

A large diverse group of birds of estuaries, coasts, riverbeds and farmland. Most are long-legged and feed in or near shallow water. Bill shape is varied; short and stubby in those (e.g. dotterels) that peck from the surface, but longer in those that feed in shallow water (e.g. stilts), or probe deeply (e.g. godwits). Flight strong and direct. Often form flocks while roosting or flying, but disperse to feed. Many species seen in NZ breed in the Arctic and arrive in September, with remnants of breeding plumage, and depart in March, often in breeding plumage. Most subadults and a few adults spend the southern winter here.

TURNSTONE *Arenaria interpres*

Common Arctic migrant

23 cm, 120 g. Very striking stout wader with *variegated white, black, brown and tortoise-shell plumage*, short black bill and *short orange legs*. Horizontal stance and habit of busily fossicking along the tideline, probing under debris and bulldozing or flicking over tide-wrack. Non-breeding has head and upperparts dark brown, mottled black and chestnut; face variegated black, white and brown; upperbreast black, underparts white. In breeding plumage, male more boldly marked with white cap, finely streaked black; female has brown cap, streaked black and white. In flight, striking complex pattern of black, white and chestnut. **Habitat:** Breeds high Arctic. In NZ, favours wave platforms, coastal lagoons and some estuaries, especially Parengarenga, Kaipara, Farewell Spit, Motueka, Lake Grassmere, Kaikoura Peninsula, Awarua Bay and Te Whanga Lagoon (Chathams). [Sp 190]



SNIPE, SANDPIPERS, GODWITS and CURLEWS

Scolopacidae

About 79 species, of which 2 breed in New Zealand (non-migratory snipe) and 32 reach New Zealand as migrants for the northern winter.

Group have caught over 4000 Arctic migrants in the Auckland area, and some of these have been marked, to enable resightings, with white plastic leg flags.

Apart from stints (known as peeps in North America), these waders have a slender bill that is as long as or longer than the head. In curlews and godwits, the bill is sensitive and flexible at the tip, and the mandibles open during probing in soft mud or shallow water. All have long, pointed wings, rapid flight, a long neck, long legs and, for birds, a short tail. Their eyes are smaller than those of plovers and dotterels, as suits their more tactile, less visual, feeding. Gregarious when not breeding.

The first Arctic migrants arrive in September-October, but others trickle into the country through November. Most leave in March-April, but a variable proportion of the summer population stays behind to spend the southern winter in New Zealand; most are probably yearlings, as few adopt breeding plumage, and so the number left behind provides an indication of the success of the previous northern breeding season.

Their diet has not been studied in detail in New Zealand. They take a variety of mudflat-burrowing crabs, small amphipod and ostracod crustaceans, polychaete worms and small gastropod and bivalve molluscs. Their diet includes insect larvae and pupae of craneflies (Tipulidae), midges (Chironomidae), beetles and flies; they may also take spiders and earthworms. They swallow grass, sedge and rush seeds, but whether by accident or design is not known for certain. The various species probe to different depths according to the length of their bill. Most of the rapid, vigorous, sewing-machine probing of medium and smaller waders is exploratory, as often is the slower, more careful probing of godwits, curlews or whimbrels.

New Zealand is at the southern limit of many species, and some of the distances travelled are huge; it is possible that some of the migrants fly between New Zealand and China, Japan or the Aleutian Chain in a single flight, although most stop at least once to refuel. In order to undertake such a long journey, waders feed voraciously in the weeks before departure and often arrive late to their roosts. They lay down extensive fat deposits, their weight can increase to 50-75% above their normal non-breeding weight. On arrival, they are often exhausted and quite approachable, but quickly regain their condition. The adult Arctic migrants moult all their flight feathers during the southern summer, and so can be distinguished from juveniles, which do not moult or lose only a few feathers until the southern autumn.

The waders that migrate to New Zealand mostly breed in the arctic or subarctic tundra of the Northern Hemisphere and are strongly migratory. Those that breed furthest north tend to migrate furthest into the Southern Hemisphere, from the largest curlews to the smallest stints. The routes taken by the various species of wader are being elucidated by an extensive co-operative programme of banding and leg-flagging throughout the East Asian flyway. The New Zealand Wader Study

The sexes are alike, but females are often noticeably larger than males. The non-breeding plumage, as is mostly seen in New Zealand, is dull, the upperparts mottled or a uniform brown and grey, the underparts paler, sometimes with streaks and spots. Before leaving and while breeding, they are brighter, many species becoming much more rufous above and rufous or black below. The age of first breeding is 1-2-3 years, and many birds live to at least 15 years old.

190. TURNSTONE *Arenaria interpres*

Plate 45

Other name: Ruddy Turnstone
Size: 23 cm, 120 g
Geographical variation: Two subspecies: the nominate *interpres*, which breeds throughout the Arctic and migrates to tropical and temperate coasts of both hemispheres; and *morinella*, which breeds in subarctic North America and migrates to South America and the Pacific Islands. Both visit New Zealand.
Distribution: Breed along the northern coasts and islands of Greenland, Scandinavia, Siberia, Alaska and the islands of northern Canada. Almost worldwide in autumn and winter on the coasts of the Americas, Africa, Madagascar, southern and southeastern Asia, the islands of the Pacific, and Australasia. In New Zealand, they concentrate in certain favoured localities: Parengarenga, Rangaunu, Kaipara, Manukau and Tauranga Harbours and the Firth of Thames in the North Island; Farewell Spit, Motueka Estuary, Lake Grassmere, Kaikoura Peninsula and the coastal lagoons and estuaries of Southland in the South Island; Chatham Island and the Auckland Islands. Small numbers are likely to turn up at any coastal lagoon or estuary, especially when they are migrating southwards in late September to October, or northwards in March-April. A straggler to the Kermadec, Antipodes and Campbell Islands. A bird banded near Auckland by the New Zealand Wader Study Group was recaptured in Queensland on southward migration and then recaptured a month later back at its original capture site.
Population: Turnstones are the third most numerous of the arctic waders to visit New Zealand: 4000-7000 birds, evenly divided between the North and South Islands, and

including c. 400 on Chatham Island and 100 on the Auckland Islands. Over 3000 have been recorded gathering at Parengarenga Harbour in March of some years, before their northward migration. Between 100 and 1500 (3-45% of the previous summer visitors) overwinter, perhaps mainly yearlings, and so reflecting the highly variable breeding success in the previous northern summer.
Behaviour: Gregarious, in small flocks of the same species or with Banded Dotterels, sometimes visiting rough farmland near the sea. Flocks in flight or when disturbed utter a twittering 'kititit'.
Feeding: Turnstones feed actively by deftly flicking over shells, seaweed and pieces of wood with their longish, wedge-shaped bill in search of such food items as sandhoppers. They tend to avoid smooth, sandy beaches and open mudflats, preferring to feed on shelly or stony foreshores, among rockpools or on exposed rocky reefs. Their actions depend on what is available; at Farewell Spit, some feed on the Ocean Beach, bustling between waves to dab at wet sand and fossick through stranded debris. Most feed on the Bay Flats; on the falling tide flicking aside or pushing into eel-grass strands, looking for animals hidden underneath, on the rising tide probing for crabs in their burrows in the small runnels among the plants. On rocky coasts, they feed differently; in Victoria, they take mostly small gastropod molluscs and some barnacles.

Reading: Houston, P. & Barter, M. 1990. *Stilt* 17: 17-23. Robertson, H.A. & Dennison, M.D. 1979. *Notornis* 26: 73-88.