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NOTES ON THE ORNITHOLOGICAL OBSERVATIONS OF PETER KALM.

BY SPENCER TROTTER.

A PECULIAR interest lends itself to pioneer work in any branch of knowledge, and the early history of things holds a charm that is hard to explain on purely logical grounds. Such an interest gathers about the work of Peter Kalm, the Swede, who travelled in North America during the years 1748-1751. Kalm was primarily a botanist and was sent out to America to gather specimens of plants and seeds with a view to the acclimatization of different species in Sweden. On his return to Sweden he published an account of his observations and travels in a work of three volumes entitled 'En Resa Til Norra America,' which appeared at Stockholm between the years 1753-1761. The original was later translated into English, German, and Dutch, the English translation by John Reinhold Forster appearing in three volumes under the title of 'Travels into North America,' published at London in 1770-1771. Forster was an English naturalist of some note and his name is commemorated in one of the beautiful species of North American terns.

Accustomed as we are to look upon Wilson and Audubon as the pioneers in American Ornithology we are apt to lose sight of earlier workers in the field who left behind no great monuments. To be sure, Mark Catesby's work (1730-1748) is a pre-Wilsonian monument of illustrated ornithology, and the works of Edwards,

Pennant, and Latham contain numerous illustrations of North American birds. Peter Kalm's work, on the other hand, is merely a desultory account of the different birds he observed during his sojourn, principally in the country about Philadelphia, scattered through the text of the volumes, coupled with observations borrowed from the more intelligent Swedish and English residents. The greater number of species seems altogether to have escaped his notice, probably because the plant rather than the bird was in his mind's eye. Kalm's observations have little scientific value, but they possess a certain freshness that commends them to every lover of the wayside. It is restful in these days of accurately annotated lists of many geographical forms to turn to the simple statements of what this man saw and heard and thought. The birds he tells us about are only the common birds known to the country folk. His observations give us a glimpse of historical background — a bit of real bird life in America more than half a century before the father of American Ornithology began his work.

Kalm mentions a number of birds observed during the voyage, including the Petrel, Shearwater, Tropic Bird, Gull, and Tern. "The Petrel (*Procellaria Pelagica*, Linn.)," says Kalm, "was our companion from the channel to the shores of America."

It is probable that he had under observation not only the Stormy Petrels (*P. pelagica*) but the other two species of "little black white-rumped 'Mother Carey's Chickens'" — Leach's Petrel (*Oceanodroma leucorhoa*), and Wilson's Petrel (*Oceanites oceanicus*) as well.

The shearwater described under the name of "*Procellaria Puffinus*, Linn." is probably referable to three species — the Manx Shearwater (*Puffinus puffinus*), the Greater Shearwater (*P. major*), and the Sooty Shearwater (*P. fuliginosus*) — for Kalm speaks of having seen the bird from "the channel to the American coasts"; also that "it has a brown back, and commonly a white ring round its neck." The first species is abundant on the eastern side, but rare on the western side of the Atlantic, while the word "commonly" would seem to indicate that some individuals of the Sooty Shearwater — a solid colored species — were also seen. A number of land birds took refuge on the ship from time to time, and were noted by Kalm.

The following observations pertain to the several species of American birds noted by Kalm. These ornithological observations are scattered through the book, sandwiched in among the mass of heterogeneous matter gathered by this untiring recorder. "No circumstance interesting to natural history or to any other part of literature has been omitted." The first English edition of 3 vols. (from which these notes have been drawn) and the second edition of 2 vols. (1772) contain numerous notes by the translator. The binomial nomenclature, affixed to the species, is evidently the work of Kalm after his return to Sweden, for, as Dr. Coues observes, "these accounts are among the bases of several Linnæan species, though largely anticipated by Catesby and Edwards" (Birds of the Colorado Valley, Bibliographical Appendix, p. 585).

DUCKS — *Sp.?* — Under date of October 30, 1748, Kalm mentions seeing large numbers of ducks between Staten Island and "the town of New York." "We saw a number of wild ducks in immense quantities upon the water: the people called them Blue bills, and they seemed to be the same with our *Pintail ducks*, or *Linnaeus's Anas acuta*; but they were very shy." (Eng. Trans., Vol. I, p. 237.)

Wild fowl had evidently greatly decreased in numbers even at the time Kalm wrote, as appears in a note written at Philadelphia under date of November 9, 1748. The note is concluded with the following observation: "But since the arrival of great crowds of *Europeans*, things are greatly changed: the country is well peopled, and the woods are cut down: the people increasing in this country, they have by hunting and shooting in part extirpated the birds, in part scared them away: in spring the people still take both eggs, mothers and young indifferently, because no regulations are made to the contrary. And if any had been made, the spirit of freedom which prevails in the country would not suffer them to be obeyed."

CRANES.— Under date of February 17, 1749, at the village of Raccoon, New Jersey, a few miles below Philadelphia and almost opposite the site of Chester, Pa., Kalm makes the following observation:

"Cranes (*Ardea Canadensis*) were sometimes seen flying in the day-time, to the northward. They commonly stop here early in

spring, for a short time, but they do not make their nests here, for they proceed on more to the north. Certain old *Swedes* told me, that in their younger years, as the country was not yet much cultivated, an incredible number of cranes were here every spring; but at present they are not so numerous. Several people who have settled here, eat their flesh, when they can shoot them. They are said to do no harm to corn, or the like." (Eng. Trans., II, p. 72.)

The Whooping Crane (*Grus americana*) was at one time abundant on our Atlantic seaboard, and this is the species probably referred to by Kalm. Dr. Coues says of *G. americana*: "So wild and wary a bird must be much influenced by the settlement of the country."

PARTRIDGES.—At Raccoon, New Jersey, where Kalm spent much of his time among the *Swedes*, is a note under date of January 22, 1749, in which we can hardly fail to recognize our Virginia Partridge or "Bob White." The "hazel-hen" referred to in the following note is undoubtedly the Ruffed Grouse—"the birds which the *Swedes* in this country call *Partridges* and *Hazel-hens* were in whole flocks in the woods" (Eng. Trans., Vol. I, p. 290). While at Montreal Kalm heard of a bird which he judged to be the "*Ptarmigans*, or *Snow-hens* (*Tetrao Lagopus*)."
(Eng. Trans., III, p. 58.)

WILD TURKEY.—"*Turkey Cocks* and *Hens* run about in the woods of this country, and differ in nothing from our tamer ones, except in their superior size, and redder, though more palatable flesh. When their eggs are found in the wood, and put under *Turkey* hens, the young ones become tame; however when they grow up, it sometimes happens that they fly away; their wings are therefore commonly clipped, especially when young. But the tamed turkeys are commonly much more irascible, than those which are naturally tame. The Indians likewise employ themselves in taming them and keeping them near their huts." (Eng. Trans., I, p. 209.)

WILD PIGEON.—At Raccoon, New Jersey, under date of March 3, 1749, occurs the following note:—"Wild Pigeons (*Columba Migratoria*), flew in the woods, in number beyond conception, and I was assured that they were more plentiful than they had been

for several years past. They came this week, and continued here for about a fortnight, after which they all disappeared, or advanced further into the country, from whence they came." (Eng. Trans., II, p. 82.)

HUMMINGBIRD.—“Of all the rare birds of *North America*, the *Humming Bird* is the most admirable, or at least most worthy of peculiar attention. Several reasons induce me to believe that few parts of the world can produce its equal. Dr. *Linnaeus* calls it *Trochilus Colubris*. The *Swedes* and some *Englishmen* call it the *King's bird*, but the name of *Humming bird* is more common.” (Eng. Trans., I, p. 210.)

Following this statement are five pages devoted to the description and habits of this interesting little bird, which seems to have excited the wonder and admiration of so many of the early travelers in America.

WHIP-POOR-WILL.—At Raccoon, New Jersey, under date of April 22, 1749, Kalm gives a somewhat lengthy account of this species, calling attention to the peculiarity of its notes as follows:—“I heard it to-day, for the first time, and many other people said, that they had not heard it before this summer; its *English* and *Swedish* name is taken from its note; but, accurately speaking, it does not call *Whipperiwill*, nor *Whip-poor-will*, but rather *Whipperiwhip*, so that the first and last syllables are accented, and the intermediate ones but slightly pronounced. The *English* change the call of this bird into *Whip-poor-will*, that it may have some kind of signification: it is neither heard nor seen in day-time; but soon after sunset it begins to call, and continues for a good while, as the cuckow does in Europe.” Observations on the habits of the bird follow. (Eng. Trans., II, p. 151.)

WOODPECKERS.—At Philadelphia, under date of October 1, 1748, Kalm writes: “A *Black Woodpecker* with a red head, or the *Picus pileatus*, *Linn.* is frequent in the *Pennsylvanian* forests, and stays the winter, as I know from my own experience. It is reckoned among those birds which destroy the maize; because it settles on the ripe ears, and destroys them with its bill. The *Swedes* call it *Tillkroka*, but all other woodpeckers, those with gold yellow wings excepted, are called *Hackspickar* in the *Swedish* language. I

intend to describe them altogether more exactly in a particular work. I only observe here, that almost all the different species of woodpeckers are very noxious to the maize, when it begins to ripen: for by picking holes in the membrane round the ear, the rain gets into it, and causes the ear with all the corn it contains to rot." (Eng. Trans., I, p. 148.)

Kalm had not yet spent a winter in America, though he speaks in the above note of knowing this bird to stay through the winter from his own experience. It is evident, therefore, that his original notes were carefully gone over upon his return to Sweden, in view of their publication. Under date of March 11, 1749, at Raccoon, New Jersey, a list of the woodpeckers was drawn up, and later revised. It is interesting as being probably the first annotated list of any group of North American birds. (Eng. Trans., II, pp. 85-88.) In this review of the woodpeckers by Kalm the most notable fact, which must be taken *cum grano salus*, is the occurrence of the Ivory-billed Woodpecker, as far north as the Delaware Valley. Possibly the bird had been observed as a straggler (for Kalm speaks of it as being only an occasional visitor) on the borders of the dense cedar swamps and pine forests of South Jersey, and this region we know is decidedly Carolinian in its faunal and floral features. At that time also a more or less unbroken woodland must have extended far up along the shores of the Delaware, quite to the site of the old Swedish village of Raccoon. But this is idle speculation, for the bird has never been authentically reported from Pennsylvania or New Jersey.

The Pileated Woodpecker is a true forest lover, and even in the time of Alexander Wilson had, like the Indian, retreated into the wilderness beyond the ever widening domain of cleared land.

Kalm seems to have been imbued with the notion that the smaller species of woodpeckers were enemies to agriculture and the orchards. The sins of the real sap-sucker were shared for many long years by his less-offending brethren. The word "flicker" does not appear among the local names of *Colaptes auratus*, the species being referred to as the "gold-winged woodpecker" and also under its Swedish names of "Hittock" and "Piut." The ground-loving habits of this bird, the palatability of its flesh, and its resemblance to the European cuckoo are commented upon.

The remarks of Kalm concerning the abundance of the Red-headed Woodpecker (*Melanerpes erythrocephalus*) in early winter as predicting a mild season brings to mind an observation made some years ago by Chris Wood, the collector. He predicted a winter of great sickness from the fact that Red-headed Woodpeckers were unusually numerous, and added that he had never known this prognostic to fail. This is an interesting piece of folklore and is probably akin to the old saying that "a green Christmas makes a fat churchyard."

The species enumerated, other than those above mentioned, are *Sphyrapicus varius*, *Dryobates villosus*, *D. pubescens*, and *Melanerpes carolinus*.

CROW. — At Philadelphia, under date of September 26, 1748, is the following observation concerning crows. "The *Crows* in this country are little different from our common crows in *Sweden*. Their size is the same with that of our crows, and they are as black as jet in every part of their body. I saw them flying to-day in great numbers together. Their voice is not quite like that of our crows, but has more of the cry of the rook, or *Linnaeus's Corvus frugilegus*." (Eng. Trans., I, p. 121.)

Under date of February 10, 1749, Kalm alludes to the premiums set upon crows' heads in the following passage. "They belong to the noxious birds in this part of the world, for they chiefly live upon corn. After the maize is planted or sown, they scratch the grains out of the ground and eat them. When the maize begins to ripen, they peck a hole into the involucre which surrounds the ear, by which means the maize is spoiled, as the rain passes through the hole which they have made, and occasions the putrefaction of the corn. Besides eating corn, they likewise steal chickens. They are very fond of dead carcasses. Some years ago the government of *Pennsylvania* had given three-pence, and that of *New Jersey* four-pence premium for every head of a *crow*, but this law has now been repealed, as the expenses are too great."

BLACKBIRDS. — In remarking upon the decrease of wild fowl (already cited) Kalm goes on to say: "But though the eatable birds have been diminished greatly, yet there are others, which have rather increased than decreased in number, since the arrival of the *Europeans*: this can most properly be said of a species of

daws which the *English* call *Blackbirds* [a foot-note speaks of them as "*Properly shining blackbirds*"] and the *Swedes* *Maize thieves*. *Dr. Linnæus* calls them *Gracula Quiscula*." (Eng. Trans., I, p. 291.)

Under date of February 23, 1749, at Raccoon, New Jersey, is a lengthy account of blackbirds, in which the author, among other observations, calls attention to the following:

"A species of birds, called by the *Swedes*, *maize-thieves*, do the greatest mischief in this country. They have given them that name, because they eat maize, both publicly and secretly, just after it is sown and covered with the ground, and when it is ripe. The *English* call them *blackbirds*. There are two species of them, both described and drawn by *Catesby*. Though they are very different in species, yet there is so great a friendship between them, that they frequently accompany each other in mixed flocks. However, in *Pennsylvania*, the first sort are more obvious, and often fly together, without any of the red-winged *stares*. . . . As they are so destructive to maize, the odium of the inhabitants against them is carried so far, that the laws of *Pennsylvania* and *New Jersey* have settled a premium of three-pence a dozen for dead maize thieves. In *New England*, the people are still greater enemies to them; for *Dr. Franklin* [Benjamin Franklin] told me, in the spring of the year 1750, that, by means of the premiums which have been settled for killing them in *New England*, they have been so extirpated, that they are very rarely seen, and in a few places only. But as, in the summer of the year 1749, an immense quantity of worms appeared in the meadows, which devoured the grass, and did great damage, the people have abated their enmity against the maize-thieves; for they thought they had observed, that those birds lived chiefly on these worms before the maize is ripe, and consequently extirpated them, or at least prevented their spreading too much. They seem therefore to be entitled, as it were, to a reward for their trouble. But after these enemies and destroyers of the worms (the maize-thieves) were extirpated, the worms were more at liberty to multiply; and therefore they grew so numerous, that they did more mischief now than the birds did before. In the summer, 1749, the worms left so little hay in *New England*, that the inhabitants were forced to

get hay from *Pennsylvania*, and even from *Old England*. The maize-thieves have enemies besides the human species. A species of little hawks live upon them, and upon other little birds. I saw some of these hawks driving up the maize-thieves, which were in the greatest security, and catching them in the air. Nobody eats the flesh of the purple maize-thieves or daws (*Gracula quiscula*); but that of the red-winged maize-thieves, or stares (*Oriolus Phœniceus*) is sometimes eaten. Some old people have told me, that this part of *America*, formerly called *New Sweden*, still contained as many maize-thieves as it did formerly. The cause of this they derive from the maize, which is now sown in much greater quantity than formerly; and they think that the birds can get their food with more ease at present." (Eng. Trans., II, pp. 73-79.)

The purple "maize-thieves" are apparently as abundant now, about Philadelphia, as they were in the time that Kalm wrote of them. They come to us about the last of February, as Kalm noted more than a century and a half ago, and during the early autumn swarm in incredible numbers over the fields of standing corn. One autumn blackbird roost that I have known of for several years past, on the edge of a populous town, must contain thousands of birds. The babel of voices from this roost at sundown is a sound never to be forgotten and falls on the distant ear as a continuous roar.

BOBOLINK.—In a journey up the Hudson during the month of June, 1749, Kalm first saw the bobolink, as is attested by the following note: "*The white-backed Maize-thieves* appeared now and then, flying amongst the bushes: their note is fine, and they are not so large as the black maize-thieves (*Oriolus Phœniceus*). We saw them near *New York*, for the first time." (Eng. Trans., II, p. 274.)

CARDINAL.—At Raccoon, New Jersey, under date of February 14, 1749, Kalm has entered in his journal the following note: "*Red-bird* is another species of small bird. *Catesby* has likewise figured it. Dr. *Linnaeus* calls it, *Loxia Cardinalis*. It belongs to that class of birds which are enemies to bees, lying in wait for them and eating them. I fed a cock for five months together in a cage; it eat both maize and buckwheat, for I gave it nothing

else. By its song it attracted others of its species to the courtyard, and after we had put some maize on the ground under the window where I had it, the others came there every day to get their food; it was then easy to catch them by means of traps. Some of them, especially old ones, both cocks and hens, would die of grief on being put into cages. Those on the other hand which were grown tame, began to sing exceedingly sweet. Their note very nearly resembles that of our *European* nightingale, and on account of their agreeable song, they are sent abundantly to *London*, in cages. They have such strength in their bill that when you hold your hand to them they pinch it so hard as to cause the blood to issue forth. In spring they sit warbling on the tops of the highest trees in the woods, in the morning. But in cages they sit quite still for an hour; the next hour they hop up and down, singing; and so they go on alternately all day." (Eng. Trans., II, p. 71.)

SNOWBIRD.—In the journal at Raccoon, New Jersey, dated January 21, 1749, is the following note: "A small kind of birds, which the *Swedes* call *Snow-bird*, and the *English* *Chuck-bird*, come into the houses about this time. At other times, they sought their food along the roads. They are seldom seen, but when it snows. *Catesby*, in his *Natural History of Carolina*, calls it *Passer Nivalis*; and Dr. *Linnæus*, in his *Systema Naturæ*, calls it *Emberiza hyemalis*." (Eng. Trans., II, p. 51.)

Again, under date of March 3, 1749, at Raccoon, is the following: "The *Swedes* call a species of little birds, *Snofogel*, and the *English* call it *Snow-bird*. This is Dr. *Linnæus's* *Emberiza hyemalis*. The reason why it is called snow-bird is because it never appears in summer, but only in winter, when the fields are covered with snow. In some winters they come in as great numbers as the maize-thieves, fly about the houses and barns, into the gardens, and eat the corn, and the seeds of grass, which they find scattered on the hills." (Eng. Trans., II, p. 81.)

SWALLOWS.—"April the 16th [1749]. This morning I returned to Raccoon [from Chester, Penna., on the opposite side of the Delaware]. This country has several kinds of swallows, viz. such as live in barns, in chimneys, and under ground; there are likewise martens.

"The *Barn Swallows*, or *House Swallows* are those with a furcated tail. They are Linnæus's *Hirundo rustica*. I found them in all parts of *North America* which I travelled over. [This statement shows that the original entry about swallows in the journal was shaped up after Kalm's return to Sweden, for as yet he had only travelled as far as New York and back]. They correspond very nearly to the *European House Swallow* in regard to their colour, however there seems to be a small difference in the note. I took no notice this year when they arrived: but the following year, 1750, I observed them for the first time on the 10th of *April* (new style); the next day in the morning, I saw great numbers of them sitting on posts and planks, and they were as wet as if they had been just come out of the sea. [At this point is inserted a lengthy editorial *excursus* by Forster on the hibernation of swallows.] They build their nests in houses, and under the roofs on the outside; I likewise found their nests built on mountains and rocks whose top projected beyond the bottom; they build too under the corners of perpendicular rocks; and this shews where the *Swallows* made their nests, before the *Europeans* settled and built houses here; for it is well known that the huts of the *Indians* could not serve the purpose of the *Swallows*.

"The *Chimney Swallows* are the second species, and they derive their name from building their nests in chimneys which are not made use of in summer: sometimes when the fire is not very great, they do not mind the smoke, and remain in the chimney. I did not see them this year till late in *May*, but in the ensuing year, 1750, they arrived on the 3rd of *May*, for they appear much later than the other *Swallows*. It is remarkable that each feather in their tail ends is a stiff sharp point, like the end of an awl; they apply the tail to the side of the wall of the chimneys, hold themselves with their feet, and the stiff tail serves to keep them up: they make a great thundering noise all the day long, by flying up and down in the chimneys; and as they build their nests in chimneys only, and it is well known that the *Indians* have not so much as a hearth made of masonry, much less a chimney, but make their fires on the ground in their huts, it is an obvious question, where did these *Swallows* build their nests before the *Europeans* came, and made houses with chimneys? It is probable that they form-

erly built them in great hollow trees. This opinion was adopted by Mr. *Bartram* [the elder Bartram — John Bartram, the first American botanist and correspondent of Linnæus], and many others here. *Catesby* has described the *Chimney Swallow* and figured it, and Dr. *Linnæus* calls it *Hirundo Pelasgia*.

"The *Ground Swallows* or *Sand Martins*, (*Linnæus's Hirundo riparia*) are to be met with everywhere in *America*; they make their nests in the ground on the steep shores of rivers and lakes.

"The *Purple Martins* have likewise been described and drawn in their natural colours by *Catesby*. Dr. *Linnæus* likewise calls them *Hirundo purpurea*. They are less common here than the former species; I have seen in several places little houses made of boards, and fixed on the outside of the walls, on purpose that these *Martins* may make their nests in them; for the people are very desirous of having them near their houses, because they both drive away hawks and crows as soon as they see them, and alarm the poultry by their anxious note, of the approach of their enemies. The chickens are likewise used to run under shelter, as soon as they are warned by the *Martins*." (Eng. Trans. II, pp. 140-148.)

Probably half a century before Kalm wrote the Swifts, the Martins, and the Barn Swallows had forsaken the rock ledge and hollow tree to cast in their lot with the settlers, doubtless reminding many a sad heart of —

"The swallow twitt'ring from the straw-built shed,"
in the old homes across the sea.

MOCKINGBIRD.—While journeying to New York, at a point not far from Philadelphia, Kalm entered a note in his journal, under date of October 27, 1748, from which the following passage is taken. "At one of the places where we stopt to have our horses fed, the people had a *Mocking-bird* in a cage; and it is here reckoned the best singing-bird, though its plumage is very simple, and not showy at all. At this time of the year it does not sing. *Linnæus* calls it *Turdus polyglottos*, and *Catesby* in his *Natural History of Carolina*, Vol. I, p. 27, tab. 27, has likewise described and drawn this bird. The people said that it built its nests in the bushes and trees, but is so shy, that if anybody come and look at its eggs, it leaves the nest, never to come to it again." (Eng. Trans., I, pp. 217-219).

This is interesting as an early northern record for the mocking-bird. From Kalm's statements it would appear that the bird was a more or less common summer resident in the region about Philadelphia. The species does occasionally breed in this neighborhood and may have been much more abundant in the earlier days of the settlements.

CATBIRD.— Under date of September 7, 1748, at Philadelphia is the following note: "Mr. *Peter Cock*, a merchant of this town, assured me that he had last week himself been a spectator of a snake's swallowing a little bird. This bird, which from its cry has the name of *Cat bird*, (*Muscicapa Carolinensis*, Linn.) flew from one branch of a tree to another, and was making a doleful tune." (Eng. Trans., I, p. 61.)

The rest of the narrative is a "snake story." Suffice it to say that the snake swallowed the bird, but was ultimately killed by the valiant Cock. Mr. Cock, by the way, was a very reputable citizen.

ROBIN.— In Kalm's journal at Raccoon, under date of March 12, 1749, is the following short note concerning the robin: "The bird which the *English* and *Swedes* in this country call *Robin-red-breast*, is found here all the year round. It is a very different bird from that which in *England* bears the same name. It is *Linnaeus's Turdus migratorius*. It sings very melodiously, is not very shy, but hops on the ground quite close to the houses." (Eng. Trans., II, p. 90.)

BLUEBIRD.— A note dated Raccoon, New Jersey, February 14, 1749, says: "The *Swedes* and the *English* gave the name of *blue-bird* to a very pretty little bird, which was of a fine blue colour, *Linnaeus* calls it *Motacilla Sialis*. *Catesby* has drawn it in his *Natural History of Carolina*, Vol. I, pl. 47, and described it by the name of *Rubecula Americana cerulea nitida, pectore rufo, ventre albo*. In *Catesby's* plate I must observe, that the color of the breast ought to be dirty red or ferruginous; the tibiae and feet black as jet; the bill too should be quite black; the blue colour in general ought to be much deeper, more lively and shining; no bird in *Sweden* has so shining and deep a blue color as this: The jay has perhaps a plumage like it. The food of the blue bird is not merely insects, he likewise feeds upon plants; therefore in

winter, when no insects are to be met with, they come to the farm-houses in order to subsist on the seeds of hay, and other small grains." (Eng. Trans., II, p. 70.)

There is little of value to the ornithologist in these fragmentary notes, but the quaintness of the statements, and the pictures which they call up of birds against the background of those early times possess a certain charm in themselves. Moreover, as Dr. Coues has remarked, some of these descriptions formed the basis of several Linnæan species. Kalm saw the birds for himself and came directly in contact with their surroundings. Therein lies the charm. He left no great work as a monument, but so long as the beautiful *Kalmia* grows on our hillsides his name will be remembered as that of the friend of Linnæus.

NOTES ON THE BIRDS OF MADISON COUNTY, NEW
YORK, WITH ESPECIAL REFERENCE TO
EMBODY'S RECENT LIST.

BY WILLIAM R. MAXON.

THE NOTES here offered are intended to supplement Mr. Embody's 'Birds of Madison County, New York,' which was reviewed briefly in 'The Auk' for January, 1902. Mr. Embody's list, professedly incomplete, embodied mainly the results of investigations in the southeastern portion of the county and properly might have borne a less general title; for, small as Madison County is, it is extremely diverse in its biologic associations and many distinct areas must be studied carefully before anything like a comprehensive understanding, or for that matter more than a tolerably complete list, of the avifauna may be had. The central portion of the county, including several high-lying swamps and adjacent hills near Peterboro, have been worked by Mr. G. S. Miller, Jr., who has kindly furnished me many notes hitherto unpublished. To the southward and westward, however, is a simi-



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