A DIE-OFF OF SHAGS IN NORTH OTAGO

The opportunity to investigate an unusual mortality among wild birds does not come very often and it appears of interest to record briefly the results of such an investigation even when they are largely negative.

On approximately 20th May, 1957, at the time of the severe gales and exceptional rains which affected most of New Zealand, Mr. T. R. Welsh, of Moeraki, noticed a number of sick and dead shags on the beach near the Moeraki jetty.

The birds continued to die in unusual numbers for about three weeks and he estimated that during that period approximately 150 shags died in the half-mile of beach near the jetty. The majority of these were Spotted Shags *(Phalacrocorax punctatus)*, but there were also some Black Shags *(P. carbo)*.

On 1st June, after a telephone conversation with Mr. Welsh, the author visited Moeraki where a number of freshly dead and moribund Spotted Shags were picked up and also a sick juvenile Black Shag. On the return trip, various additional beaches were visited and it appeared that an excessive mortality among shags was occurring as far South as Shag Point, but forther South, although there were some dead shags of various species on the beaches, the numbers did not appear excessive considering the severe storms on the week-end May 17-20 and sick birds, unable to fly, were not seen. However, at this time, unusually large numbers of Spotted Shags were fishing in the Otago harbour right up to the wharves in Dunedin. At the end of August, Mr. Welsh stated that the number of Spotted Shags then on the jetty at Moeraki was far below the usual in previous years.

Post mortem examinations were made on the specimens collected. In all birds the respiratory passages, oesophagus and stomach were fully opened up and a large part of the intestine was also opened. All internal organs except the brain were examined in all birds. The brain was only examined in those most freshly dead, as it undergoes rapid post mortem degeneration.

No subcutaneous or abdominal fat was present in any bird and all birds seemed somewhat wasted, but without examination of a considerable series of normal birds of the same species taken at the same time of year it is not possible to state confidently that these were abnormal findings. One bird had a large organising thrombus lying over the liver, probably the late result of a shot gun wound from which he was recovering, but otherwise the only abnormalities were in the stomach where, except in the case of the Black Shag, the contents were numbers of parasitic nematodes varying from about 30 up to well over a hundred and small amounts of altered blood. In the Black Shag, fish bones were also present. The nematodes have not yet been identified and it appears likely that some of them belong to hitherto undescribed species. They are being examined by Mr. M. Gemmell. The lack of helminths in the intestines was as remarkable as the numbers in the stomach.

Despite the lack of any suggestion of bacterial, fungal or viral infection at post mortem, cultures were made from organs and intestinal contents. No fungi or viruses were isolated and none of the bacteria grown were of types known to be pathogenic.

DISCUSSION: The lack of evidence of infection at post-mortem together with the failure to isolate any likely disease-producing agent in an extensive series of cultures makes it unlikely that an epizootic was responsible for this die-off. The nematode infestation of the stomachs can hardly be regarded as sufficient alone to have caused these deaths and, further, it is not known whether the birds dying had a heavier infestation than the survivors and it is thought that the causation was probably complex.

The amount of feed for birds off the coast of Otago and Southland has been reported to have been very poor during the first half of 1957 and a very high mortality among juvenile mutton birds which has been reported by the mutton-birders has been attributed to this cause. It is probable that the shags were poorly fed when the severe gales of May 17-20 occurred and that during that time they were unable to feed. As a result of this period certain of the birds, possibly those carrying a heavy parasite load, may have been so weakened that they were unable to fish in the open sea and, therefore, died from starvation.

It is possible that the Otago peninsular was spared a similar die-off because the weakened birds were able to fish the sheltered waters of the harbour until they had recovered sufficient strngth to return to their usual feeding grounds.

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LETTER

Dear Sir,

I see the name "Dunnock" used for *Prunella modularis* in a recent number of your journal. I hope you will allow me to call your attention to the fact that this name for the Hedge Sparrow is not generally accepted by British Ornithologists. It does not appear, for example, in the Check List published in 1952. The name "Dunnock" is a local folk-name used in a very restricted area of England. The oldest accepted name, used by Chaucer, is "Haysuck" but Hedge Sparrow was used by Shakespeare and by all literary and scientific writers until the Editors of British Birds arbitrarily adopted "Dunnock" as a preferred alternative name a few years ago.

Yours sincerely,
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