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NOTES ON SKUAS AND JAEGERERS IN THE WESTERN TASMAN SEA

From 1 September 1976 to 30 April 1979 I kept records of skuas and jaegers sighted at sea from the *Simon Barjona*, out of Eden, NSW, 500 km south of Sydney. Records were not kept from June to September 1978 when the vessel was laid up. In all, I observed for 4,445 daylight hours but not at night. I could not make regular counts for defined periods but estimated totals seen each day and converted these to sightings per hour, thus avoiding the fluctuations from the many birds counted when hauling gear to the few seen during normal steaming or towing. I collected some specimens and took photographs for identification when possible.

The area covered lies between 36 and 38° S, roughly from Montagu Island to an area off the oilfields in eastern Bass Strait. I recorded the temperatures of surface waters daily, the highest being 24.5°C off Tathra, NSW, during March 1979, and the lowest, 13°C near Cape Everard during December 1978. This illustrates the contrast from month to month in different areas, which however is levelled out by averaging (Fig 1.) A brief description of hydrological conditions in the area is given by Barton (1979).

Stercorarius pomarinus Pomarine Jaeger

Pomarine Jaegers arrived in mid-October during about three weeks, a few being seen initially and later more, and more and constantly: largest numbers occurred in January 1977, March 1978 and February 1979. Milledge (1977) noted a peak off Sydney in January 1974. Temperatures of surface waters during these peaks differed from 18.5°C in January 1977 to 22.3°C in March 1978 and 20.5°C in February 1979. The peaks occurred when Wedge-tailed Shearwaters *Puffinus pacificus* were also most numerous.

During summer, surface water normally moves south, at times up to four knots, and cooler water on the bottom and in midwater layers moves north

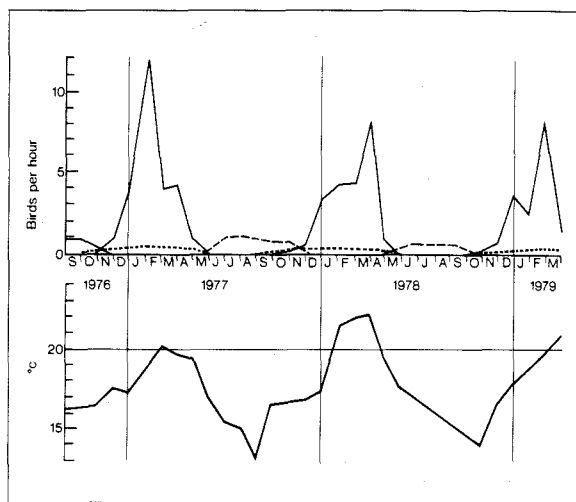


Figure 1. Frequency of observation of Southern Skua - - - Pomarine Jaeger — and Arctic Jaeger and mean temperature of sea water.

offshore. As warm surface waters flow south, Pomarine Jaegers also move south into eastern Bass Strait, along with Wedge-tailed and Fleshy-footed Shearwaters *P. carneipes*, the movement generally follows the edge of the continental shelf, to its farthest point offshore, south of Cape Everard.

From mid April to early May congregations (up to 20 birds) of Pomarine Jaegers were noted each year along the edge of the continental shelf, some 25km offshore in the north to some 57km offshore in the south. These seemed to be pre-migratory gatherings, because each year, within a week of observing these flocks, the birds disappeared, apart from rare single sightings.

When the birds arrived, few had elongated central tail-feathers. By late April about 80% of adults had grown these feathers but all birds, adult and immatures, were in new plumage on body, wings and tail. Dark- and light-phased birds occurred in the

ratio of about 60:40 and the ratio of adults to immatures was about 65:35. These ratios are merely estimates because differences in moult and plumage varied so much that no attempt was made to count phases and ages accurately. In adults, dark-phased birds were uniformly dark brown with a white wing-flash caused by the white bases of the primaries; light-phased birds had yellowish to light-grey ear-coverts and collar, varying in size, belly and throat white, under tail-coverts and underwing grey to light brown, with the white wing-flash. In immatures, dark-phased birds were like adults but with varying amounts of very dark barring on the lower breast and belly: light-phased birds were also like the adults except that all the white on throat and belly was heavily barred brownish to grey, usually without a trace of yellow on cheeks or collar, which was brown to grey and slightly barred, the collar usually indistinct. I saw birds of both phases with completely white primaries and some with white upper and under wing-coverts and black primaries. Some photographs of these aberrated birds were taken.

Pomarine Jaegers were very active about the boat in getting offal and were fearless in competing with large petrels and albatrosses on the surface. Like most seabirds, they preferred sharks' liver and fish guts. If the offal sank, they often dived from a sitting position on the surface and swam effectively under water to retrieve it; they also easily dived from flight like shearwaters. Usually they ate food on the surface. When pressed by other birds, they flew away with the food in their beaks and could carry surprisingly large items.

Like other jaegers and skuas, when hunting,

Pomarine Jaegers flew about 10 to 15m above the surface with powerful wing-beats and little gliding. I noted that they grouped into parties (often up to 15) after feeding, resting on the surface. They also sat thus during very strong winds, each bird facing into the wind and patiently ducking its head as the waves hit it. While resting on calm surfaces, the birds often stood up on the water and bathed by dipping their heads continually and flapping their wings flatly on the surface. This action lasted for two or three minutes and then the birds puffed up their feathers and preened. I did not notice them preening each other as albatrosses often do.

I noted Pomarine Jaegers calling only when feeding or excited by the prospect of doing so, as the trawl was hauled; then they uttered a sharp which-yew, which-yew, followed by a continuous week, week, week like the excited calling in similar circumstances of the Cape Petrel *Daption capense*.

These Jaegers engaged in kleptoparasitism without real aggression or determination. I often saw them swoop on another bird with food on the water and crash into it with wings outstretched and breast pushed forward aggressively, calling loudly. Flesh-footed Shearwaters, which are large, often resisted this attack with equal aggression and the Jaeger seldom renewed the attack. Aggression in flight was seldom more than a half-hearted attempt to bully or bluff other birds. Wedge-tailed Shearwaters often frustrated the attacks by sheer numbers, swarming about offal in a living shield.

Details of weights and measurements of specimens are shown in Table I.

TABLE I

Specimens of skuas, taken off south-eastern Australia and held in the collections of CSIRO, Division of Wildlife Research, Canberra.

Reg. No.	Date	Sex	Age	Length (mm)	Wing-span (mm)	Weight (g)	Phase
<i>Stercorarius pomarinus</i>							
19760	8.xii.77	F	Ad.	500	1,300	700	Light
19803	3.ii.78	F	Ad.	500	1,200	710	Light
19805	7.ii.78	F	Imm.	480	1,210	780	Dark
19807	3.ii.78	M	Imm.	500	1,100	690	Light
19887	17.ii.78	F	Ad.	490	1,140	700	Dark
19888	17.ii.78	F	Ad.	520	1,190	750	Dark
<i>Stercorarius parasiticus</i>							
19758	8.xii.78	M	Imm.	420	980	260	Light
19889	17.ii.78	M	Imm.	480	1,060	—	Dark
<i>Stercorarius maccormicki</i>							
19754	13.xi.77	M	Imm.	564	1,360	1,200	—

Stercorarius parasiticus Arctic Jaeger

Arctic Jaegers arrive a little earlier than Pomarine, in early October, at first singly or in pairs, when I saw most birds close inshore. During late summer I saw them mostly in bays or large areas of sheltered water. In late April I recorded parties (rarely more than 6 or 7) about the continental shelf and slope from 25 to 60km offshore. They were near similar flocks of Pomarine Jaegers but not mixed with them. Like Pomarines, after a period of flocking thus, the birds quickly disappeared apart from occasional single birds.

Arctic Jaegers seemed to be sedentary. During my study I believed that six birds frequented Twofold Bay during summer; I also noted similar groups in Merimbula Bay, Tathra Bay, Disaster Bay, on the southern side of Gabo Island and on the western side of Cape Everard. In Twofold Bay during the summers of 1977-78, and 1978-79, there were consistently two light-phased and four dark-phased birds. On 17 February 1978 I collected one of the dark-phased birds; during January and February 1979 I again consistently saw three birds of each phase, which suggested that the dark-phased bird had been replaced by a light-phased. Perhaps the same birds returned to the Bay each year.

Arctic Jaegers tended to hunt singly, and, though I have seen them flying among Crested Terns *Sterna bergii*, Silver Gulls *Larus novehollandiae*, White-fronted Terns *S. striata* and Australasian Gannets *Morus serrator* that were diving into schools of fish, I did not see them catch food for themselves. They seemed to be totally kleptoparasitic, harrassing and swooping after terns, gulls and Fluttering Shearwaters *P. gavia* with single-minded determination; yet they did take small bits of offal from near the boat by swooping down, grabbing and flying away with them. They fed in the main on the wing. They were less noisy than Pomarines when feeding and totally silent when pursuing other birds; their determination seemed emphasized by their silence. I noted that birds, feeding on offal, called with a high pitched weet, weet but only when in company with other Arctic Jaegers. The ratio of dark-phased to light-phased birds observed was about 2:1 but I could not note any obvious difference in the field between adult and immature. At the end of summer some 50% of birds observed had grown elongated central tail-feathers; those that had not grown them were assumed to be immature.

Details of weights and measurements of specimens collected are shown in Table I.

Stercorarius longicauda Long-tailed Jaeger

Barton (1978) published a record of two Long-tailed Jaegers sighted east of Merimbula on 4 January 1977. In March 1978 off The Skerries some 30km south-west of Gabo Island I glimpsed a jaeger during very bad weather which may have been another.

Stercorarius skua Great Skua

Great Skuas (no doubt of the race *lonnbergi*) arrived with an uncanny regularity at the time when Pomarine Jaegers left. In 1977 I saw the last Pomarine on 12 May and the first Great Skua on 14 May; in 1978, 10 May and 14 May respectively; and in 1979 30 April and 3 May (off Gabo Island) respectively. Great Skuas left early in November and I have seen both species in the area in late October and November.

Great Skuas, though common in winter, were not numerous; on average I saw one bird every four to four and a half hours during daylight, normally singly, like other skuas, flying 10 to 15m high and in a straight line with little gliding and powerful wing-beats. When the trawl was being hauled they approached the boat readily but only in flight, never settling on the water nearby. While steaming into strong winds and fish were being gutted, I saw Great Skuas approach into the wind over the stern and glide a metre or two above my head; when pieces of offal were thrown overboard, the skuas seized them before they hit the water; once one bird took offal from my outstretched hand. The birds then glided 30 or 40m from the boat and swallowed the food after alighting. Almost always they then took off and again approached the boat. However, even when the boat was hove to and food purposely thrown out, they would not come near the boat but sat some 30m off. Sometimes they plunge-dived and swam below the surface after food.

Great Skuas are kleptoparasitic, like Pomarines usually with only moderate ferocity. Though I often saw them pursue and harrass the large Shy Albatross *Diomedea cauta*, they did not press the attack with the determination of the Arctic Jaeger. After any unsuccessful attempt to bluff or steal food from other birds they normally retired from further effort, flew off some 30m and alighted on the water, aloof from the feeding frenzy nearby.

I have seen Great Skuas on numerous occasions with primary feathers missing and have concluded the birds moult in this area, although this is not obvious in the field. No specimen of this species was taken during the study but many were photographed.

Stercorarius maccormicki. South Polar Skua

I collected an immature male South Polar Skua on 13 November 1977 south-east of Tathra (Barton 1978). It was far more active and determined than any Great Skua that I saw in harassing and pursuing Wedge-tailed and Fleshy-footed Shearwaters and an immature Yellow-nosed Albatross *Diomedea chlororhynchos*. Like Great Skuas and Arctic Jaegers it was completely silent when pursuing other birds. In the summer of 1978-79 light-coloured large skuas were reported near a shallow bank, 500 km east-north-east of Eden, by tuna fishermen, which suggests that South Polar Skuas may travel far offshore on migration, as they are trans-equatorial travellers (Devilliers 1976).

DISCUSSION

Great Skuas move north along the eastern Australian coast to at least southern Queensland; birds are regularly sighted off Tweed Heads and Coolangatta (McMillan pers comm.)

Both Pomarine and Arctic Jaegers have been sighted in summer off Stradbroke Island, Queensland (Vernon & Martin 1975), off Broadbeach, Queensland (Glasman 1977) in Sydney Harbour (Milledge 1977) and near Batemans Bay (Marchant 1976). They are seen regularly in New Zealand waters in summer (Bartle 1974) and (Edgar 1978) and Watson (1975) reported sightings of Arctic Jaegers on the Antarctic Peninsula south of 65°S. I have observed Arctic Jaegers in adult plumage near Hachinohe on the Pacific coast of Honshu and in the harbour of Kushiro, also on the Pacific coast of Hokkaido, in Japan (Lat 40° to 43° N) in July 1978. All of these sightings about the Pacific are near the coast. The results of my observations perhaps may help to increase our knowledge of these birds in more pelagic conditions.

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B. Furness (pers. comm.) states that Arctic Jaegers follow the migration pattern of the main species they parasitize, the Arctic Tern *S. paradisea* in the Atlantic Ocean. I have found no evidence to suggest anything similar with the jaegers in the Pacific, unless there is a connexion with the little-understood trans-equatorial migration of both the Wedge-tailed and Fleshy-footed Shearwaters. Much more observation and banding needs to be done before we can expect to know more of these migrants. I suspect that a relation occurs between other species, marine conditions and surface water temperatures, etc.

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