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POLLUTION

Guillemots and PCBs

The accusing finger which pointed towards environmental pollutants as the cause of death of thousands of seabirds in the Irish Sea during the autumn of 1969 may have been a little premature, but it seems that at least one enlightened manufacturer is taking no chances.

Although records of "wrecks", particularly of the larger auks, go back to the middle of last century, long before pollution could be incriminated, none has been so devastating as the Irish Sea disaster which claimed at least 12,000 birds, mostly guillemots (*Nature*, **224**, 300, 402; 1969).

With a commendable sense of urgency, the Natural Environment Research Council stepped in to coordinate what has proved to be perhaps the most extensive and concentrated investigation of an incident of this kind yet undertaken. The work culminated in a report and supplement edited by Dr M. W. Holdgate, who at the time of the investigation was Deputy Director (Research) of the Nature Conservancy. This report is summarized in a booklet published by the NERC last week (NERC Publication Series C No. 4).

Nearly all the birds were suffering from malnutrition. The breast muscles were atrophied, and subcutaneous fat had been completely mobilized, but the most interesting and controversial finding was of unusually high concentrations of polychlorinated biphenyls (PCBs) in the livers of the majority of the birds, concentrations much higher than had previously been detected in land or fresh water animals. Whether the lesions in the liver caused by the PCBs were sufficient to cause the death of the birds remains conjecture, but is unlikely. Analysis of the livers of apparently healthy birds shot in the area after the disaster demonstrated similarly high PCB concentrations. It is of great interest, however, to discover that PCBs, which are lipid soluble and normally dispersed throughout subcutaneous and other fat reserves, become concentrated in the liver when this fat is mobilized during periods of undernourishment, and although not a primary cause of the Irish Sea "wreck" may have been a contributory factor to the lowering of resistance of a large number of birds already weakened by the stresses of the moult. What initiated their undernourishment remains unknown, but the cause could have been a natural disaster, possibly an undetected failure of the food supply or a disease-initiated interruption of their normal feeding habits.

It seems that several different factors in combination were responsible for the disaster. If this is the case, then pollutants could be more insidious than the lethal dose figures would have us believe, for even in relatively low concentrations, they may be sufficient to tip the scale of the balance between life and death of an animal already under some form of natural stress.

For those who will look on this report as merely perpetuating the use of PCBs as the latest in a chain of toxic scapegoats, a recent announcement by Monsanto Chemicals Ltd, the sole manufacturers in Britain and the USA, should cause them to question their philosophy. Without any announcement, or, it seems, documented justification, Monsanto have placed heavy restrictions on the sale of PCBs in Britain, following a similar restriction imposed on US sales several months ago. Their Newport factory is also to significantly reduce production of these persistent and highly toxic industrial chemicals.

Note to receipients: Nature was one of the first publications to carry a popular version of the PCB issue.

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