

Poisoning of Dark-bellied Brent Geese in Essex, February 1979

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The Colne Estuary in Essex holds wintering Dark-bellied Brent Geese *Branta bernicla bernicla* from November to March. During the winter of 1978–1979 the numbers peaked at 2,500 geese which, by early January, were feeding inland. Severe weather in January and early February, with periods of snow cover, reduced the amount of food available. In an attempt to provide alternative food, naturalists and wildfowlers placed wheat, peas and various other seeds, obtained from local farms, on the saltmarsh, particularly on the National Nature Reserve at Colne Point.

On 22 February some 300 Brent Geese were found dead on the saltmarsh at Colne Point. The bodies were scattered over two kilometres but the majority were within 200 metres. It is probable that the geese died in the estuary and were drifted in by the high tide on 14 February. A heavy snow fall on 15 February prevented the bodies being discovered until the thaw on the 22 February.

Specimens examined at the Veterinary Investigation Centre, Cambridge, were found to be in fair condition with fat deposits. There was no evidence of disease or trauma and the gizzards contained substantial amounts of fresh grain, beans and some grass, but little or no soil. Tissues were sent to the Tolworth Laboratory of the Agricultural Science Service, where measurements indicated that many of the casualties had no detectable brain esterase activity, suggesting that an esterase-inhibiting toxic chemical might be involved. Chemical analysis revealed residues of up to 200 ppm (calculated on a wet weight basis) of carbophenothion on the grain from the gizzards, and it was also detected in liver, kidney, brain, muscle and fat. This organophosphate insecticide is used on wheat seed to prevent damage by the wheat bulb fly *Delia coarctata*. It is acutely toxic to vertebrates and the laboratory results con-

firmed that the Brent Geese died from carbophenothion poisoning.

The use of carbophenothion as a wheat seed treatment has led to the death of large numbers of wintering Greylag *Anser anser* and Pink-footed Geese *A. brachyrhynchus* particularly in Scotland (Bailey *et al.* 1972; Hamilton & Stanley 1975; Stanley & Bunyan 1979). These grey geese died after consuming grain collected either from the surface of newly drilled fields or by uprooting germinating wheat under wet soil conditions. Carbophenothion has been withdrawn from use as a wheat seed treatment in Scotland due to the unacceptable hazard to wintering geese. The Brent Geese poisoning incident is novel in that the geese appear to have consumed treated grain provided for them, not sown. No drilling of winter wheat had occurred in the area for many weeks and the clean condition of the grain in the birds confirmed that it had not be sown. It seems possible that treated grain was accidentally included in the grain and other seeds distributed on the saltmarsh during the severe weather. This is the first recorded case of wild Dark-bellied Brent Geese consuming grain, previous attempts in Essex to feed them with grain having failed.

If the Brent Geese wintering in Essex adapt to feeding on surface grain on newly drilled fields then they will become an increasing nuisance to local farmers and will be at risk due to the use of insecticide-treated wheat seed. Therefore, the adoption of this food supply by the Brent Geese should not be encouraged by the artificial feeding of grain on reserves.

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References in brief

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