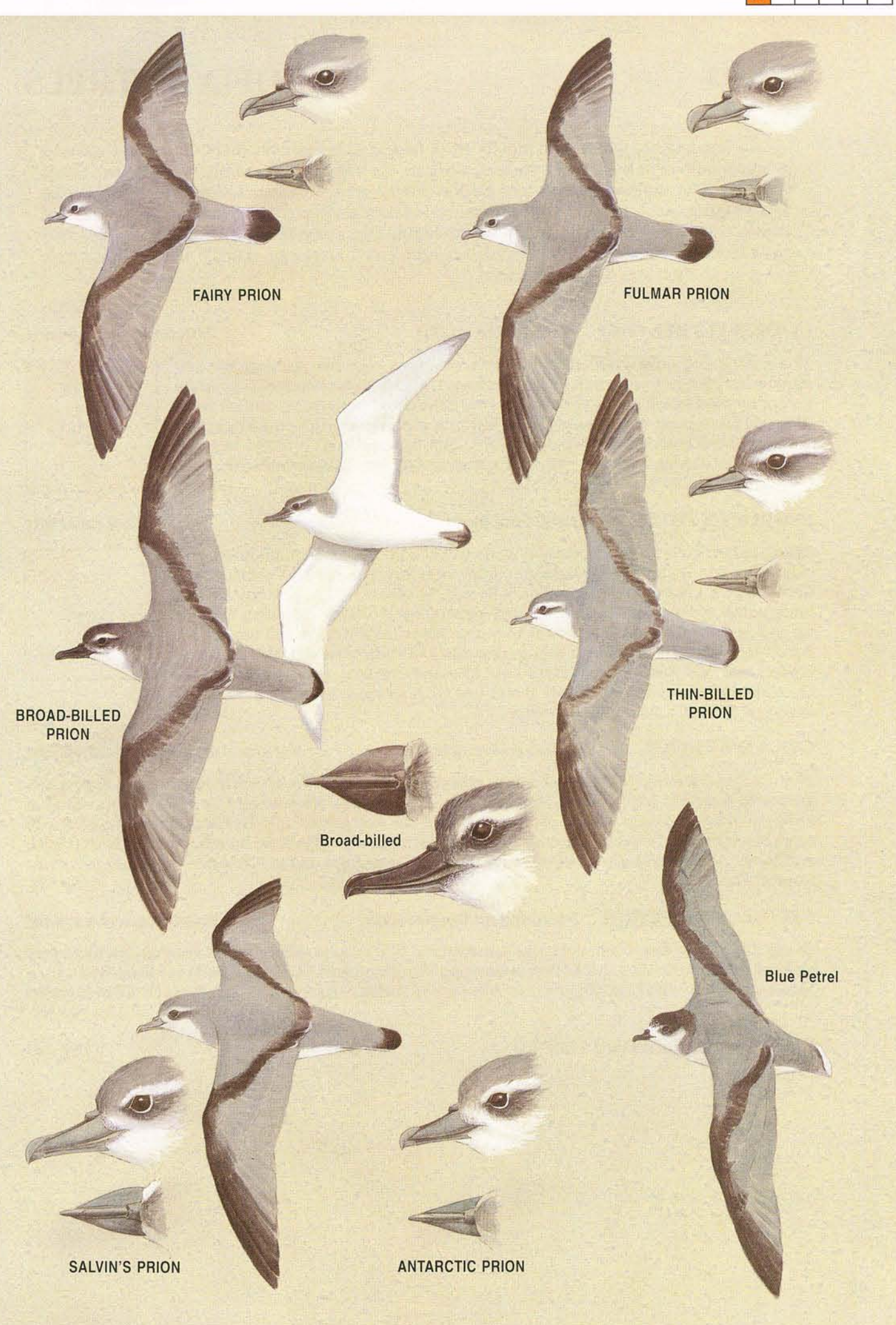
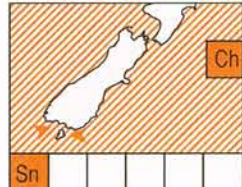


Small seabirds with blue-grey upperparts with black M across upperwings and lower back, white underparts, black-tipped tail, and blue legs and feet. Bill has comb-like lamellae on inside. Sexes and ages alike. Species separated by size, bill structure, face colours and extent of black on tail. Flight fast, buoyant and erratic; usually stay close to the surface. Feed near surface by plunging or dipping. Generally oceanic. Do not follow ships or fishing boats. Noisy at night at breeding colonies, with harsh cooing and cackling calls in air or on ground.

BROAD-BILLED PRION (Parara) *Pachyptila vittata*

Common native

28 cm, 200 g. Upperparts blue-grey; black M across wings; dark face with clear white eyebrow; very narrow black tip to tail. Bill very broad (34 x 20 mm), iron-grey. **Habitat:** Breeds S Atlantic and around southern NZ; main colonies are in Fiordland, Foveaux Strait, off Stewart I, The Snares and Chathams. Ranges around NZ coast and rarely to Australia. **Breeding:** Aug–Jan.



SHEARWATERS, FULMARS, PRIONS and PETRELS

Procellariidae

The Procellariidae is the largest and most diverse family of seabirds, with about 72 species. In the New Zealand region, 49 species have been recorded, including 11 endemic species and 23 other breeding species.

to their colony months before egg-laying to claim their nest sites (usually the same site is used year after year) and to court. After copulation, females leave the colony for one to six weeks on a 'pre-laying exodus' to form the egg. Males also leave but often make occasional visits to the nest site.

The Procellariidae includes a wide variety of seabirds from the giant petrels to the diving petrels. All have distinctive external nostrils encased in a tube on the top or sides of the bill. They have 11 primaries. The 11th (outermost) is minute, but the 10th is at least as long as the 9th, giving the wing a pointed tip. All seabirds have webbed feet with three forward-pointing toes of about the same length.

All species lay one white egg, which is very large relative to the female's size. The few instances of two eggs in a nest are from two females using the same site. A long incubation period is typically split up into several incubation stints lasting from several days to several weeks between changeovers. Occasionally the changeovers do not coincide and the egg is left unattended for several days; however, eggs have hatched successfully after

Most species nest in burrows or crevices, normally clumped into colonies. Birds return

being chilled for six days. Incubation stints shorten as incubation proceeds, and when the egg hatches the downy chick is brooded and guarded for only a few days in hole-nesting species, but for several weeks in surface-nesting species, until it is able to maintain body temperature.

Throughout its development, the chick is fed large meals at irregular intervals. It gains weight rapidly, becoming much heavier than its parents, but this declines towards adult weight before it fledges. Chicks normally spend some time on the surface exercising their wings before they eventually leave the colony. Once they have flown, they are completely independent of their parents. Young birds usually return to their home colony at 2–7 years old, and spend several years visiting the colony, especially when breeders are incubating or feeding chicks, before attempting to breed. The Procellariidae are typically long-lived, with several species known to live over 25 years.

The four species of diving petrel (*Pelecanoides*) are small, stocky black and white seabirds with short wings adapted for propulsion under water. They have a fast, direct, whirring flight and readily dive for small krill and copepods.

Most species now breed only on offshore and outlying islands because mainland colonies have been ravaged by introduced mammalian predators. They generally return to their colonies at night, and once on land they are clumsy and unable to take flight rapidly; their only defence is by biting or by spitting stomach oil. The nestling is particularly vulnerable to predators because it is often left unattended for a long period while the parents feed at sea and it emerges from the nest at night to exercise its wings in the week or two before it can fly.

The three species of *Pseudobulweria* are medium-sized seabirds with exceptionally large feet and a notch on the cutting edge of the upper bill caused by the latericorns having blunt ends.

The Procellariidae feed on a wide variety of sea life, ranging from some of the prions, which sieve zooplankton on comb-like lamellae along the edge of their bills, to the giant petrels, which scavenge on dead marine mammals and occasionally kill small seabirds. Most species feed within a few metres of the sea surface, but some shearwaters dive to at least 20 m. These seabirds have well-developed nasal glands for extracting salt from their blood and exuding it out of the prominent nostrils.

The fulmarine petrels (*Lugensa*, *Pagodroma*, *Daption*, *Thalassoica*, *Fulmarus* and *Macronectes*) are a diverse group of 8 species, all of which have robust bills with prominent joined nasal tubes, rising from the base.

The shearwaters (*Calonectris*, *Puffinus*) include 15 species to large species with long slender bills and flat nasal tubes. They

The six species of prion (*Pachyptila*) are small seabirds pale blue above and white below with a prominent M-shaped mark across the upperwings and a dark-tipped tail. Comb-like lamellae on the inside of the bill are used to filter zooplankton.

The Broad-billed Prion (*Pachyptila vittata*) is the largest prion (wing 195–225 mm) and has a large head and grotesquely wide bill (19–24 mm), which does not overlap in size with that of any other prion.

The single *Halobaena* species looks like the prions but has a white-tipped tail and the upper bill has small tooth-like serrations at the base.

The gadfly petrels (*Pterodroma*) consist of 29 species of highly agile seabirds with long wings and short, laterally compressed black bills with a strongly hooked nail. They feed mainly on squid and small fish.

The gadfly petrels (*Pterodroma*) consist of 29 species of highly agile seabirds with long wings and short, laterally compressed black bills with a strongly hooked nail. They feed mainly on squid and small fish.

rock crevice or cave. Eggs hatch in mid-October to early November after c. 45 days and young fledge in mid-December to mid-January at c. 55 days old.

Reading: Harrison, P. 1987. *Seabirds of the World: a photographic guide*. London: Christopher Helm. Harrison, P. 1988. *Seabirds: an identification guide*. London: Christopher Helm. 1936. *M.C.J. 1985. Ibis* 127: 197–229. Murphy, R.C. 1936. *Oceanic Birds of South America*. New York: MacMillan. Serventy, D.L. et al. 1971. *The Handbook of Australian Seabirds*. Sydney: Reed. Warham, J. 1990. *The Petrels: their ecology and breeding systems*. London: Academic Press.

48. BROAD-BILLED PRION *Pachyptila vittata*

Plate 12

Other names: Parara, Whalebird
Size: 28 cm, 200 g
Distribution: Broad-billed Prions have a disjunct distribution, with breeding populations on Tristan da Cunha, Nightingale, Inaccessible and Gough Islands in the South Atlantic Ocean, and on many islands about southern New Zealand: in Fiordland, Solander Islands, Foveaux Strait and on islands and stacks around Stewart Island, The Snares and most islands in the Chathams group. New Zealand birds range through temperate waters close to the Subtropical Convergence between 35 and 50°S in the Tasman Sea and Bass Strait, and in the central South Pacific. About 50–100 are wrecked on Southland and North Island west coast beaches each year in June–January, but wrecks are large in some winters (e.g. 1400 in 1961, and 1200 in 1984).
Population: Abundant, with large colonies on the Chathams (especially South East Island, c. 330,000 pairs) and on Foveaux Strait islands.
Conservation: Protected native. Chicks used to be harvested by Maori but are now protected. Introduced predators (cats, rats and Weka) have exterminated many colonies, but the species remains safe on predator-free islands. Occasional large wrecks of mainly subadults are unlikely to affect the species.
Breeding: Adults return to their colonies from February onwards to prepare burrows and to court. Laying is in late August to mid-September at all New Zealand colonies. They lay 1 white egg (50 x 36 mm) in a burrow,

Behaviour: Nest in huge colonies, often interspersed with other burrowing petrels. At sea, they are often seen in flocks as they feed, roost or stream back to their colonies at dusk. They are silent at sea but very vocal at their colonies, with persistent harsh calls given both in the air and on the ground; similar to those of Fairy Prions, but louder, faster and with more notes.
Feeding: Diet is mainly copepods, other crustaceans and other planktonic invertebrates, but some small fish and squid are eaten. Most are taken from the sea surface while the bird is scurrying forwards rapidly with beak held partly open under the sea surface and moving its head from side to side, or by shallow plunging from the surface. Minute prey are sieved on to the well-developed comb-like lamellae inside the upper bill.
In the hand: Broad-billed Prions are the largest prion (wing 195–225 mm) and have a large head and grotesquely wide bill (19–24 mm), which does not overlap in size with that of any other prion.
Reading: Harper, P.C. 1980. *Notornis* 27: 235–286. Harper, P.C. 1987. *Notornis* 34: 169–192. Cape Town: African Seabird Group. Powlesland, R.G. 1989. *Notornis* 36: 125–140. Richdale, L.E. 1944. *Emu* 43: 191–217. Richdale, L.E. 1965. *Trans Zool Soc (Lond)* 31: 87–155.