MORTALITY OF KITTIWAKES DURING THE BREEDING SEASON

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In connection with the survey of winter wrecks of Kittiwakes (Rissa tridactyla) (see pp. 253-266) it is of interest to note that several instances of mass mortality have occurred in recent years during the weeks when the Kittiwakes are on the breeding cliffs.

In May and June 1955 there was a heavy mortality in a breeding colony near Pennan Bay, north Aberdeenshire. The birds were watched for some time turning over and over in the water and floating on their backs, and eventually some were washed up dead on the shore (Mrs. J. B. Cowdy, private communication). None of these corpses was examined, and the cause of death is a matter of conjecture. At about the same time 120 dead Kittiwakes were picked up on the shore at Stonehaven, south of Aberdeen, and investigation showed that those examined had died from a heavy infestation of Aspergillus fumigatus (A. Anderson, private communication). All the birds in both cases were adults.

In mid-May 1957 70-80 corpses of adult Kittiwakes were found on the East Lothian shore between Aberlady and Dunbar (R. W. J. Smith, private communication). 2 corpses were sent for examination at Lasswade Veterinary Laboratory, and it was reported that both birds were slightly underweight but that it was “impossible to give the cause of death”.

Evidence as to the cause of death is lacking in two of the instances, but at a time when the birds are crowded together on the breeding cliffs an epidemic could sweep through the colony in a way that would not be possible when the birds are widely dispersed over the winter feeding area. H. N. Southern (private communication) suggests that the habit of communal bathing in fresh-water lochs near the breeding cliffs may assist in the spread of disease.

All the birds concerned in the mass mortalities discussed so far were adults. The circumstances in the recorded cases of mass mortality of juveniles appear to be somewhat different.

Many juvenile Kittiwakes were found dead in August 1956 at Eynhallow in the Orkneys (A. Anderson). E. Balfour (private communication) counted 250 corpses, “all juveniles and the majority fully fledged”, in the vicinity of Marwick Head at this time. A similar mortality occurred in August 1957. One report stated that “thousands of corpses were found on the sandy shores of Westray and West Orkney”. E. Balfour visited Marwick Head on 7th August and found 280 corpses, all juveniles. In both
years the freshly dead bodies were "nothing but skin, bone and feathers". A third instance has been reported by G. T. Kay, who has written to say that there was a heavy mortality in Shetland about 25 years ago: many juveniles were found, on the shore of the loch of Clickimin; all, apparently, were in perfect condition, but none could fly, and when they were picked up they were found to be "literally skin and bones".

In each of these instances of juvenile mortality starvation appears to have been the cause of death. 11 corpses were examined at Lasswade in 1957 and it was found that in every case the crop and gizzard were empty and the intestinal contents practically nil. All the internal organs had atrophied. One bird had aspergillosis affecting the right abdominal air sac, but none of the others showed any signs of specific diseases; the bacterial examination was negative and internal parasites were not present in significant numbers. The heaviest of these birds weighed 249 gm., the lightest 177 gm., and the average weight was 216 gm. The results of this examination strongly suggest that the birds died of starvation, and this idea is supported by the fact that the juveniles which were rescued at the time of the Shetland wreck recovered after a few days' feeding.

The suggestion has been made by the Lasswade Laboratory that as all the other sea birds in the area remained healthy, and as there was no evidence of disease in the older Kittiwakes, the only possible reason for death would be starvation brought about by a larger than usual hatch of Kittiwakes or by a failure in the normal food supply.

There are no records of mortalities on a similar scale at the Kittiwake colonies on the Durham coast and on the Farne Islands, which have been intensively studied by J. C. Coulson and E. White and by E. Cullen respectively. Cullen (1957) has shown that food may, to a certain extent, limit the number of young raised: there is asynchronous hatching and a definite peck-order is quickly established among the chicks. But food shortage as a controlling factor would presumably only operate during the period prior to fledging, when the parents are still feeding the young, and not after the juvenile plumage has been acquired and the young are able to feed themselves.

In the present state of our knowledge it is difficult to say more about the cause, meaning or possible effect of these breeding season mortalities, whether affecting adults or juveniles, but it will be interesting to watch for similar occurrences during future breeding seasons, and to see whether they can be correlated with any factors which control the population of Kittiwakes and their food supply.

REFERENCE