SOME VOCALIZATIONS OF THE BLACK, YELLOW, AND VIRGINIA RAILS

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AMONG the most challenging problems in tape-recording wildlife sounds is the study of nocturnal vocalizations of rails. New information is continually being found and there is little chance that the complete vocal repertoire of any rail is known. This is to summarize my current knowledge of certain songs (or calls) of the Black Rail (*Laterallus jamaicensis*), Yellow Rail (*Coturnicops noveboracensis*), and Virginia Rail (*Rallus limicola*).

MALE BLACK RAIL

The song of the male Black Rail has not been generally known and only in recent years have field guides described it correctly, e.g. Robbins et al. (1966). The first sound recordings were made available as a record by Kellogg et al. (1962). The song is distinctive. The commonest rendition heard here in the middle-Atlantic states is a three-sound phrase, with the first two clearly higher in pitch than the last. The first sounds carry better and, under windy or noisy conditions, the last part may be inaudible. Although the first parts sound to the ear as simple notes, audiospectrograms (Fig. 1A, 1B) and Kellogg (1962) show some slurring or change in pitch. The last sound is much different in quality, is of more complex form, and resembles a scold or disturbance call. The speed of delivery of the phrase during natural singing periods varies considerably between individuals, ranging in cadence from about 3 to 6 sec.

A number of minor variations in the song itself are heard, including phrases with one or with three introductory sounds, instead of the commoner two. The final sound is occasionally given twice or rarely three or more times, and in the last case it resembles disturbance calls given when the individual is approached closely. Limited studies of individual differences in the initial pitch of the song show a range from approximately 1200 Hz to approximately 3400 Hz (Fig. 1A, 1B) and Kellogg (1962).

Verbal phraseology of the song of the male includes some imaginative coined descriptions. Gosse (1847) included three renditions used by residents of Jamaica, "Cacky-quaw," "Johnny Ho," and "Kitty Go." W. T. March in New England used the expression, reported by Forbush (1925), "Chi-chi-croo-croo," matching one of the song types heard in the present studies. T. E. McMullen in New Jersey (Bent 1926) referred to the call or song as "did-ee-dunk." Kellogg (1962) paraphrased two songs as "Kic-

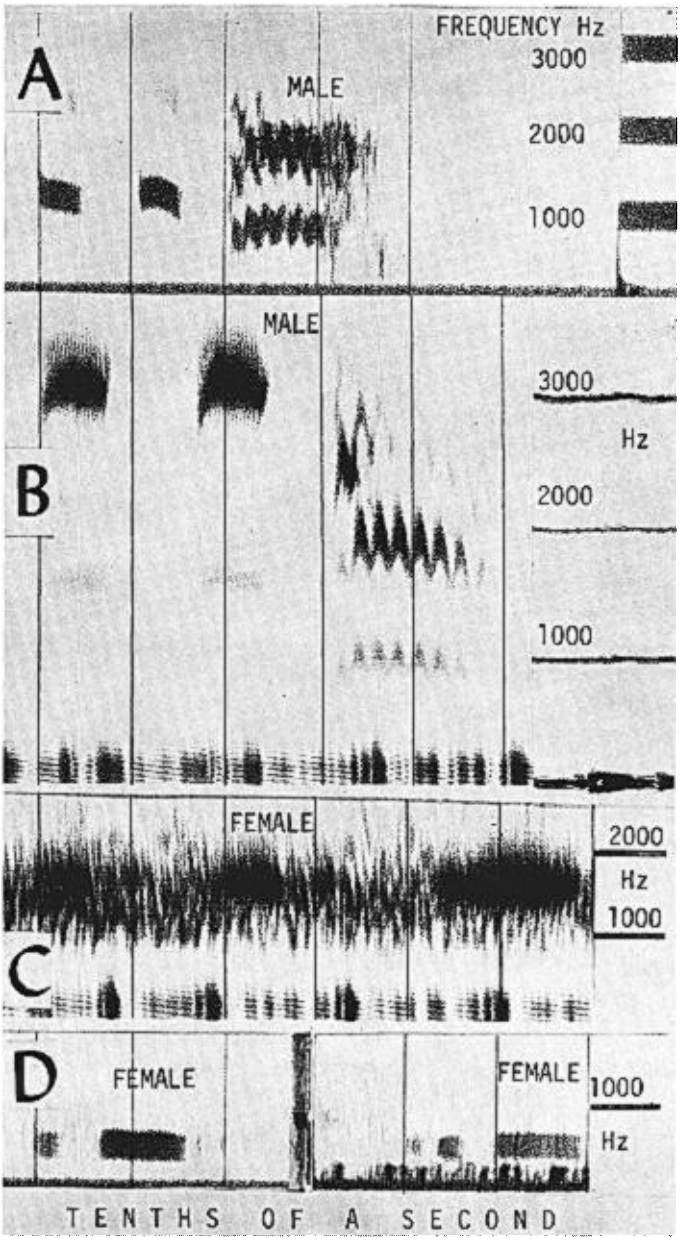

Fig. 1. Spectrograms of vocalizations of male (A, B) and female (C, D) Black Rails (*Laterallus jamaicensis*) in the middle Atlantic states.

kic-kerr" and "Kic-kic-kic-kerr." Finally, Robbins et al. (1966) referred to the male Black Rail's song as "kickee-doo." These all do represent the rhythm of the song, which is easily remembered after hearing it once.

An important feature of the singing of the Black Rail is its general limitation to the period 1 to 2 h after sunset until about 1 or 2 h before sunrise. This may mean staying out until about 2200 to hear the song or arriving on location well before 0400. On only one occasion have I heard the song given at all persistently in the daytime. This was at Broadkill Beach, Kent County, Delaware at 0545, 28 May 1967, when a Willet (*Catoptrophorus semipalmatus*) was calling and circling at about 2 m above the ground, above a singing Black Rail. What caused the disturbance was not determined. Shortly after the singing stopped, I approached the spot and saw a male Black Rail walking slowly across a dry part of the otherwise marshy beach. During its singing, which I tape-recorded, the rail sang at a cadence of approximately 2.0 sec, the fastest singing performance in my collection.

The singing of Black Rails is comparatively common in another area of the Delmarva peninsula, at Elliott Island, Kent County, Maryland where I have heard as many as 15 individuals in a limited roadside survey. Richard Rowlett reported hearing 45 Black Rails between 2200 and 2330, 6 May 1973 (Robbins 1973), also at Elliott Island.

Female Black Rail

Another vocalization that has been unusually elusive is a song of the female Black Rail. Although referred to occasionally in field guides, it has received little attention or study since Wayne (1905) described it. In coastal South Carolina during daylight hours, he saw a Black Rail that had been flushed from a nest with eight eggs, giving a "cuckoo-like croo-croo-croo-o" call as it entered a field of standing oats. The bird was captured and found to be female. The cuckoolike call, according to the author, referred to its similarity to the start of a song of the Yellow-billed Cuckoo (*Coccyzus americanus*) and not to the song of the Old World Cuckoo (*Cuculus canorus*).

More recently, Post and Enders (1969) described experiences with Black Rails' vocalizations. At about midnight, 29 March 1967, Post heard a "who-who-who" sound coming from the ground some 6 to 8 m away. Black Rails were later banded there and one, when in hand, gave a "who-who-who" distress call, which resembled the call heard earlier in the field. The bird's sex was not determined.

Although I have been on more than 40 special nocturnal trips to seven places where male Black Rail songs have been heard, on only three of these

have I heard the female. I heard the male songs on more than 30 of the trips, generally in April, May, and June. Each time I heard the female, the male's song was also heard from the same direction in the marsh.

The first of the occasions was at Turkey Point, near Dividing Creek, Cumberland County, New Jersey, where I heard the song at 2230, 12 May 1961. This was a faint "who-who" type of call, but I made no tape recordings. Another 6 years elapsed before I heard it again (Reynard 1972), at Broadkill Beach, Delaware, at 2200, 27 May 1967. A tape recording made of distant male Black Rails included a very few faint songs of the female, although a heavy background of other sounds made them barely perceptible. They were given as a three-note phrase, sounding as though one were to sing "who-who-whooo" all on one pitch. One phrase, shown as a spectrogram (Fig. 1C), indicates a pitch of approximately 1800 Hz and the phrase length just under 0.6 sec. Careful listening to other sections of the original tape recording reveals other phrases too faint to justify making spectrograms for study, but all sounded like the one pictured.

On the third occasion, Donald E. Kunkle alerted me that the calls or song of the female Black Rail were being heard again at Turkey Point. He had heard them on other occasions there in the past few years, and also at other similar brackish marshes along the Delaware River bay. When I arrived at 2200, 19 May 1971, I heard the song of the male Black Rail from a spot about 100 m away. Then from the same place, before the recording equipment could be readied, I heard a series of "who" notes, given rapidly and in consecutively descending pitch throughout the series. The estimated six or seven notes covered about 1 sec of time, and were similar in quality to those heard at the same locality in 1961. This descending series was heard only once.

Immediately thereafter, and almost continuously for a period of 20 min, I heard a low pitched "who-whooo" phrase, given at a cadence of about 6 sec, and I taped several sequences. A spectrogram of two of the phrases (Fig. 1D), shows a double-note phrase and a triple-note phrase, with the first notes shorter than the last. Most of the series was heard as two notes, and the first of the three-note phrase was very faint. The phrase length was less than 0.2 sec and the pitch was about 500–600 Hz. With sounds of this low pitch, lower than most bird songs, a low intensity and very short duration, it is not difficult to understand how it could be missed. The length of the phrase is even less than that of the laconic Henslow's Sparrow (*Ammodramus henslowii*), which Borror and Reese (1954) show as approximately 0.27 sec.

It is difficult to comment on the difference in pitch and length of the

two vocalizations presented (Fig. 1C, 1D), with limited experience with either one. It is suggested that the former may eventually be found to be the principal song, and that this was the same vocalization heard by Wayne (1905) and in the field by Post (Post and Enders 1969). The descriptions in these two reports match fairly closely the one here. In regard to the very short vocalization (Fig. 1D), it was being given along with singing from a male, but its purpose and classification remain to be determined. Although its phraseology is similar to the former song, the much lower pitch and shorter duration suggest that it is questionably only a difference between individuals in giving the same type of vocalization. So far as I am aware, the two recordings made here are the only vocalizations attributed to the female Black Rail on tape. I would welcome other reports or tape recordings for study, and have been unable to locate additional publications on the topic.

Following the above experiences, I made inquiries among some investigators familiar with rail vocalizations. Only a few positive responses were obtained, in addition to that of Donald Kunkle, referred to above. John C. Miller of Philadelphia, Pennsylvania, (pers. comm.) reported from his written field notes that he had heard the cuckoolike calls at Merritt Island, Florida, at 0615, in daylight, 31 May 1955. He did not hear the song of the male Black Rail at the same time. Robert Miller, also of Philadelphia, stated (pers. comm.) that he, Paul DeAoun, and Thomas Daugherty heard the "coo-coo" song over a 45-min period from 0330 to 0415, 23 April 1966, in the marshes at Elliott Island, Maryland.

Any preparations for study of the song or call of the female Black Rail might well be preceded by listening to recordings of songs of the Yellow-billed Cuckoo, Black-billed Cuckoo (*Coccyzus erythropthalmus*), and the Least Bittern (*Ixobrychus exilis*). The Yellow-billed Cuckoo's covers several seconds and the rail's song phrase less than a second. The quality of the Black-billed Cuckoo song resembles that of the rail. The length of the individual notes in the cuckoo's phrase is uniform compared with the short-long notes in the phrase of the female Black Rail. These two are similar in the shortness of the notes and rapidity of delivery within a phrase, but another difference is that the rail's phrase may be of two or three notes, and the cuckoo's more regularly of three and four notes.

The song of the Least Bittern is similar to the second vocalization of the female Black Rail in its low intensity and low pitch. A typical example of the Bittern's song shows a frequency of approximately 800 Hz (Fig. 2A), hardly distinguishable in the field from the 500–600 Hz from the rail (Fig. 1D). The short notes of nearly equal duration, from the

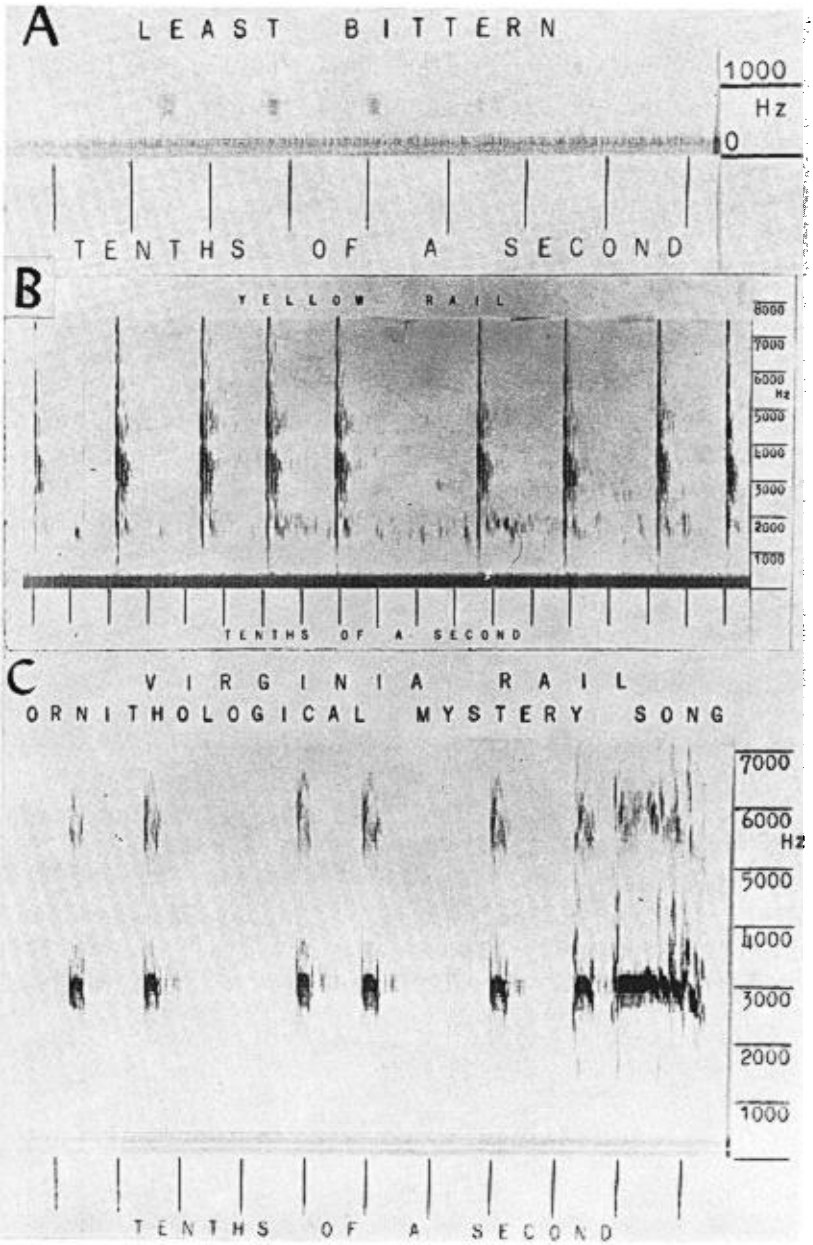

Fig. 2. Spectrograms of vocalizations of (A) Least Bittern, (B) Yellow Rail, and (C) Virginia Rail.

bittern, are in contrast with the short-long pattern that I heard on both occasions when there were continued series of phrases from the female Black Rail. Another difference is in the numbers of notes within each phrase, generally five or more from the bittern and two or three from the rail. A third feature, uniformity of pitch within the phrase, has been a consistent feature from the rail, and the bittern phrase illustrated (Fig. 2A) also is on one pitch. I have frequently heard the Least Bittern singing with slight but detectable changes in pitch within the phrase. This is evident in the songs published by Kellogg et al. (1959, 1962).

Although the many miscellaneous vocalizations of rails have not been a part of this study, one incident involving a female Black Rail has come to my attention. In 1953 on Long Beach Island, New Jersey, John M. Jubon (pers. comm.) heard a type of disturbance sounds made by a female Black Rail, when he was photographing activities of the female at a nest. He described the sounds as "rapid, soft, high pitched, nasal," and with slight modification of his paraphrasing, they sounded like "ink-ink-ink-ink." The sounds came each time she approached the nest, this a signal to him to start filming, and stopped when she reached the nest.

Yellow Rail

During the efforts to record Black Rails at Elliott Island, Maryland, it was of interest to hear the song of the Yellow Rail outside its known breeding range. A group from the Delaware Valley Ornithological Club of Philadelphia was camped there, and at 0215, 26 April 1969, Richard Mellon and J. George Hitchner called my attention to singing Yellow Rails. Black Rails were also in full song. Tape recordings were made of both species, together and when singing separately. One recorded sequence has three or more Yellow Rails and five or more Black Rails in song.

The song of the Yellow Rail referred to here is, so far as I am aware, its only song. It is a series of dry "tick" or "click" sounds, heard in long continued series of pairs and triplets, such as "tick-tick, tick-tick-tick" or "tick-tick-tick, tick-tick," or less frequently "tick-tick, tick-tick." Although the pauses between phrases are just perceptibly longer than the periods between parts of the phrase, the phrases are not hard to detect in the field. A spectrogram (Fig. 2B), taken from the recording cited above at Elliott Island, was from a "doublet-triplet" followed by a "doublet-doublet."

After the above experience, I made inquiries again among a number of investigators working in the Atlantic states about the frequency of hearing Yellow Rail songs. Representative occurrences indicate that it may not be as rare as generally believed. F. H. Lesser and P. F. Springer

heard the song in May in Delaware (Lesser 1964), C. R. Mason heard songs in April in Florida (Steffee 1969), singing was heard in March in Florida by Stevenson (1972), and Douglas Hackman and Ben Poscover heard one in song in Somerset County, Maryland, 18 April 1973 (Robbins 1973). The season of the year of these representative reports suggests that singing is during initial periods of spring migration to northern breeding areas. This may be from birds that have been in Delaware or Maryland all winter, or perhaps Florida wintering individuals stop for a few days in these states before continuing their northward flights.

ORNITHOLOGICAL MYSTERY SONG

Brewster (1901) described a nocturnal raillike song he had heard in wet meadows or in marshes in Massachusetts, paraphrasing the song with such expressions as "kik-kik-kik, ki-quèeah." The unknown mystery songster then came to be known as the "kicker" and Brewster suggested that it might be a Black Rail. Ames (1902) interpreted sounds he heard from a captive Yellow Rail as representing the "kicker." In later years a number of observers considered the mystery song to be that of a Yellow Rail. In this belief, a sound recording of the vocalization was listed as that of a Yellow Rail in two phonograph records (Kellogg et al. 1959, 1962), but it was suggested in the second record that there was uncertainty about this attribution. Uncertainty was also expressed in the identification of a spectrogram of the song, described as "Tic-tic-tic-McGreer" (Kellogg 1962). According to Keith (1967), evidence was being accumulated by Joseph A. Hagar that the song was very probably a rare call of the Virginia Rail. Subsequently that correct supposition was confirmed. In the first instance, Reynard and Harty (1968) captured a male Virginia Rail that had been giving the song. Callin (1968) summarized many reports of people hearing the song and shortly after seeing Virginia Rails. I do not know if the female Virginia Rail also may give the song.

It is somewhat remarkable that the mystery song remained unidentified for more than half a century. After hearing the song for the first time in Pennsylvania 23 May 1966, I visited marshes often and heard the song twice more in 1966 in New Jersey, two times in 1967 in the same state, and on 26 April 1969 I heard three "kickers" at Elliott Island, Maryland. Post and Enders (1970), in consideration of their work and the many other reports, such as those by Callin (1968), considered the vocalization to be "probably one of the main breeding calls."

In the interest of correcting data or observations based on the incorrect identification of the song, specific changes are given here. In the original issue of the record, "A field guide to bird songs" (Kellogg et al. 1959), the song listed from a Yellow Rail is the mystery song of the Virginia

Rail. In "A field guide to western bird songs" (Kellogg et al. 1962), the first song is correctly identified as from a Yellow Rail, and the second is again the mystery song. I understand that recent revisions of the two records have been corrected. Finally, a spectrogram of the "kicker" song, as it is called in a paper by Kellogg (1962), should be labelled Virginia Rail instead of Yellow Rail.

For direct comparisons of audiospectrograms of songs of the Black Rail, Yellow Rail, and the mystery song of the Virginia Rail, one phrase of the last song is included here (Fig. 2C). This could well be paraphrased almost identically to a song paraphrase given by Brewster (1901), as "kik-kik, kik-kik, kik, ki-quèeah."

It is hoped that other investigators will report their experiences with this song, and more particularly, information on the singing of the female Black Rail. It would also be of interest to document singing of Yellow Rails in other regions in spring, to learn the timing and migration route of this elusive species.

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