

COURTSHIP DISPLAY BY SANDWICH TERNS *STERNA SANDVICENSIS* IN SOUTH AFRICA

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In some tern species, pair bonds have been found to persist for several years, for example in Swift Terns *Sterna bergii* for at least up to two years, and in Sandwich Terns *S. sandvicensis* for up to four years (Smith 1975, Dunlop 1985a). However, mate changing is apparently frequent and in Sandwich Terns life-long pair bonds may not be the rule (H.W. Nehls in Glutz von Blotzheim & Bauer 1982, Dunlop 1985a). Most Sandwich Terns arrive paired at the colony, single birds being first breeders (Smith 1975, Veen 1977). Prebreeding roosts may form in the vicinity of the prospective colony and become a centre of display activity, which leads to pair formation and early copulations (E.K. Dunn in Cramp 1985). However, at other localities pair bonds seem to be already established upon arrival in the breeding area (Veen 1977). Considerable courtship activity must therefore take place in the winter quarters or during migration, but I know of only one report of ground and aerial courtship, in late January from West Africa (Smith 1975). Both H.W. Nehls and E.K. Dunn refer to this observation and conclude that pair formation begins in the winter quarters. The only other report of displaying Sandwich Terns in Africa deals with summering nonbreeders: Milon (1959) saw about 1 500 performing aerial displays and courtship feeding on 1 June at Nouadhibou (Port-Etienne), Mauritania.

On the evening of 23 March 1984, at the Olifants estuary (31 42S, 18 10E), southwestern Cape, South Africa, a group of approximately 300 Sandwich Terns were roosting on a sand bank, with birds flying to and from feeding areas along the coast. Birds were either in full breeding plumage, or with incomplete head moult (the ratio at a similar roost

in St Helena Bay (32 42S, 18 13E) on 22 March 1984 was 53 complete : 276 incomplete head moult). Over the roost, two "couples" were engaged in noisy aerial displays equivalent to the "high flights" described by Cullen (1960). Only one of the four birds was in full breeding plumage. At Marcus Island, Saldanha Bay (33 03S, 17 58E), where breeding Swift Terns were studied between late January and the end of April 1984, small numbers of Sandwich Terns (usually less than 20) roosted almost daily within the colony, but no courtship activity was observed.

Juvenile and immature Sandwich Terns reach southern Africa in much smaller numbers than adults (Moller 1981), and very few birds spend the austral winter in southern Africa (Morant *et al.* 1983), whereas immatures commonly summer along the coasts of West Africa. Immatures mostly retain the non-breeding plumage head pattern during the northern summer (C.S. Roselaar and J. Wattel in Cramp 1985). The relatively late date of this observation (when older breeders have already begun to arrive at their colonies) and the high proportion of individuals in prebreeding moult suggest that the majority of the birds were young adults (nearly two to four years old). Older and early breeding individuals moult earlier (Nehls 1987; similar in Swift Terns, pers. obs., but see Dunlop 1985b for sex-related differences). Since many of the first or young breeders do not arrive at their European colonies before late April or May, or even June (Veen 1977), birds still present in southern Africa by the end of March need not necessarily be nonbreeders. It therefore seems possible that pair formation in the Sandwich Tern can start in the most distant winter quarters. An

alternative explanation of a mere "practise", indicative of birds coming into breeding condition (A.J. Williams *in litt.*) cannot be ruled out, but would seem more likely to apply to the Mauretanian birds. Aerial displays and copulations in the winter quarter or along the migration route and the arrival of paired birds at the breeding grounds have also been reported in other large migratory tern species, e.g. Royal Terns *S. maxima* (Kale *et al.* 1965, F.G. & P.A. Buckley and E.K. Dunn in Cramp 1985) and Caspian Terns *S. caspia* (Bergman 1953, Staav 1979).

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