Above: Antarctic fur seal youngsters playing around the shallows of South Georgia

Supercharged sea puppies

Marine biologist **Jamie Watts** and underwater photographer **Malcolm Nobbs** have been lucky enough to dive with fur seals around the world and speedy enough to capture them in action

With a quick double beat of its 'wings', the seal that a moment ago was at the surface several metres above was suddenly on top of me. The young animal seemed as startled about this as I was, huge, wide eyes fixed on me as his otter-like body buckled into rapid twists and rolls, just inches away from my face, flaring then beating his flippers as he rolled around while circling me fast enough to make me dizzy, his body flowing, contorting and twisting in every direction, but his staring eyes never leaving me.

There is nothing under the sea that moves and manoeuvres as insanely fast as a young fur seal. They are frenetic, manic almost, and look like a film running at double speed. I didn't have time to raise my camera, let alone frame or focus.

To my right, another seal appeared as a blur on the edge of visibility and was instantly upon me, rolling away at the last moment and somehow not making contact. Another comes, then another, all staring with those huge black eyes rimmed with white, somehow managing to look shocked and mournful at the same time. Their tiny, thorn-shaped ears sticking straight out add to the comic cuteness of the picture; the only thing on these animals that is not superbly fluidly streamlined.

Sometimes it seems like a game; that they're egging each other on, daring each other to get closer. Then once in a while you'll get a glancing thwack from a solid, rubbery flipper – you can feel the animal flinching with the shock of it. Sometimes they'll open their mouths wide and blow a small burst of bubbles or flash you a mouthful of sharp teeth. Just once in a while you'll feel an exploratory nip – they don't really have hands, so their mouths are how they explore new and interesting things in their world. You couldn't really call this mouthing biting, but they do tend to run away with a guilty look on their faces when they've done it.

These youngsters have few concerns. The seas they live in provide plenty of food even for their immense appetites and they have the luxury of playtime. There are a few predators – big sharks and orcas in a couple of areas – and as long as they stay inshore and keep an eye out, they are too agile to get caught.

Adequate divers

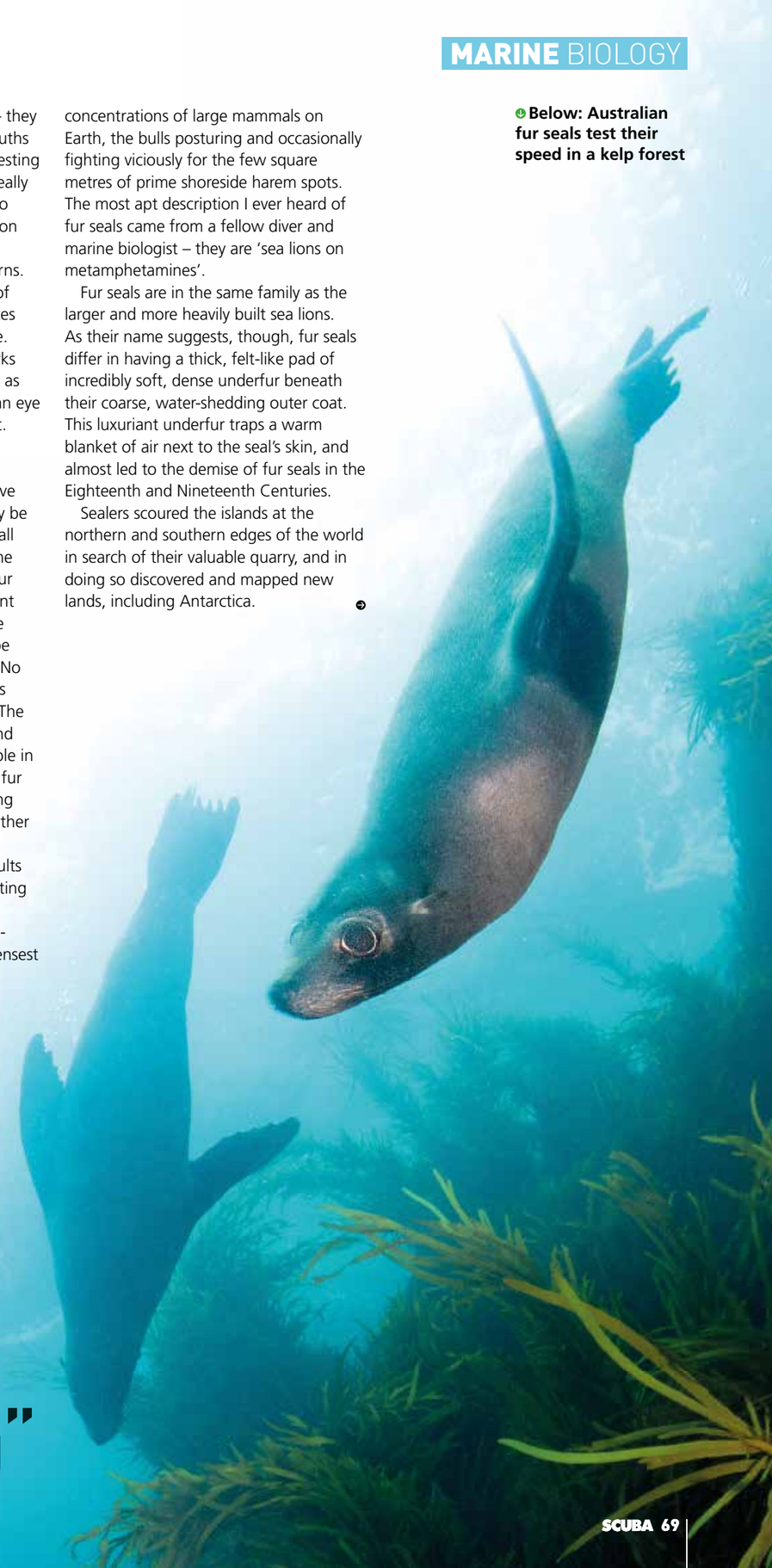
Animals this small-bodied, hyperactive and oxygen-hungry couldn't possibly be supreme breath-hold divers, and of all the marine mammals, fur seals do the shortest dives. Dive times for most fur seals compare with those for a decent human freediver; a minute would be typical, four to five minutes would be a long and particularly relaxed dive. No human is anywhere close to being as slippery or agile through the water. The big bulls, with their greater blood and body volume, are a little more capable in terms of dive times and depths, but fur seals are most definitely animals living fast-paced lives at the sea surface rather than laid-back deep divers.

At the end of every spring, the adults get ready for the serious and exhausting business of reproduction. Fur seal breeding colonies are incredibly high-stress (and dangerous) places; the densest concentrations of large mammals on Earth, the bulls posturing and occasionally fighting viciously for the few square metres of prime shoreside harem spots. The most apt description I ever heard of fur seals came from a fellow diver and marine biologist – they are 'sea lions on metamphetamines'.

Fur seals are in the same family as the larger and more heavily built sea lions. As their name suggests, though, fur seals differ in having a thick, felt-like pad of incredibly soft, dense underfur beneath their coarse, water-shedding outer coat. This luxuriant underfur traps a warm blanket of air next to the seal's skin, and almost led to the demise of fur seals in the Eighteenth and Nineteenth Centuries.

Sealers scoured the islands at the northern and southern edges of the world in search of their valuable quarry, and in doing so discovered and mapped new lands, including Antarctica.

Below: Australian fur seals test their speed in a kelp forest



> "There are nine or ten species of fur seals, depending on who is doing the species-splitting"

Above: The high energy world of an Australian fur seal

Below: South African fur seals must evade great white sharks on a daily basis

Fortunately, despite the decimation of populations, fur seals are spectacular survivors: they can breed at a young age and have rebounded from the edge of extinction. While sea lion populations around the world are generally in the tens to low hundreds of thousands, fur seal populations in the north Pacific and southern Africa are back in the millions, and Antarctica and South Georgia's krill-eating Antarctic fur seal now has a population of more than five million.

Agile swimmers

The family is known as the eared seal family, and one of the most conspicuous characteristics separating fur seals from 'true' seals are their tiny, almost vestigial external ears. True seals and walruses, the other seal families, just have a small opening for an ear. A bigger difference is the mode of swimming – the fur seals and sea lions fly through the water with their wing-like arms or pectoral flippers, using their slender hips and feet just for steering, while the true seals have small, weaker, stubby arms and instead swim with side to side movements of their powerful hind legs.

There are nine or ten species of fur seals, depending on who is doing the species-splitting, two in the north Pacific and the remainder in the cool richer seas of the southern hemisphere. Perhaps more than any other group of marine animals, their sheer appetite for calories restricts fur seals to the richest seas on Earth, with the densest supply of oily fishes, squids and crustaceans. Most fur seal species are rather similar to each other, differing subtly in things such as the proportions of snout and flippers, and variations in colour.

The 'average' fur seal juvenile or adult female resembles a large, tail-less, snake-hipped otter or weasel with wing-like foreflippers. The bulk of the population is made up of these youngsters and adult females, most of them somewhere between the size of a spaniel and a Rottweiler. They are slender but rather solid spindles of muscle, and magnificently fluid, fast and acrobatic underwater. They might weigh somewhere between 25 and 65 kilos, depending on their age and species.

The adolescent bulls start to get much larger than this from about the age of five, becoming thickset, especially around the neck and forequarters. Big bulls of most species reach three or four times the bulk of the adult females. At a maximum of around 150 to 200 kilos when fattened up for the breeding season, they are still significantly smaller and less thickset than their heftier cousins the sea lions. The bulls also develop a longer snout; more doglike, slim and pointed than the thick, snub, bear-like snout of sea lions. If sea lions are the sumo wrestlers, then fur seals are the light-heavyweight boxers or mixed martial arts stars.

The tiny, dainty Galapagos Fur Seal is the smallest of the fur seals, a third the size of most of the group, while the largest, a sea lion-sized monster twice as big as the average fur seal, is the Cape or Australian fur seal, found around southern Africa and southern Australia.

See for yourself

If you want to dive with fur seals, you have options – their range is pretty vast – virtually all of the cool temperate southern hemisphere and the cold north Pacific has a fur seal species somewhere nearby, although these colonies are not necessarily easily accessible. Malcolm's photos here are mainly of the larger Australian and medium-sized New Zealand fur seals, taken off Montague Island, south of Sydney, Cabbage Tree Island, north of Sydney, or in Tasmania.

Above: One in about a thousand or so Antarctic fur seals have pale blonde fur

Below: Curiosity seems a common factor in fur seals

The population of fur seals in Australia is estimated to be 120,000, about a third as many as there were before Europeans settled there. Fishing operations had led to near eradication in parts of Australia, for example, the Seal Rocks colony north of Port Stephens. Fur seals have been protected since 1975, and are slowly increasing and re-occupying some of their former range. The only breeding colonies are currently in Victoria and Tasmania, but in recent years a few pups have been sighted once again on some New South Wales islands.

Southern Africa has huge populations of fur seals. Malcolm was buzzed by a single South African fur seal – a very close cousin of the Australian subspecies – while photographing blue sharks in South African waters, and the populations off South Africa and Namibia are well over a million. Namibia still has fur seal hunts. My photos of Antarctic fur seals were taken off South Georgia. By specialising in feeding on krill, this species has become by far the most abundant and successful fur seal, and one of the most successful of all marine mammals, but is one of the least accessible to photographers.

Below: This bull was the largest Antarctic fur seal I ever saw, over 200 kilogrammes in prime condition for the start of the breeding season, off South Georgia

Bottom: By contrast, this young Antarctic fur seal has yet to bulk up

Above: An Australian fur seal pup displays its acrobatic skills