

SUBANTARCTIC SKUA *CATHARACTA ANTARCTICA* PREDATION TECHNIQUES ON LAND AND AT SEA

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INTRODUCTION

Dietary studies of Subantarctic Skuas *Catharacta antarctica* have been made by various people (Serventy *et al.* 1971) but not much has been written on how they secure their food on land or at sea. The observations given here were made over a four-year period in the southwestern Cape, South Africa, at the Prince Edward Islands and on sea voyages in the South Atlantic and Indian Oceans.

OBSERVATIONS ON LAND

Marion Island in the Prince Edward Island group has an estimated breeding population of 400 pairs of Subantarctic Skuas and a smaller number of non-breeding birds (Williams *et al.* 1979). The breeding population's two main sources of food are the penguin colonies and nocturnally visiting breeding petrels. Scavenging from carcasses of Elephant Seal *Mirounga leonina*, King Penguin *Aptenodytes patagonicus*, Rockhopper Penguin *Eudyptes chrysocome*, Macaroni Penguin *E. chrysolophus* and Gentoo Penguin *Pygoscelis papua* was another important food source and kitchen offal from the Meteorological Station fed a regular attendance of 20 - 50 Subantarctic Skuas during the summer of 1978 - 79. Detailed examination of Subantarctic Skua nesting territories showed that birds nesting close to penguin colonies fed almost exclusively on penguin eggs and penguins. Birds breeding away from penguin colonies and situated near petrel colonies fed almost exclusively on adult petrels.

The general mode of flight of the Subantarctic Skua is slow, level and gull-like but when in pursuit of another bird in flight it can achieve considerable speed with powerful and fast wing beats and can easily overtake in a short time any bird it pursues. This hunting technique is used in attacking the majority of petrels (Procellariidae) over land and at sea. Skuas were frequently seen to hunt in pairs over land during daylight hours and at dusk and dawn at Marion Island. Single prions *Pachyptila* spp. sometimes ventured over land during daylight and if they crossed a skua territory both birds would give chase. The technique in catching the prion was to chase the bird from below, making it gain height, and for the other skua then to rise above the prion to swoop and strike it with its feet knocking it towards the ground. If this failed, the other bird below would quickly fly up and pluck the prion out of the air with its bill. Both birds would then settle on the ground and proceed to dismember the prion with tug-of-war tactics. This hunting technique was seen many times and species frequently taken were Salvin's Prions *P. salvini*, Kerguelen Petrel *Pterodroma brevirostris* and Softplumaged Petrel *P. mollis*. Single Subantarctic Skuas hunting in a similar way also met with success although if the chase crossed over an established skua territory the territory holders would give chase to the intruding skua and the prey would have a chance to escape. The general escape

technique of the prey species was to fly directly out to sea where the pursuing skuas would usually give up the chase. Only once were two skuas observed to chase and kill a Softplumaged Petrel over the sea at ca. 500 m from the shore. However, a Northern Giant Petrel *Macronectes halli* ousted the skuas from feeding and swallowed the Softplumaged Petrel in one gulp. Subantarctic Skuas were never seen to chase or harry petrels offshore at Marion Island and if a skua did venture out to sea it was quickly mobbed and pursued by the large numbers of prions waiting offshore for nightfall before venturing inland.

At night the lights of the Meteorological Station attracted many petrels and especially on calm misty nights hundreds would be dazzled by the lights and subsequently became easy prey for skuas. The feeding frenzy at times was so great that skuas were seen to swallow whole diving petrels *Pelicanoides* spp. and prions. However, the normal procedure for a single skua eating a petrel was to take the dead bird to a small pond, seal wallow or stream to soak the bird in water. The skua would pluck the dead bird, pulling off beakfuls of feathers and then wash off any adhering feathers on its bill or head in the water. The breast of the dead bird would be eaten first followed by the entrails, head and legs. The only parts not eaten would be the sternum and wings which frequently were left joined together as a unit.

It was evident in some petrel colonies that burrows were excavated by Subantarctic Skuas although this was only observed directly on three occasions. On all three occasions the skuas were digging out prion burrows in loose scoria using their bills to dig and loosen the scoria and sometimes their feet to scrape away loose fragments. At one nest a skua extracted an incubating adult prion and when it finished eating the bird it then consumed the egg. The other two prion burrows contained large chicks which were extracted and swallowed whole. During my examination of Kerguelen Petrel study burrows a small group of skuas would follow me and watch my handling of the adults and chicks. At one nest when I replaced the chick and covered the nest chamber, two skuas almost immediately started to dig open the nest chamber. I chased off the skuas, but the following day the nest chamber had been excavated and the chick was absent.

The two large petrels breeding at Marion Island, the Whitechinned Petrel *Procellaria aequinoctialis* and the Grey Petrel *P. cinerea* were rarely taken by Subantarctic Skuas. Presumably because of this relative invulnerability they regularly came ashore during daylight hours to visit their burrows to feed chicks. One kill of a Whitechinned Petrel was observed when three skuas attacked the bird as it emerged from its burrow. The adult Whitechinned Petrel was very aggressive towards the skuas but one skua managed to grab the petrel by the nape whilst the other two pounded it on the head with their bills. These three skuas were then joined by four more birds which took part in eating the petrel. At Prince Edward Island a fully fledged Grey Petrel was attacked by two skuas who grabbed it by its outermost primaries and dragged it for a short distance. However, the young Grey Petrel managed to ward off its attackers by continually lunging at them with its bill and lying on its back and using its feet to defend itself.

Wandering Albatrosses *Diomedea exulans* at the Prince Edward

Islands are not normally a food source for Subantarctic Skuas although unattended small chicks were sometimes divebombed by skuas, presumably in an attempt to make them regurgitate. A pair of Subantarctic Skuas took up a position alongside a gam, a group of displaying adult Wandering Albatrosses, at Marion Island for several weeks and succeeded in grounding many adult Wandering Albatrosses and making them regurgitate. The technique employed was to wait on the brow of a hill until an adult Wandering Albatross flew in from the sea and approached the gam. The skuas would then fly in pursuit of the albatross, divebombing it and sometimes grabbing it by the primaries, forcing it into a crash landing. The shock of being pulled out of the air would usually make the albatross regurgitate but if it did not regurgitate and tried to take off, the skuas would continue the same tactics until it did regurgitate. However, when the Wandering Albatross was grounded the skuas kept a safe distance only attacking the bird in flight and during takeoff.

In a Greyheaded Albatross *D. chrysostoma* colony at Marion Island Subantarctic Skuas were seen to take small unattended chicks. The colony was situated on a steep grassy cliff with the pedestal nests placed close to the cliff face. The skua or skuas would stoop at a chick from above and forceably knock the bird from the nest over the cliff where it would crash onto the rocks below. The skuas would follow it down to the cliff base where they dismembered it.

Subantarctic Skuas can be seen loafing around or patrolling over the large colonies of Macaroni and Rockhopper Penguins at the Prince Edward Islands at all times during the breeding and moulting seasons. Both species of penguins lay two eggs, the first-laid smaller than the second, and after several days' incubation the penguin rejects the smaller of the two eggs (A.J. Williams pers.comm.). These displaced eggs, when seen by a patrolling skua, are deftly and swiftly picked up in its bill and taken to the edge of the colony or to the skua's breeding territory. If the skua with the egg is challenged by another skua in the air or on the ground, it will swallow the egg whole, to avoid being robbed. If not under any immediate threat of being robbed, the skua cracks open the egg by either pinching it with its bill or by making a hole by hammering it. The contents of the egg are then eaten in the same manner as the bird drinks water.

OBSERVATIONS AT SEA

Subantarctic Skuas are present throughout the year on the trawling grounds off the southwestern Cape, South Africa (pers. obs.). They are more abundant during the winter months when over 50 can be seen around any trawler when fish are being gutted. Their role here is purely as a scavenger and their behaviour in foraging is timid amongst the large groups of albatrosses (Sinclair 1978). No incidents of predation on other seabirds have been observed on these trawling grounds by Subantarctic Skuas.

On 18 December 1977, south of Cape Agulhas at 35 OOS, 19 48E, a Subantarctic Skua was observed pursuing a Little Shearwater *Puffinus assimilis*. The skua, after a short pursuit, managed to

force the Little Shearwater into the water where it took evasive action by diving. On resurfacing, the Little Shearwater took flight only to be again knocked into the water by the skua. On this second attack the Little Shearwater regurgitated and made its escape while the skua fed on the regurgitation. At the same locality, three Subantarctic Skuas made eight pursuits after Cory's Shearwaters *Calonectris diomedea* and succeeded in forcing three to regurgitate. On 29 October 1979 at 39 23S, 05 52W I observed five Great Shearwaters *P. gravis*, one Atlantic Petrel *P. incerta* and one Little Shearwater being harried by Subantarctic Skuas. The technique of pursuit was similar to the Little and Cory's Shearwater pursuits described above although two Subantarctic Skuas hunted together in pursuit of a Great Shearwater. No regurgitations were noticed from any of these birds. On 11 February 1980 at 34 40S, 17 47E one Subantarctic Skua successfully harried a Cory's Shearwater and obtained a regurgitation.

In addition to the above observations, the following extract from the Cape Bird Club News Sheet No. 30, for September 1955 is of interest.

"From Dr. Morrell comes the following account of a pair of 'brown skuas' attacking, killing and devouring a Hartlaub's Gull *Larus hartlaubii* off the breakwater at the Cape Town docks; he says 'One of the skuas was quite a passive onlooker till the other had completed its fell deed. This was accomplished by forcing the Hartlaub's Gull into the water, while all the time pecking at its head (at its eyes?). Feathers flew in all directions and when the gull ceased to struggle and was dead the two devoured their kill.'"

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