A possible explanation of how this egg movement was accomplished has been discussed by Oring (Auk 81:88–89, 1964) who reported that some Pintails (*A. acuta*) and Mallards (*A. platyrhynchos*), but none of 15 trapped Gadwalls, moved their eggs into new nests after a trap was placed over the original nest. The ducks used the ventral surface of their bills to pull the eggs through the trap. This Gadwall may have moved her eggs in the same manner when she returned to her nest from opposite sides of the fence.

The authors thank Kenneth F. Higgins and Harold F. Duebbert for reviewing the manuscript.—ROBERT F. JOHNSON JR., *Dept. of Forestry, Michigan Technological Univ., Houghton 49931* and LEO M. KIRSCH, *Northern Prairie Wildlife Research Center, U.S. Fish and Wildlife Service, Jamestown, ND 58401.* *Accepted 3 Feb. 1976.*

Foods of western Clapper Rails.—The Colorado River population of the Clapper Rail (*Rallus longirostris yumanensis*) is presently listed as endangered (U.S. Fish and Wildlife Service, United States List of Endangered Fauna, p. 11, 1974). Its presence in fresh-water habitat during the 5-month breeding season and probable migration to Mexican coastal salt water swamps (Tomlinson and Todd, Condor 75:177–183, 1973) are considered unusual for Clapper Rails in general.

In June 1971, Tomlinson and R. L. Todd collected 35 Clapper Rail specimens in the southwestern United States and western Mexico to determine if a racial distinction occurred among the geographically isolated populations. Three separate races (*R. l. yumanensis*, *R. l. rhizophorae*, and *R. l. nayaritensis*) were confirmed from the collection (Banks and Tomlinson, Wilson Bull. 86:325–335, 1974). Because the food habits of these rails were unknown, 32 stomachs (proventriculus and gizzard) were preserved for later food habits analysis. This analysis provides the first insight into the freshwater food habits of *R. l. yumanensis*, and should be useful in future preservation and management considerations. The birds were collected in fresh-water marshes along the Colorado River from Needles, California south to the Delta in Sonora, Mexico and in mangrove (*Avicennia germinans* and *Rhizophora mangle*) swamps from Guaymas, Sonora, to San Blas, Nayarit, Mexico (Table 1). Airline distance from the northernmost to southernmost points is approximately 1800 km. The specimens, including specific data relating to their collection have been deposited in the U.S. National Museum, Washington, D.C.

Each Clapper Rail stomach was wrapped in cheesecloth in the field and preserved in a 10% formalin solution. Analysis was conducted at Arizona State University following procedures described by McAtee (Auk 20:449–464, 1912). The contents of each stomach were separated into ingesta types in a gridded petri dish and examined under a dissecting microscope. Each food type was visually estimated as a percentage of the total content in a particular stomach.

The major foods of Yuma Clapper Rails were invertebrates; little vegetative material was present (Table 2). Crayfish (*Procambarus* and *Orcopectes* are the common genera) were the dominant food in 9 of the 10 stomachs from Topock Marsh on the lower Colorado River south to Imperial Reservoir in Arizona and California; the other stomach was empty. Of 2 specimens collected at the confluence of the Gila and Colorado rivers, one contained primarily an introduced fresh-water clam (*Corbicula* sp.) (98%), and the other primarily isopods (97%). Colorado River Delta specimens in Mexico contained a greater variety of food organisms, but the major components were water beetles and fish.

Of the 16 *R. l. yumanensis* stomachs, 9 had crayfish, 11 contained insect fragments, 4 had water beetles, 4 had fish, and 3 contained clams. In addition to the water beetles, other insect matter consisted of small amounts of weevils (3 stomachs), damselfly nymphs (2 stomachs), dragonfly nymphs, grasshoppers, and insect eggs. Spiders, leeches, prawns,

TABLE 1

CLAPPER RAIL COLLECTION SITES

Race	Number of Specimens	Location	Coordinates
Yuma Clapper Rail			
(*R. l. yumanensis*)	4	Topock Marsh and Gorge	34°44′N, 114°30′W
	1	Bill Williams Delta	34°17′N, 114°04′W
	2	Cibola Lake	33°14′N, 114°10′W
	1	Below Cibola Lake in Colorado River	33°11′N, 114°10′W
	1	Martinez Lake	32°58′N, 114°29′W
	1	Imperial Reservoir	32°52′N, 114°28′W
	2	Confluence of Gila and Colorado rivers	32°43′N, 114°33′W
	4	Colorado Delta in Sonora, Mexico	32°02′N, 115°06′W
	16		
Sonora Clapper Rail			
(*R. l. rhizophorae*)	2	Laguna Del Soldado, Guaymas, Sonora	27°57′N, 110°59′W
	2	Bahia Tobari, Sonora	27°05′N, 109°56′W
	2	Topolobampo, Sinaloa	25°38′N, 109°03′W
	6		
San Blas Clapper Rail			
(*R. l. nayaritensis*)	2	Altata, Sinaloa	24°38′N, 107°56′W
	3	Mazatlan, Sinaloa	23°13′N, 106°22′W
	5	San Blas, Nayarit	21°34′N, 105°17′W
	10		
Grand Total	32		

and a small mammalian bone also were found. Vegetative matter consisted of twigs (10% in 1 stomach), 2 legume seeds (1 stomach), and 18 unidentified black seeds (3 stomachs).

All 16 of the *R. l. nayaritensis* and *R. l. rhizophorae* stomachs contained crabs (Table 3). Of the 6 *R. l. rhizophorae* samples, 5 contained 99% or more crab material and one contained 75% pulmonate snail plus 23% crab. The stomach contents of each of the 10 *R. l. nayaritensis* specimens consisted of 89% or more of crab parts. Six morphologically distinct types of crab were differentiated by exoskeleton and chelae in the sample but further identification was not accomplished. Other identifiable items were insect eggs in 2 stomachs and insect fragments in 3. Vegetative matter was slight, consisting of 2 unidentified seeds, each found in a separate stomach. One stomach contained 2 white stones. Esophageal contents from 1 bird (possibly part of a regurgitated casting) consisted of 6 crab legs.

TABLE 2

STOMACH CONTENTS OF *R. L. YUMANENSIS* FROM THE LOWER COLORADO RIVER AND DELTA[1]

FOOD ITEMS	General Locations of Collection: Topock Marsh to Imperial Lake — % Composition Average	Range	Confluence of Gila and Colorado Rivers — % Composition Average	Range	Colorado Delta — % Composition Average	Range	Total Birds Containing Food Items
Crustacea							
Astacidae (Crayfish)	94.67	80–100					9
Palaemonidae (Shrimp)					.25	0– 1	1
Isopoda			48.50	0–97			1
Insecta							
Hydrophilidae (Water beetles)					56.50	1–80	4
Carabidae (Ground beetle)	0.11	0– 1					1
Unidentified Coleoptera	0.56	1– 5					1
Curculionidae (Weevils)	2.78	5– 10					3
Anisoptera (Dragonfly nymphs)					0.50	0– 2	1
Zygoptera (Damselfly nymphs)	0.11	0– 1			2.00	0– 8	2
Orthoptera (Grasshoppers)	0.11	0– 1					1
Insect eggs	0.11	0– 1					1
Unidentified parts	0.78	1– 6	1.50	1– 2			4
Arachnida (Spider)	0.56	0– 5					1
Hirudinea (Leech)					3.75	0–15	1
Mollusca (*Corbicula*)	0.06	0– 0.5	50.00	2–98			3
Vertebrata							
Unidentified fish					31.75	9–98	4
Unidentified mammal bone	0.06	0– 1					1
Plant matter							
Seeds	0.11	0– 1			2.75	1– 5	2
Twigs					2.50	0–10	1
	100.02		100.00		100.00		
Total Birds Examined	9		2		4		15[2]

[1] Date presented as estimated percentages of total volume of stomach food content.
[2] One additional bird taken at Bill Williams Delta had no food in its digestive tract.

TABLE 3

STOMACH CONTENTS OF *R. L. RHIZOPHORAE* AND *R. L. NAYARITENSIS* FROM MEXICO[1]

FOOD ITEMS	*R. l. rhizophorae* % *Composition* Average	Range	*R. l nayaritensis* % *Composition* Average	Range	Total Birds Containing Food Items
Crustacea					
Brachyura (Crabs)	86.83	23–100	98.40	89–100	16
Mollusca					
Pulmonata (Snail)	12.50	0– 75			1
Insecta					
Eggs	0.17	0– 1	1.00	0– 10	2
Misc. Parts	0.17	0– 1	0.20	0– 2	3
Plant					
Brown seed	0.17	0– 1	.10	0– 1	2
Miscellaneous					
White Stones			.10	0– 1	1
Feathers	0.17	0– 1	.10	0– 1	2
Unidentified black fragments			.10	0– 1	1
	100.01		100.00		

[1] Data are presented as estimated percentages of total volume of stomach food content. Samples included 6 *R. l. rhizophorae* and 10 *R. l. nayaritensis*.

Food selections by birds in our sample were similar to those of other Clapper Rail populations. The major food item of Georgia Clapper Rails (*R. l. waynei* and *R. l. crepitans*) was crabs, supplemented by other invertebrates and the seeds of cordgrass (*Spartina* sp.) (Oney, J. Wildl. Manage. 15:106–107, 1951). Pellet castings by *R. l. crepitans* in Delaware revealed crab exoskeleton and clam shell fragments (Meanley, Auk 79:113, 1962). Foods of western races of Clapper Rails, other than those reported herein, also consisted mainly of invertebrates with a minor amount of plant material. Moffitt (Condor 43:270–273, 1941) reported that the California race (*R. l. obsoletus*) ingested horse mussel (*Modiolus demissus*) as its main food item, with other invertebrates and seeds of cordgrass as supplements. Test and Test (Condor 44:228, 1942) found representatives of amphipods (Amphipoda) in one specimen of *R. l. obsoletus*, and Williams (Condor 31:52–56, 1929) observed this race to feed on clams (*Macoma* sp.). Applegarth (M.A. thesis, Stanford Univ., Standford, Calif; 1938) also listed a variety of invertebrates in the diet of the California birds and stated that this race lives almost entirely upon invertebrates. It was therefore not surprising that the 3 populations sampled in our study also relied heavily on invertebrates, particularly crabs and crayfish. However, we noted several interesting observations relative to food selection. First, despite a great abundance and variety of invertebrate food species in the mangrove swamps of Mexico, the birds sampled there apparently selected crabs in preference to other available foods. In the Colorado Delta (which generally contains brackish water and no crabs), the birds were adaptable and consumed a greater variety of foods. Up stream in the freshwater marshes of the Colorado River (which are relatively limited in invertebrate species and numbers; Grinnell, Univ. Calif. Publ. Zool. 12:15–294, 1914), the rails' principal food was crayfish. Thus, within the limits of this investigation, Clapper Rails were selective, opportunistic, or limited in the variety of foods eaten depending upon habitat type.

On the basis of the available literature (Ortmann, Proc. Am. Phil. Soc. 41(171):267–400, 1902) it is interesting to note that crayfish were absent on the lower Colorado River prior to 1900. In recent years, crayfish have become relatively common through introduction and/or natural expansion. The increase of a major food item, combined with creation of stable marsh habitat behind dams during the same period (Ohmart, et al., Trans. 40th N.Am. Wildl. and Nat. Res. Conf., 240–254, 1975) strongly support a hypothesis suggested by Tomlinson and Todd (Condor 75:177–183, 1973) and supported by Ohmart and Smith (USBR contract no. 14-06-300-2409, Boulder City, Nev., 1973) that *R. l. yumanensis* has since 1904 increased its distribution from the Colorado Delta northward along the Colorado River to approximately Needles, California. Further documentation of early river development and Clapper Rail distribution can be found in Dickey (Auk 40:90–94, 1923), Phillips et al. (The Birds of Arizona, Univ. of Ariz. Press, 1964), and Welsh (Audubon Field Notes 20:590, 1966).

We are grateful to R. L. Todd (Arizona Department of Game and Fish) for his help in securing specimens. Jill B. Leigh and Nancy Stamp aided in the sorting and identification of stomach contents.—R. D. OHMART, *Dept. of Zoology, Arizona State Univ., Tempe, 85201 and* R. E. TOMLINSON, *Patuxent Wildl. Res. Center, U.S. Fish & Wildl. Serv., Laurel, MD 20811.* (Present address RET: *U.S. Fish & Wildl. Serv., P.O. Box 1306, Albuquerque, NM 87103.*) *Accepted 19 Jan. 1976.*

Aggression in foraging migrant Semipalmated Sandpipers.—The comparative study of foraging in young and older birds is a current interest in ornithology (e.g. Orians, Anim. Behav. 17:315–319, 1969), but few accounts assess the specific components that affect foraging efficiency, for example age-related differences in mechanical abilities or differences in social factors (e.g. aggression) related to foraging.

We describe here some social and mechanical aspects of foraging in juvenile and adult Semipalmated Sandpipers (*Calidris pusilla*) which we observed at Plymouth, Massachusetts on 29 and 30 August 1973. Juveniles were easily identified by their juvenal plumage (see Bent, U.S. Natl. Mus. Bull. 142:248, 1927). The observations were made during an especially high tide when prey items, mostly amphipods, were unusually visible, even to us. Semipalmated Sandpipers in Plymouth usually rest during high tides and, except for brief periods during falling tides, they normally locate prey tactually.

Our observations on 29 August were made to compare the frequency of aggression among about 20 adult and 5 juvenile sandpipers. Chasers were usually in a "Tail-up" posture quite similar to what Drury (Fig. 5 in Auk 78:176–219, 1961) likens to Sharp-tailed Grouse (*Pedioecetes phasianellus*) dance postures. Dominant birds in virtually all chases we saw were the individuals that initiated a particular chase. The results (Table 1) are assessed by the same method Hailman (Bird-Banding 46:236–240, 1975) used in his analysis of sparrow aggression and show (1) that juvenile sandpipers were more frequently aggressive than adults ($\chi^2 = 19.88$, $P < 0.001$), but (2) that they were no more aggressive towards adults than towards other juveniles.

Our observations on 30 August were made under conditions similar to those of the 29th, but were directed more toward tallying rates of feeding attempts rather than toward determining social interactions between adults and juveniles. About 45 juveniles and 45 adults were present in the observation area, more than on the previous day. We chose a