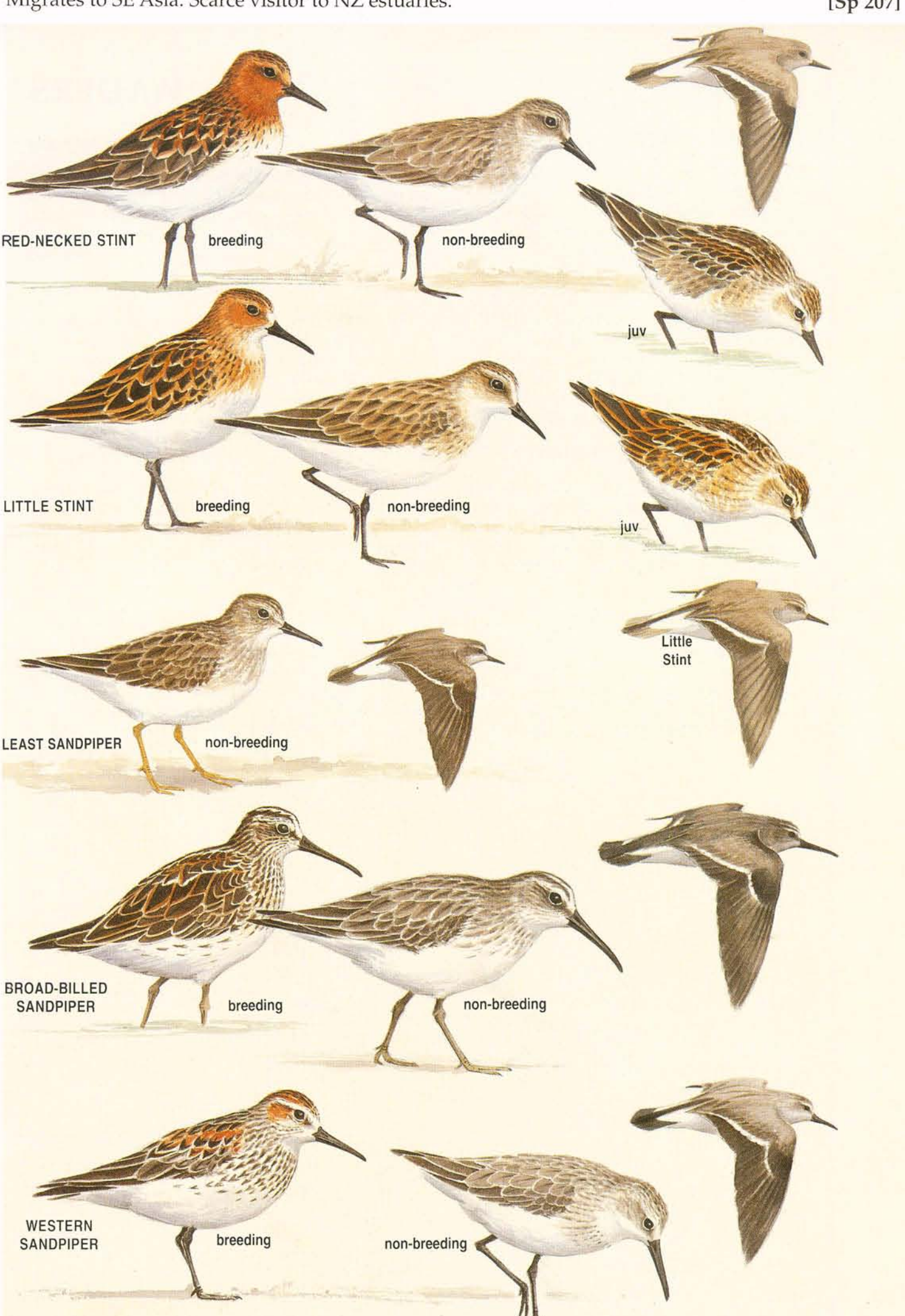


A large diverse group of birds of estuaries, coasts, riverbeds and farmland. Most are long-legged and feed in or near shallow water. Bill shape is varied; short and stubby in those (e.g. dotterels) that peck from the surface, but longer in those that feed in shallow water (e.g. stilts), or probe deeply (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.

BROAD-BILLED SANDPIPER *Limicola falcinellus*

Rare Arctic migrant

17 cm, 35 g. Small wader with short olive-green legs, very long (3 cm) heavy black bill slightly drooped at tip, and double eyebrow; a broad white eyebrow joining a thinner, higher stripe in front of each eye. Non-breeding adult has crown, neck and upperparts pale brown-grey with dark feather shafts and pale edges giving a scaly appearance; grey stripe down centre of head to bill; underparts white, lightly streaked grey on sides of neck and breast. Breeding adult has head, neck and breast streaked black; upperparts very dark, feathers thinly edged buff or rufous, giving a streaked appearance; central stripe on head becomes black. Juvenile has prominent V on mantle, rufous edges to mantle and inner scapulars, buff and white edges to rest of upperparts. In flight, dark grey leading edges to upperwing and narrow white wingbar; white sides to rump contrast with broad dark grey stripe down centre of tail. **Habitat:** Breeds Arctic Eurasia. Migrates to SE Asia. Scarce visitor to NZ estuaries. [Sp 207]



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.

Apart from stilts (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.

Their food 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.

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 stilts. 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

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.

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.

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 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.

207. BROAD-BILLED SANDPIPER *Limicola falcinellus* Plate 47

Size: 17 cm, 35 g

Geographical variation: Two subspecies: *falcinellus* breeds in northern Europe and Asia and migrates to East Africa and southern Asia; *sibiricus* breeds in eastern Siberia and migrates mainly to southeastern Asia and northwestern Australia.

Distribution: Breed in widely scattered parts of the Arctic from Scandinavia to eastern Siberia, and winter in Africa, southern Asia and in Australasia. A few reach New Zealand. They were first recorded at the Firth of Thames, January-March 1960, and since then singles, or at most two birds, have been

recorded occasionally between Northland and Canterbury. Most sightings have been on the Firth of Thames.

Behaviour: Often solitary, but also with Wrybills or Red-necked Stilts at high-tide roosts,

Feeding: In New Zealand, they feed on soft intertidal mudflats with the bill held vertically, probing vigorously up and down, sometimes inserting the full length of the bill and submerging the head; occasionally peck at the surface.

Reading: Sibson, R.B. & McKenzie, H.R. 1960. *Notornis* 8: 233-235.