

ON THE UTTERANCES OF THE KINGBIRD, *TYRANNUS TYRANNUS*, LINN., WITH ESPECIAL REFERENCE TO A RECENTLY RECORDED SONG.

BY LEON AUGUSTUS HAUSMAN, PH.D.

ON several occasions, in various New England and eastern states, and separated by intervals of several years, the writer has recorded vocal performances of the Kingbird (*Tyrannus tyrannus*) which seemed to be definite and recognizable songs. A recent review of old field note-books suggested that the material found therein relating to the notes of the Kingbird, be published, and especially the records of what we shall term the songs of this suppositive songless flycatcher. The observations on which this study is based were made in northern Massachusetts and New York, northern and central New Jersey, southern New Hampshire and Connecticut.

For purposes of convenience in classification and study, the various utterances of the Kingbird may be grouped thus: (1) call notes, (2) alarm notes, (3) chase notes, (4) victory notes, (5) flight song, and (6) matin song (described in this paper).

By call notes are meant those abrupt, apparently spontaneous utterances not called forth by an external stimulus (e. g. the presence of an enemy); notes which may be regarded as the simple uncompelled expression of the bird's individual existence. Chapman¹ speaks of the call note of a bird as "its simple 'I am here' or 'This is I.'"

The call notes of the Kingbird are two in number: (1), the most frequently voiced, a sharp, metallic double note; a sort of short shrill twitter, pitched about an octave above middle B or C,² and represented by the vocable, *kittër*. The first syllable is practically pure in tone, and delivered without vibrations; the second is tremulous and burred slightly by the presence of overtones. The term *kitter*, with its sharp t-consonants, seems to the writer to

¹ Handbook of Birds of Eastern North America.

² In recording notes there was used a whistle provided with a sliding plunger for modifying the pitch, and calibrated an octave above the ordinary chromatic pitch-pipe.

represent the peremptory, metallic, staccato character of the note more accurately than the vocable, *kipper*, employed by some ornithologists. The quality of shrillness is also better indicated by the t's than by the p's.

The note, *kitter*, seldom modified in pitch, may be regarded as the unit note from which are built up the various other utterances of the Kingbird, with the exception of the matin song. Occasionally only the first syllable of the note is uttered—a single, abrupt, penetrating *kīt* or *kēēt*, which reminds one of the metallic squeak of the Rose-breasted Grosbeak (*Zamelodia ludoviciana*). Of this note I find only two records. The first occurs in Thoreau's *Journal*.¹ where the note is referred to as "that clear, plaintive *tilt tilt*, like the call of a Robin, somewhat"; and the second in Nuttall,² where it is described as a monosyllabic call, sounding in the ears of the observer like the syllable *tschēūp*, of harsh quality, and "rather quickly pronounced."

The call notes may be varied from a single *kit*, or *kitter*, to a rattling call produced by a rapid repetition of the *kitter* element: *kitter kitter*, *kitter kitter kitter*. I have not seen allusion to the fact that these notes are closely similar, both in syllabification and general pitch (though not in intensity) to the call notes of the Chimney Swift (*Chaetura pelagica*). To the writer's ears the frequently-uttered, shortened call of the Chimney Swift, near at hand, seems nearly identical with the call of the Kingbird at three or four times the distance. There is a fall in pitch of nearly two tones, however, in the terminal notes of the call of the Chimney Swift, which is not the case in the call of the Kingbird. Again, the calls of a Kingbird in the distance nearly resemble the closing notes in the song of a Savannah Sparrow (*Passerculus sandwichensis savanna*) close at hand. Thoreau first commented on the similarity of the Kingbird's notes to the general notes of Swallows, writing in his *Journal*³ "First Kingbird. Its voice and flight relate it to the Swallow." He was thinking, no doubt, of the quality and pitch of the notes, rather than of their phrasing. Minot⁴ referring to the Kingbirds, says: "Their notes are shrill

¹ Journal Vol. 7, under date, June 10, 1855.

² Birds of the United States and Canada.

³ Journal, Vol. 4, under date, May 14, 1852.

⁴ The Land Birds and Game Birds of New England.

twitters which often resemble those of the Swallows." Forbush¹ has the same observation.

Kingbirds are constantly alert and vigorous, and frequently continue to utter their notes during the heat of the day, when most other birds are silent. Thoreau² picturesquely writes of this habit: "How still the hot noon; people have retired behind blinds. Yet the Kingbird—lively bird with white belly and tail edged with white, and with its lively twittering—stirs and keeps the air brisk."

During the nesting season the call notes are uttered at short intervals by both birds of the pair as they fly to and from the nest. The male may often be seen sitting on an elevated perch—while the female is incubating the eggs or feeding the young—giving vent to the call alone. At times the perching individual will fly out to meet the one returning with food, and accompany it to the nest giving energetic voice to the call meanwhile.

The alarm notes of the Kingbird are those induced by an attack on the birds, the presence of an intruder near the nest or young, or by the squeaking outcry made by a nestling in pain. The alarm notes can readily be called forth by the squeaking sound produced by exerting suction between the slightly parted lips pressed against the back of the hand, if the noise be made in the neighborhood of the nest. In southern Connecticut the writer once drew down an unusually sharp attack from a pair of Kingbirds whose nest lay concealed in the topmost branches of a large apple tree, by squeaking thus. The alarm notes, delivered almost into his ears, were disconcertingly, almost painfully, shrill and piercing.

Like the call notes, the alarm notes consist of a repetition of the syllables, *kitter*, many more times repeated than in the case of the simple call, given with greater vigor and sharpness, with a slight elevation in pitch. In the alarm call the syllable *kit* not infrequently occurs, exceedingly penetrating and shrill, and the call has the typical form: *kitterkitterkitter*, *kit kit kitterkitterkitter*. The differences between the alarm and the call notes are those of intensity, duration, phrasing, and sometimes of pitch, with the added—perhaps fanciful—element of vehemence.

¹ Useful Birds and their Protection.

² Journal, Vol. 5, under date, May 29, 1853.

The chase notes are uttered when the bird is in pursuit of a marauder, when the *kit* and *kitter* notes are given with their maximum of vigor, sharpness, and rapidity. There is a definite and measurable rise in pitch in many of the notes, to an octave above middle C sharp or D. The *kitter* note is often uttered so rapidly as to rise into a prolonged, shrill, chattering, staccato cry. Flagg¹ adequately describes the birds during an attack as "screaming with a sharp and rapid twitter," and Nuttall² speaks of the notes as constituting a tremulous, shrieking twitter." Oftentimes, however, the phrases of the chase call are shorter, and voiced with less frequency than those of the alarm call, especially during the times when the bird is engaged in swooping down upon the head and neck of its adversary, or clinging to its back. In northern New Jersey the writer once witnessed the prolonged chase of a crow by a pair of Kingbirds, during which one of the individuals alighted upon its enemy's back just between the shoulders, and thus rode for a considerable distance (possibly some five or six hundred feet) assailing it meanwhile with fury. The vigorous efforts made by the Crow to dislodge its tormentor, bore witness to the warmth of the attack! During periods of such intimacy of attack few or no notes are uttered.

The victory notes (there seems to be no need of any other category of *post bellum* utterances) are those heard after the rout of a marauder has been accomplished, when the birds usually return to some elevated perch—during the breeding season commonly in the vicinity of the nest. The notes are similar to the call notes, consisting of single *kitters*, or the note repeated. After the long chattering chase cry ceases the birds not infrequently return to their perches in tall trees without giving voice to a single note, or with only the ejaculation of a periodic sharp *kit*, as though out of breath from their exertions.

Although the Kingbird has been excluded from among the true singing birds, it nevertheless gives voice, during the reproductive season, to two dissimilar vocal performances, which I think may properly be termed songs, if by songs we mean those irrepressible vocalizations which give expression to the emotions

¹ The Birds and Seasons of New England.

² Birds of the United States and Canada.

aroused during the nesting season. The first of these songs has been referred to by Hoffman¹ as a "mating performance," and the second is here described, it is believed, for the first time. Both songs may be regarded as nuptial songs, since they are uttered only during the nesting season, and are here referred to as the *flight song* and the *matin song* respectively.

The flight song is uttered while the bird is either mounting higher and higher with erratic, jerky flight, or tumbling earthwards from a considerable altitude, and consists of the *kitter* and *kit* notes, uttered with great rapidity and abandon. This song may be repeated many times, the flight antics being indulged in meanwhile, and reminds one—though only in its abandon and spontaneity—of the flight song of the Bobolink (*Dolichonyx oryzivorus*). The song is not more musical, nor more rhythmical, than the chase notes, which it closely resembles. Both are the result of an exuberance of physical vigor. Forbush² well describes the character of the notes by speaking of the bird during its flight song as "twittering fiercely all the time."

On several occasions the writer has recorded from different individual Kingbirds a song which was markedly different from the flight song in two particulars: first in the possession of a characteristic and regularly-recurring rhythm, and second in the possession of two new notes. This song has been heard only in the morning twilight hours, and may be represented by the syllables, *kitter kitter kitter—kit trée wēēt*, *kitter kitter kitter—kit trée wēēt*, repeated over and over again in a loud clear tone, the principal stress falling upon the syllable *tree* in the second phrase. The song is repeated many times, with unvaried rhythm, and with the same monotonous iteration as that characteristic of the song of the Least Flycatcher (*Empidonax minimus*). The notes are pitched about an octave above middle B or C, the note *tree* being half a tone or so higher. Each of the two phrases (of three notes each) occupy about three seconds, and the pause between them about two seconds. In the first phrase the three *kitter* notes—and there are invariably three—are rapidly uttered, but each is distinct. They do not differ from the *kitter* note of the call. The opening

¹ Birds of New England and Eastern New York.

² Useful Birds and Their Protection.

note, *kit* is likewise the same note as that present in the call. The two closing notes, however, are not found in any other association of notes uttered by the bird, and are characteristic of this song. They seem to partake more of the character of true song notes than any others voiced by the bird. The *tree* note, in particular, is clear and distinctly musical. The second phrase of the song is similar, in its general tone quality, stress, abruptness, and delivery, to the songs of the rest of the *Tyrannidae*, and is suggestive, more specifically, of the song of the Phoebe (*Sayornis phoebe*), though differently accented. The longest period during which the writer has recorded any one bird as uttering the song, was something exceeding twenty minutes. This record was made on the banks of the Connecticut River at Gill, Massachusetts, in June, 1923. The bird sang continuously, without a break, while perched on the topmost branch of a small hackberry tree. This song was delivered about 4:15 A. M. Eastern Standard Time. For the purposes of record this song is called the *matin song*.

The only other record of this type of matin song of which the writer is aware is that by Olive Thorne Miller.¹ With reference to a pair of Kingbirds which she had under observation she says that during the period of sitting, at 4:30 each morning the male would sing thus: "*Kr-r-r-r-r-ree be! Kr-r-r-r-r ree be!* The notes . . . were at first weak, uncertain, fluttering . . . But as the days went by they grew strong and assured, and at last were . . . joyous and loud . . ." In Chapman's Handbook she writes again (probably alluding to this same early observation): ". . . but while the mate is sitting—and possibly at other times—he indulges in a very soft and pleasing song, which I have heard only in the very early morning." Mathews² says he has never heard such a song, but has noticed that in the early morning the birds seemed to be unusually vigorous. The song recorded by Miller seems to be a true matin song, but is a different one from that heard by the writer,—differing in the phrasing of the first portion of the song, the accent and notes of the second part, and in the intensity, of the entire performance.

¹ The Kingbird's Nest, Atlantic Monthly, Aug., 1890, p. 258.

² *Field Book of Wild Birds and Their Music*. In this work the notes which Mathews describes as those of the Kingbird, and which he locates in their place on the musical staff, are not the notes of the Kingbird, but of the Great Crested Flycatcher (*Myiarchus crinitus*).

SUMMARY.

The various cries and calls of the Kingbird, as well as the flight song, are all built up from the simple call notes, which are best represented by the syllables *kitter* and *kit*, and differ from one another in grouping, length and intensity. The flight song may be regarded as a true song, and is given only during the mating season. The matin song is seldom heard; is more musical in character than the flight song; possesses a definite song-rhythm and two new, true song-notes; is delivered only during the morning twilight hours; and is sung from an elevated perch.

*Rutgers College,
New Brunswick, N. J.*

SOME NESTING HABITS OF THE BELTED
PIPING PLOVER.¹

BY GAYLE PICKWELL.

Plate XVI.

ON Saturday, May 20, 1922, the Nebraska Ornithologists' Union, on its annual bird hike, located a Belted Piping Plover's nest (*Charadrius melodus circumcinctus* Ridgway), on a strip of sandy beach at Capitol Lake near Lincoln. The nest of this bird had been reported only once before in the vicinity of Lincoln and that several years previously.

Within the last year or two a sand dredging outfit was erected on the south shore of the lake and, when operations were suspended, a large sloping beach of sand and gravel was left in that locality. This condition seemed ideal for the Plover and it was in this stretch of sand that the nest was found.

The day following the discovery of the nest, and for several days thereafter a great deal of rain fell and this prevented any detailed study of the birds or their habits. Mr. Frank H. Shoemaker, a member of the Nebraska Ornithologists' Union and an expert in bird-nest photography, visited the vicinity the following

¹ Studies from the Zoological Laboratory of the University of Nebraska, No. 144.