

A careful study of these flocks was made and detailed counts of families and immature birds were recorded. For instance, when there were 2,000 geese on the marsh it was found that 520 were young birds of the year—26 per cent. The average size of family appeared to be 3.6, which meant that 144 families were present. If both parents still survived, as in most cases they seemed to have done, only 288 of the 1,480 adults were accounted for. The remaining 1,192 were either non-breeding birds or had lost all their young.

Supposing this to be an average season with 520 grown young, then the flocks should contain 520 1946 birds and 520 1945 birds, less losses. As geese do not breed till they are three years old these 1,040 birds (less losses) would form the bulk of the 1,192. The remainder are presumably barren pairs or pairs which have lost all young. Of course, this may not have been an average season, and in any event it probably differed in its breeding results from 1945 and 1946.

These and many other similar figures are not of very much use by themselves, but over a period of years might lead to most interesting conclusions. The addition of ringing on a large scale which it is hoped to develop at the New Grounds will greatly increase our understanding of the influences governing the annual fluctuations in numbers and the general decline amongst most species of wildfowl.

THE ROCKET NET

One of the objects of the Trust as laid down in the Rules is "the ringing of the wild geese on the marshes."

Although this Report is primarily concerned with the activities of the Trust during the year 1947, it seems that such an important development as the first attempt with the Trust's new rocket nets for ringing the wild geese should be included although it took place early in 1948, so that Members can be informed of the latest developments at the New Grounds. The following account of the first trial has therefore been prepared by the Director. It proved that great possibilities lie ahead in the field of ringing wild geese.

Preparation

We have never been able to settle who thought of it first.¹ We had tried, with only moderate success, to catch geese with a net propelled by springs. We had found that the springs did not propel it far enough. We thought that rockets would propel it farther. And so during the summer we approached the old-established firm of Messrs. Schermuly Brothers, the inventors of the Schermuly Pistol Rocket Apparatus for saving life at sea. The nets, of various sizes, some made of flax and some of cotton, were netted to order, some by another old-established firm, Messrs. Gassons of Rye, and some by Mr. Baines, an elderly net-maker who has for many years made all the nets for Borough Fen Decoy.

On a sunny summer day the first tests were carried out in a grassy meadow at the proofing grounds of Messrs. Schermuly Brothers at Newdigate in Sussex, and we found that a net could be thrown to cover an area of 25 yards square. We found also that if any grass or thistles got into the net, it would not throw nearly so well; and this turned out to be our most serious problem. But, all the same, if the net could be carefully furled in a suitable place frequented by the geese, and the rockets, satisfactorily hidden, could be fired electrically with a length of flex leading to a hide, we believed that we had some chance of success.

When the first opportunity came to try the net in practice, the winter flock of Whitefronts on the estuary was smaller than usual. Only about 1,300 geese

¹The Director and our Council Member Mr. James Robertson Justice have both staked claims for their inventive genius. The idea seems to have had its origin during the war years; perhaps two simultaneous origins.

were feeding in the area, most of them in the wheat fields lying to the east and north-east of the Dumbles.

On the morning before the attempt, the Assistant Curator, Miss Eunice Overend, and I, watched the morning flight from the top of a straw stack. The geese went into a group of small fields (not more than 15 acres) and we felt that there was a good chance for the net if it were set in one of these. After lunch, one of our Members—Mr. Keith Shackleton, the distinguished bird painter—arrived with Mr. Harris, a staff photographer from *Country Life*, and the youngest of the Schermuly brothers, Mr. A. J. Schermuly. During the afternoon the net, which had previously and repeatedly been dyed in order to get the right colour to match the grass or young wheat, was thrown a couple of times experimentally. On each occasion a very indifferent throw was achieved owing to the stalks and stems of the coarse grass in which we had set it. Whereas in the summer the little 1-lb. rockets had pulled it over the full 25 yards, on neither of these throws was more than ten yards of the centre of the net carried over, and scarcely more than half the "catching area" was covered.

Later in the afternoon we made a reconnaissance of the feeding grounds. The geese were no longer to be found in the three small fields into which they had flown at dawn, but we came upon them at last much farther away round the edges of a 100-acre field at the Frampton end of the New Grounds. Here, however, the wheat in the centre of the field had been grazed almost bare, and the geese had congregated in a thick swathe along two edges of the field. One of these edges was formed by a barbed-wire fence, and the other by a shallow creek or "flash," no more than a few yards wide. Along the top of the slope leading up from the flash the geese were sitting most thickly; indeed, we could not remember to have seen Whitefronts more tightly packed.

We flushed them gently from the field, and walked over to examine the area and select the most suitable spot on which to set the net in the darkness before the morrow's dawn. In view of the north wind we thought that it should lie along the drills of the wheat at the edge of the field where the shoots were longer because the geese had not grazed there so much. We then explored the nearest available cover, which was an old disused sea-wall some 100 yards away across the flash and beside the continuation of the fence. All this decided, we returned in the dusk, feeling that our chances were reasonably good if only the geese would come again to the area in which we had last seen them.

That night great preparations were made. Mr. Schermuly overhauled his wiring; Mr. Harris checked a telephoto lens; and the rest of us made lists of the objects which must on no account be forgotten on the morrow—the net, the rockets, the cartridges, the battery, a pressure hurricane lamp and torches for setting the net in the dark, the rings for ringing, pliers for crimping on the rings, a pencil and notebook for writing down their numbers, sacks for setting up on sticks in the small fields in which we did not want the geese to alight, the portable hide, spare string for an emergency, sandwiches and a spade. Someone said it would be useful to have a "nice little ferreting spade," but in the absence of such a specialised tool we substituted a spade (although it appeared on the list as "spade, N.L.F.").

The Great Day

We rose at four next morning and set off in two parties, one by car with the heavy gear to go round to the Frampton Bridge, which was less than half a mile from the selected spot, the other to walk the mile and a half, planting the "scare geese" in the small fields on the way. After arriving by car at the bridge, I was not very familiar with the exact route to our part of the 100-acre, so with our various hurricane lamps and torches we started on the right bearing by the stars. This led us across a number of awkward ditches, but they were successfully negotiated, and soon after 5.15 a.m. we joined the other party on

the old sea-wall, and went out together, all seven of us, like a party of smugglers or body-snatchers, across the flash at its lowest crossable point, and down the edge of the wheat to the corner of the fence. There we laid out all the equipment we had brought in a small heap so that nothing should be overlooked and be left to frighten the geese when daylight came.

The patch we had chosen for the net was about ten yards from the fence, and, like the rest of the field, it was covered with small lumps of clay which were frozen solid. We found, as we laid out the net, that the meshes caught frequently on these little lumps and were held firm and immovable. The chances that it would fly out freely, however carefully we folded it, seemed very small. But, having risen at four, and being on the spot, we felt that we could not do more than lay it carefully and hope for the best. So we laid it out carefully, seven of us in a row, with the Tilly lamp hanging on the handle of the "nice little ferreting spade."

As soon as the net had been furled the party divided and some went off to fetch the portable hide which had been left beside the car. Three of us stayed behind to set out the rockets and lay the firing wires. It was getting late. Already the eastern sky was bright and we knew that we had a bare twenty minutes before the arrival of the geese. We stretched out the wire and then our rocket expert decided that he must fire a couple of cartridges in order to make sure that the wiring circuit was correct. The powder was removed from the cartridges and they were set up in the pistols; then we set off to run round the head of the flash to the end of the remote-control, near the place selected for the hide. We were in a hurry and we turned to cross the flash too soon. I had high waders and could cross it anywhere but my companion stumbled and filled one boot. We hustled to the end of the flex, found that it would not go into the terminal on the battery without paring away the insulation, and in trying to do this in the dark Mr. Schermuly cut the ball of his thumb badly. But eventually the job was done, the contact was made, and two little sparks of light flashed at each end of the net. The circuit was correct, all that remained was to set up the rockets in place of the trial cartridges. Back we rushed round the head of the flash again, crossing this time a little farther up. The rockets were slid into their pistols, the head string of the net was attached. Grass was strewn over the heads of the rockets and plucked wheat shoots were strewn over the grass. Twenty yards ahead of the net, five yards less than the net should, in theory, be able to throw, I made two tiny cairns of lumps of frozen clay, one opposite each end of the net. These were to be the markers, to show when the geese were within the "catching area." With a last glance at the net, which looked painfully visible even in that early morning light, we collected together the spare equipment and started back once again round the head of the flash. As we walked along it we could hear the first geese coming and I extinguished the two hurricane lamps. The geese were heading for the small fields and it was still almost too dark for them to see the sacks on their sticks. When we got back to the old sea-wall we found that the rest of the party had just finished erecting the portable hide. The flex, however, had not been laid the full distance and the roll of it still lay 20 yards away along the barbed-wire fence. At this critical stage a large skein of geese came up to the field and looked as if it would settle. But by great good luck, the geese swept back to circle yet again over the small fields, and while they did it I rushed down and collected the coil of flex, spreading it as I returned. It reached the portable hide with exactly two feet to spare and was laid under one corner to the battery (an ordinary high-tension dry battery taken from a wireless set). We went to collect grass with which to decorate the hide, and the party was split up when the geese returned. Five of us¹ flopped

¹ Miss Peggy Cameron—S.W.T. Warden.
Mr. Keith Shackleton—a Member.
Mr. A. J. Schermuly—Rocket Expert.
Mr. C. R. E. Harris—*Country Life* Photographer.
Mr. Peter Scott—S.W.T. Director.

down into the three-sided square of wire netting and barrage balloon fabric while the other two¹ hid themselves in the ditch about 50 yards away.

An Advancing Phalanx

About 300 geese came straight for the 100-acre and settled in the middle of the bare part of the wheat field. This was excellent, we thought, for they were directly down-wind of our net and seemed likely in a few hours to feed up to it. Meanwhile more geese came slipping in over the belt of trees in the background—skein after skein in an almost unbroken stream. They came with great confidence, flying low and setting their wings as soon as they reached the edge of the field. By the time that the sun rose, oval and orange red behind us, there were over a thousand geese feeding in a tight pack in front. Then came a startling development. A family party of geese rose from the great crowd and flew low towards the corner of the field—our corner. They settled about 40 yards in front of the net. They were followed by others, until a regular flight began. Bunch after bunch swept in and pitched in the ever-thickening crowd in front of our net. So far everything had gone unbelievably right. For the next hour we lay breathlessly in the hide as the phalanx of geese advanced into the “catching area.” They were ten yards from the little clay cairns—five yards—two yards—passing between them, and then the cairns were swallowed up in the milling crowd of geese which advanced still closer to the net. Was all in readiness? The wireless battery, the leads—the leads, where were they? They were nowhere to be seen. Two feet of the end of the flex had been pulled under the edge of the hide in that hurried last minute but it was not there now. We peered out through the observation slit in the front of the hide. The black shiny insulated wire led towards us, but just outside the hide it turned off at right angles. While we had been camouflaging the hide someone must have kicked away the end of the lead; it was outside the hide, on the same side of it as the geese. What were we to do? Slowly and dexterously we lifted a corner of the hide and reached out towards the lead. My fingers closed over grass stems, over a bramble, but not over the missing flex. One of my companions squinted down through the observation slit. “Another four inches and you’ll reach it.” At last I felt the flex and pulled it into the hide. The crisis was over, and the geese were another five yards closer to the net.

The slit in the hide was at a very awkward height, so that one could only use glasses through it by supporting oneself on the other arm, and then only for short periods. During one of these quick looks, however, I noticed a Pinkfoot, no doubt one of the three young birds which we have observed scattered among the Whitefronts all through the winter. As usual he was at the edge of the flock and in the forefront of those which crowded on towards the net.

Now or Never

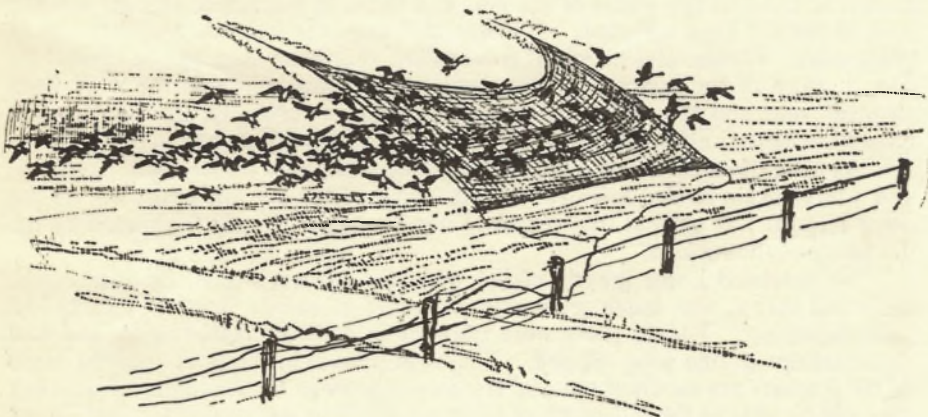
Now was the critical time. At what distance would the geese first see and keep away from the net? Would they turn about and walk quickly away from it once they had detected its presence? We watched anxiously. A feature of the advance of a flock of wild geese when feeding is that from time to time the more powerful and influential geese drive others away from them; and so the leading edge of the flock keeps bulging where a bird or a family has run a few paces forward at the close approach of a quarrelsome gander. At length there came a time when the fugitive birds would no longer run forward. If pursued they turned and threaded their way back through the flock. They would not come nearer to the net than about four yards from it. The crowd in the “catching area” could not get any thicker. It had reached saturation point.

¹ Miss Eunice Overend—Assistant Curator.

Miss P. Talbot-Ponsonby—Assistant Secretary.

It was now or never. Mr. Harris got ready with his camera and Mr. Schermuly with the ends of his flex.

"All right, let her go!" The circuit was made and the rockets fired; simultaneously the whole flock of 1,300 geese rose into the air with the combined roar of wings and of voices. We all jumped up to watch. As the cloud rose we could see that a small patch of flapping geese remained on the wheat field. We had made a catch. I set off to run towards the net, straight down by the fence to ford the flash with my high boots on, whilst the rest came round by the shallower crossing farther up. I think the geese were more alarmed by the sudden appearance of seven people careering across the field in scattered formation than they were by the discharge of the rockets themselves, and on any future occasion we have planned to remain hidden until the uncaught birds are well clear.



As I came to the net I made a quick count, 32 geese. We had succeeded. We had made the first great catch of geese alive for ringing. It was a satisfying moment. Then began the laborious task of extricating the birds from the net. Almost before we had started one bird, however, extricated itself and flew off. But we lost no more. The Assistant Curator, armed with rings and pliers, and the Assistant Secretary, with notebook and pencil, started at one end of the net and ringed half the birds. Mr. Schermuly and I started at the other end putting the extricated birds into the sacks we had brought for those birds required for the collection, and Keith Shackleton and Peggy Cameron started to disentangle the ringed ones. Mr. Harris hovered round taking photographs. About the third bird at our end of the net turned out to be the Pinkfoot which we had seen advancing into the "catching area." Although he was at the end which was being kept for the collection, we had no need of more Pinkfeet and so he was ringed and released. Some of the birds were released one by one, but sometimes they were released in couples, which we thought to be the better way, as the two then flew off together. Fairly soon it became apparent that many of them could not be extricated from the net without cutting some of the meshes. It was astonishing to what extent the birds had become taffelled up in so short a time. It was astonishing, too, how docile and resigned the geese seemed to be, and how little they struggled while being extricated. One old gander was full of spirit and continuously pecked my knee while I was disentangling his neighbour and finally himself. We ringed several young birds including a family of five with their parents, but we made an error in not recording the breast markings of the adult birds we ringed. In this way it would have been possible to have known the ring numbers had we seen the birds later, and to have identified each without the necessity of recapturing it, for the

Whitefronts' black bars are, like finger prints, of different pattern in each individual adult.

We had pulled the net at 8.40 a.m. and it was half-past nine by the time we had finished. Of our 31 geese, 15 Whitefronts and one Pinkfoot had been ringed and released at once, and 15 other Whitefronts had been put into the sacks for transporting to the pens. As soon as the work was completed we made a careful survey of the way in which the net had thrown. As on the previous evening, the rocket corner had gone over much farther than the centre of the net. In the middle, however, more than half of its 25 yards stretch still remained neatly furled as we had laid it before dawn. Fourteen yards of net still lay in a heap and only eleven yards had gone forward to catch our 31 geese. Had the throw been perfect at least twice that number would surely have been caught. But another snag had appeared. All the geese seemed to have been caught in the first few yards of the net, and those in the centre seemed to have pushed the net back up wind. It seems that however free one may become of grass stems, thistles, and lumps of frozen clay, the throw may yet be spoiled by one or more of the quarry. We are inclined to think that had the wind been stronger, and had the rockets been set to fire more vertically, the result might have been better, although as it was we were far from disappointed.

As we walked back to the hide some of the geese were returning to the fields, and a large skein circled low over the 100-acre. They did not settle, but on the other hand it was evident that they had not been disastrously frightened by the discharge of the rockets.

We returned home greatly elated with our success which, in spite of the net's bad throw, was much greater than any of us in our heart of hearts had been expecting. The 15 geese were released from their bags, ringed, and had the primaries of one wing clipped. They will remain in the pens until the stubs of the feathers are moulted out and fresh ones grow in the autumn. Thereafter they will be able to fly, but many of them are likely to stay and make their home with the Trust's collection in the paddocks round the decoy.

Soon after midday the main lot of the geese were feeding on the Dumbles at the Purton end, and we went to look them over. A new game had been discovered—hunting the rings—and already at the first glance we were able to pick up four of the birds we had had in our hands only a few hours before. Since that day it has been possible on all occasions to find one or two of the ringed 16, with the numbered and addressed aluminium ring on their right leg often shining brightly in the sun. On one occasion a bird was so close (about six yards) that with the binoculars focused right down we could read the number on the ring.

That is the story of our first attempt with the rocket net. It is only the beginning, but it may well lead to a new understanding of the migration of wild geese. Some may feel that this method could become a danger to the birds if it were attempted by irresponsible people catching for the markets. I do not believe this danger exists. The technical difficulties, the complicated equipment, the number of people required to set out the net, the great expense—all these are features of an attempt to catch geese *alive*, but unnecessary when taking geese for market. A fowler would be far better advised to set out a punt gun than a rocket net if he needed wild geese for the poulterer's shop. The idea of a hidden punt gun for wildfowl is nothing new. It is a method much practised in France, but in this country it has been largely discouraged by public opinion and the national conception of sportsmanship. It does not constitute a danger to our wildfowl and it is a vastly simpler and more efficient way of taking geese—unless your object is specifically to take them alive. It seems unlikely, therefore, that the rocket net will be exploited. Meanwhile, for ringing it is a modern method which may show us how best to help our European wildfowl in their struggle for existence in the modern world.