ABSTRACTS OF PAPERS ON CURLEW SANDPIPERS

by M.A. Barter

Similarities and differences in the first half of primary feather moult of Curlew Sandpipers (*Calidris ferruginea*) in North Western Australia, Southern Victoria and Hobart

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An analysis has been made of the timing of the first half of primary moult in adult, second-year and first-year Curlew Sandpipers in north Western Australia, southern Victoria and Hobart. Both adult and second-year birds in north Western Australia commence moult before the same age groups in southern Victoria and Hobart, and are still significantly ahead during mid-moult. Adult males in north Western Australia, as in Victoria, are more advanced than females in both the initial and middle stages of moult. Second-year birds in north Western Australia and Hobart commence primary moult before adults, but adults have caught up by mid-moult. The majority of first-year Curlew Sandpipers in north Western Australia and southern Victoria undergo a partial outer primary moult, most commonly of four feathers, with birds from the north-west having a slightly higher median primary moult score. Possible explanations are proposed for the difference in moult timing of adult and second-year birds in the three areas.

Sex determination by bill length of live adult Curlew Sandpiper *Calidris ferruginea*

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Bill length information was obtained from live adult Curlew Sandpipers caught at 6 sites: Anna Plains (northern Western Australia), Southern Victoria, Hobart (Tasmania), Hong Kong, Central Thailand (near Bangkok) and Tamil Nadu (southern India). The measurements were taken by a number of people and involved measuring from feather margin to the bill tip. A statistical method was used to calculate the mean bill length of adults of each sex.

The results showed that there is reasonable agreement between the mean bill length and standard deviation of length for each sex at the six sites. Variations between means can be satisfactorily explained by the moult abrasion cycle at the feather margin on the bill. The mean bill lengths of live birds were found to be longer than those determined from museum specimens - live birds should not be sexed on the basis of bill lengths determined from museum specimens. Pooled Australian data gives bill length means and standard deviations of 37.0 mm (S.D. 1.55 mm) for males, and 41.0 mm (S.D. 1.49 mm) for females. At the 95% confidence level the criteria are males <37.3 mm and females >40.8 mm whilst at the 90% level the criteria are males <37.8 mm and females >40.3 mm. Approximately 57% of birds can be sexed at the 95% level and 69% at the 90% level.

Primary moult in adult Curlew Sandpipers *Calidris ferruginea* wintering in the Hobart area

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Over the period November 1979 to March 1984, a total of 784 Curlew Sandpipers were caught by the Tasmanian Shorebird Group in the Hobart area and scored for primary feather moult. An analysis of the moult scores showed that on average, Curlew Sandpipers start primary feather moult in early October and finish approximately 125 days later in early February, the median start/median finish dates being 6 October and 8 February. The rate of change in primary moult score is faster during the early stages of moult than in the latter part. The earliest moulting birds were found on 18 September, whilst 8% were still moulting on 18 March. Second year birds commence moulting about 2 weeks before adults, but there is no evidence that they finish moulting earlier. The timing and duration of moult is similar to that found in other south-eastern Australian investigations and in South African and Kenyan studies.

Weight variations and migration strategy of Curlew Sandpipers *Calidris ferruginea* wintering in Tasmania

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During the period November 1979 to March 1984 the Tasmanian Shorebird Study Group made 25 catches of Curlew Sandpipers, and a total of 893 adult, second and first year birds were weighed. Analysis of the weight data showed that adult Curlew Sandpipers lost about 2g in weight in the months after arrival before gaining significantly in weight from January to March, the increase being from 55.2g in January to 68.7g in March. Insufficient data are available for April to determine a satisfactory mean weight.

Second year birds are approximately 2g lighter than adults during the September-November period, during which time they lose 1g in weight. After November they become indistinguishable from adults. First year birds, which first arrive in November - some 2 months later than adults, increase in weight from January to February in a similar manner to adults before declining to a more typical weight in March. The monthly mean weights and the timing of weight changes for adult birds are consistent with other Australian work and are strikingly simila. to South African data on Curlew Sandpipers.

There is evidence that the weight loss occurring in adult and second year birds after September is due to moult induced physiological stress. However, more work needs to be done in this area. It seems likely that adults put on sufficient fat to support a non-stop migration from Hobart to coastal northern Australia, a distance of 3 000 kilometres or more.

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