

- OGILVIE-GRANT, W. R. 1913b. On a small collection of birds from Henderson Island, South Pacific. *Ibis* 55: 343-350.
- REHDER, H. A.; RANDALL, J. E. 1975. Ducie Atoll — its history, physiography and biota. *Atoll Res. Bull.* 183: 1-40.
- RIPLEY, S. D. 1977. *Rails of the world*. Boston: David R. Godine.
- RIPLEY, S. D.; BIRCKHEAD, H. 1942. On fruit pigeons of the *Ptilinopus purpuratus* group. *Amer. Mus. Novit.* 1192: 1-12.
- SINOTO, Y. H. In press. Analysis of Polynesian migrations based on archaeological assessments. *J. Soc. Oceanistes*, Paris.
- SMITH, E. A. 1913. On a small collection of marine shells from Henderson Island. *Ann. Mag. Nat. Hist.* (8) 12: 409-415.
- STICKNEY, E. H. 1943. Birds collected during the Whitney South Sea Expedition 53. Northern shore birds in the Pacific. *Amer. Mus. Novit.* 1248.
- ST JOHN, H.; PHILIPSON, W. R. 1962. An account of the flora of Henderson Island, South Pacific Ocean. *Trans. Roy. Soc. NZ. Botany* 1: 175-194.
- TAIT, D. R. 1913. (Unpublished report on a survey of Henderson Island.) Hydrographic Department MS ex H5364/20.
- WHEELER, W. M. 1936. Ants from the Society, Austral, Tuamotu and Mangareva Islands. *Occ. Pap. B.P. Bishop Mus.* 12 (18): 1-17.
- WHITNEY SOUTH SEA EXPEDITION. 1922. Manuscript journals: R. H. Beck, vol. E: 102-103, 106-109. E. H. Quayle, vol. J: 30-40, vol. K: 3-42. C. C. Curtis, vol. M: 55-58.
- WILLIAMS, G. R. 1960. The birds of the Pitcairn Islands, Central Pacific Ocean. *Ibis* 102: 58-70.
- ZIMMERMAN, E. C. 1936. *Cryptorrhynchinae of Henderson, Pitcairn and Mangareva Islands (Coleoptera, Circulionidae)*. *Occ. Pap. B.P. Bishop Mus.* 12 (20): 1-8.

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SHORT NOTES

DECLINE OF THE PIED STILT IN CENTRAL OTAGO

Over recent years we have noticed a marked decline in the populations of the Pied Stilt (*Himantopus h. leucocephalus*) throughout Central Otago, particularly in the districts centred on Alexandra. Many habitats previously supporting good breeding populations, generally of 10-20 pairs, are now deserted, as are some of their traditional feeding haunts; this in spite of greater potential feeding habitat resulting from increased acreage of irrigated pastures.

Breeding success has also been very low in recent years, and I suspect that one reason for this is increased predation of both eggs and young by feral cats, stoats and ferrets, the ubiquitous Black-backed Gull (*Larus dominicans*) and Harrier (*Circus approximans*), and the gradual build-up of the White-backed Magpie (*Gymnorhina tibicen hypoleuca*) in this district. This is particularly true on the smaller riverbeds such as the Manuherikia, where access to nesting islands and terraces is fairly easy for predators when rivers are low.

Perhaps a more important factor, and one which gives predators an advantage, has been the steady decline in quality and quantity of nesting habitat on riverbeds, caused by the gradual encroachment of the usual adventive weed species — willow, broom, gorse, briar and lupin. Again the smaller riverbeds are particularly susceptible to this type of deterioration; extensive stretches of the Manuherikia, Lindis,

Cardrona, Kyeburn and other small rivers are now useless for those birds requiring broad reaches of uncluttered shingle.

A third factor is the aggressive competition from the Spur-winged Plover (*Vanellus miles novaehollandiae*), which has steadily increased in distribution and density since the first ones arrived in 1964 and is still doing so. Breeding Spurwings will attack anything in their vicinity, and the more timid Pied Stilts are often forced away from potential nesting-sites.

The 1982/83 season has been especially disastrous for many of the riverbed species; they have had to contend not only with the problems I have mentioned but also with periodic floods and high river levels over the main part of the breeding cycle (November/December). An exceptionally high and unseasonal flood in mid-January took a heavy toll of renesters and late nesters.

Some idea of the lack of breeding success of the Pied Stilt this season can be judged from the following figures of groups in well-frequented localities:

- 6/12/82: 12 nests in one colony on Manuherikia River, Galloway: all predated
 18/1/83: Lindis River: Only 5 adults in a stretch of 5 km
 21/1/83: Manuherikia River, Galloway: 26 ad., 2 juv.
 23/1/83: At the confluence of the Manuherikia and Clutha Rivers, Alexandra, after a major flood: 18 adults only
 30/1/83: Matukituki River mouth, W. Wanaka: 26 ad., 2 juv.
 31/1/83: Makarora River mouth, head of Lake Wanaka: 25 ad., 2 juv.
 13/2/83: 'Taieri Lake', near Kokonga: 67 ad., 5 juv.

The proportion of juveniles to adults above is 11:167, that is 6.6%.

PETER CHILD, 10 Royal Terrace, Alexandra



FERTILISATION OF WANDERING ALBATROSS EGGS ON MACQUARIE ISLAND

Several authors (e.g. Murphy 1936, Matthews 1951, Rankin 1951) have provided narratives on parts of Wandering Albatross (*Diomedea exulans*) life history, but as these authors have usually studied large colonies for a short time, and as the birds were usually unbanded, they could not describe courtship displays, copulations and other behaviour in the light of a most important factor — the birds' breeding status. Thus it is not known at what stage of egg development Wanderer eggs are fertilised. This paper records the copulation frequency of breeding pairs on Macquarie Island and infers when the egg is fertilised. Richdale (1950) suggested that fertilisation in *D. epomophora santfordi* may occur 9-13 days before egg laying, and Tickell & Pinder (1975) suggested that it occurs about 14 days before egg laying in *D. m. melanophrys* and *D. chrysostoma* on Bird Island.