Vol. III, p. 11.) The work closes with an appendix, giving an analytical key to the genera, and separate indexes to the generic and specific names adopted, and to all those mentioned in the work. From these it appears that 339 generic and 880 specific names have been used by different authors for the birds of this group.

* A Classification and Synopsis of the Trochilidae. By Daniel Giraud Elliot, F. R. S. E., etc. Washington City: Published by the Smithsonian Institution. March, 1879. 4to, pp. xii, 277, figg. 127 (wood-cuts in the text).

Mr. Elliot is certainly entitled to the sincere thanks of ornithologists the world over for this carefully elaborated "Synopsis" of the largest and most interesting family of American birds. It will doubtless form a reference work for the group, not to be soon superseded, either in point of completeness or of usefulness. — J. A. A.

BREWER ON THE NESTS AND EGGS OF THE EMPIDONACES. — In a paper* of ten pages Dr. Brewer gives "the measurements of all the eggs of the eight species of *Empidonax* that are in the collection of the Smithsonian Institution," and of those in his own collection, with the addition of some others. Following the measurements and descriptions of the nests and eggs of these eight species are several pages devoted to a consideration of the nests and eggs of *E. flaviventris*, in which the author affirms that the unspotted eggs, found in nests built in bushes, and formerly ascribed by him to this species, were correctly identified, and argues that the differences these nests and eggs present, as compared with those recently described by Messrs. Osborne and Purdie, are only in accordance with the wide range of variability in these respects known to obtain in other species of this genus. — J. A. A.

General Notes.

THE USE OF TRINOMIALS. — As our practice for some time has been a practical indorsement of the use of trinomials, it might appear almost superfluous to offer further testimony in the matter. Nevertheless, in response to Mr. Ridgway's recent call, a few brief remarks may be ventured.

It is scarcely necessary to waste time in arguing upon the desirability of some better method of expressing geographical varieties than that afforded by the binomial system, so far at least as American ornithologists are concerned, since, as stated by Mr. Allen, not alone they, but nearly all American writers on other branches of zoology, as well as botany, concede the necessity by discarding the binomial in favor of the trinomial in some form or other. But if any argument were needed in favor of a change it could be found in recent English and Continental ornithological writings, where binomials are still closely adhered to. One of the most perplexing evils resulting from such close adherence is frequently apparent in the difficulty or impossibility the student finds in discriminating between

* Notes on the Nests and Eggs of the Eight North American Species of Empidonaces. By T. M. Brewer. Proc. U. S. Nat. Mus., Vol. 1, pp. — —, April 29, 1879. Also separate, author's edition, pp. 10. (Only the author's separates have been seen by the reviewer.)

such forms as the writer considers valid and trenchantly defined species and those which he views as mere geographical varieties, except in so far as this may be indicated in the general text. A good illustration of the inadequacy of binomials is seen when their strict employment necessitates the addition of several lines, it may be paragraphs, to the text, with the alternative of leaving the author's precise estimate of the rank of a named form in obscurity.

The change from the binomial towards a more comprehensive system has been a somewhat gradual one, and the use of an explanatory abbreviated term, as "var." or "subsp.," was probably a necessary compromise, paving the way, as we believe, for the final and universal adoption of the pure trinomial. With a general understanding of the exact significance of the trinomial, as at present employed, we see not the slightest necessity for the use of the above expressions, or, in fact, for the interposition of any explanatory term, since such may be understood as implied in the trinomial itself, as contrasted with the binomial, which may be limited to such absolutely defined species as are not known to intergrade.

Mr. Ridgway's plan of the use of Greek letters would certainly have an advantage over the method of writing var. or subsp. in so far as it is less cumbersome, but its seeming advantage of greater precision would, as Mr. Allen has shown, inevitably lead to confusion in the instance of forms treated differently by different writers, or by the same writer at different times.

We therefore unhesitatingly express our preference for the pure trinomial. — H. W. HENSHAW, *Washington; D. C.*

NOTE ON *HELMINTHOPHAGA GUNNII*, GIBBS. — The bird described in the Grand Rapids "Daily Democrat" of June 1, 1879, as a new species of *Helminthophaga*, for which the above name was proposed, has been recently forwarded to the Smithsonian Institution for examination; and having had the privilege of inspecting the example in question, it gives me great pleasure to offer a few remarks concerning it. In the first place, it may be stated that Mr. Purdie's surmise (see his article in the July number of this Bulletin, Vol. IV, p. 185), that the specimen might be merely a variation of *H. leucobronchialis*, Brewster, is correct. The specimen collected by Mr. Gunn, and named after that gentleman, is in all essential respects like the type of *H. leucobronchialis*, (which, through the courtesy of its owner, I examined several years ago,) except that the breast has a large, well-defined patch of bright gamboge-yellow, while the upper parts are much less brightly colored, both the yellow of the crown (especially posteriorly) and the bluish-gray of the nape, back, and wings being obscured by a wash of olive-green. The yellow wing-patch is also more restricted than in the male. The yellow breast-patch, which is very abruptly defined anteriorly against the pure white of the jugulum, does not extend back to the flanks and abdomen, but is strictly limited to the

middle of the breast, the sides of which are deep bluish-gray, almost as dark as the back. The upper part of the throat (not the chin) is strongly tinged with pale yellow. The measurements are as follows:—wing, 2.40; tail, 2.10; bill, from nostril, .35; tarsus, .65; middle toe, .42.

This being, as Mr. Purdie remarks, the seventh specimen thus far collected, the validity of *H. leucobronchialis* may be considered as established beyond question. The variations in plumage and the sexual differences of coloration appear to be nearly the same as those of *H. chrysoptera*, but there seems to be a frequent tendency to assume more or less of a yellow tinge beneath, especially on the breast, which is rarely to be noticed in *H. chrysoptera*, although sometimes slightly indicated in that species. It is not unlikely that there may be specimens of this species in the possession of collectors who have mistaken them for individuals of *H. chrysoptera*, and in view of this probability it would be well for those having the latter in their collections to examine them critically. The species, in all stages, may be readily distinguished by the entire absence of black or dull gray on the throat (only the bases of the feathers being sometimes grayish), and by the absence of the dusky-gray or black auricular patch.—ROBERT RIDGWAY, Washington, D. C.

HELMINTHOPHAGA LEUCOBRONCHIALIS IN NEW YORK.—While collecting, Aug. 24, 1879, in a low swampy thicket composed of alders, small maples, etc., I shot a specimen of *H. leucobronchialis*. It was in company with several other species of Warblers. It was an adult male, and resembled Mr. W. W. Coc's specimen, cited by Mr. H. A. Purdie in the last number of the Bulletin, in having the band of yellow across the breast and very slight suffusion of the throat, it differing from other specimens in having the wing bars *whitish*, whiter even than in *H. pinus*. The back is that of a typical *H. leucobronchialis*.—A. K. FISHER, M. D., Sing Sing, N. Y.

HELMINTHOPHAGA PINUS, OGORORNIS FORMOSA, AND MNIOTILTA VARIA BREEDING IN PENNSYLVANIA.—Some notice having appeared in a former number of this Bulletin (Vol. III, p. 194) in regard to the breeding of *H. pinus* in Pennsylvania, I think it would now be desirable to supplement the article kindly inserted by Dr. Elliott Cones by stating that, whilst lately residing in Chester and Delaware Counties, I have found the three birds mentioned at the head of this note to be the commonest representatives of their family in that part of the State, and that I can, during any of the summer months, secure a goodly number of specimens in the nearest belt of woodland. I found two nests of the Blue-winged Yellow Warbler and one of the Kentucky Warbler in 1878, and saw another nest of the same species found by a schoolmate, and secured one of the eggs. A collector in West Chester, Penn., told me that he had secured six nest complements of *O. formosa* and three of *H. pinus* in a single season.

So far *M. varia* has eluded my search, so far as nidification is con-

earned, although I have quite frequently seen them feeding their young. — S. N. RHOADS, *Haddonfield, N. J.*

NOTES ON THE OCCURRENCE OF CERTAIN RARE OR UNCOMMON BIRDS AT PHILADELPHIA AND ADJACENT LOCALITIES. — The following notes on certain birds considered of rare or uncommon occurrence in this locality are made principally from the observations of Mr. Christopher D. Wood, and may prove of interest in regard to the range of certain species. When not otherwise stated, the notes refer to Mr. Wood's observations and collecting.

1. *Protonotaria citrea*. PROTHONOTARY WARBLER. — A specimen of this rare species was seen on a telegraph-wire below the city in the fall several years ago. Another individual was shot, I believe, the following spring, by Mr. John McIlvaine, on the western bank of the Schuylkill above the city.

2. *Helminthophaga celata*. ORANGE-CROWNED WARBLER. — Mr. McIlvaine shot an individual of this species in his yard in West Philadelphia, one cold day in March, some years ago.

3. *Pyrranga æstiva*. SUMMER REDBIRD. — A female of this species was shot on Darby Creek, in the spring, about thirteen years ago.

4. *Vireo philadelphicus*. PHILADELPHIA VIREO. — On the 19th of September last I had the good fortune to procure a female of this species near Frankford, Philadelphia. A male bird was taken by Mr. William L. Collins in September of the preceding year, not a quarter of a mile from where I shot my specimen.

5. *Plectrophanes lapponicus*. LAPLAND LONGSPUR. — A specimen of this species, which in this latitude is by no means common, was shot out of a flock of Snow-Buntings (*P. nivalis*) at League Island, in the winter, about fifteen years ago.

6. *Euspiza americana*. BLACK-THROATED BUNTING. — A few pairs of these birds breed regularly every year in a small area of country north of Philadelphia, but in no other locality in this neighborhood have I authentic information of their being seen. In former times this bird was quite common here, but has now become comparatively scarce.

7. *Goniaphea cærulea*. BLUE GROSBEEK. — A male of this species was shot on Darby Creek, in the spring, about thirteen years ago. A female was also taken last fall (1878), by Mr. Collins, near Philadelphia; he also saw a young male about the same time.

8. *Contopus borealis*. OLIVE-SIDED FLYCATCHER. — A male of this species was shot at Coatesville, Chester County, Pa., about thirty miles from Philadelphia, in the spring, several years ago.

9. *Nyctale acadica*. SAW-WHET OWL. — This curious little Owl is occasionally met with in this locality. A female was taken in October, 1876, by Mr. Collins; several were also taken here last fall (1878).

10. *Limosa hudsonica*. RING-TAILED GODWIT. — A specimen of

this bird was shot in September, 1878, on the banks of the Schuylkill, below Philadelphia. I believe it is rather unusual for this species to be taken so far inland.

11. *Mergulus alle*. LITTLE AUK; DOVEKIE. — A specimen of this bird, now in my collection, was found in an exhausted condition in the early part of December, 1878, in New Jersey, near Philadelphia, more than sixty miles from the ocean. — SPENCER TROTTER, *Philadelphia, Pa.*

[This specimen is referred to also in a note received from Mr. William L. Collins, Frankford P. O., Philadelphia. He adds: "I am also informed of another specimen in the possession of Professor E. D. Cope, which was taken near Atlantic City, N. J., about the end of November, 1878. See also p. 228 of this number of the Bulletin. — Eds.]

NESTING OF THE KENTUCKY WARBLER (*Oporornis formosa*) IN OHIO. — Although the Kentucky Warbler has long been a well-known summer resident of Southwestern Ohio, its nest and eggs have hitherto eluded the vigilant search of our local ornithologists, and have, in consequence, been classed among their especial *desiderata*. As the nesting habits of this species have been recorded in but a few instances, and only once in Ohio,* a notice of a nest and eggs recently taken near Madisonville may be of interest to readers of the Bulletin.

The locality chosen for this nest was a gentle slope, well wooded and covered with undergrowth, situated within a short distance of a small woodland stream on the border of an open glade. The nest, which was placed on the ground at the root of a small elm sapling, was concealed by a sparse growth of weeds, and consisted of two distinct portions. The foundation was a saucer-shaped mass of beech and maple leaves loosely interwoven with a few weed stems, and retained its shape sufficiently well to permit careful handling without injury; surmounting this basal portion was the nest proper, a rather bulky and inelegant structure, elliptical in shape, composed of dark-brown rootlets and weed stems, with which were interwoven a few dried leaves. There was also a trace of an effort at horse-hair lining, a half-dozen hairs perhaps being disposed around its interior. Its measurements are as follows:— Internal long diameter, $2\frac{1}{2}$ inches; internal short diameter, 2 inches; depth of cavity, $1\frac{1}{4}$ inches; average thickness of nest proper, about $\frac{3}{4}$ inch; ditto of foundation, about 1 inch. The eggs, which are four in number (exclusive of the Cowbird's egg which accompanies them), are oblong-oval in shape, spotted and speckled everywhere with reddish-brown and lilac on a glossy white ground, the markings on two specimens being massed at the larger end, while those on the other two form a distinct "wreath" around the rather

* By Dr. J. P. Kirtland. I am unable to refer to the original record at present; it is mentioned incidentally, however, by Dr. Brewer, in *Hist. N. Am. Birds*, Vol. I, p. 293.

blunt apex. They were far advanced in incubation (May 28th), and measure, respectively, $.72 \times .54$, $.73 \times .56$, $.75 \times .56$, $.73 \times .55$. Their identification was perfectly satisfactory, the female being secured instantly after being driven from the nest. — FRANK W. LANGDON, *Madisonville, Hamilton Co., Ohio*.

VIREO GILVUS AND VIREO FLAVIFRONS IN NORTHERN NEW ENGLAND. — The opinion having been expressed in the Bulletin (Vol. I, p. 73, Vol. II, p. 15), that the Yellow-throated and Warbling Vireos rarely occur in Northern New England, it may be worthy of mention that my correspondents in Vermont (East Bethel, in the very heart of the Green Mountains, just north of the centre of the State) send me, with parent, one set of the eggs of the former (*Vireo flavifrons*), and no less than four sets of the latter (*Vireo gilvus*), and write me that they are quite common there. — T. M. BREWER, *Boston, Mass.*

THE LOGGERHEAD SHRIKE IN CENTRAL NEW YORK. — July 19, 1879, Dr. William L. Ralph of this city brought me a Shrike, shot by him in Marcy, Oneida Co., N. Y., within a mile of this city. The bird was a young female, evidently bred near here. Believing the bird to be *Lanius ludovicianus*, I sent it to Mr. Robert Ridgway, who has kindly compared it with skins of that bird from the Gulf States, with which he says it exactly agrees. — EGBERT BAGG, JR., *Utica, N. Y.*

THE EVENING GROSBEAK IN NEW MEXICO. — Respecting the occurrence of the Evening Grosbeak (*Hesperiphona vespertina*) in New Mexico, Mr. F. Stevens writes me, in a recent letter, that he killed a pair in pine woods, January 26, 1876, and that on the 9th of May following he killed another pair in a box-elder grove. At this date the sexual organs were not enlarged. About ten days later (May 18), however, he killed at the same place two females and a male. The females, he thinks, would have laid in three or four weeks. The locality was in Southern New Mexico, near the Arizona line. These facts seem to favor Mr. Henshaw's belief that the species is a rare resident in portions of Arizona. — J. A. ALLEN, *Cambridge, Mass.*

NOTE ON HESPERIPHONA VESPERTINA. — There is one fact connected with the occurrence of the Evening Grosbeak in Minnesota which is not, I think, generally known. This is the lateness of its departure in the spring. The habits of the species are so regular that it is possible by persistent observation to determine with considerable accuracy the time of the spring migration. In the spring of 1876 we kept a large flock of thirty or forty individuals under almost daily scrutiny until May 17. After this date nothing more was seen of them, and they evidently left for the north at that time. May 6 is the latest record in 1877. During the winter of 1877-78 the species was scarcely to be found here. The past winter they were here in only moderate numbers, but quite constantly.

I kept a close watch on them during May, and found them in their accustomed place as late as May 19; thus confirming the previous late date. Before their departure both male and female become very full plumaged, and are more than usually striking in appearance when seen among the thick green foliage of late May. — THOMAS S. ROBERTS, *Minneapolis, Minn.* [Comm. by E. C.]

SOUTHWARD RANGE OF CENTROPHANES LAPPONICA. — A letter from Howard Ayers, dated Fort Smith, Ark., February 26, 1879, states: "The Lapland Longspur is found as far south as the central part of Arkansas. They appear in this part of the State about November, in small flocks, but as it grows cold they collect in immense numbers and scatter again as spring comes (about 1st of February). Two thirds of these large flocks are Missouri Skylarks (*Neocorys spraguei*). I have never seen the Longspurs in companies by themselves, but always more or less mixed with the Larks." — ELLIOTT COUES, *Washington, D. C.*

HENSLOW'S BUNTING (*Coturniculus henslowi*) NEAR WASHINGTON. — About the middle of July of this year, while walking through a meadow some five miles west of Washington, in Fairfax County, Virginia, I was quite surprised to hear near by a rude bird-note, which sounded familiar, although I had not heard it since the summer of 1871. It was the peculiar *sewick'* of Henslow's Bunting. The time was about dusk, the brighter stars having made their appearance, and there seemed to be some half-dozen individuals answering one another from different directions. Upon returning by the same route a few days afterward, I heard these birds in every weedy meadow through which I passed, and soon discovered that the species in question was not only an extremely common bird, but generally distributed, in suitable localities. A friend who accompanied me on the first occasion, and whose attention was directed to the note, returned to the same locality a few days after, and with a companion has made one or two subsequent visits, the result of which has been the securing of numerous specimens, including the young in first plumage. — ROBERT RIDGWAY, *Washington, D. C.*

THE SNOWBIRD (*Junco hyemalis*) IN SOUTHERN MICHIGAN IN SUMMER. — I take pleasure in announcing the occurrence here in summer of the Blue Snowbird. I saw it on July 8 (1879), and was often within ten or twelve feet of it. I was without my gun, or I would have secured it. This, however, is not the first instance of the occurrence of this bird in Southern Michigan in midsummer. Mr. Charles W. Gunn, of Grand Rapids, Mich., shot a male and female, July 13, 1878, near Grand Rapids, in Ottawa County, which were apparently breeding. — H. A. ATKINS, *Locke, Ingham Co., Mich.*

NESTING OF THE SNOWBIRD (*Junco hyemalis*) IN EASTERN TENNESSEE. — In conversation with the late Rev. R. Bidwell, some time

since, he remarked that he was once on a peak of the Unaka Mountains, in Southeastern Tennessee, in August, and found the Snowbird nesting around the very crest of the peak, on the ground, in some tussocks of grass, the top of the peak being destitute of trees. The locality is probably in the "Smoky Range," southeast of Knoxville, many of the higher peaks of which attain an altitude exceeding six thousand feet. Dr. Coues refers to the nesting of this species in the "Graylock Range" (Birds of the Northwest, p. 141). — GEORGE H. RAGSDALE, *Gainesville, Texas.*

CAPTURE OF A FISH CROW (*Corvus ossifragus*) NEAR SEABRIGHT, MONMOUTH COUNTY, NEW JERSEY. — April 14, 1879, Edward Keeler brought me a "Sea Crow," stating that it was shot the day before, in company with many "Land Crows" (probably *C. americanus*, but *C. corax* also occurs); all were very shy. It proved, on dissection, to be a male bird; and of remarkably large size. Its dimensions are greater than any I can find on record, viz.: Length, 17.50; extent, 34.00; wing, 11.50; tail, 7.10; culmen, 1.63; gape, 1.92; tarsus, 1.90; middle toe and claw, 1.96; graduation of tail, .55. The stomach contained two whole shrimps, besides several fragments of the same. — LOUIS A. ZEREGA, 23 *North Washington Square, New York City.*

THE ROCKY MOUNTAIN WHISKEY-JACK (*Perisoreus canadensis capitalis*). — This race of the Canada Jay, so very different from the two styles found to the westward and eastward, *obscurus* and *canadensis*, is peculiar to the Rocky Mountain region, and is especially abundant in the State of Colorado. I have just received from Mr. Edwin Carter the nest, eggs, and female parent, taken this spring, and although the differences between the three forms are varietal rather than specific, it will be interesting to compare its nest and eggs with what little we know of those of the more eastern form. Writing, May 26, 1878, from his camp on the Shuto Platte, El Paso County, Mr. Carter says: "The Jay, *capitalis*, is not here. They are only found from 8,000 feet up to the limit of trees. They breed about Breckenridge, but I have never taken their eggs, and I know of no other bird that covers its action so completely during the nesting season. The young are on wing by the middle of June." On the 2d of April, 1879, Mr. Carter found the nest of the Rocky Mountain Jay near Breckenridge. The nest was on the horizontal branch of a pine tree, three feet from the trunk and forty feet from the ground. It contained three eggs, apparently its full complement, which were slightly incubated. The nest, which is now before me as I write, is warmly, strongly, and compactly interwoven of various materials, of which the feathers and down of various kinds of birds constitute the characteristic ingredient. The nest measures 4 inches in external height, and 7 in diameter. The cavity is 2 inches deep, and 4 in diameter at the top. The external framework of the nest is a rude but strong interweaving of twigs and small branches of pine, enclosing a closely impacted inner nest composed of

strongly blended materials, stems of grasses, hempen fibres of plants, bark, down-feathers, etc. The walls of the nest are 2 inches thick, and the inner nest is warm and soft.

The eggs of the *capitalis* before me differ from those of the *canadensis*, but not more than we often find the eggs of the same species differing one from the other. The average size of the *canadensis* is $1.20 \times .82$, the ground is a light gray, and the entire egg is finely marked with points and spottings of slate and brown, with faint cloudings of an obscure lilac. These markings are but little more numerous and larger about the rounded end. The measurements of those before me are $1.19 \times .86$, $1.16 \times .86$, and $1.10 \times .86$. Their ground color is a grayish-white. In two the markings are all grouped around the larger end, the residue of the surface being nearly unmarked. In one the markings are well distributed over the entire egg, but larger and confluent at the rounded end. The markings are larger, more confluent, and not so distinct and separate as in the eggs of the *canadensis*, and are of a distinct shade of brown. While there is an absence of slate and lilac, and while the markings are all of one color, there is a tinge of purple shading them all, and the blotches vary greatly in the depth and intensity of the shading, from very light to a very deep color. The parent accompanying the nest and eggs is a female, whose measurements are as follows: Length, 11.60; extent, 17.65; wing, 5.95; tail, 5.95; tarsus, 1.45; middle toe and claw, 1.15; culmen, .80. — T. M. BREWER, *Boston, Mass.*

ANOTHER NEST OF THE YELLOW-BELLIED FLYCATCHER (*Empidonax flaviventris*). — In view of the seeming inconsistencies in the nesting habits of *E. flaviventris*, the record of the finding of another nest may be of interest. The locality was the Richardson Lakes, Oxford Co., Me.; the date, June 18, 1879; and the discovery was very similar to that of the nest which I secured last year at Grand Menan, and which is described in Vol. III, No. 4, of this Bulletin. Mr. Pearsall and myself were collecting in a tract of low swampy woods bordering on a stream, when a Yellow-bellied Flycatcher flew up from under my feet. An instant's search revealed the nest, when the parent bird was immediately shot. The nest was built in the side of a hummock of moss under the roots of a small tree, and was only about half covered over, the eggs being clearly visible from the outside. The construction, or rather the almost total lack of construction, was similar to that of the Grand Menan specimen, as were also the eggs, which were four in number and pretty well advanced in incubation. Does not this seem to argue something for uniformity in the breeding habits of this bird? Here we have three nests, one taken by Messrs. Purdie and Deane, and two by Mr. Pearsall and myself. The locations are quite far apart, viz. Houlton, Me., Grand Menan, N. B., and Richardson Lakes, Me.; and yet the situation and make of the nests, as well as the color and markings of the eggs, agree perfectly. In both cases which I have recorded the identity was beyond

all question, as I found both nests *myself*, and the birds were never lost sight of from the time they left the nests until they were in our possession. Ornithologists may draw what inferences they please from these facts, but to my mind they augur ill for the identity of those nests which have been found in bushes, built of stubble, etc., and containing pure white eggs. — S. D. OSBORNE, *Brooklyn, N. Y.*

NESTING OF THE YELLOW-BELLIED FLYCATCHER (*Empidonax flaviventris*).— During a collecting trip made the past season with Mr. J. Dwight, Jr., to Fort Fairfield, Maine, I had the good fortune to obtain two nests of the Yellow-bellied Flycatcher (*Empidonax flaviventris*). As but little is known of the breeding habits of this bird, a description of the nest and eggs may not be without interest.

My first nest, containing four fresh eggs, which was taken on June 14, I found in rather wet mixed woods of small spruces and arbor-vitæ, with a few larger hemlocks, — also a few yellow birches and maples. It was on the edge of a bank formed by a decayed tree trunk, and over a pool in a small brook that was flowing beneath the moss-covered trunks of fallen trees. The nest was protected above and hidden from sight by some green moss growing upon a projecting root. A small vine (*Ribes lacustre*) growing past the entrance of the nest gave additional concealment. The bird flew from the nest when I was within a few feet of it. After a short time she returned to the nest, and I again flushed her. Just as she was returning once more, Mr. Dwight shot her to make the identification complete.

The nest, which was partly sunk in the surrounding moss, is made of fine brown roots, bits of rotten wood, and the scaly coverings of buds, apparently of the arbor-vitæ, together with a few sticks and withered leaves, and one or two bits of arbor-vitæ and green moss. It is scantily lined with very fine black roots and stalks of withered grass, the latter contrasting strongly in color with the rest of the nest. Its external diameter is four inches, its depth two and a quarter inches; internally its diameter is two and three eighths inches, its depth one and a quarter inches. The ground color of the eggs is white, with a slight creamy tinge. They are spotted and blotched with two shades of light-reddish brown, mostly about the larger end. Two of the eggs have also a few fine dashes and specks of black over the other markings. Their measurements are as follows: — .68 × .52, .68 × .52, .66 × .51, .66 × .51.

I did not find the second set until June 27. It was in a small piece of damp woods, consisting of scattered arbor-vitæ and hemlocks growing in the valley of a small brook. The nest was not far from a clearing, and was among a tangled mass of fallen trees. It was situated about two feet from the ground, on the side of the moss-covered stump of a fallen tree. It was deeply sunk in the soft green moss, which covered and protected it above, though the eggs could be seen from the outside.

As I approached the spot I saw a bird dart out from the moss and fly swiftly away. I noticed a rather inconspicuous hole in the moss, and looking in saw the eggs. Recognizing them by their resemblance to the other set, I retired a short distance and waited for the bird to come back. She returned in a few moments, and was soon joined by her mate, who, however, was disposed to remain rather more in the background. The female remained near the nest until I shot her, occasionally uttering her characteristic note of alarm, but without showing much anxiety.

The nest, which is very bulky for the size of the bird, is a compact mass of the soft green moss that is so abundant in such places, with a few bits of arbor-vitæ and one or two sticks. It is thinly lined with slender stalks of grass and a few very fine roots. Its external diameter is four and a quarter inches, its depth four inches; internally its diameter is two inches, its depth an inch and a half. The eggs, four in number, are white with a faint creamy tinge, and are marked, chiefly about the larger end, with spots and blotches of two shades of light reddish-brown, together with a few rather inconspicuous spots of lavender. Three of them have a few fine specks of black over the other markings. They measure $.70 \times .54$, $.67 \times .54$, $.67 \times .53$, $.67 \times .51$. The eggs appeared to have been incubated for only a day or two.

The nests and eggs that have been found in the past two seasons agree so closely in all respects as to render it probable, to say the least, that future sets will not vary much from them. Their number now seems sufficient to make one hesitate about admitting the identity of supposed nests of this species that differ widely from them in situation, structure, and in the appearance of the eggs. — CHARLES F. BATCHELDER, *Cambridge, Mass.*

A CORRECTION. — I beg to apologize for a singular blunder recently made in proposing to substitute the name *Buteo aquilinus* (Barton) for *B. borealis* (Gm.). I have "always" known, of course, that *Falco borealis*, Gm., 1788, was the name of the bird; but during a momentary lapse of memory I attributed the specific term to Vieillot, and so gave priority wrongly to Barton. (See *Birds Col. Val.*, I, 1878, p. 573, and *Bull. Nutt. Club*, IV, 1879, p. 84, foot-note. Also compare *Proc. Phila. Acad.* 1875, p. 344, foot-note.) — ELLIOTT COUES, *Washington, D. C.*

WILSON'S PLOVER ON LONG ISLAND, N. Y. — On May 28, 1879, at Good Ground, Suffolk Co., Long Island (Shinnecock Bay), I shot a female Wilson's Plover, *Ægialitis wilsonia*. It was identified and mounted by Mr. James Bell, who reported it very rare. He said it was about six years since one had been recorded as far north as Long Island. This specimen was in very poor flesh. — WM. DUTCHER, *New York City.*

THE BLACK SKIMMER (*Rhynchops nigra*) IN NEW ENGLAND. — The only record of this species occurring in New England was given by Lins-

ley, in 1843, in his Catalogue of the Birds of Connecticut; but since then writers have considered that it was given without sufficient proof.

Under date of August 20, 1879, Mr. Charles I. Goodale writes me that three specimens of the Black Skimmer were shot at Sandwich, Cape Cod, Mass., on the 19th inst., and that the next day a fourth specimen was killed off Pettock's Island, Boston Harbor, which latter bird he has preserved.

My friend, Mr. Geo. A. Boardman, of Milltown, St. Stephens, N. B., under date of 31st August, 1879, writes me that there had been a flight of Skimmers in his locality, and that seven specimens had been killed off Grand Menan and Campobello Island, and that they were seen at St. Andrews, at the head of Passamaquoddy Bay. On the same date, while sailing some ten miles from shore off Saco, Maine, I saw a single bird, undoubtedly of this species, flying rapidly along the surface of the water.

Is it not a little strange that a bird that has escaped our observations for years should appear so suddenly, and at various points along the coast from Cape Cod to the Bay of Fundy?—RUTHVEN DEANE, *Cambridge, Mass.*

THE BLACK SKIMMER IN MASSACHUSETTS. — Prof. Baird, in a letter dated August 23, informs me that, having occasion to visit Wood's Holl (Falmouth, Mass.) a few days previous, he saw there a young example of *Rynchops nigra*, which had been shot at that place on the 19th of that month, by a son of Rev. Dr. Hiram Carleton, an Episcopal minister resident in the village. This example is to be presented to the New England Collection of the Boston Society of Natural History. — T. M. BREWER, *Boston, Mass.*

OCCURRENCE OF THE CASPIAN TERN (*Sterna caspia*) UPON THE COAST OF VIRGINIA. — Until very recently, this, the largest of the Terns, has been considered as an exclusively Northern species along our coast, and even its winter limits have been placed at a point no farther south than New Jersey. Sennett's discovery, therefore, of the species on the Texan coast, where, as he informs me, he had every reason to believe it was about to breed, was a surprise. The truth is, our ideas respecting its distribution have doubtless been very erroneous, and I suspect that this species has more than once been observed along our Southern coast and reported as the Royal Tern. Be that as it may, I now have the satisfaction of recording the fact that Mr. Ridgway and myself have found the Caspian Tern breeding on Cobb's Island, off the coast of Virginia, where, July 29, the present season, we took a fine pair of adults with their two downy young.

How numerous the species is in this locality we cannot at present state, as our brief visit did not permit a by any means full exploration of this island, to say nothing of the several others adjacent, which may be equally well, perhaps better, fitted to afford it shelter.

The pair taken had certainly isolated themselves from their own kind,

if any such there were, nor can it be positively stated that any others were seen, the Royal Tern being sufficiently near the present species in size to render discrimination between them at a distance very uncertain.

A hollow scratched in the dry sand, and without trace of lining, precisely as in the case of the Skimmers' nests close by, held the young, and, when the spot was first approached by our boatman, the female darted close down upon him with such unmistakably hostile intentions that he had recourse to his gun to ward her off.

A description of the downy young, which have hitherto not been noticed, is appended: Color above grayish-white, each down tuft on the rump and back with blackish tips, under parts pure white, except the jugular region, which is overspread with dusky. A peculiarity of coloration is seen in the uniformly light colors, the back and rump being only faintly mottled with black, which is not aggregated into patches as in the young of nearly all the family. Probably the same will be found to be the case in the same stage of the Royal Tern, which appears not to be known. — H. W. HENSHAW, *Washington, D. C.*

NOTE ON ALLE NIGRICANS, LINK. — In looking over Link's Description of the Museum of the Rostock University,* — a book so rare that only four copies are known to be extant, — I find, on p. 17 of Abth. I, the above name, which requires attention. It is, in fact, a new genus and species, based on *Alca alle*, Linn., and set forth in due form. Now *Mergulus*, the current name of the genus, is a very old word, having come down to us from the pre-Linnæan fathers; but one which was never used in the sense of a modern genus by a binomelator until so employed by Vieillot in 1816. Consequently *Alle*, Link, 1806, antedates *Mergulus*, and must be employed for the genus, unless we are to accept *Arctica* of Moehring, 1752, which few of us seem disposed to follow Gray in doing. As to the specific name, there are three to choose from. We may say *Alle candida* after Brünnich, 1764, but this name is scarcely applicable, as it was based upon an entirely white specimen, probably an albino, and misleads as to the character of the bird; moreover, it conflicts with a Linnæan name, and would therefore be thrown out by most systematists. We may say *Alle alle*, after Linnæus, but this duplication of generic and specific terms is objectionable, and now rarely practised. The alternative is *Alle nigricans*, Link; and this would appear to be the tenable name of the bird in question, according to recognized rules of nomenclature. — ELLIOTT COUES, *Washington, D. C.*

* Beschreibung der Naturalien-Sammlung der Universität zu Rostock. Erste [sechste] Abtheilung. Von D. H. F. Link. Rostock, Adlers Erben, 1806 — 1808. 1 vol., sm. 8vo. (Vögel, pp. 17–50 of Abtheilung I, 1806.)

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