

numbers have been seen throughout the 1978-79 and 1979-80 summers near the new Dannevirke sewage ponds.

I am grateful to R. N. Cotter, S. Creswell and L. Gurr for permission to include their observations.

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#### ARCTIC SKUAS CHASE WADERS AT MIRANDA

On the morning of 7 October 1979 at about 0720 hours I was at the Old Limeworks at Miranda, Firth of Thames, watching two Spur-winged Plovers (*Vanellus novaehollandiae*) in the company of about ten Pied Stilts (*Himantopus leucocephalus*). They were feeding on the fringe of a small pool near the seashore.

Looking northwards I saw two skuas silhouetted against the low sunlight. I watched them through my telescope (20-45x) as they chased White-fronted Terns (*Sterna striata*) but was unable to identify them. They left the terns and flew towards me and I switched to binoculars (8x30) as they came closer. They crossed the far side of the pool about 10 m away, flushing two or three stilts. As they flew above me I had an excellent view of both birds. One was completely dark, the other having a collar of yellowish streaking, and each had sharply pointed tail-feathers projecting about 3 cm from the rest of the rounded tail, marking them as Arctic Skuas (*Stercorarius parasiticus*).

They circled around the pond again, and as I watched, the paler bird swooped on a rising stilt. As it was hit, the stilt was jolted and I saw two white feathers come floating down, but its flight was not visibly affected. Because of the position of the stilt's body and the speed of the action I did not see what the skua had struck the stilt with.

Hearing the loud calling of a Spur-winged Plover behind me I turned to see the darker skua pursuing it over the shellbanks parallel to the shore for about 20 m and then out to sea. The other bird followed soon after, and I did not see any other skuas that day. I understand that there are very few records of skuas chasing other birds over land in New Zealand.

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#### SEASONAL FLUCTUATIONS IN THE NUMBERS OF BAR-TAILED GODWITS ON NELSON HAVEN

The flock of Bar-tailed Godwit (*Limosa lapponica*) on Nelson Haven uses the salt flats on either side of Sewerside Drive as a high tide roost. During spring tides all the birds are found in this area as they have a preference for soft ground. Only once have they been seen on the Boulder Bank at spring tide and that was because of

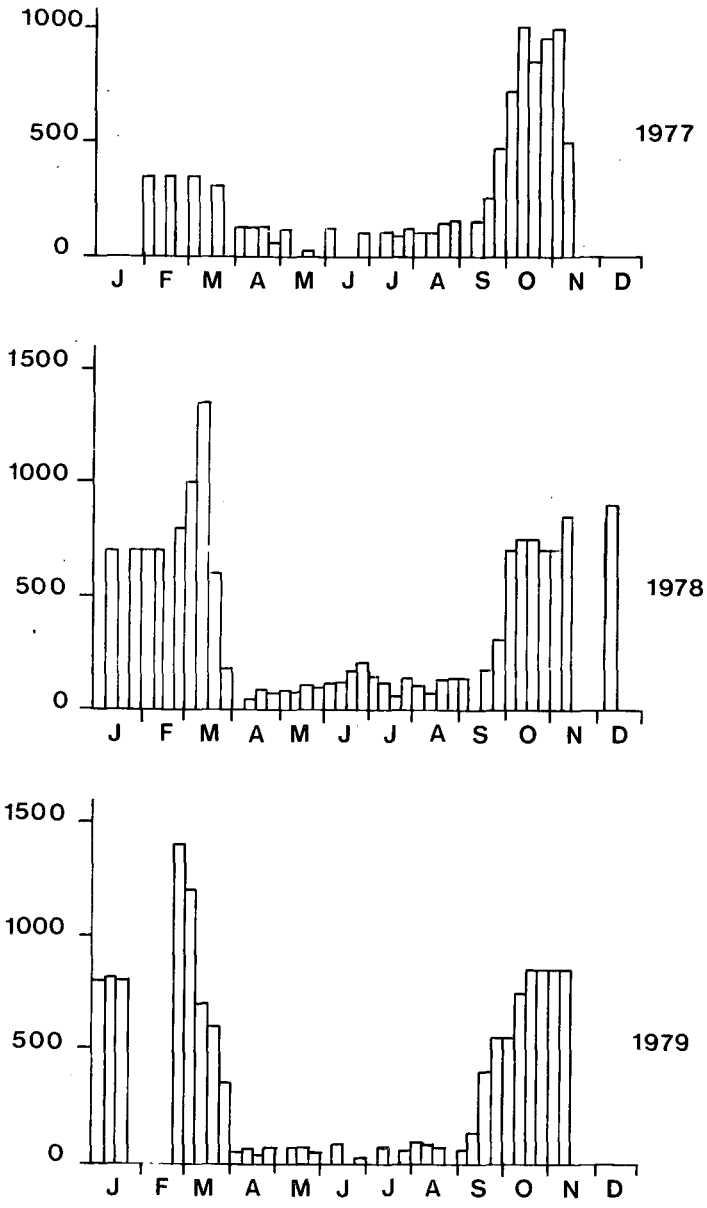


FIGURE 1 — The maximum number of Bar-tailed Godwit observed in Nelson Haven each week.

interference in their usual roosting areas. Occasionally on neap tides some godwits roost on small promontories round the Haven, and during heavy rains they move into the paddocks north of the Haven.

From February 1977 to October 1979 observations have been made several times a week throughout the year and almost daily during the spring and autumn migrations. Figure 1 graphs the highest count made during the four eight-day periods each month. The lack of a bar for a particular period signifies that counts were not made. The Nelson Haven flock reaches its New Zealand summer peak of some 800-900 birds during October and then does not vary to any marked extent until the autumn. In 1978 the first birds with breeding plumage were noted on 27 January and on 17 January in 1979.

In both 1978 and 1979 the flock numbers doubled briefly in early March and late February respectively. This increase of some 800 birds may have been missed in 1977 when observations were not so frequent. On 10 March 1978, more than 800 godwits flew up the Haven in four separate flights and joined the resident flock on the high-tide roost. The 1979 increase of some 600 godwits was accompanied by almost 100 Knots, many in breeding plumage. In both years, these extra birds had moved on in 2 or 3 days, and from then till the end of March the numbers decreased by 20 to 100 every day or so.

It seems probable that these dramatic increases are due to birds from the southern estuaries making a short stopover during their northward migration — however, a similar increase has not occurred during their return south in spring. Winter numbers fluctuate considerably, suggesting some movement between the Haven and Waimea or Motueka estuaries. An occasional coloured bird appears during winter, and in 1978 there were six noticeably coloured until the end of June.

The date of the spring increase has varied slightly over the three years. In 1977 the highest winter number increased by some 20 birds on 24 August — a bird with some colour was seen on the 30th. On 29 August a Curlew Sandpiper (*Calidris ferruginea*) with fading breeding plumage also appeared. In 1978 the increase was noted on 24 September and on 14 September in 1979. Each year there has usually been a daily increase until mid-October when they reach the summer number. The early increase in 1977 suggests that these birds may have been over-wintering on the northern estuaries and were experiencing an urge to fly south (Beth Brown, pers. comm.).

It would be interesting to know if the large sudden increase in Bar-tailed Godwit numbers noted at the autumn migration has its counterpart on other estuaries.

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