This is intended partly as a piece of nostalgic reminiscence, but more especially as a warning of the constant pressure that is being exerted on wildfowl habitat throughout North-West Europe. It is the story of how, during the past five years, a big drainage scheme on the marshes of the lower Ems has robbed many thousands of ducks and geese of one of their main wintering grounds in western Germany, and thereby upset a tradition of many seasons standing. What the final repercussions will be, it is still too early to say, but for a population of this size alternative resorts must become increasingly difficult to find.

To many people, who served in B.A.O.R. during the first ten years after the war, the Emsland will already be well known as the scene of numerous forays. They at least will have no difficulty in appreciating the great changes that have taken place, but for others, who missed this chance of seeing the area in its heyday, a map and a short description may help to give some idea of what has been lost.

The things that one remembers most about the Emsland are perhaps the sense of space, the soft sadness of the grey-green landscape, and always in the background the long rampart of the dyke which confined the river and its tributaries along the whole of their lower course. The only landmarks were an occasional spire or line of poplars by a distant road, and the red-brown bulk of the great Friesian barns, nestling in their clumps of trees at the marsh's edge. Otherwise there was nothing but watermeadow, stretching out for as much as three miles from the line of the dyke, and broken only by the cut of a drainage ditch every few yards. Then, almost overnight, the scene would change, and vast stretches would be under water for many weeks on end.
Altogether the area liable to flooding amounted to more than 50,000 acres, stretching northward from Papenburg along the east bank of the Ems to Leer, and then eastwards again on either side of the Leda and Jümme for another dozen miles to Detern and Barsselermoor. Besides this a further 2500 acres lay somewhat to the south in the neighbourhood of Aschendorf, and formed part of the same complex. Not all of this would necessarily be flooded at the same time, but as the waters ebbed on one marsh they would increase on another, and continue in this fashion from early November until late March.

This rotational flooding made the district extremely attractive to wildfowl. As each marsh in turn became lightly covered, it provided a perfect feeding ground, drawing birds in from a wide area; then as the depth increased, the floods became a secure roost, unapproachable on foot by reason of the hidden ditches; finally, when the level fell again, the place would be deserted in favour of another marsh where the cycle was just beginning. So it went on, until in due course frost drove the birds away, usually sometime in the New Year.

Had it not been for this concentration of the main flocks into a succession of comparatively small areas, covering a few thousand acres, any estimate of the numbers that used to occur would be virtually impossible. As it was, a fairly regular pattern emerged, at any rate for the geese. By far the commonest were the Whitefronts, which started to assemble towards the end of October, and reached their full strength of up to 10,000 by mid-November. A few weeks earlier many of these had probably been on the coastal marshes of the Elbe, where the main influx in October was by now waning, and similarly when the weather hardened, a large proportion almost certainly moved on to southern England and the marshes of the Severn estuary. In the latter case not only did the fluctuation in numbers agree but there were also some recoveries of Slimbridge ringed birds to confirm the link between the two. The Emsland marshes were thus exclusively an early winter resort, but during the eight or ten weeks that the geese were present in force, the flocks may well have amounted to half of all the Russian-bred Whitefronts coming to North-West Europe. Now that the floods no longer occur, the geese have left the district completely, although to the west of the Ems a couple of thousand are still said to roost on the tidal basin of the Dollart, and to feed in the fields around Marienchor. Except for these remnants the main body seems to have shifted westwards into Holland, where there has been a marked increase in the autumn and early winter of recent years. So far there has been no sign of big numbers coming straight through to England at this time.

Besides the Whitefronts some quite large flocks of Pinkfeet appeared each year, presumably of Spitzbergen origin. Dr. Klimmek of Leer considers that at times they must have comprised about a quarter of all the geese present, a total of, say, 2-3000, but from my own notes the largest flock was one of 500. They tended, however, to be overlooked amongst the great mass of Whitefronts, and only became obvious during hard weather, when they stayed on longer than the other species. A few Bean Geese also occurred regularly, but the numbers were always small, probably less than a hundred altogether. A favourite resort was on the Tunxdorf marshes, near Aschendorf, which were more broken by hedges and clumps of willow than the others to the
north. Other species were virtually unrecorded, except for a few unconfirmed reports of Greylags in October.

The behaviour of the flocks of geese varied from day to day, being governed almost entirely by the extent and distribution of the floods. Under normal conditions flighting was limited to short local movements between one marsh and another, but on occasion the same area of floodwater would afford both roost and feeding ground, and the geese would stay there without moving for several days at a time. On the other hand, if disturbance became too much for them, or if a suitable inland roost was lacking, they would flight out to the mudflats of the Dollart, some 15 miles to the northwest. There was even evidence of a flight to and from another coastal roost on the Jade Basin, more than three times as far to the northeast. On the Ammersum marshes, near Detern, skeins were several times seen to arrive from that direction at least an hour after all local movement had ceased, whilst on the Jade itself it was sometimes found that the numbers on the roost in no way tallied with those on the local feeding grounds. On these occasions Harrison (Pastures New: 1954) noticed that the flocks observed in the evening were often much smaller than those flighting out next morning, from which he deduced that some birds must be travelling much further afield, and not returning until long after dark. In view of these long flights it is rather surprising that the geese should have deserted the Emsland marshes so completely, and yet continue to feed on the fields to the west of the river, which are also dry.

Detailed estimates of the number of ducks on the floodwater were not possible owing to the wide distribution of the flocks over both the shallow and deeper water. The population was also much less stable, due partly to the constant flow of migrants, and partly to the purely local effects of weather and tide. At times, however, there is no doubt that the peak numbers ran to many thousands, with Mallard, Teal, Wigeon, Pintail and Shoveler all represented in strength.

The river itself, although tidal for more than thirty miles above Emden, was not much used by ducks; for the stream, which was swift and closely confined between its dykes, formed a busy thoroughfare for the barge traffic to and from the Rühr. In several places, however, meanders had been replaced by canals, and the old channel left to silt up. Most of these ox-bows were on the upper reaches above the limit of tidal water, and were used mainly by Mallard in rather small numbers, but lower down near Tunxdorf and Weener there were two large loops, nearly a mile long, that were fully tidal. These were favourite resorts, particularly for Teal, and were always the main centre for ducks in the early part of the season, serving equally well as a roost and a feeding ground. During August and September both Mallard and Teal usually numbered several hundred, but in the first week of October the Teal were reinforced by a tremendous temporary influx, often accompanied by a marked passage of Wigeon, Pintail and Shoveler. Thereafter all five species were normally present, although as the winter advanced the number of Shovelers decreased steadily. In their day both of these two places were capable of carrying 2-3000 birds, but now only the Tunxdorf loop remains; at Weener a new dyke has been built across the entrance, and without the scour of the tide, the open water is rapidly disappearing under a tangle of reed-beds.
Another feature of the Emsland floods were the great herds of Bewick's Swans which were present from early November until the first prolonged frosts. During this time the normal population was probably 3-400, but on one occasion, at the onset of hard weather in January 1949, Colonel Kingsford-Lethbridge saw nearly a thousand in one skein moving high to the southwest. In their case the effect of the drainage seems to have been less drastic than with the geese, for in the past few years quite large numbers have taken to using the Tunxdorf loop of the river. At the end of October 1960 well over 50 were there, and the farmer expected many more to arrive in the course of the next few weeks. Whoopers on the other hand were always rare in this part, although on the Elbe they were by far the commonest swan, often numbering several hundred.

Finally, some mention should be made of the common waders which at times well outnumbered all the ducks and geese. In August and September Snipe were unusually plentiful, especially at Tunxdorf where it was quite common to see a flight lasting upwards of an hour with wisps of ten and twenty moving out one after the other from the meadows to the edge of the falling tide. Later on, when the floods were out, huge stands of Green Plover were the normal background to almost every marsh, and on some of them Golden Plover at times seemed nearly as numerous. What their total number may have been is beyond my power of estimation.

Such was the annual pattern of events in the Emsland before the drainage scheme came into effect in 1956. Up to that time the farmers regarded the flooding as a necessary evil, forced upon them by the dictates of wind, weather and tide; when the river water coming down was met by a spring tide, backed up perhaps by a north-westerly gale, there was no option but to relieve the pressure on the dykes by opening the floodgates. Once this was done, the pumping system was quite inadequate, and the only means of clearing the water was by careful manipulation of the sluices at each ebb tide. There was not even the consolation that the land was being enriched by silt; for in the Leda and Jümme at any rate the water came straight from the peat moors a mile or two upstream, and was intensely acid.

The problem was not so much to get rid of the river water, as to prevent the big tides from backing up along the lower reaches to such an extent that they threatened the dykes. One solution, adopted on the Ems itself, was to raise and strengthen the defences along the whole length of the tideway, but this was a tremendous task, and on the Leda-Jümme it proved easier to build a huge sluice across the river at the point where it joins the main stream at Leer. Now when the tide reaches a certain level the flood gates are lowered, preventing any further flow upstream, and at the same time the river water coming down is diverted into an embanked basin of some 250 acres, where it is held until the ebb. Coupled with this main scheme there has also been a general improvement of the surface drainage on the marshes, by means of new cuts and additional pumping stations.

Once the threat of any further flooding was removed for all time, the countryside immediately took on a new air of prosperity. Now wherever one goes there are signs of recent activity; many of the old mud tracks are freshly metalled; new roads cut straight across the centre of some of the larger marshes; and new houses and barns are springing up by the side of them. Furthermore the drift of labour away from the land is being met
increasingly by mechanisation, and in at least one part the farmer talks of changing over from dairy to arable in the course of the next ten years. So far the best example of what has been achieved is perhaps on the Jümmiger Hammerich, that long cul-de-sac of land tucked away between the Leda and the Jümme, and covering more than 4000 acres. At one time its inner fastnesses were approachable only by the muddiest of tracks or by ferry over the river; now a bridge spans the Jümme at Amdorf, a new road leads through to Stickhausen, and the whole area is wide open to development.

So far as wildfowl are concerned the effect of all this has been disastrous; not only are the geese now gone completely, but the numbers of all other species are enormously reduced. In the absence of any sizeable area of standing water, the only habitat suitable for a large gathering of ducks is on the Tunxdorf loop of the Ems, and even there the amenities are somewhat spoiled by the drainage of the adjoining meadows. Elsewhere the population is limited to scattered pairs of Mallard in the ditches, and to a few small parties of Teal and Wigeon on various ponds and marshy corners. Another aspect is the great reduction in the number of nesting birds, both ducks and waders. The best season ever was perhaps in 1945 when vast areas were deliberately kept under water until well into June, but even in a normal season most marshes remained wet enough to support a large and varied population. Dr. Klimmek recalls that the Jümmiger Hammerich, in particular, was a favourite resort of Mallard, Lapwing, Black-tailed Godwit and many other species; so much so that on one occasion when he drove down the track from Stickhausen to Amdorf he had constantly to halt and allow their broods to cross his path. Now, he says, one can drive the whole length of the new road and never see a single family.

Not all the farmers were best pleased by the reclamation work; for many of them were ardent wildfowlers and bitterly resented the loss of their shooting. In fact some of them, in one last despairing gesture, went so far as to open the sluice-gates, reflooding some 2000 acres of meadow between Loga and Nortmoor. This was in 1957, in the second season after the floods were stopped. The results, however, were disappointing; for although large numbers of ducks appeared almost at once, the geese made no attempt to return.

So much then for the Emsland, which is now finished as a wildfowl resort. In terms of human benefit, the new project has doubtless been worthwhile, and one can only regret that the wildfowl had to suffer as a result. But a word of warning: this is not just an isolated example; it is typical of a trend that is gaining momentum in every country of Europe. Wildfowl conservation is no longer just a matter of protecting this or that species, it demands the husbanding of every acre of habitat that still remains, and above all the waging of a constant battle against ignorant waste of this most valuable resource.