

NOTES ON CHARADRIIFORMES OF THE SOUTH COAST OF PERU

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ABSTRACT.—On the south coast of Perú, at Mollendo, resident Charadriiformes consist of two oystercatchers, two plovers, four gulls, and three tern species. This fauna is augmented seasonally by 38 species of Nearctic migrants. An additional seven species representing tropical and South American breeders occur irregularly. A second area of coastal wetland habitat occurs 75 miles to the north of Mollendo, but otherwise suitable habitat for shorebirds along this extreme desert coast occurs 300 miles to the north and 800 miles to the south.

With the exception of the Tumbes district in the far north, the Peruvian coast is very arid and under the domination of the Peru Current and its associated upwelling phenomena. Apart from rare years when the warm current “El Niño” affects the region, sea surface temperatures along shore, south of latitude 6°S, remain within the range of 15°–20°C, regardless of season, with higher means offshore. Away from occasional river valleys, the seaboard is backed by waterless deserts.

These general conditions attain their maximum expression along the southern shores of the republic, in the departments of Arequipa, Moquegua and Tacna where, along 400 miles of coastline, there are only two significant areas of wetland habitat. These lie within 75 miles of each other in coastal Arequipa, at Pucchún, near Camaná (16°40'S, 72°50'W) and Mejía, near Mollendo (17°01'S, 72°01'W), close to the mouths of the Majes and Tambo rivers, respectively. For the rest, the whole of this long shore is made up of flat, open and heavily surf-beaten beaches alternating with steep and rocky stretches.

Due to the lack of wetland habitats along so much of the ‘Desert Coast’ of western South America, an exceptional importance attaches to these isolated areas which, apart from a surprisingly rich and diversified native fauna of such groups as grebes, Ardeids, Rallids and ducks, are also utilized by numerous migrants from the Nearctic Region, especially shorebirds. North of Pucchún the nearest coastal stopping area for most shorebirds is the Pisco Bay district, 300 miles distant, whilst south of Mejía there are no suitable areas as far as the mouth of the Huasco River in southern Atacama, Chile, more than 800 miles away.

At both Pucchún and Mejía there are brackish coastal lagoons, freshwater pools, good stands of typical marshland plants (*Typha*, *Scirpus*, etc.) with *Distichlis* grasslands on the drier ground. The water level in the lagoons is subject to seasonal variations, being highest between May and August and lowest between October and January, at which time wide mudflats are exposed. These variations are due partly to increased evaporation during the southern spring months and partly to changes in river flow. The volume of the rivers of south coastal Peru falls to its lowest ebb between September and November, the first freshets occurring in December as a result of the onset of the summer rainy season in the Andean interior, the flood season lasting from January to April.

Resident Charadriiformes along the South Coast of Peru are relatively few:

¹ c/o Casilla 62, Mollendo, Perú.

Haematopus ater (Blackish Oystercatcher).—Occurs all along the coast in small numbers.

Haematopus palliatus (American Oystercatcher).—Very local and uncommon.

Charadrius alexandrinus (Snowy Plover).—Frequent on all lengthy sand beaches.

Charadrius vociferus (Killdeer).—Locally common, chiefly in wetlands or cultivated fields near the sea and consequently limited to the proximity of river valleys.

Larus dominicanus (Kelp Gull).—Frequent all along the seaboard.

Larus belcheri (Band-tailed Gull).—The dominant gull along the rockier stretches of the coast and at the inshore islands.

Larus modestus (Gray Gull).—Very abundant along sand beaches, much less so elsewhere. Despite its abundance, it is not known to breed in Perú and its numbers decline sharply between November and February.

Larus cirrocephalus (Gray-hooded Gull).—Very local and scarce; virtually confined to brackish coastal lagoons.

Sterna hirundinacea (South American Tern).—Very scarce resident, numbers being increased by immigration from the south during the southern winter (April–September). A well-defined but thin southerly movement is perceptible at Mollendo in August.

Sterna lorata (Peruvian Tern).—Breeds on sand beaches in scattered colonies, mainly between October and January. The birds largely disappear from the region between March and July.

Larosterna inca (Inca Tern).—Common all along the coast, especially the rockier sections.

Passing mention should also be made of the curious endemic Peruvian Thick-knee (*Burhinus superciliaris*) which, although a bird of the coastal deserts, often descends at night to forage along beaches where halophytic vegetation (*Salicornia*) is well developed, and also of the Least Seedsnipe (*Thinocorus rumicivorus*), a common resident in the 'loma' fog-vegetation of the coastal hills, small parties of which frequently pay brief visits to the *Salicornia* flats, sometimes pausing to drink at the margins of pools and lagoons.

No less than 38 species of Nearctic Charadriiformes have been recorded from the South Coast of Perú and Table 1 illustrates the relative abundance of each species, the figures being based on actual counts taken in the Mollendo district during the five years between 1971 and 1975.

The fall passage generally becomes apparent as early as the first half of August, reaching a peak in October and November. December and January comprise a relatively quiet period but movements connected with the spring passage become evident in February, increasing notably in March and April, declining rapidly thereafter, although belated birds, by then often in full breeding plumage, may be seen well into May. In June and July Nearctic birds are normally absent from the region apart from isolated individuals which, for any one of various possible reasons, have not returned north in order to complete the breeding cycle. In this respect, the South Coast of Perú differs considerably from the Pisco Bay district, slightly further north, where appreciable numbers of non-breeding shorebirds remain throughout the northern summer months. In the South the species most

TABLE 1
ANNUAL TOTALS OF NEARCTIC CHARADRIIFORMES RECORDED AT MOLLENDO, PERU, 1971-1975

Year Field hours	1971 188	1972 170	1973 181	1974 220	1975 243
<i>Charadrius semipalmatus</i>	39	18	22	70	95
<i>Pluvialis dominica</i>	1	7	9	10	7
<i>Pluvialis squatarola</i>	66	127	126	76	66
<i>Arenaria interpres</i>	194	42	107	68	55
<i>Aphriza virgata</i>	20	6	12	62	41
<i>Calidris alba</i>	23,156	23,581	15,650	18,629	12,512
<i>Calidris canutus</i>	82	-	-	-	3
<i>Calidris melanotos</i>	86	32	38	31	31
<i>Calidris bairdii</i>	294	184	330	907	87
<i>Calidris fuscicollis</i>	-	-	-	-	1
<i>Calidris mauri</i>	1	-	-	12	31
<i>Calidris pusilla</i>	576	376	243	1301	879
<i>Calidris minutilla</i>	-	2	50	129	100
<i>Actitis macularia</i>	33	23	10	15	9
<i>Micropalama himantopus</i>	25	54	1	21	76
<i>Tringa solitaria</i>	-	-	-	1	-
<i>Tringa flavipes</i>	1016	1483	602	754	2555
<i>Tringa melanoleuca</i>	357	592	353	678	1073
<i>Numenius phaeopus</i>	189	217	193	240	329
<i>Catoptrophorus semipalmatus</i>	4	21	4	7	3
<i>Limnodromus griseus</i>	15	-	2	1	28
<i>Limosa haemastica</i>	3	-	4	8	12
<i>Limosa fedoa</i>	-	-	-	-	1
<i>Steganopus tricolor</i>	702	338	682	1033	347
<i>Phalaropus/Lobipes spp.</i>	3	32	157	216	330
<i>Stercorarius parasiticus</i>	56	122	141	155	130
<i>Stercorarius pomarinus</i>	-	-	-	-	2
<i>Sterna hirundo/paradisaea</i>	6366	11,769	13,471	22,375	26,808
<i>Sterna elegans</i>	6300	6529	1076	932	2429
<i>Sterna maxima</i>	-	1	-	1	-
<i>Sterna sandvicensis</i>	-	-	11	40	107
<i>Chlidonias niger</i>	-	8	212	25	242
<i>Gelochelidon nilotica</i>	3	3	31	121	39
<i>Larus pipixcan</i>	39,249	157,033	264,294	78,124	88,663
<i>Larus atricilla</i>	-	-	-	2	4
<i>Xema sabini</i>	-	7	1	2	3

frequently recorded in these months are Whimbrel (*Numenius phaeopus*), Greater Yellowlegs (*Tringa melanoleuca*), Sanderling (*Calidris alba*) and Ruddy Turnstone (*Arenaria interpres*), usually in one's and two's and seldom in greater numbers.

Not all species arrive and depart at the same times, of course, there being many variations to the theme. Some species, such as the Pectoral and Baird's Sandpipers (*Calidris melanotos* and *C. bairdii*) and Wilson's Phalarope (*Steganopus tricolor*) occur primarily during the two passage periods with a hiatus in between; others, like the Sanderling, Greater Yellowlegs, Lesser Yellowlegs (*Tringa flavipes*), Franklin's Gull (*Larus pipixcan*) and Common Tern (*Sterna hirundo*) are abundant "winter" residents as well as passage migrants, although their numbers tend to be highest during the two passage periods. Still others

TABLE 2
AVERAGE MONTHLY COUNTS OF SIX REGULAR MIGRANT SHOREBIRDS AT MOLLENDO, PERU,
1971-1976

Species	J	F	M	A	M	J	J	A	S	O	N	D
<i>Steganopus tricolor</i>	11	8	41	4	5	0	0	49	382	162	3	X ^a
<i>Aphriza virgata</i>	0	0	0	0	0	0	0	19	8	1	X	0
<i>Calidris alba</i>	1299	1579	3094	2520	1705	66	61	815	2525	2925	2711	2992
<i>Tringa flavipes</i>	166	244	593	35	2	0	0	24	36	37	29	42
<i>Numenius phaeopus</i>	4	3	15	11	3	2	2	49	52	82	53	10
<i>Micropalama himantopus</i>	5	0	28	10	X	0	0	1	1	X	X	1

^a X, present but averaging less than 1.

appear overwhelmingly during only one of the two passage periods: records of the American Golden Plover (*Pluvialis dominica*), Stilt Sandpiper (*Micropalama himantopus*) and Sandwich Tern (*Sterna sandvicensis*) refer mainly to the spring passage (February to April), those of the Surf-bird (*Aphriza virgata*), Willet (*Catoptrophorus semipalmatus*) and Sabine's Gull (*Xema sabini*) being concentrated in the months between August and December, i.e., the fall passage.

By referring to Table 1 it can be seen that the majority of listed migrants occur annually; the truly exceptional ones on the South Coast of Peru are Knot (*Calidris canutus*), White-rumped Sandpiper (*C. fuscicollis*) Solitary Sandpiper (*Tringa solitaria*), Marbled Godwit (*Limosa fedoa*), Pomarine Jaeger (*Stercorarius pomarinus*), Royal Tern (*Sterna maxima*) and Laughing Gull (*Larus atricilla*). The normal wintering ranges of these seven species lie either in eastern or northern South America, far removed from our region. The most abundant migrants reaching the region are the Sanderling, both yellowlegs, Wilson's Phalarope, Franklin's Gull, Common and Elegant terns. Sandpiper abundance varies considerably from year to year, this being especially so in the case of the Bairds. Some examples of within-year variability are given in Table 2.

The Nearctic migrants visit all the main habitats afforded by the region but by far the greatest diversity is found on the mudflats around the coastal lagoons, where the birds frequently associate in mixed flocks, encountering no competition from native species apart from the Killdeer. Sand beaches are the preferred habitat of the Sanderling and Willet. Here competition is mainly with the Gray Gull, individuals or pairs of which often chase the Sanderlings in a usually vain attempt to rob them of their food. Visiting Franklin's Gulls also pursue the Sanderlings in the same way. Common, Elegant and Sandwich terns habitually roost on the beaches but they feed over the sea, the first close inshore, the other two mostly favoring deeper water where they suffer considerable harassment by Parasitic Jaegers (*Stercorarius parasiticus*). The rocky stretches of coastline are chosen by the Ruddy Turnstone and Surf-bird, which share this environment with Blackish Oystercatchers and the highly specialized furnariid landbird, *Cinclodes nigrofumosus*.

Although each species has its preferred habitat, occasional individuals appear at times in unlikely locations. However, two species are truly catholic in their choice: Franklin's Gull and Whimbrel, these birds appearing almost anywhere.

The pelagic waters are visited by flocks of 'sea' phalaropes (*Phalaropus fuli-*

carius and *Lobipes lobatus*), Arctic Terns (*Sterna paradisaea*) and Sabine's Gulls, none of which is regularly seen from the beaches.

Seven other charadriiform species remain to be considered in the present summary. The Great Skua (*Catharacta skua*) is a regular visitor to the coastal waters from Magellanic South America, appearing chiefly in the southern winter months when the northern jaegers are absent from the region. However, both may be seen at the same time on occasion; the present species tends to victimize larger birds, such as boobies, than its smaller relative. The Tawny-throated Dotterel (*Oreopholus ruficollis*) from southern South America is another winter visitor, appearing in small flocks in coastal farmlands and among the fog-vegetation of the adjacent uplands, avoiding beaches and wetlands alike. The Andean Lapwing (*Vanellus resplendens*) from the Puna Zone of the high Andes is no more than a casual visitor, seen very occasionally at the coastal wetlands. There is no resident population of the Common Stilt (*Himantopus himantopus*), but occasional individuals appear briefly at long intervals at the coastal lagoons. It is of interest to note that such occurrences have involved birds of both the northern 'mexicanus' and southern 'melanurus' races, indicating vagrancy from both north and south. The Andean Gull (*Larus serranus*) is a regular visitor from the high Andes, descending to sea level along the Pacific Coast chiefly during the southern winter months. The Swallow-tailed Gull (*Creagrus furcatus*) from the Galapagos Islands ranges southeastwards over the open oceans off the coasts between Ecuador and South Perú, with a number of records as far south as Mollendo.

Finally, mention must be made of the Black Skimmer (*Rynchops nigra*). This bird is often abundant along the South Coast of Perú where, as in Chile, its presence is markedly seasonal, generally arriving from the north in late September or October, building up to a maximum in December and declining afterwards, although sometimes showing a secondary minor peak in March or April. Records for the May–August period are very few. Many of the birds in October–December are brownish immatures. Such a well-defined seasonal pattern would appear to suggest that the birds originate in North America, which supposition is strengthened by the fact that they associate freely with such undoubted Nearctic migrants as Franklin's Gulls, and Common and Elegant terns. However, all the skimmers observed belong to the dark-underwinged 'cinerascens' race, native along the great river systems of trans-Andean South America, rather than the pale-underwinged North American 'nigra,' and their precise origin is a complete mystery.