Text and images extracted from Heather, B.D. & Robertson, H.A. (2005) *The Field Guide to the Birds of New Zealand*. Penguin Books, Auckland. Pages 28, 29, 184, 185, 204.

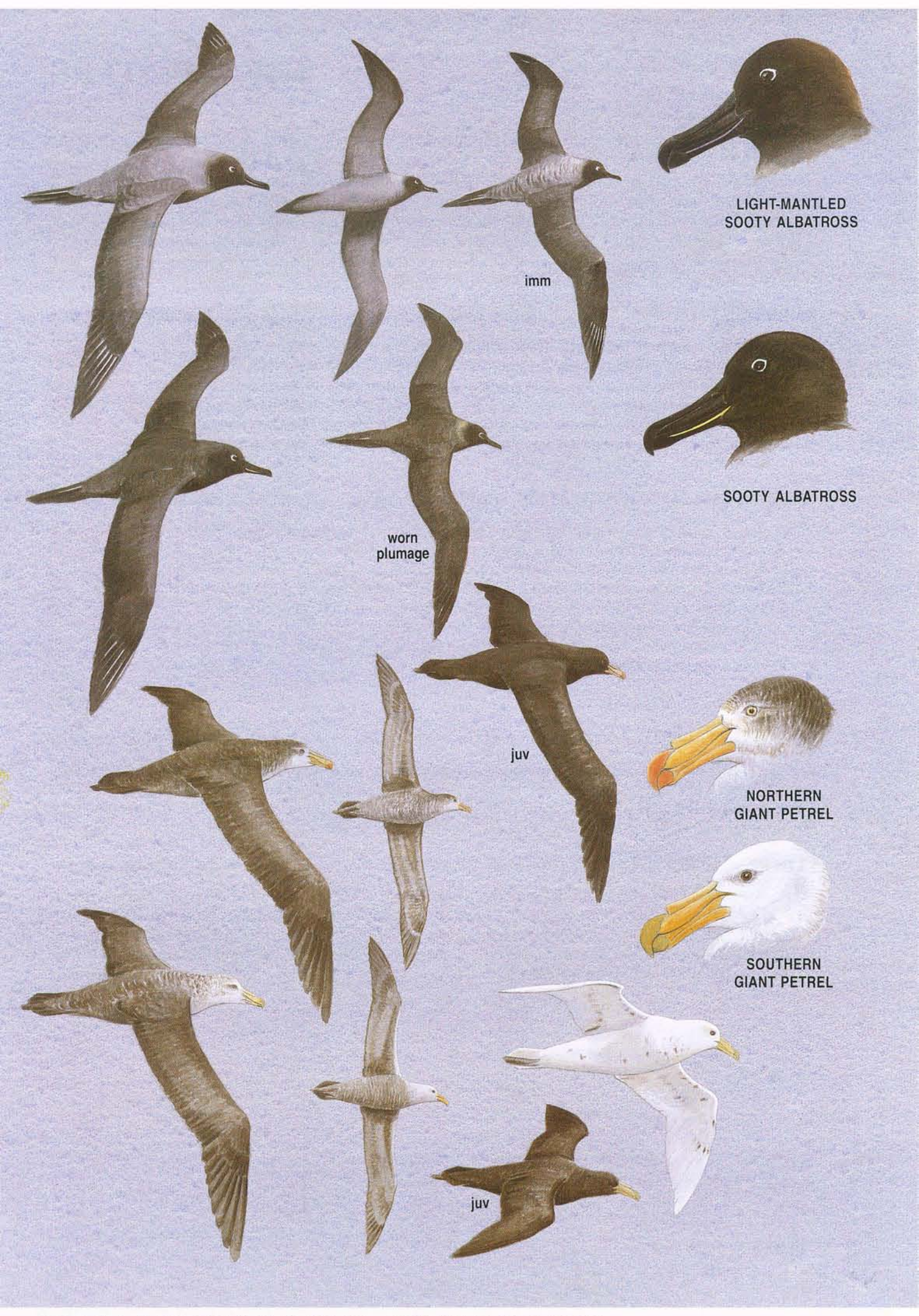
Plate 6

SOOTY ALBATROSSES and GIANT PETRELS

The two giant petrels are very similar robust brown-to-white (rare) fulmarine petrels with short wings and tail. Massive pale bill with prominent nasal tubes. Flight laboured with burst of flapping interspersed with long glides and wheeling, not soaring. On land, mobile and can stand upright. Oceanic and coastal. Frequently follow ships and trawlers. Silent at sea except when fighting for food. Loud calls at colonies. Lay 1 large white egg in low cup-shaped bowl. Long incubation and fledging periods. Sexes alike but male larger; juveniles darker.

SOUTHERN GIANT PETREL (Nelly) *Macronectes giganteus* **Common visitor**

90 cm, 4.5 kg. Variable plumages; dark adults and juveniles are almost identical to Northern Giant Petrel except *bill yellowish horn, tipped green*, and face paler. Adult (dark phase) has white head, flecked brown, merging into greyish-brown body, wings and tail; often shows thin white leading edge to innerwings. Bill robust (90–105 mm); eye brown to grey, usually brown. Juvenile all dark sooty brown, fading to grey-brown with age; eye generally brown. Adult and juvenile (white phase) completely white except for scattered flecks of brown. **Habitat:** Breeds circumpolar subantarctic and around Antarctic coast; in NZ region, recorded breeding once at Cape Crozier, Antarctica. Ranges widely through southern oceans, and juveniles common in NZ waters, especially in winter and spring; a few adults reach NZ. **Breeding:** Sep–Apr. **[Sp 41]**



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.

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.

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

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 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.

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 long periods 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 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 shearwaters (*Calonectris*, *Puffinus*) include about 15 medium to large species with long slender bills and flat nasal tubes. They are usually brown to black above and white or brown below. Some have large sternums and dive well for fish and squid, using their wings for propulsion, while others have small sternums and feed on, or close to, the surface.

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.

The four species of *Procellaria* are large stocky seabirds with large, heavily hooked pale bills with dark markings and prominent nostrils. They feed mainly at night on bioluminescent squid but also now take offal discarded from fishing boats.

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 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 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 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.

Reading: Harrison, P. 1987. *Seabirds of the World: a photographic guide*. London: Christopher Helm. Harrison, P. 1988. *Seabirds: an identification guide*. London: Christopher Helm. Imber, M.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.

41. SOUTHERN GIANT PETREL *Macronectes giganteus* Plate 6

Other name: Nelly
Size: 90 cm, 4.5 kg
Distribution: Circumpolar, breeding on ice-free areas of Antarctica, on small islands around the coast, on many subantarctic islands and on islands off the Chilean coast. In the New Zealand region, one pair has nested at Cape Crozier, Ross Dependency. The nearest stronghold is Australia's Macquarie Island, where c. 4000 pairs breed. Most remain near Antarctica and in the subantarctic zone during the summer and autumn. Some adults and many subadults disperse eastwards and northwards to about 30°S in winter and spring, and some follow the Humboldt Current to 10°S off South America.

Although the two species are difficult to distinguish at sea, Southern Giant Petrels are probably more common than Northern Giant Petrels in New Zealand waters in winter and spring. Of 77 banded Southern Giant Petrels recovered in New Zealand, most were fledglings that left South Atlantic colonies in April–May and were recovered June–September.
Population: Moderately common, with main colonies (5000+ pairs) on South Orkney, South Shetland and South Georgia Islands in the South Atlantic Ocean.
Behaviour: At sea, they are often seen alone, but they join large mixed flocks when feeding around fishing boats, and formerly they used to gather around whaling ships, sewer and abattoir outfalls. When feeding in flocks they are often noisy and aggressive, but otherwise they are usually silent at sea.
Feeding: Voracious scavengers and predators, feeding on dead penguins and marine mammals, and offal. Giant petrels often kill penguins and other small seabirds, and are even known to have drowned and eaten small albatrosses. The diet also includes crustaceans, squid and fish taken from the sea surface.

In the hand: Separated from Northern Giant Petrel *M. halli* by having a green, not brownish, tip to the bill. Males are larger than females, and most adults can be sexed on bill length: males >97 mm, females <95 mm.

Reading: Hunter, S. 1984. *J Zool* (Lond) 203: 441–460. Johnstone, G.W. 1974. *Emu* 74: 209–218. Powlesland, R.G. 1986. *Notornis* 33: 171–184. Warham, J. 1962. *Auk* 79: 139–160.