

BANK SWALLOW (*RIPARIA RIPARIA*),  
BOBOLINK (*DOLICHONYX*  
*ORYZIVORUS*), AND OTHER BIRDS  
AT A DESERT RESERVOIR IN CHILE

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The deserts of northern Chile are among the most barren areas on earth, where rain falls only at intervals of many years or has never been recorded within historic times. The region contains valuable mineral deposits, and mining enterprises have piped water that comes from the Andes into the desert to support industrial plants and small towns. One example is the nitrate-mining community of Pedro de Valdivia at an altitude of about 1450 m in the Province of Antofagasta. Construction of the present industrial plant began in 1930, and most of the major environmental changes date from that time. Trees and shrubs were planted and are maintained by watering, and a few passerine birds reside among them. The Río Loa, one of the few permanent streams that flows across the desert to the sea, courses within 26 km of the town and is used as its principal water source. The river is bordered by vegetation that supports a few species of birds and may have made it possible for some to reach suitable habitat at Pedro de Valdivia. At the edge of the town is a large, irregular excavation into which all industrial and domestic waste water is pumped, forming a large permanent reservoir. The content of dissolved and suspended material in the water probably varies considerably, but the continued presence of waterfowl and shorebirds indicates that these substances are not toxic or repellent to some species, at least. Green algae are abundant, and in a few places small clumps of reeds grow. At the times of my visits, flies of the family Ephydriidae bred in enormous numbers around the edge of the reservoir but other insects appeared scarce. Large irregular blocks of stone that were removed during excavation surround the reservoir in great piles, and these provide shade and cover for several kinds of terrestrial vertebrates. The lizard *Tropidurus peruvianus*, with a maximum size of about 25 cm, was abundant near the water, and I found some remains of the introduced rabbit *Oryctolagus cuniculus* and scats that were probably those of *Rattus* sp. I saw no domestic dogs or cats around the reservoir although there are some in the town.

I visited Pedro de Valdivia in the course of a study of the nesting of the Gray Gull (*Larus modestus*) in the desert between this town and the coast (Howell et al., in press). In 1968 I visited the reservoir on 3, 5, 10, 11, and 15 December, making a thorough census with binoculars and telescope on 5 December. In 1970 I revisited the reservoir briefly on 10, 11, and 27 January with my colleagues Braulio Araya M. and W. R. Millie of the Departamento de Oceanología, Universidad de Chile, Viña del Mar. Our visits were during the austral summer, when the nighttime air temperatures were about 10°C and the mean maximum daytime air temperatures were about 30°C. There would be virtually no birds at the site of Pedro de Valdivia without the water and vegetation brought in by man, and a list of the birds presently found at this artificial "oasis" is of interest. As the dates of our visits did not overlap, years are not cited after the months in the following account. The no-

menclature follows that of Meyer de Schauensee (The species of birds of South America, Acad. Nat. Sci. Phila., 1966) and of Eisenmann (vernacular names) in the same work.

*Phoenicopterus chilensis*. Chilean Flamingo. I saw no flamingoes in 1968, but we found two immature birds in grayish plumage at the reservoir during the 1970 visits.

*Anas flavirostris*. Speckled Teal.

*Anas georgica*. Yellow-billed Pintail. Both these species were present at each visit, and on 5 December I counted 66 ducks of which about two-thirds were pintails and one-third teal. During the hotter parts of the day, the ducks came out of the water and rested in full sun on small islets or around the shore. At about 14:00 on 3 December, when air temperature in shade was 33–34°C, I saw a pintail open its bill and pant for several seconds. I saw no indication of reproductive activity among the ducks, and the absence of suitable nest sites and materials makes it doubtful that they breed around the reservoir.

*Anas puna*. Puna Teal. I saw a single male on 5 December in company with the preceding two species. This bird was larger than the teal and at least as large as the pintail, and it was creamy-white on the cheeks and throat. The Puna Teal is usually found at higher altitudes in montane regions.

*Charadrius semipalmatus*. Semipalmated Plover. On 10 December I saw two individuals in company with two Puna Plovers and some Baird Sandpipers (see below).

*Charadrius alticola*. Puna Plover. In December a pair consistently occupied a particular site on a small rise about 5 m from the water's edge. Their agitation each time I approached suggested that they were on a nesting territory but I did not find a nest. The experience was repeated in January at the same place, but again no nest was found. This species is usually confined to high altitude lakes in montane regions, and we found an adult with two recently hatched chicks in such a habitat on 15 January at the Laguna Legía, 4100 m, 50 km SE of Toconao, Antofagasta. As the chick of this species seems to be undescribed, we collected one for preparation as a study skin after taking color photographs. In size, color, and pattern it is similar to the chick of *C. alexandrinus*, and, like that form, lacks any trace of a pectoral band. This shows clearly in photographs, but in dried specimens the skin of the neck turns black and gives a superficial appearance of a dark pectoral marking although the sparse down feathers are unpigmented. The adult plumage shows faint indications of two pectoral bands, and Johnson (The birds of Chile, Vol. 1, Platt Establecimientos Graficos, Buenos Aires, 1965) suggests that *alticola* may be a derivative of the strongly marked Double-banded Plover (*C. falklandicus*).

*Pluvialis dominica*. American Golden Plover. From one to three individuals were present in 1968 and 1970. On 5 December I noted that two of three birds showed symmetrical molt of the inner primaries, the lack of which gave the appearance of light patches in the wings when in flight. The principal winter range of this species lies east of the Andes, and Chilean records are few.

*Tringa flavipes*. Lesser Yellowlegs. On 11 January we saw two Greater and one Lesser Yellowlegs together in company with other shorebirds and ducks. On 27 January several Lessers were seen but no Greater were positively identified.

*Tringa melanoleuca*. Greater Yellowlegs.

*Calidris bairdii*. Baird Sandpiper. This sandpiper is abundant around bodies of water in the interior of

Chile, and there were always at least 100 around the reservoir in 1968 and 1970. They often took wing in tight flocks and gathered closely together when resting, but when foraging, they showed intolerance of one another and two birds seldom came closer than 1–1.5 m without an aggressive move by one or both. However, I did not find that individuals defended a particular area more than temporarily, while foraging there.

*Steganopus tricolor*. Wilson's Phalarope. We observed a group of nine on the water on 27 January.

*Lessonia rufa*. Rufous-backed Negrito. I estimated five pairs of these small tyrannids among the rock piles at the edge of the reservoir, where they were conspicuous because of their dark color and the aggressive chases of males by other males. Despite their active territorial behavior, we did not find evidence of nesting. These birds spent most of their time on the ground or on rocks, and they fed primarily by running up to the mass of flies at the water's edge and snapping at them as the flies took wing. The negrito does not hop but runs, and its flight appears fluttery and weak, poorly suited for aerial pursuit.

*Riparia riparia*. Bank Swallow. On 5 December I found a Bank Swallow resting on a wire and obtained close-up color motion pictures of it to confirm the identification. On 10 December I saw two individuals resting on the wire. On 27 January 1970 I recorded three birds foraging in company with a single Barn Swallow. There are no other records of this species from Chile, and it is probably only a casual visitor to the area west of the Andes.

*Hirundo rustica*. Barn Swallow. In 1968 I estimated 200 Barn Swallows at the reservoir, where they foraged over the water and shore or rested on nearby utility wires. I found a mummified bird and saved it as a specimen record. In 1970 only a few Barn Swallows were present, with no more than 10 seen at any time.

*Dolichonyx oryzivorus*. Bobolink. On 3 December I found three Bobolinks in a small clump of reeds at the edge of a small marginal pond, and on 5 December I observed a group of nine at close range with a telescope. One bird had a few patches of black showing through the buff-tipped feathers of the underparts. I took close-up color motion pictures and have showed them to O. S. Pettingill, who is studying the migration of this species and who confirms the identification. This is the first record of the Bobolink from Chile, and like the Bank Swallow this species' main winter range is east of the Andes. We found no Bobolinks in 1970 despite a search of the same pond and similar places around the reservoir, and regular occurrence of the species would not be expected.

*Zonotrichia capensis*. Rufous-collared Sparrow. This species occupies a great range of different habitats in Chile and seems successful in the desert wherever water and some vegetation are provided. The birds appear surprisingly heat-tolerant, and I noted individuals singing even at midday from the tops of utility poles near the reservoir. These sparrows are

also present among the trees and shrubs in the town itself.

On 1 December I visited the Río Loa at Chacance, 26 km NNE of Pedro de Valdivia, a type locality for two subspecies (Goodall et al., *Las aves de Chile*, Vol. 1, Platt Establecimientos Graficos, Buenos Aires, 1946). At that time of year the Río Loa was a narrow, shallow creek, clear, cool, and swift-flowing, with a rocky bed. It flows at the bottom of a canyon, the floor of which is vegetated but the walls are dry and lifeless. The stream is bordered by reed beds and then by small shrubs. A smaller stream, the Río San Salvador, flows into the Río Loa in this vicinity and at that point there is a sandy bed, much wider areas of open water, and more extensive reed beds. This part is a popular recreation area for local people and the extent of man-made changes is difficult to assess fully. Pepper trees and probably other plants have been introduced.

There were six species of birds that appeared to be resident, as follows:

*Rallus sanguinolentus*. Plumbeous Rail. In the reeds along the river's edge, I saw one adult with one downy chick and heard the cheeps of a second chick. The chick appeared to be about 5–7 days old, covered with grayish-brown down, and twitched its short cocked-up tail feathers in the adult manner as it walked. This is apparently the first record and certainly the first evidence of breeding of this rail in the largely dry Province of Antofagasta (Johnson, op. cit.).

*Pheocryptes melanops*. Wren-like Rushbird. This furnariid is remarkably similar in appearance and habits to the Long-billed Marsh Wren (*Telmatodytes palustris*) of North America. The bird was common in the reeds at Chacance and many were in song. The population at this locality, described as *loensis* Philippi and Goodall, appears to be maintaining itself well.

*Tachuris rubrigastra*. Many-colored Rush-tyrant. This attractive species is also restricted to the reed beds, and it seemed less numerous than the preceding one. Chacance is the type locality of *T. r. loensis* Philippi and Johnson.

*Troglodytes aedon*. House Wren. These wrens were numerous, paired, and in song. They were largely confined to the shrubs beyond the reed beds in the canyon, but sometimes moved into the outer edges of the reeds.

*Passer domesticus*. House Sparrow. This species was numerous among the introduced trees and the shrubs in the river canyon and in the recreational area.

*Zonotrichia capensis*. Rufous-collared Sparrow. In Chile this species is even more ubiquitous than the House Sparrow and it was equally numerous in the same situations as that species at Chacance. These sparrows were in song here, as elsewhere, all during the day.

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