

## NOTES ON THE SPOTTED RAIL IN CUBA

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THE Spotted Rail (*Pardirallus maculatus*) is exceedingly rare in Cuba outside the Zapata Swamp, and was thought to be limited to the three central provinces of the island (Bangs, 1913; Barbour, 1923; Bond, 1956; Greenway, 1958). It is therefore worth recording its presence and abundance in the westernmost province, Pinar del Rio. In addition, a few notes are included on molt, breeding season, available specimens, and habits of the population and taxonomy of the species.

The trip during which the specimens mentioned here were collected was partially supported by the Peabody Museum of Yale University. Notes on the collection made between August and December 1955 were published by Ripley and Watson (1956). I am grateful to Mr. and Mrs. W. W. Caswell, Jr., and to the late Mr. Dayton W. Hedges for hospitality during my stay in Cuba and to Srs. Jack Boyle, Gaston S. Villalba, and Jesus Carrillo for facilitating my travel and collecting. Without the services of these persons I would probably never have seen any Spotted Rails. For the loan of specimens I am indebted to R. A. Paynter, Jr., C. H. Blake, C. O'Brien, J. Bond, H. G. Deignan, and D. W. Warner and I also thank E. Stresemann, G. Mauersberger, and D. Goodwin for reporting on the Berlin and British Museum collections. J. Bond and P. S. Humphrey have given helpful criticism on the manuscript.

### OCCURRENCE

I collected two female Spotted Rails, one laying, in wet rice fields at Finca Dayaniguas, south of Paso Real de San Diego, on 16 September 1955. The rice plantation lies in the flat natural savannah between the Los Palacios and San Diego rivers where cultivated and fallow irrigated fields, criss-crossed with shallow ditches, provide an extensive wet habitat of high grasses. Several other Spotted Rails flushed or called in this area so that I hardly regard the species as either a chance find or rare in Pinar del Rio. As Bond (1956) found in 1935, the species was also locally common around Santo Thomás (=Las Mercedes) in the Zapata Swamp during 1955 and I was able to collect three specimens there. The saw grass, rush, and *Myrica* bush habitat is probably ecologically very similar to the rice fields and wet savannahs in southern Pinar del Rio. The grunting and clucking voice of the Spotted Rail is distinctively different from the voices of other rails and gallinules one might find in similar habitat (*Rallus elegans ramsdeni*, *Porzana flaviventer gossi*, *P. carolina*, *Gallinula chloropus cerceris*, and *Porphyryula martinica*). I feel reasonably confident that I heard the species in the Lanier Swamp on the Isle of Pines, where the habitat, although less extensive, is much the same as in the Zapata Swamp. Schwartz (pers. comm.) saw what he has tentatively identified as a Spotted Rail west of Nueva Gerona in August 1958. The species has never been collected on the Isle of Pines.



SPOTTED RAIL (*Pardirallus maculatus*)  
From a tempera painting by Robert Verity Clem.

## MOLT

All five 1955 specimens of the Spotted Rail were in molt. Little has been published on rail molts and this small series contributes data on the sequence and timing of molt in the Cuban population of this species. A nonlaying hen from Pinar del Rio had enlarged gonads but no brood patch in mid-September. Numerous pinfeathers were present on all parts of the body and only the outer pair of rectrices had not been shed. I secured the bird alive and when it flapped its wings in an attempt to escape, several of the worn outer primaries dropped from each wing. Wing molt was probably just beginning. The other hen, which was laying, was in the process of renewing its alula quills, all of its remiges, greater wing coverts, and rectrices at once and graphically illustrates simultaneous molt of the main flight feathers which is a common occurrence in rails (Witherby et al., 1952). Much of the body plumage is fresh but some of the crown and rump feathers and smaller upper tail coverts are still in growth; the undertail coverts have all been dropped. This specimen was therefore about to complete a molt, probably prebasic, while laying. A male with enlarged gonads, which I collected in the Zapata Swamp on 17 October, has worn remiges and coverts but much of the body shows incoming feathers. Two other specimens from the Swamp also had enlarged gonads. A male collected on 23 October had newly replaced wing and tail feathers but was still molting on the crown, mantle, breast, sides, and flanks. A female was only replacing its upper tail coverts on 17 October; the rest of its plumage seems to be fresh.

Although the evidence is meager, the general sequence of prebasic molt in the Cuban Spotted Rail appears to be as follows: feather replacement begins on the body in several areas (nape, upper back, upper sides, flanks, breast, and throat). The crown starts to molt as the remiges, wing coverts, alula quills, and rectrices begin regrowth after having been shed simultaneously. The wings and tail complete growth quickly but a few areas of the body and head continue to show some feather renewal. The molt is complete when the upper tail coverts are fully regrown.

These five specimens also permit speculation on the timing and duration of the prebasic molt in the Cuban population. The two mid-September birds are about half-way through the molt; a mid-October bird has nearly completed molting, the other two October birds are less advanced. Molting, therefore, probably lasts from August into December in the population.

## BREEDING SEASON

No young of this species were found either in Pinar del Rio or in the Zapata Swamp during September and October. The laying hen collected in September and the fact that all the other specimens had enlarged gonads

indicate that the breeding season persisted into the early fall during 1955, when molt had already begun. Evidence from other rails collected in Cuba in the same year suggests that most species were nesting in the late summer and early fall (Ripley and Watson, 1956).

Soft part colors were recorded in the field: iris, reddish brown; bill, bright yellowish green with an orange red spot at the base of the lower mandible; and legs and feet, pinkish red. These colors, which were recorded while at least one specimen was breeding, are essentially the same as those noted on the labels of nonbreeding specimens from the island Trinidad and those recorded by Friedmann (1949) and Dickerman and Warner (1961) for Mexican specimens.

#### SPECIMENS

In an attempt to learn more about the Cuban Spotted Rail, I borrowed whatever Cuban material was available in the United States and made inquiries in an attempt to locate specimens in Europe. These and other known examples are listed in Table 1, which probably records most of the extant specimens of this population. The only specimens I was able to locate outside of the U.S. are in Cuba. Some are not sexed; none are accompanied by breeding data; all are in relatively fresh plumage; one may be molting. Males sexed at skinning average larger in all measurements. On this basis, unsexed specimens have been provisionally identified in Table 1.

The type, collected in February, shows one upper breast and one mantle feather in growth. Scattered molting feathers, however, are difficult to locate on dried skins. Evidence for a prealternate body molt in the Cuban population is thus doubtful. A series of eight skins of Spotted Rail from Trinidad, however, contains molting specimens from August, September, October, February, and May. One August specimen is apparently just completing regrowth of its primaries, September and October birds have fresh remiges but are renewing upper tail coverts and some body feathers. All these birds seem to be in prebasic molt. The February and May specimens are in body molt only but the remiges are somewhat worn. They are probably undergoing a partial prealternate body molt which Witherby et al. (1952) and Bent (1926) found in all British and United States rail species studied.

#### ECOLOGY AND HABITS

According to Gundlach (1875) the species was common in wet grassy ditches of Havana Province in his time and frequently appeared on sale in the Havana market. The striking dearth of material in museums and the difficulty Barbour (1923) had in locating living birds or specimens, led, however, to the subsequent opinion that this was a rare species in Cuba.

TABLE 1  
KNOWN SPECIMENS OF CUBAN SPOTTED RAILS PRESERVED IN MUSEUM COLLECTIONS

Museum No.	Locality	Date	Sex	Wing (mm)	Tail (mm)	Tar- sus (mm)	Cul- men (mm)	Wt. (g)
MCZ* 61101 (type)	Jaruco, Havana	14 Feb. 1913	♂	125	48	39	50.5	—
MCZ 61117	Havana Province	ca. 1870	♀	105	—	—	43	—
				worn				
MCZ 158959	Santo Tomás Zapata Swamp	20 April 1935	♀	117	49.5	34	44	—
CNHM* 36598	Cuba	March 1892	♂	121	47	37.2	47.5	—
CNHM 36599	Cuba	March 1892	♂	122.5	54	38	50	—
AMNH* 45671	Cuba	—	♂	120	52.5	37	49	—
USNM* 453185	Havana	Winter 1917	♂	124	49.5	39	—	—
ANSP* 111893	Santo Tomás Zapata Swamp	4 Jan. 1931	♀	119	51	35.5	46	—
YPM* 33333	Las Mercedes Zapata Swamp	17 Oct. 1955	♀	116	48	36	46	153
YPM 33334	Finca Dayaniguas Pinar del Rio	16 Sept. 1955	♀	—	—	36.5	47	167
YPM 33335	Finca Dayaniguas Pinar del Rio	16 Sept. 1955	♀	—	—	37.5	48.5	190 laying
YPM 33336	Las Mercedes Zapata Swamp	23 Oct. 1955	♂	129	54	39	50	193
YPM 33337	Las Mercedes Zapata Swamp	17 Oct. 1955	♂	125.5	50	37.5	—	195
Gundlach Collection Havana, Cuba		No data available, seen in 1955						
Ramsden Collection Guantanamo, Cuba	Havana	No data available, not seen; mentioned by Barbour (1923).						

\* Museum of Comparative Zoology, Cambridge, Mass.; Chicago Natural History Museum, Chicago, Illinois; American Museum of Natural History, New York, N.Y.; United States National Museum, Washington, D.C.; Academy of Natural Sciences, Philadelphia, Penn.; Yale Peabody Museum, New Haven, Conn.

Mongoose (*Herpestes auro-punctatus*) predation, which Bangs (1913) suggested would bring about extinction of the Spotted Rail, is probably insignificant at present in the wetlands of the southern swamps, but may have radically reduced the population in the drained agricultural lands near

Havana. Allen (1911) recounts some of the destruction to native wildlife by the mongoose in the West Indies and specifically mentions its great abundance near Havana. Simultaneous molt of most of the flight feathers must render the Spotted Rail extremely vulnerable to ground predation in drier areas, such as Havana Province, in which the mongoose and domestic cat are plentiful. In Jamaica, the first of the Greater Antilles to experience mongoose introduction, the Spotted Rail population disappeared before a single specimen was collected (Bond, 1956). In the heavy marshes of southern Cuba, fluctuating water levels and perhaps avian, reptilian, and piscine predation may limit Spotted Rail populations, but no natural mammalian predators live in the swamps and wet savannahs.

Little is known of the habits of this retiring species in Cuba, even in the Zapata Swamp where it has been observed most frequently. A nest has never been found in Cuba, although Gundlach (1875) mentions, without giving dates, two eggs taken from dead birds.

Friedmann (1949) records observations on a captive example in Mexico which suggest that this rail frequently climbs in vegetation using its wings for balance, but descends by flying. I found the Spotted Rail loath to fly in Cuba although one flushed just ahead of a moving rice combine. Most of my other observations have been of individuals skulking in heavy grasses or dashing from the cover of one bush to another in low open places. Only one other time did one flush when I cornered it in a low bush. Dickerman and Warner (1961) report flushing several birds but with difficulty. I was able to attract Spotted Rails by imitating their accelerating clucking and occasionally I was answered, but never did a bird leave its cover in response to my calling. I was told that one of the local Cuban names, "Gallinuela Escribano," refers to the dangling legs "writing" on the water surface in flight. The other local name I heard was "Gallinuela Color-Guineo" calling attention to the rail's similarity in plumage pattern to the introduced Guinea Fowl (*Numida meleagris*).

#### RANGE AND TAXONOMY

In addition to its occurrence in Cuba and formerly in Jamaica, the species ranges over Middle and eastern South America from Veracruz, Mexico, to northern Argentina. Few series of specimens have been collected from any one locality and only the nominate race is recognized for all South America and Central America north to Costa Rica (specimen in the British Museum identified by D. Goodwin). The apparent rarity of the species over all its range is probably best explained by its inaccessible habitat, wary habits, and its reluctance to flush.

*Pardirallus maculatus inoptatus*, of Cuba, was described from two speci-

mens which were apparently compared with a single South American specimen and with the then unique type of *P. m. insolitus* (Bangs and Peck) from British Honduras. Bangs (1913) separated the Cuban specimens from South American *maculatus* on the basis of reduced spotting and consequent darker appearance, lack of white spotting on the rump, and black tips on the white under tail coverts; and from *insolitus* on the basis of its pure white throat and lighter brown upper parts. Using these characters I am unable to separate the thirteen available Cuban specimens from South American birds either individually or in series. I compared the Cuban series with eight Yale Peabody Museum specimens from the Caroni Swamp in Trinidad and twelve South American specimens from Venezuela south to Argentina in the American Museum of Natural History. The range of variation in size, color (even allowing for seasonal wear and foxing), amount of spotting, and relative width of black and white bars is the same in Cuban and Trinidad series. The Cuban birds do not appear darker and less spotted; in some Cuban specimens the spotting is reduced; in most, however, it is pronounced. Birds with the greatest amount of white on the nape also have the white markings on the innermost secondaries, their coverts, and the scapulars elongated into marginal streaking. Seven Cuban specimens have larger white spots on the rump than any of the birds from Trinidad, three of which almost lack rump spotting. The under tail coverts are faintly tipped with black in most specimens of both series, but in a few they are pure white. Some Cuban individuals are markedly white on the throat, others are flecked with grey, especially in worn plumage. In fact, all the characters mentioned in the description are highly variable in the Cuban population and vary to the same extent in the South American series. In short, *P. m. inoptatus* does not stand up as a valid subspecies on the basis of comparisons of series of specimens.

Dr. Warner has kindly sent me the three Veracruz specimens, collected by Dickerman, for comparison with the recently collected Cuban material and with the Trinidad and other South American birds. The main characters requiring comparison were the brown margination of the back feathers and wing coverts and the intensity of the dorsal spotting since all the other characters such as dark or light color of the underparts and the throat have proved to be individually variable in the species (Friedmann, 1949; Dickerman and Warner, 1961). The recently collected Mexican specimens are in fresh or slightly worn alternate (?) plumage but the brown feather margins are less pronounced and extend less far onto the mantle than in most of the Cuban and Trinidad specimens so that the total appearance of the birds is darker and much less brown. One of the Veracruz examples, however, is almost identical with a Cuban specimen in this regard. The shade of brown in each of the four Mexican specimens may be matched in a Cuban and a

Trinidad specimen, but is slightly darker than in the majority. During previous comparisons of specimens with the type of *insolitus* (which is worn) and with old Cuban specimens (the three in the MCZ), no allowance has apparently been made for foxing due to the difference in ages or wear of the material. Old and worn Cuban specimens, for instance, are lighter than freshly collected newly molted ones. The Mexican specimens are separable from South American ones, however, on the basis of dorsal spotting. The size of the individual white spots is less in the type of *insolitus*, in the two darker specimens from Veracruz, and in Friedmann's (1949) Chiapas bird (examined), so that the spotting in all four shows less tendency toward elongation and streaking than in the South American specimens. This is most marked on the inner secondaries, secondary coverts, and scapulars which are distinctly streaked in all South American specimens and either spotted or unmarked in Central American ones. Cuban specimens are variable in this character, three of the 11 tending toward spotting but the majority being streaked like South American birds. On the basis of the few available specimens, it seems that nigrescent individuals with reduced spotting and narrower brown feather margins are found in Central America from British Honduras north. Consequently, two populations may be recognized on the basis of quantitative characters in this highly variable species, nominate *maculatus* from South America north to Costa Rica and Cuba, and *insolitus* from northern Central America to Veracruz.

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### NEW LIFE MEMBER

Mrs. Frederick C. Lyman, of Wayzata, Minnesota, is a new Life Member of the Wilson Ornithological Society. As an amateur in ornithology she is particularly interested in the history of the study of birds in the United States. In addition, she has spent a considerable amount of time observing present-day bird life from the decks of the "Tern," the Lymans' 39-foot yawl, while sailing along the Atlantic coast from the Bahamas to Maine and New Brunswick, and while sailing in European waters from Holland to Norway and Sweden. Mrs. Lyman, a graduate of the University of Minnesota, is a member also of the Minnesota Ornithologists' Union, National Audubon Society, Nature Conservancy, and Garden Clubs of America.

