gms respectively per bird per trial period. In the last two weeks the Mallard took on average 13·3 gms per bird per test period, and 7·9 per cent during the fifth week and only 3·1 per cent during the sixth week was of the grain treated with Morkit.

Discussion

It appears from these few experiments that Morkit, even at low concentrations, will repel ducks that are not particularly hungry. What it is that the birds dislike about anthraquinone is uncertain. To humans it is tasteless, though producing a rather odd sensation in the mouth as an after effect. It must be pointed out that caged birds normally prefer uncontaminated food with which they are familiar whatever the contaminant (Neff *et al.*, 1957), and a true repellent must satisfy two paramount requirements: it must repel even hungry birds, while not being toxic to plants nor harmful to structures (Duncan, Wright and Ridpath, 1960). With wildfowl, however, the problem is often not to remove the birds altogether but to persuade them to feed in places where the damage they can do is negligible. Subsequent, more important trials will assess the value of anthraquinone when sprayed on to selected areas of grass in an effort to control the grazing of geese and swans.

References

DUNCAN, C. J. 1963. The response of the feral pigeon when offered the active ingredients of commercial repellents in solution. *Ann. appl. Biol.* 51: 127–134.

DUNCAN, C. J., E. N. WRIGHT and M. G. RIDPATH. 1960. A review of the search for bird-repellent substances in Great Britain. *Annales des Epiphyties*, No. hors serie: 205–212.

KEAR, J. 1963. The protection of crops from damage by wildfowl. *Wildfowl Trust 14th Ann. Report*: 66–71.

NEFF, J. A. and B. MEANLEY. 1956. Research on bird repellents. Progress report No. 1. *U.S. Fish and Wildlife Service*, pp. 1–13.

NEFF, J. A. and B. MEANLEY. 1957. Research on bird repellents. Progress report No. 2. *U.S. Fish and Wildlife Service*, pp. 1–21.

NEFF, J. A., B. MEANLEY and R. B. BRUNTON. 1957. Research on bird repellents. Progress report No. 3, part 1. *U.S. Fish and Wildlife Service*, pp. 1–19.

Wader ringing by the Wildfowl Trust, 1959-64

M. A. OGILVIE

In August 1959, the Wildfowl Trust's rocket-netting equipment was successfully used to catch waders on the south shore of the Wash. The initiative for this operation came from Dr. C. D. T. Minton and other ringers under the collective name of the Wash Wader Ringing Group. Although the rocket-nets were designed for catching geese and had, apart from occasional sorties after ducks, been used exclusively for this purpose, the equipment required no modification in kind for wader-netting. The greatest single obstacle to catching waders with nets thrown over them, as opposed to flight-netting, is finding suitably hard ground, frequented by the birds and preferably not ever covered by the tide, on which to place the nets. The topography of the Wash with its areas of salting and mud in front of the sea-wall and large fields behind provided the answer. During normal high tides the waders are driven off the mud-flats, over which they feed, on to the saltings. Here they roost until the water has receded. During periods of spring tides, however, the saltings are generally completely covered and the birds then fly over the sea-wall and roost in large, compact flocks on suitable fields, usually choosing ploughed land or fields with very short vegetation. It was this habit that was first observed and then taken advantage of by the Wash Wader Ringing Group using the rocket-nets. The catching was all done in daylight, the tides sometimes giving us two chances in a day, more often just one.

In each of the five years 1959–1963 catching operations were carried out for one or two periods of a week, between July and September. At this time of year relatively few suitable fields were available as roosting sites, making the choice of where to set the nets a little less difficult. The technique improved with experience but a number of important discoveries were made early on. Unlike geese, many waders do not lie quietly when caught by the net and it was necessary to cover every bird with blackout material immediately after firing the nets. This done, the birds were extracted and placed in the hessian keeping cages. Here they sat quietly until ringed and released. It was learnt very soon that two rocket-nets of ¼ acre each cover very little of a field which may be up to 110 acres in area. However if, as not infre-

Table I. Ringing totals and recoveries of waders caught on the Wash 1959–1963

species	Total ringed	Recovered total	Recovered rate %	RECOVERIES abroad	Britain outside Wash	local dead	local recaps
Oyster-catcher	207	7	3·38	1	1	2	3
Grey Plover	417	3	0·72	1		2	
Turnstone	302	3	0·99			1	2
Curlew	235	24	10·20	2	2	19	1
Bar-tailed Godwit	72	2	2·78			2	
Redshank	934	31	3·32	2	13	16	
Knot	3157	29	0·92	7	10	5	7
Dunlin	7560	38	0·50	22	3	3	10
other species*	32	–	–				
Total	12916	137	1·06	35	29	50	23

* Also ringed, no recoveries:— Ringed Plover 2; Golden Plover 1; Whimbrel 1; Black-tailed Godwit 7; Curlew Sandpiper 7; Sanderling 14.

quently happened, the waders landed outside the catching area, it was possible to move the flock either all together or bit by bit in the desired direction by driving them very gently with a slow-moving vehicle or sometimes a single person on foot. Mounted decoys were used, as in goose-netting, to attract the birds to the catching area by the nets. The best possible decoys, again as in goose-catching, were small flocks of birds landing in the catching area before the main flight over the sea-wall began. During the late summer and early autumn the numbers of waders in the Wash are quite high; not infrequently 5–10,000 waders roost in a single close-packed flock on one field, and there may be three such flocks roosting along the 15-mile south shore of the Wash. As in every type of catching operation, failures or part-failures always tend to predominate, so that the totals caught in one throw of the nets range from under 100 (often) to 2,200 (once). Only very occasionally were both nets fired at once, the almost invariable practice with geese, because it was thought possible that between them the two nets might one day catch more birds than could be safely and conveniently managed. A large team of ringers, skilled in handling and ringing birds with care and speed, was always present and with even the largest catch was not overwhelmed by the numbers involved.

As Table I shows, Dunlin were caught in much greater numbers than any other species, because they were most plentiful as well as being the easiest to catch. Other species were not so tolerant of being moved around a field, and, as one of the smallest species, the Dunlin were the first to be affected by the rising tides so there was always a longer period and more days when they came over the sea-wall to roost. At the other extreme, Curlews and Godwits were only driven off the saltings for perhaps the three or four highest tides in a week and for one or two hours each time instead of four or five. Efforts, not always successful, were directed, especially in the last two years, towards catching species other than Dunlin. Ringing large numbers of Dunlin just because it was possible to do so was placed second to deliberate attempts to catch Knot, Bar-tailed Godwit and Curlew, three species which have not been ringed on quite the massive scale that the Scandinavians in particular have marked Dunlin. Only Knot were caught in large numbers, with smaller though useful catches of Oystercatcher, Grey Plover, Turnstone, Curlew and Redshank.

Results from ringing

Set beside the expected reporting of 15–25% of ducks and geese ringed, the recovery percentage of waders is low (1%). Even among the species that may legally be shot in most of the countries they visit, returns are meagre. Table II records all the recoveries so far reported outside the British Isles.

Oystercatcher

The single overseas recovery is the second British-ringed Oystercatcher to reach Morocco. It is known from other ringing (Buxton, 1957) that there is a regular migration from Britain down the west coast of France into northern Spain with a few birds reaching Portugal, south Spain and the north coast of Africa.

Three Oystercatchers marked on the Wash in early August have been recaught breeding there in subsequent years.

Grey Plover

So far the ringing in 1963 of 383 of this species, rather more than three times the

number previously marked in Britain, has provided a single recovery in Morocco, the only one away from the Wash. This bird fits in well with the pattern of recoveries from over 500 Grey Plover ringed in Denmark and Norway. These birds, breeding it is thought in Siberia, migrate through western France to Africa, one bird reaching 6°N by early October (Nørrevang, 1959).

Turnstone

There have been just three local recoveries of Turnstone, two of them a year after marking. Other ringing has shown (Nørrevang, 1959) that the breeding populations from Greenland and Ellesmere Island and from northern Scandinavia and Russia migrate to western Europe and south to west Africa.

Curlew

The two foreign recoveries confirm the continental origin of Curlew wintering in Britain. A single recovery on the Severn estuary is possibly an example of the known onward passage of some birds through England, some going to Ireland, others to western France. Over half the local recoveries were in years subsequent to that of ringing, indicating a strong attachment to winter-quarters.

Bar-tailed Godwit

The two recoveries are both local, one and two years respectively after ringing. From European ringing, the origin of the wintering birds in Britain is northern Eurasia (Nørrevang, 1959).

Redshank

Ogilvie (1963), using recoveries of British-ringed Redshank notified to the end of 1962, concluded that, while the local breeding stock moves south and west in autumn, the wintering population in Britain, comprised largely of birds from Iceland, is fairly sedentary throughout the winter months. The exceptionally severe weather during the early part of 1963 caused many birds to leave Britain and decimated those that remained. Pilcher (1964), writing about the effects of the cold on the north coast of the Wash, lists 144 corpses of Redshank found in one week at the end of February. 14 recoveries were reported during the cold spell including one in France and seven others over 50 miles from the Wash. In the autumn of 1963, Redshank were still very scarce on

Table II. Overseas recoveries of waders caught on the Wash 1959–1963

Ring number	*date ringed*	*age*	*cause of death*	*recovery locality*	*recovery date*
Oystercatcher					
AT 83155	17.8.62	Fg	shot	Near Bouznika, Morocco (33°49′N, 7°10′W)	16.12.62
Grey Plover					
DS 14153	6.9.63	Ad	caught	El Merja region, Kenitra, Morocco (34°25′N 6°30′W)	14.3.64
Curlew					
AT 83036	28.8.61	Ad	shot	Højer, Jutland, Denmark (54°58′N, 8°48′E)	3.8.64
AT 83042	28.8.61	Ad	found dead	Söderveckoski, Borgå, Usuimaa, Finland (60°23′N, 25°25′E)	6.7.64
Redshank					
P 10005	18.8.59	Ad	killed	St. Martin de Brehal, near Coutances, Manche, France (49°03′N, 1°27′W)	13.1.63
P 19404	29.8.61	Juv	killed	St. Marie du Mont, Manche, France (49°22′N, 1°14′W)	21.11.61
Knot					
734282	17.8.62	Juv	shot	Crown Prince Island, Disco Bay, Godshavn, West Greenland (69°00′N, 53°20′W)	8.6.64
734389	3.9.63	Juv	? dead	Igdlerssuit, Umanak, West Greenland, (71°15′N, 53°25′W)	28.6.64
CX 25424	3.9.63	Juv	caught & killed	Bomi Hills, Liberia (6°55′N, 10°55′W)	11.9.63
CX 25719	3.9.63	Juv	killed	Lake Malika, 20 kms from Dakar, Sénégal (14°38′N, 17°27′W)	29.9.63
CX 26635	6.9.63	Juv	killed	M'Boro, near Thies, Sénégal 14°49′N, 16°52′W)	25.9.63
CX 26864	6.9.63	Juv	killed	M'Boro, near Thies, Sénégal (14°49′N, 16°52′W)	25.9.63
CX 27680	6.9.63	Juv	killed	Lake Tamna, near Kayar, Sénégal (14°53′N, 17°24′W)	13.10.63

Table II. Overseas recoveries of waders caught on the Wash 1959-1963-*continued*

Ring number	*date ringed*	*age*	*cause of death*	*recovery locality*	*recovery date*
Dunlin					
624034	18.8.59	Ad	shot	Near Holbaek, Sjaelland, Denmark (55°43′N, 11°44′E)	20.8.61
624167	18.8.59	1stw	killed	Baie de Goulven, near Plouneour, Finistère, France (48°38′N, 4°19′W)	31.7.62
624803	18.8.59	Ad	shot	Rammu Island, Harju, Estonian S.S.R. (59°35′N, 25°13′E)	10.8.61
627010	9.8.60	Ad	? dead	North shore of Ringkobing Fjord, Jutland, Denmark (56°05′N, 8°15′E)	0.8.61
627372	11.8.60	Ad	found dead or killed	Octeville, Seine Maritime, France (49°33′N, 0°07′E)	25/29.3.62
627403	11.8.60	Ad	shot	Vallensbaek, near Taastrup, Sjaelland, Denmark (55°36′N, 12°23′E)	15.8.61
622747	26.8.60	Ad	controlled	Amager, Copenhagen, Sjaelland, Denmark (55°38′N, 12°34′E)	18.8.61
622908	26.8.60	Ad	killed	Póvoa de Santa Iria, near Loures, Estremadura, Portugal (38°50′N, 9°10′W)	c.1.2.62
61309 S	25.8.61	Ad	caught & killed	Santa Iria, near Loures, Estremadura, Portugal (38°51′N, 9°05′W)	c.25.12.62
61556 S	29.8.61	Ad	found dead	Manslagt, near Emden, Niedersachsen, Germany (53°23′N, 7°08′E)	16.6.62
61661 S	29.8.61	Juv	killed	Near Severodvinsk, Arkhangel, U.S.S.R. (64°32′N, 39°55′E)	19.5.63
639521	17.8.62	Ad	controlled	Skanör, Skåne, Sweden (55°25′N, 16°24′E)	23/25.7.64
639488	19.8.62	Juv	killed	Audenge, Gironde, France 44°40′N, 1°01′W)	21.9.62
BA 48030	7.8.63	Ad	killed	Puerto Real, Cadiz, Spain (36°32′N, 6°11′W)	c.23.2.65
BA 48517	7.8.63	Ad	killed	Figueira da Fez, Beira Litoral, Portugal (40°09′N, 8°51′W)	22.9.63
BA 4813–	4/5.9.63	Fg	found dead	Grève de l'Epois, Baie de Bourgneuf, Vendèe, France (47°02′N, 2°00′W)	12.5.64
BA 49788	6.9.63	Ad	killed	Baie de Mont-St.-Michel, Ille et Vilaine, France (48°38′N, 1°30′W)	15.3.64
BA 49822	7.9.63	Ad	controlled	Aflandshage, Amager, Sjaelland, Denmark (55°33′N, 12°36′E)	6.8.64
BA 4989–	7.9.63	Ad	shot	Figuiera da Foz, Beira Litoral, Portugal (40°09′N, 8°51′W)	23.9.63
BA 50034	7.9.63	Ad	controlled	Amager, Sjaelland, Denmark (59°38′N, 12°34′E)	9.8.64
BA 50046	7.9.63	Juv	killed	Baie de l'Aiguillon, Vendée, France (46°18′N, 1°15′W)	11.11.63

the Wash and only 12 were caught compared with the previous four years' total of over 900.

Knot

The breeding distribution of this species described by Kozlova (1962) is both widespread yet discontinuous, with colonies on Victoria Island, Melville Island and Ellesmere Island in Northern Canada; northwest, north and east Greenland; probably some in Spitsbergen; and the Taymyr Peninsula and Novosibirskiye Islands in Asian Russia. Wintering is recorded from the Caribbean, the west and east coasts of South America; western Europe, equatorial West Africa, and Angola; the west and east coasts of Australia, and New Zealand.

From ringing in Scandinavia, where over 3,000 have been marked, Nørrevang (1959) showed that birds from Arctic Canada and Greenland, and from Siberia, come to western Europe, with many passing through on their way to Africa. The capture of 2,000 Knot on the Wash in September 1963 has produced as yet very few, but very spectacular recoveries, especially those from West Africa showing an extremely rapid onward passage. In just eight days, one bird was killed in Liberia, 3,300 miles to the south. Other recoveries were reported from Sénégal, two within three weeks of ringing and two more before five weeks had passed. All these were juveniles that had already travelled considerable distances from wherever they were bred. The only evidence as to the origin of the Knot ringed on the Wash comes from two recoveries in west Greenland. There is a definite movement through Britain to

Ireland, possibly of birds of a different stock. Others winter in the Wash, as shown by nine local recoveries and recaptures in the same season of ringing.

Dunlin

As mentioned above, this was the easiest bird to catch and, although efforts were made to catch other birds instead, more Dunlin were caught each year than any other species. The total of 7,500 ringed is less than half the number marked in Scandinavia since the war. Ogilvie (1963), using recoveries notified to the end of 1962, showed that winter visitors to this country come from Scandinavia and Russia, and also from Iceland with a certain amount of autumn passage through Britain of both stocks to areas further south. The recoveries since then have not altered this picture. From recaptures and recoveries it is known that Dunlin arriving on the Wash as early as mid-July may stay there the whole winter, whilst passage-migrants continue to pass through for a further two months or more. Over 200 Dunlin have been recaught in subsequent seasons and these have shown that there is a marked tendency for birds to return not only to the Wash itself, but to a particular part of the coast. The main catches of Dunlin have been made in two areas either side of the mouth of the River Nene, only seven miles apart, but the number of birds recorded as moving from one roost to the other even after three or four years is less than one-sixth the number recaught at the ringing place. Such strong attachment to discrete areas away from a nesting place had not previously been met with in waders, though well known in wildfowl.

Age-ratios, moult, weights and measurements

Whilst it was always the aim to extricate, ring and release the birds caught as expeditiously as possible, the opportunity was taken to examine as many as was practicable and to collect such information as the age, state of wing-moult, weight and various measurements. With a small catch and plenty of people every bird could be examined in this way, but only a sample could be taken of the larger catches. The age and state of primary-moult was comparatively simple and quick to record at the same time as ringing each bird and consequently more data of this kind were gathered than from the more detailed and time-consuming weighing and measuring. Because the timing of the catching trips each year depended on the spring tide periods, the dates varied widely and direct comparisons from year to year are invalid. However, a much greater advantage is gained by having records over five years covering the whole of the period from mid-July to early September. Thus it has been possible to study the variation of age-ratio with date, and the timing and speed of the wing-moult. Full results of this work are being written up and will be published elsewhere in the near future.

Foreign-ringed birds caught on the Wash

Many Dunlin ringed on passage in Scandinavia have been recaptured each year by the rocket-nets at the Wash. They were marked in Finland (2), Sweden (25), Norway (7), Denmark (5), Heligoland (1). Two others ringed in May in eastern Finland and in June on the Great Ainov Islands in the White Sea were probably breeding birds.

A single Turnstone ringed on passage in south Norway was caught at the Wash in September 1963.

Other wader-ringing undertaken with the Trust's rocket-nets

The Dee, Cheshire

In September 1961 a Trust team joined with Dr. E. White of Liverpool University in an attempt to catch Oystercatchers on the Dee estuary. A single catch of 151 was made on the Welsh side of the Dee, after several frustrations and disappointments on the islands off the north shore. Dr. White subsequently developed his own equipment and is studying the waders of the area. The Oystercatcher has now become the subject of an intensive study by the Ministry of Agriculture, Fisheries and Food who are using their own design of cannon-nets.

Vlieland, Holland

A Wildfowl Trust rocket-netting team visited Vlieland from 3rd to 11th September, 1964, at the invitation of Dr. A. C. Perdeck, Director of the Vogeltrekstation, a division of the Instituut voor Oecologisch Onderzoek, Arnhem, to discover whether the equipment could be used successfully to catch some of the very large numbers of waders frequenting the island in late summer and autumn. Members of the W.W.R.G. also took part, together with members of the staff of the Vogeltrekstation and representatives from Germany and Belgium. Catching operations began on 4th when a net was set by a small freshwater stream crossing mud-flats visited by many Shelducks in order to drink. A catch of 61 was quickly made. A second catch of 31 was made on 7th, when the ducks were noticeably more wary.

Table III. Birds caught on Vlieland, September 1964

Species	*Total*	*Species*	*Total*
Shelduck	95	Greenshank	2
Oystercatcher	2	Knot	2
Ringed Plover	5	Purple Sandpiper	1
Kentish Plover	1	Dunlin	81
Turnstone	349	Curlew Sandpiper	1
Redshank	486	Common Gull	15
Spotted Redshank	1	Black-headed Gull	111
		total catch	1152

The first catch reassured us that the equipment could be used in very wet conditions, the rockets firing well despite immersion in sea-water. Thus, in the absence of any promising assembly of resting waders on dry land, it was decided to set both nets on a sandy shore close to high-water mark for a catch on the morning tide of 5th. In the event, the tide covered the nets as well as the rockets with over 6 inches of water and no large concentration of waders in the catching area was achieved, despite great activity as the tide began to ebb. The nets were not seriously displaced by the tide. A catch of 89 was made in one net, nearly all Dunlin. Attempts on the succeeding days to move the large numbers of Knot, Dunlin and Bar-tailed Godwit in this area confirmed that they were not prepared to sit on dry land at high water, which was essential before they could be caught.

From 5th onwards the evening tides were too late for catches to be made before dark. For the morning of 6th the nets were set on the sand flats of the Vliehors, an area used by several thousand Oystercatchers. The shore there is so gently shelving that accurate prediction is very difficult, if not impossible: the tide rose higher than expected, the nets were carried over the rockets and pieces of driftwood also settled across the nets, so that they could not be fired. Continued attempts to drive Oystercatchers into the catching area failed. For the tide of 7th the nets were moved up the sand flats to a point most unlikely to be inundated. It was necessary to move the Oystercatchers a long distance to bring them into the catching area. This was achieved very successfully by herding them in front of the Land Rover, Oystercatchers being exceptionally willing to walk or run and unwilling to fly during their long high-water resting period. Unfortunately, just as the first birds had entered the catching area, a low-flying aircraft proved too great an additional stimulus. A small catch of gulls was inadequate compensation for what had promised to be a notable haul of waders. The Vliehors could not be used after 7th because of the resumption of target-practice by tanks, which caused the birds to leave.

On 8th one net was set in a small grass field being used as a roost by gulls and a few Oystercatchers and the second net was set in a very small field very close to the village of Oost-Vlieland. The first field proved useless, perhaps because the earliest-arriving birds found setting in progress, but a catch of Turnstones and gulls was made near the village.

The only dry site remaining to be exploited was a large Curlew roost on dunes inland. This posed considerable problems in setting, because it was hard to find space to set both nets and impossible to see the area adequately from a safe distance. On the afternoon of 8th the nets were set in a T-shape, with a firing-point within 40 yards of and almost in line with the end rocket of the nearer net. Much time was spent in covering the nets, which remained uncomfortably conspicuous for such wary birds as Curlew. On the morning of 9th several thousand Curlew and Bar-tailed Godwit settled in the vicinity, but fewer than a hundred sat in the catching area and no build-up could be achieved, despite many efforts at moving the birds. The nets were removed and set in a wet field close to the team's base at Het Posthuis which had come belatedly into favour with waders, especially Redshanks, and gulls. The nets were set in tandem to fire down-wind and disguised. A catch of nearly 800 birds was made in one net.

This international exercise was extremely stimulating to everyone who took part. We are most grateful to Dr. A. C. Perdeck for bringing it about, for securing financial support and for his generous and successful arrangements for the visitors. It is perhaps not invidious to express particular satisfaction at the presence of J. P. van de Weghe, of Vogelringstation Braakman, and F. Gräfe, of Vogelwarte

Helgoland, not merely as representatives of Belgium and Germany but for contributing notably to such success as was achieved.

References

BUXTON, E. J. M. 1957. Migrations of the Oystercatcher in the area of Britain: results from ringing. *Brit. Birds* 50: 519–524.

KOZLOVA, E. V. 1962. *Fauna of the U.S.S.R.*: Birds, Vol. 2, section 1, part 3. 433 pp. Moscow. (In Russian.)

NØRREVANG, A. 1959. The migration patterns of some waders in Europe, based on the ringing results. *Vidensk. Medd. Dansk Naturh. Foren.* 121: 181–222.

OGILVIE, M. A. 1963. The migrations of European Redshank and Dunlin. *Wildfowl Trust 14th Ann. Report*: 141–149.

PILCHER, R. E. M. 1964. Effects of the cold winter of 1962–63 on birds of the north coast of the Wash. *Wildfowl Trust 15th Ann. Report*: 23–26.

Nests and eggs of Greylag Geese in Galloway

J. G. YOUNG

Summary

Sixty eggs in 10 nests of Greylag Geese in Galloway in 1964 were measured. Their dimensions (average length 84·5 mm., breadth 59·2 mm.) were similar to those published for other British eggs which tend to be smaller than eggs from continental Europe. All 10 nests were successful, though 5 eggs failed to hatch. In a second group of nests, 6 out of 8 clutches were successful. At least 42 goslings were reared in the first group and 28 in the second. The sites and dimensions of the nests are described.

Introduction

In recent years Greylag Geese *Anser anser* have been increasing and spreading as breeding birds in south-west Scotland. The increase is probably due largely, though perhaps not wholly, to 'overspill' from the flourishing feral colony on the estate of the Earl of Stair near Stranraer, Wigtownshire. The study area, a loch and its environs, was first used by a single pair in 1951. In 1952 seven adults and five goslings were seen on 29th June. In 1953 31 geese were counted, of which only ten or twelve were adults. In 1957 there were 20 adults with seven broods. The breeding stock does not seem to have increased beyond this point, ten nests having been found in 1963 and again in 1964. The area is also used as a moulting place, counts of over 150 geese in early June being not uncommon.

This paper is concerned with the ten nests of 1964, with the dimensions of the 60 eggs they contained, and with the success of this and another group of nests elsewhere in Galloway.

Nests

All the nests were built on islands. They were built on the ground, of large twigs, withered grasses and moss, and contained considerable amounts of down. In two nests examined twig by twig on different islands there was no evidence of material having been carried to the nest. Most of the nests were near the water's edge. Five were at the bases of large trees, three beside large rocks, two in dense secondary growth and one on open ground. In a group of four on one island, the nearest nests were six feet apart and the furthest forty-five feet. The average diameter of the nests was 26 inches, with a rim of $3\frac{3}{4}$ inches and a cup $2\frac{1}{4}$ inches deep.

Clutch-size

Three single eggs were found deposited in positions where there was obviously no nest. The clutches in the ten nests were distributed as follows:

clutch-size	4	5	6	7	9
number of clutches	2	2	2	3	1

The mean clutch-size, excluding the single eggs, was 6·0. This is rather larger than would be expected from the note by F. C. R. Jourdain (in Witherby, Jourdain, Ticehurst and Tucker, *The Handbook of British Birds*, III, 1939) 'Eggs:—Number variable; usually 4 to 6, occasionally 7 or 3 only, rarely 8'. Two pure white eggs were seen in different clutches, in which the rest of the eggs were stained. The white eggs hatched at the same time as the other eggs so must presumably have been incubated for the same period.

Hatching success

All the nests were successful in producing young. 55 of the 60 eggs (91·7%) hatched, the five that failed to do so occurring in five different nests. The clutch of nine in nest VI all hatched and a brood of nine was later seen on the loch.